Construction Environmental Management Plan (CEMP)

TAP04 Redfern Station Upgrade – New Southern Concourse

Document Information	
Document Number	TAP04-PLN-EN-0001
Issue Date	18/12/2023
Revision status	Version 11
Status	Final
Custodian	Environmental Adviser
Approver	Senior Project Manager

Asite Document Reference	Asite Document Title
TAP04-PLN-EN-0003	Construction Environmental Management Plan (CEMP)

Revision Control

Version	Change from previous	Date	Comment
00	Document Creation	01/05/19	For review
01	Updated following TfNSW comments	08/05/19	For project Proposal
02	Updated following TfNSW Comments on Project Proposal	15/11/19	Update by LM
03	6-monthly review	12/05/20	Alignment with CEMF Changes to Monitoring Assurance Program; Roles & responsibilities & Risk Register
04	Structural and formatting changes	28/11/20	Structural changes and formatting changes
05	Update in line with TfNSW and ER comments	05/12/20	Update in line with TfNSW and ER comments
06	Update in line with TfNSW and ER comments	24/12/20	Close off any remaining open comments
07	Update CEMP with two minor ancillary facilities	08/01/20	Update with minor ancillary facilities
08	Update ER inspection frequency	10/06/21	Update ER inspection frequency
09	Results of June 6 monthly compliance report review	16/09/22	Clarification of environmental issue vs non-compliance & dangerous goods
10	Review and updated scope	7/12/23	Scope and ECMs updated to reflect new design changes
11	Revised report timeframe (Section 12.3 – Environmental Issues and non-compliance)	18/12/23	Revised ECPR timeframe to accommodate final stage of the project.

Reviewed by			
Name	Organisation	Role	Date
Larry Melnick	Novo Rail	Environmental & Sustainability Manager	26/11/20
Marijan Harris	Novo Rail	Senior Project Engineer	27/11/20
Kimberley Purkiss	Novo Rail	Environmental Manager	19/01/22
Tommaso Buratti	Novo Rail	Environment & Sustainability Advisor	16/09/22
Tommaso Buratti	Novo Rail	Environment & Sustainability Advisor	18/08/23
Tommaso Buratti	Novo Rail	Environmental & Sustainability Advisor	7/12/23
Tommaso Buratti	Novo Rail	Environmental & Sustainability Advisor	18/12/23

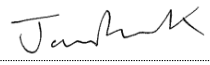
Name	Organisation	Role	Signature
James Renwick	Novo Rail	Senior Project Manager	
Jerome Cargnino	Novo Rail	Project Manager	

Table of Contents

1 Glossary, acronyms and abbreviations

Terms	Description
Aboriginal object	The same meaning as in the National Parks and Wildlife Act 1974 (NSW).
ACHMP	Aboriginal Cultural Heritage Management Plan
Acid sulfate soils	Naturally occurring soils, sediments or organic substrates (e.g. peat) that are formed under waterlogged conditions. These soils contain iron sulfide minerals (predominantly as the mineral pyrite) or their oxidation products. In an undisturbed state below the water table, acid sulfate soils are benign. However, if the soils are drained, excavated or exposed to air by a lowering of the water table, the sulfides react with oxygen to form sulfuric acid.
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System
Ancillary facility	A temporary facility for construction of the SSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area.
AS	Australian Standard
ASITE	Record keeping and Document management system
At-property treatment	Acoustic treatments including those described in Section 7.3 of the Noise Mitigation Guideline (TfNSW(RMS), 2015) and other treatments including, but not limited to, noise curtains and retrofitted double glazing.
BC Act	*Biodiversity Conservation Act* (NSW) *2016*
Blue Book	Landcom, 2004, Managing Urban Stormwater: Soils and Construction, Volume – 4th Edition
CALD	Culturally and Linguistically Diverse
CEMF	Construction Environmental Management Framework: The document serves as a Roadmap and encompasses systems and processes for environmental management including performance outcome and mitigation measures. Document facilitates delegation and approval of the CEMP by the nominated Significant State Infrastructure Environmental Representative.
CEMP	Construction Environmental Management Plan
CM	Construction Manager
CNVS	TfNSW's Construction Noise and Vibration Strategy (7TP-ST-157)
Completion of construction	The date upon which construction is completed and all construction-related requirements of the Planning Secretary (if any) have been met. If construction is staged, completion of construction is the date upon which construction is completed and all requirements of the Planning Secretary (if any) have been met, in respect of all stages of construction.
Construction	Includes all work required to construct the SSI as described in the EIS, RtS and CEMF, including commissioning trials of equipment and temporary use of any part of the SSI, but excluding enabling works and site establishment works approved under a Site Establishment and Enabling Works Management Plan and low impact works which are completed prior to approval of the CEMP.
Construction Boundary	The area physically affected by work as described in the documents listed in Condition A1.
CMP	Conservation Management Plan
CHMP	Construction Heritage Management Plan
CNVMP	Construction Noise and Vibration Management Plan
C&SM	Community and Stakeholder Manager
CRZ	Critical Root Zone – the distance from the tree trunk that is 5 times the diameter of the tree trunk
CS	Construction Supervisor
DBYD	Dial-Before-You-Dig

Terms	Description
DECC	Former NSW Department of Environment and Climate Change
Department	NSW Department of Planning, Industry and Environment (now NSW Department of Planning and Environment)
DPE	New South Wales Department of Planning and Environment. *Note: Office of Environment and Heritage was abolished on the 01/07/19 and merged into the newly formed department. On the 21/12/21, the reduced Department of Planning, Industry and Environment (DPIE) was renamed back the Department of Planning and Environment i.e., DPE.*
E&SM	Environment and Sustainability Manager (Novo Rail)
ECM	Environmental Control Maps: ECMs provide detailed illustrative indicative controls including their positioning for managing potential environmental impacts identified under the project. The ECM is a fluid document and is to be revised to reflect changes at the project site which may be as a result of any significant change in the project scope and/or as a result of Client request(s).
EcMP	Ecological Management Plan
EES	Environment, Energy and Science Group of the Department of Planning, Industry and Environment
EIS	The Environmental Impact Statement submitted to the Planning Secretary seeking approval to carry out the development described in it, as revised if required by the Planning Secretary under the EP&A Act, and including any additional information provided by the Proponent in support of the application for approval of the project.
EMS	Laing O'Rourke's Environmental Management System, supported by key elements from TfNSW's EMS. Henceforth Laing O'Rourke's/TfNSW's EMS will be referred to as Project's EMS.
Enabling works	All works within the rail corridor that are undertaken during the Christmas 2020 rail possession including: (a) piling for concourse piers, abutments and entrances; (b) installation of footings for stairs, lifts and columns; (c) relocation of overhead wiring structures; (d) relocation of platform furniture; (e) relocation of utilities, services and lighting; (g) removal of privacy walls at existing platform buildings.
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
Environmental Issue	An environmental issue is an occurrence or set of circumstances that has the potential to cause or lead to an environmental incident or non-compliance if not rectified
EPA	NSW Environment Protection Authority
EP&A Act	*Environment Protection and Biodiversity Conservation Act* (Cwlth) *1999*
ERAP	Environmental Risk Action Plan (Issue-specific Plans for mitigating risk under the Project)
ER	Environmental Representative. Nominated Environmental Representative as nominated by the Proponent, i.e. TfNSW and approved by the Planning Secretary (as per the CoA requirement)
ESD	Ecologically Sustainable Development - As defined by clause 7(4) Schedule 2 of the EP&A Regulation. Development that uses, conserves and enhances the resources of the community so that ecological processes on which life depends are maintained, and the total quality of life, now and in the future, can be increased.
ESTR	Environment and Sustainability Team Representative (Novo Rail)
Feasible	A work practice or abatement measure is feasible if it is capable of being put into practice or of being engineered and is practical to build given Project constraints such as safety and maintenance requirements.

Terms	Description
HARD	Historical Archaeological Research Design Report
Hardstands	A hard-surfaced area on which heavy vehicles or airplanes can be parked
Hazard	Hazard is a situation that has the potential to harm a person, the environment or damage property
HMMP	Hazardous Materials Management Plan
Heavy Vehicle	Has the same meaning as in the Heavy Vehicle National Law (NSW) 2013.
Heritage item	A place, building, work, relic, archaeological site, tree, movable object or precinct of heritage significance, that is listed under one or more of the following registers: the State Heritage Register under the Heritage Act 1977 (NSW), a state agency heritage and conservation register under section 170 of the Heritage Act 1977 (NSW), a Local Environmental Plan under the EP&A Act, the World, National or Commonwealth Heritage lists under the Environment Protection and Biodiversity Conservation Act 1999 (Cth), and an "Aboriginal object" or "Aboriginal place" as defined in section 5 of the National Parks and Wildlife Act 1974 (NSW).
Heritage NSW	A branch within the Community Engagement Group of the NSW Department of Premier and Cabinet
Highly noise affected	As defined in the Interim Construction Noise Guideline (DECC, 2009)
Highly noise intensive works	Works which are defined as annoying under the Interim Construction Noise Guideline (DECC, 2009) including: (a) use of power saws, such as used for cutting timber, rail lines, masonry, road pavement or steel work; (b) grinding metal, concrete or masonry; (c) rock drilling; (d) line drilling; (e) vibratory rolling; (f) bitumen milling or profiling; (g) jackhammering, rock hammering or rock breaking; and (h) impact piling.
HIP	Heritage Interpretation Plan
HIS	Heritage Impact Statement
HV	High Voltage
ICNG	Interim Construction Noise Guideline (DECC, 2009)
ICAM	Incident Cause and Analysis Method
iGMS	iGMS is the portal to the Laing O'Rourke enterprise wide management system.
Impact	Impact is a change to the environment, whether adverse or beneficial, wholly or partially resulting from the organisations aspects.
IMPACT	Laing O'Rourke Incident recording system
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.
INX	TfNSW's incident reporting system
ISCA	Infrastructure Sustainability Council of Australia
ISO	International Organisation for Standardisation
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act.
Landowner	Has the same meaning as "owner" in the *Local Government Act 1993* and in relation to a building means the owner of the building
Local road	Any road that is not defined as a classified road under the *Roads Act 1993*.
LOTE	Language Other than English
Low impact works	Includes:

Terms	Description
	a) survey work including carrying out general alignment survey, installing survey controls (including installation of global positioning systems (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; b) investigations including investigative drilling, contamination investigations and excavation; c) operation of construction ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community; d) minor clearing and relocation of native vegetation, as identified in the documents listed in CoA A1; e) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments; f) property acquisition adjustment work including installation of property fencing, and relocation and adjustments of utilities to property including water supply and electricity; g) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER; h) installation of site hoarding; i) archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (DECCW, 2010) or archaeological monitoring undertaken in association with [(a)]-[(h)] above to ensure that there is no impact on heritage items; j) other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access; and k) maintenance of existing buildings and structures required to facilitate the carrying out of the SSI. However, where heritage items, or threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW, EES or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation).
LV	Low Voltage
Material harm	This is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).
Minister	NSW Minister for Planning and Public Spaces
NML	Noise Management Level as defined in the *Interim Construction Noise Guideline* (DECC, 2009)
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval but is not an incident.
NSW Heritage Council	NSW Heritage exist within the Community Engagement Division of the Department of Premier and Cabinet.
OEH	NSW Office of Environment and Heritage
OHEW	Overhead Earth Wire
OHW	Overhead wiring
OOHW	Out of Hours Works - Defined as works outside standard construction

Terms	Description
Operation	The carrying out of the SSI (whether in full or in part) upon the completion of construction. Note: There may be overlap between the carrying out of construction and operation if the phases of the development are staged. Commissioning trials of equipment and temporary use of any part of the SSI are within the definition of construction.
PASS	Potential Acid Sulfate Soils
Planning Secretary	Planning Secretary of the Department (or nominee, whether nominated before or after the date on which this approval was granted)
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
Proponent	The person identified as such in Schedule 1 of this approval and any other person carrying out any part of the SSI from time to time.
PMP	Property Management Plan
Publicly available	To be made available on the website required under Condition B10 of this approval.
SEEWMP	Site Establishment and Enabling Works Management Plan
SCWMP	Soil, Contamination and Water Management Plan
SMP	Sustainability Management Plan
SPM	Senior Project Manager
PRN	Project Referral Notice, Project ID 15031, dated 17/12/18
RBL	Rating Background Level
Relic	Has the same meaning as the definition of the term in section 4 of the Heritage Act 1977 (NSW).
Relevant roads authority	The same meaning as the roads authority defined in the Roads Act 1993 (NSW).
Response to Submissions (RtS)	The Proponent's response to issues raised in submissions received in relation to the application for approval for the SSI under the EP&A Act.
SDS	Safety Data Sheet
Sensitive receivers	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres and passive recreation areas (including outdoor grounds used for teaching). Receivers that may be considered to be sensitive include commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, and retail spaces), and industrial premises as identified by the Planning Secretary.
SER	Severe Environmental Risk
SHR	State Heritage Register
Site establishment works	Works required to establish compound sites and ancillary facilities (not including minor construction ancillary facilities). Types of works/activities are defined in Section 7.
SMP	Sustainability Management Plan, TAP04-PLN-MG-0011, established to manage and satisfy sustainability requirements under the Project
SoHI	Statement of Heritage Impact
SRS	Systems Requirements Specification (includes functional requirements and parameters associated with environmental and sustainability requirements under the Project)
SSER	Shared services equipment room, proposed building for providing HV and LV supplies under the Project (EIS Pathway)
SSI	State Significant Infrastructure (recognised project type under the Project's EIS pathway)
SWMS	Safe Work Method Statement
Sustainability	Promoting transport systems that meet our present social, environmental and economic needs without compromising the quality of life of future generations. An important part of this is minimising the impact of transport on our natural environment now and into the future (TfNSW 2012-2017 based on the Brundtland 1987 definition).

Terms	Description
SL	Sustainability Lead (Novo Rail)
TAP	Transport Access Program
TCP	Traffic Control Plan
Teambinder	Electronic correspondence management system for record keeping purposes. System managed by TfNSW and for utilisation by the Novo Rail Alliance.
TfNSW	Transport for NSW
TMP	Traffic Management Plan
Tree	Long lived woody perennial plant greater than (or usually greater than) 3 metres in height with one or relatively few main stems or trunks (AS4373-2007 Pruning of amenity trees).
Track possession	Track possession is the term used by railway building/maintenance contractors to indicate that they have taken possession of the track (usually a block of track) for a specified period, so that no trains operate for a specified time. This is necessary to ensure the safety of workers and rail users.
TMP	Traffic Management Plan
Unexpected heritage find	An object or place that is discovered during the carrying out of the SSI and which may be a heritage item but was not identified in the documents listed in Condition A1 or suspected to be present. An unexpected heritage find does not include human remains.
Unexpected contamination find	Any contamination that is discovered during the carrying out of the SSI but was not identified in the EIS or Response to Submissions report or was not suspected to be present.
Work	Any physical work for the purpose of the SSI including but not limited to construction, low impact work, enabling works, utility works and site establishment but not including operational maintenance works.

2 Project overview

The Project involves the upgrade of Redfern Station through the construction of a new concourse at the southern end of the station platforms, providing both lift and stair access to Platforms 1 to 10. The new concourse would extend between Marian Street and Little Eveleigh Street and include associated interchange upgrades of Little Eveleigh Street, Marian Street, and parts of Cornwallis Street and Rosehill Street.

The Project forms part of the Transport Access Program (TAP). The TAP has the objective of providing a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

All Project components described are subject to further design. Changes may be made during the ongoing design development and community consultation processes.

Amended description of the Project including proposed changes

The key features of the Project are listed below:

- a six metre wide concourse between Little Eveleigh Street and Marian Street
- new stair and lift access from the concourse to Platforms 1 to 10
- an upgraded station entrance at Marian Street including station services and customer amenities
- a new station entrance at Little Eveleigh Street including station services and customer amenities
- formalisation of a shared zone on Little Eveleigh Street, including:
  - safety improvements to vehicle, cyclist and pedestrian interactions (including changes to traffic direction and loading zone)
  - improvements to the streetscape such as landscaping, drainage and pavements
  - impacts to approximately 20 parking spaces (including 18 resident / restricted parking spaces, accessible parking space and car share scheme parking space)
  - utility adjustments
  - provision of 17 new bike hoops (34 bicycle spaces) to the north end of Little Eveleigh Street Entrance
- upgrade of Marian Street / Cornwallis Street / Rosehill Street area:
  - extension of existing shared zone including part of Rosehill Street
  - safety improvements to vehicles, cyclist and pedestrian interactions including footpath widening
  - improvements to the streetscape such as drainage, landscaping and pavements as well as utility adjustments
  - changes to street parking arrangements including removal of approximately 13 parking spaces (including relocation of one car share scheme parking space) and provision of a loading zone
  - provision of 13 additional bike hoops (26 bicycle spaces) near the Marian Street Entrance.
- other components of the Project include:
  - relocation of the shuttle bus zone from Little Eveleigh Street to Gibbons Street
  - a new Kiss and Ride area on Lawson Street in both directions, and associated footpath upgrade
  - new pedestrian crossing on Lawson Street

  - footpath widening and new contraflow cycleway on Ivy Street
  - partial road closure on Wilson Street with provision of associated island, road furniture and marking and opening of Wilson Street to connect into the new shared zone
  - relocation of a building on Platform 1 to accommodate the concourse
  - repurposing, relocations and alterations to platform building features and other platform features including privacy walls, platform seats and electrical equipment
  - additional platform resurfacing on all platforms and associated drainage alterations
  - addition of platform canopies
- installation of station operation component s and infrastructure including:
  - wayfinding and signage
  - tactile ground surface indicators (TGSI)
  - rubbish bins
  - CCTV
  - passenger information system (e.g. passenger information display, public address and hearing loops)
  - emergency equipment (e.g., for fire and life safety)
- service relocation and upgrade including:
  - relocation of overhead wiring structures
  - installation of a new rail signal between Platforms 1 and 2

There are three construction ancillary facilities that are being used for the Project (these are described in detail in the approved EIS). These include:

- Ancillary Facility 1: Eveleigh Maintenance Centre
- Ancillary Facility 2: Sydney Trains carpark
- Ancillary Facility 3: Gibbons Street Reserve and Marian Street carpark.

However, for the main works the Project would only use the Sydney Trains carpark and the Gibbons Street Reserve and Marian Street carpark ancillary facilities. These ancillary facilities are described in detail in Appendix L (Ancillary Facilities Management).

In addition, there are material storage (laydown areas) including:

- CarriageWorks
- Sydney Signal Box No:02
- Local storage area, north of Sydney Signal Box No:02
- Central Station
- Newtown Station.

These are also detailed in the Appendix L (Ancillary Facilities Management).

Redfern Station Upgrade is subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as State Significant Infrastructure (SSI). Detailed environmental impact assessments have been carried out and approved by the Minister for Planning.

The Environmental Impact Statement (EIS) assessed impacts for Redfern Station Upgrade, New Southern Concourse.

The planning approval (Infrastructure approval SSI Redfern Station Upgrade) and associated environmental assessment documents are located at:

https://www.planningportal.nsw.gov.au/major-projects/project/25836

Novo Rail is to meet all applicable planning approvals over which it has the ability to control or influence with due consideration to the asset life cycle and stakeholder relationships. The plan has been developed to address the Transport for NSW's specific requirements and the Project EMS.

3 Purpose and scope

This Construction environmental management plan (CEMP) and its associated management plans, details the environmental management system that needs to be employed throughout the Project, the processes and procedures for effective environmental management, and the environmental and sustainability management controls for the Redfern Station Upgrade – New Southern Concourse project.

Implementing this CEMP assists in demonstrating environmental due diligence under the Project and in meeting relevant legislative, regulatory, contractual and compliance requirements specifically meeting the requirements and demonstrating compliance with CoA C1 to C5.

The Project commenced in December 2020 with site establishment, low impact works and enabling works. These works and the processes and procedures to cover environmental management are detailed in the Site Establishment and Enabling Works Management Plan (SEEWMP). The CEMP has been developed to cover the remainder of the Project defined as Construction in the CoA, ie. The Construction period from January 2021 until completion in July 2022. Appendix L (Ancillary Facilities Management) will be an appendix to the CEMP for the duration of construction for the continual management of the ancillary facilities.

Novo Rail has adopted Laing O'Rourke's ISO14001: 2015 certified Environmental Management System (EMS), supported by key elements from TfNSW's EMS. The EMS is currently certified (No. 4749) with SciQual. Henceforth Laing O'Rourke's/TfNSW's EMS will be referred to as the Project's EMS. This CEMP has been prepared to ensure that the correct environmental controls, mitigation measures, inspections and audits are upheld throughout the life of the Project.

This CEMP will be made available to all Project Personnel (i.e. Alliance team members, subcontractors, visitors or anyone working on the project for the duration of the Project).

The scope of the CEMP and details on construction works is discussed in Section 6.

3.1 CEMP Objectives

The key objective of the CEMP is to ensure that the environmental impacts caused by the Project are minimised within the scope permitted by the planning approval.

To achieve this objective, the following will be undertaken:

- Ensure appropriate controls and procedures are implemented during Construction to avoid or minimise real and potential impacts to the environment and sensitive receivers along the Project corridor
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 5 of this Plan
- Provide staff with an increased level of understanding and awareness of sensitive environmental issues within and adjacent to ancillary facilities and ensure effective communication is maintained with statutory authorities
- Contractual obligations (TSR-E) under the Program Alliance Agreement

- PRN 18-005: TfNSW Standard Requirements TSR-A – Alliances, (5TP-FT-301/4.0); Annexure A Additional Project Requirements
- Fulfil compliance requirements and contractual obligations under the approved Minister's Conditions of Approval (CoAs), the Project's approved Environmental Impact Statement (EIS), the Response to Submissions (RtS) , Construction Environmental Management Framework (CEMF), the Program Alliance Agreement (e.g. Project Referral Letter) and other environmental planning approval documents

Note: where there is contradictory or conflicting requirements between the planning approval documents, the higher level document takes precedence. E.g. the CoAs and CEMF takes precedence over the Program Alliance Agreement.

- Align with the Project EMS
- Ensure the needs and expectations of TfNSW are addressed
- Manage environmental and sustainability risks and opportunities through development of the CEMP Management Sub-Plans, Environmental Risk Action Plans (ERAPS) and the updated Environmental and Sustainability Risk and Opportunity Register (Appendix C)
- Align with the project's environmental and sustainability commitment (see Section 4)
- Communicate that active and visible leadership and commitment would occur
- Demonstrate the processes and the Project's commitment to conserve and preserve resources and heritage by instilling the principles of Ecological Sustainable Development
- Internalise and apply risk management methodologies, including the pre-cautionary principle to the Project
- Apply intuitive environmental management tools and incentivised mechanisms to assist in decision-making in the protection of the environment
- Internalise hold-point and witness points into Novo Rail processes to assist in decision-making and to assure biodiversity, ecological and heritage values are conserved
- Assist and set the framework for establishing workshops and other forums at all levels to facilitate learning, innovation and knowledge-sharing
- Integrate environmental management practices and processes across other disciplines such as safety, quality and engineering.

4 Environmental and sustainability commitment

The Redfern Station Upgrade Environment and Sustainability Commitment is the overarching commitment for the CEMP.
The commitment will be:

- displayed at prominent locations on the project site
- communicated to site personnel during induction and training
- made accessible to clients and concerned / interested members of the public.

The Contractor will maintain a project specific Environment and Sustainability Policy that will reflect a:

- commitment for the delivery of the Project to:
- align with, and support the Transport for NSW (TfNSW) Environment and Sustainability Policy
- minimise impacts on the environment
- procure, deliver and promote sustainable transport options that promote value for money
- comply with relevant legislations
- build and support a transport system that improves social, environmental and economic needs
- Subcontractors will be required to undertake their works in accordance with this policy.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S1.3, pg. 1)

See Appendix A for Novo Rail's Sustainability Commitment.

4.1 Environmental Objectives and Targets

The Project-specific environmental objectives and targets have been developed with the compliance requirements, contractual obligations, risks and opportunities taken into consideration. The objectives, as a first measure, have taken into consideration the Performance Outcomes detailed in the Redfern Station Upgrade – New Southern Concourse Response to Submissions (Transport for NSW, September 2020) and the Redfern Station Upgrade – New Southern Concourse Construction Environmental Management Framework (Transport for NSW, October 2020). The Performance Outcomes outline the broader objectives to be achieved during design, construction, and operation. The objectives contained within this CEMP have been further refined and tailored using identified potential risks and opportunities as evaluated in the initial risk and opportunity workshop and provided in Appendix C. Measurable targets have been developed based on identified objectives. These targets would assist in determining and tracking Project environmental performance.

Environmental objectives and targets have been determined and tailored to previously identified environmental risks. This is captured within the CEMP Management Plan, standalone management plans, by meeting the performance requirements/outcomes under

the CEMF and those under the CoAs. This is captured in Table 4-1 in meeting the performance requirements.

Table 4-1 Environmental objectives and targets

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
Noise and vibration	To comply with contractual requirements and ensure that noise and vibration from construction activities does not cause environmental nuisance	No valid noise / vibration complaints resulting from construction works for the duration of the Project	Consultation Manager (CM) – no complaints lodged in the database for the duration of Construction	Zero (0) complaints lodged in the database for the duration of the Phase
		No noise and vibration impacts on external receptors	Consultation Manager (CM) – no complaints lodged in the database for the duration of Construction	Zero (0) complaints lodged in the database for the duration of the Phase
		Undertake work activities through feasible and reasonable means in addressing project specific noise management levels	Noise logger to retrieve noise data. Noise and vibration data/information is captured in the Noise and vibration data report form, records retained on Asite and also a copy sent to TfNSW Weekly inspections to be recorded on the Environmental and Sustainability Inspection Report Vibration monitoring equipment e.g. SiteHive Hexanode	Noise levels need to be maintained around set targets as per the CoA
Heritage (Aboriginal and Non-Aboriginal)	To comply with contractual and legislative requirements and ensure that existing and undiscovered heritage and archaeological items are protected from construction activities	No disturbance or damage to existing known heritage sites or items	Visual monitoring weekly of any existing items Completion of the Environmental and Sustainability Inspection Report INX InSystem – logged as an incident if damage occurs	Zero (0) instances of disturbance or damage to existing known heritage sites or items
		Unknown or undocumented heritage sites are not knowingly destroyed, defaced or damaged	INX InSystem – logged as an incident if damage occurs	Zero (0) incidents occurring to unknown or unexpected finds of heritage
		Identify and protect any new artefacts, heritage sites or relics before any harm	New artefacts are communicated and reported to the TfNSW	100% of all new artefacts or heritage sites are protected

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
		can take place and for consideration of incorporation into site features	heritage representative – records of communications are kept Photographs of heritage items and evidence of delineation are retained	
Soil, contamination and water	To comply with contractual and legislative requirements and ensure that water discharged off-site from construction and erosion and sediment control (ESC) activities does not cause environmental nuisance / harm.	No sediment impacts to the surrounding environment and waterways as a result of the works	Visual monitoring by site supervision, with photographs to support visual inspection Weekly Environment and Sustainability Inspection Report	Zero (0) sediment impacts to the surrounding environment and waterways
		No off-site water quality impacts as a result of erosion and sedimentation and/or inadequate onsite controls	Visual monitoring by site supervision, with photographs to support visual inspection Weekly Environment and Sustainability Inspection Report. The ESTR will undertake "at least weekly" inspections of on-site ESC devices, plus prior to expected rainfall and after rainfall Maintenance activities for ESCPs shall be documented – items that cannot be immediately repaired are to be documented on the project CAR Register. All water quality data including quantity, quality and dates of water release will be maintained the project records.	Zero (0) off-site water quality impacts
		All trade waste to be discharged in accordance with legislation and approvals – no breaches to legislation or approvals	Visually monitored daily by the ESTR Inspection report F1227 detailing any trade waste issues will be completed by the ESTR	Zero (0) breaches to legislation or approvals Zero (0) reportable/notifiable incidents to the EPA Zero (0) incidents occurred and logged into the INX system

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
			INX InSystem – logged as an incident	
		Educate Novo Rail staff and subcontractors on the relevant legislation, the correct use of the washout system and applicable Trade Waste Permit(s) where required	Toolbox talk sign-on sheet Records/copies retained of the presentation delivered on Trade Waste	Conduct at a minimum one (1) toolbox talk in relation to trade waste for the duration of the Enabling Works Phase
		No impacts to the surrounding environment and waterways	Visually monitored daily by the ESTR Inspection report F1227 detailing any trade waste issues will be completed by the ESTR	Zero (0) trade waste impacting the surrounding environment and waterways
		No spills, uncontrolled releases or incidents of concrete	Weekly inspections to be recorded on the Environmental and Sustainability Inspection Report Record of daily inspection to be kept in Site Manager's/Supervisor's diary when concrete washout is being undertaken INX InSystem – logged as an incident Incidents or spills of concrete to be recorded on form Environmental Incident and Complaint Report	Zero (0) instances of spills or uncontrolled release of concrete Zero (0) incidents recording in relation to concrete wash 100% weekly inspections completed on time 100% of all records retained from daily inspections
Air quality	To comply with contractual and legislative requirements and ensure that air quality from construction activities does not cause an environmental nuisance	No exceedances of air quality goals as per the *National Environmental Protection Measure* Note: air quality goals/triggers have been programmed into SiteHive Hexanode	SiteHive Hexanode – trigger levels are programmed into the system with exceedances captured as part of automatic capture.	Zero (0) exceedances of air quality goals and/or trigger levels
Hazardous material	To comply with contractual and legislative requirements	No environmental incidences involving contaminated/ hazardous materials	INX system – recorded as an environmental incident	Zero (0) incidents occurred and logged into the INX system

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
	and ensure that hazardous / contaminated material from construction activities does not cause an environmental nuisance / harm and is disposed of in accordance with legislative requirements.		The finding of any contaminated material on site will be reported in accordance with the project's unexpected finds procedure.	
		No pollution events of the surrounding environmental and water ways by contaminated material	INX system – recorded as an environmental incident The finding of any contaminated material on site will be reported in accordance with the project's unexpected finds procedure.	Zero (0) incidents occurred and logged into the INX system
		All transport of any found contaminated material will be tracked	Receipts for the disposal of any found hazardous material will be filed on site by the ESTR EPA's online tracking system	100% of all contaminated material found is transported off-site to a facility legally able to accept that waste and is tracked. 100% of all disposal receipts are retained
Traffic, access and pedestrian	To comply with contractual requirements and ensure that noise and additional traffic from construction activities does not cause an environmental nuisance	No valid complaints resulting from congestion from construction traffic outside the approved Traffic Management Plan	Consultation Manager (CM) – no complaints lodged in the database for the duration Phase The Environmental Incident and Complaint Report is to be used to document complaints	Zero (0) complaints lodged in the database for the duration of the Phase
		No breaches to traffic management standards and requirements	INX InSystem – logged as an non-compliance related incident	Zero (0) breaches to traffic management standards and requirements
		No visible queueing in streets surrounding the site	Visual inspection/observation – photographs taken as supporting evidence of breach/non-breach INX InSystem – logged as an non-compliance related incident	Zero (0) logged incidents in relation to queue lengths in surrounding streets
		No use of roads for construction traffic outside of the haulage routes defined in the approved planning approvals	Compliance auditing documents/records	Zero (0) non-compliances logged

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
Biodiversity and biosecurity	To comply with contractual and legislative requirements and ensure that native fauna and flora are protected from construction activities	No death or injury to fauna	Visually monitored daily Environmental and Sustainability Inspection Report detailing any flora and fauna Discovery of fauna is to be managed in accordance with the TfNSW Fauna Management Guideline including observing HOLD-POINT and notification to the TfNSW Environmental Representative INX InSystem – recorded as an incident	Zero (0) incidents or instances of death or injury to native fauna
		No unapproved removal of flora	Visually monitored daily Environmental and Sustainability Inspection Report detailing any flora and fauna INX InSystem – recorded as an incident	Zero (0) incidents or instances of unapproved removal of flora
Visual amenity	To comply with contractual requirements and ensure that visual amenity from construction activities do not cause impacts on sensitive receivers.	No valid visual amenity complaints from construction works for the Construction	Consultation Manager (CM) – no complaints lodged in the database for the duration Phase Visually inspect barriers regularly to ensure condition is maintained	Zero (0) complaints lodged in the database for the duration of Construction
		Minimal impacts to existing structure during construction	Visually inspect existing structures during construction Major impacts of structures recorded as an incident in the INX InSystem	Zero (0) incidents lodged as a result from impacts to existing structures
		No light spillage onto residents during evening and night works	Consultation Manager (CM) – no complaints lodged in the database for the duration Phase	Zero (0) complaints lodged in the data for the duration of Construction

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
			Environmental and Sustainability Inspection Report detailing any environmental issue in relation to lighting mitigation measures. Note: inspections will alternate between day and evening shifts for construction *INX InSystem* – recorded as an incident	Zero (0) incidents lodged as a result from impacts to existing structures
Waste management	To comply with contractual and legislative requirements and ensure that waste from construction activities does not have the potential to escape from the site and cause an environmental nuisance / harm.	No at-risk observations where waste has been identified as having the potential to move off-site	Weekly inspections to be recorded on the Environmental and Sustainability Inspection Report	Zero (0) at-risk observations of waste having the potential to move off-site
		All transport of waste will be tracked and delivered to a facility that is legally able to accept that type of waste	Waste Management Tracker under the Environmental and Sustainability Management Register Waste monitoring and management to be reviewed by a suitably qualified professional Monthly Reporting	100% of all waste is tracked and delivered to facilities that are legally able to accept that waste Zero (0) occurrences of non-compliance breaches
		The NSW EPA Waste Classification Guidelines waste management hierarchy is to be adopted, where practicable	Waste Classification Reports	Transport and dispose of in line with Reports
		Target to reuse or recycle construction waste	Environment and Sustainability Management Register	All of the following targets for landfill diversion have been achieved or bettered: 80 to <100% by volume of spoil AND 50 to 90% by volume of inert and non-hazardous waste AND

Environmental item	Objective	Target	Measurement Tool	Key Performance Indicators (KPIs)
				40 to 60% by volume of office waste.

5 Contractual requirements and compliance obligations

Mandatory compliance obligations and contractual requirements relevant to the Project are detailed within this section.

All personnel associated with the Project will comply with all relevant requirements including:

- all legislation and regulations as described under Section 2 in the CEMF and maintained/updated in the Environment and Sustainability Management Register
- the CoAs relevant to this Plan, applicable CEMP Management Plans and Project documentation

A project specific RSU Compliance Matrix (Appendix B) has been established for the duration of construction. And upon commencement to ensure that the contractual obligations and approval conditions have been captured, addressed and adequately closed-out. The tool is designed to be updated as works progress and/or minor scope changes occur. The compliance matrix would be reviewed quarterly to ensure continual compliance.

Environmental issues in relation to environmental planning approval requirements are detailed under Section 10 and Section 12 of this CEMP.

5.1 Relevant legislation and guidelines

Legislation, guidelines and standards of relevance to this Plan are captured in the Legal Register and are linked to the relevant risk items.

> Table 2-1 in the CEMF identifies key NSW environmental legislative requirements and their application to the construction of the Project, current as at the date of this document. These legislative requirements will be regularly reviewed and updated by the Contractor and appointed Subcontractors.
> The CEMP will include a comprehensive register detailing legal requirements to be applied to the Project, which will be maintained through the life of the Project. The legal register in the CEMP will be reviewed on a six-monthly basis and/or in instances where significant legislative and or regulatory change occurs, relevant to the Project
>
> **(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S2.1, pg. 2)**

The Legal Register is to be reviewed in conjunction with the 6-monthly management review outlined in Section 12.3.4 or where there has been a change to relevant legislation.

Numerous environmental publications, standards, codes of practice and guidelines are relevant to TfNSW construction and are referenced throughout this Construction Environmental Management Framework. A summary of these applicable standards and guidelines is provided in Table 2-2 of the CEMF.
Additional standards and guidelines are also referenced in the EIS. These would be incorporated into the CEMP, as indicated in the EIS.
The Construction contractor would prepare a detailed register of the relevant standards and guidelines to ensure these are referenced in the construction environmental documentation, as relevant.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S2.3, pg. 3)

5.2 Minister's Conditions of Approval

The CoAs relevant to this Plan are listed in Table 5-1. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 5-1 Minister's Conditions of Approval (CoAs)

CoA #	Condition Requirement	Document Reference	How Addressed
GENERAL			
A1	The Proponent must carry out the SSI in accordance with the conditions of this approval and generally in accordance with the description of the SSI in: (a) Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020); (b) Redfern Station Upgrade – New Southern Concourse Response to Submissions (Transport for NSW, September 2020); and (c) Redfern Station Upgrade – New Southern Concourse Construction Environmental Management Framework (Transport for NSW, November 2020).	Throughout this CEMP	This CEMP aligns and addresses the requirements of the documents mentioned in CoA A1
A2	The SSI must be carried out generally in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	Throughout this CEMP, including ERAPS CEMP Management Plans	This CEMP provides detail on how construction will be carried out in accordance with all procedures (throughout this document), commitments (Section 4), preventative actions (Section 10 and 12 and throughout the ERAPS), performance criteria and mitigation measures (CEMP sub-Plans and throughout the ERAPS).
CONSTRUCTION ANCILLARY FACILITIES			
A15	The use of a major construction ancillary facility for construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition C6 and the Construction Noise and Vibration Monitoring Programs required by Condition C8 have been approved by the ER and made publicly available.	This CEMP Appendix L (Ancillary Facilities Management).	The approval of this CEMP by the ER and upon the CEMP being made publically available, would allow the use of established major ancillary facilities to support construction works. Appendix L discusses how ancillary facilities would be used and managed during Construction
A16	The use of a major construction facility for enabling works must not commence until the Site Establishment and Enabling Works Management Plan required by Condition A14 has been approved by the ER and made publicly available. Where a major construction ancillary facility is initially used for enabling works and then for construction, the requirements of Condition A15 must be complied with once the enabling works are completed and the facility is used to support construction activities.	Appendix L (Ancillary Facilities Management).	The approval of this CEMP by the ER and upon the CEMP being made publically available, would allow the use of established major ancillary facilities to now support construction works.

CoA #	Condition Requirement	Document Reference	How Addressed
			Appendix L discusses how ancillary facilities would be used and managed during Construction
PROJECT IDENTIFICATION			
A21	Boundary screening required under Condition A19 of this approval must minimise as far as practicable visual, noise and air quality impacts on adjacent sensitive receivers	This CEMP Section 7.12.2	During construction, hoarding on platforms and around construction sites would be established. Hoarding barriers would continue to be maintained and inspected regularly to ensure that this requirement would be adequately met.
ENVIRONMENT REPRESENTATIVE			
A29	For the duration of the Work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must: (d) approve documents identified in Conditions A9, A14, C1, C6, and C8 after verifying all relevant matters set out in this approval pertaining to those documents have been met and make a written statement to the Planning Secretary to this effect;	This CEMP	The ER is the delegated approval authority for this CEMP.
	(e) regularly monitor the implementation of the documents listed in Conditions A14, C1, C6 and C8 to ensure implementation is being carried out in accordance with the document and the terms of this approval	This CEMP Section 12.3.2	The ESTR is responsible for ensuring environmental and sustainability performance information is included as part of the monthly Project Report for TfNSW. This monthly reporting could be used to inform ER monthly reporting requirements, as required and to aid in regular monitoring of environmental approval compliance.
INCIDENT NOTIFICATION AND REPORTING			
A37	During Work, the Department must be notified as soon as possible and no later than 24 hours after the Proponent becomes aware of an incident. The initial advice can be via telephone but must be followed with written advice within the 24-hour period and must identify the SSI (including the application number and the name of the SSI), time, date, location and nature of the incident.	This CEMP Section 10.2	Section 10.2 details the incident management procedures and protocols during an incident occurrence, inclusive of notification requirements to TfNSW and the Department
A38	Subsequent written notification must be given and reports submitted to the Planning Secretary in accordance with the requirements set out in Appendix A, unless otherwise approved by the Planning Secretary.	This CEMP Section 10.2 Appendix I	Section 10.2 details the incident management procedures and protocols during an incident occurrence, inclusive of notification requirements to TfNSW and the Department (Appendix I)

CoA #	Condition Requirement	Document Reference	How Addressed
COMPLAINTS MANAGEMENT SYSTEM			
B7	The telephone number, postal address and email address required under Condition B6 of this approval must be made available on site boundary fencing / hoarding at each construction site and ancillary facility before the commencement of Work and for the duration of construction. This information must also be provided on the website required under Condition B10 of this approval.	This CEMP Section 7.12.2	These details would be made available on the site hoarding structures at each construction site before the commencement work and for the duration of construction. Details would be capture under the mitigation measures in Section 7.12.2
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN			
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. The CEMP must be prepared in consultation with the City of Sydney Council.	This CEMP Section 4 Section 5.3 Section 5.4 Consultation Summary Report	This CEMP provides detail on how construction will be carried out in accordance with all commitments (Section 4), performance criteria and mitigation measures (Section 4, 5.3 and 5.4, CEMP sub-Plans and throughout the ERAPS). Consultation with the City of Sydney has been undertaken and is detailed in the Consultation Summary Report
C2	The CEMP must be prepared having regard to the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment, 2020) and be consistent with the document Construction Environmental Management Framework (TfNSW, October 2020). The CEMP must detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This CEMP Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment, 2020)	This CEMP has been prepared with regard to Environmental Management Plan Guideline for Infrastructure Projects. The CEMP follows the EMP structural recommendations and notes DPIE processes and expectations. This CEMP is consistent with the documents in CoA A1, in which the CEMF is the core compliance document. CEMF is addressed within the relevant and applicable sections throughout this CEMP. This CEMP provides detail on how construction will be carried out in accordance with all commitments (Section 4), performance criteria and mitigation measures (Section 4, 5.3 and 5.4, CEMP sub-Plans and throughout the ERAPS).

CoA #	Condition Requirement	Document Reference	How Addressed
C3	The CEMP must provide: (a) a description of activities to be undertaken during construction (including the scheduling of construction and site layout figures);	This CEMP Section 6	Section 6 describes the types of activities proposed to be undertaken during construction, including scheduling and duration of work.
	(b) details of environmental policies, guidelines and principles to be followed in the construction of the SSI;	This CEMP Section 4 CEMP Management Plans ERAPs	The CEMP would follow/align with the Redfern Station Upgrade Sustainability Commitment as detailed in Section 4 of this CEMP. Applicable guidelines have been discussed in the CEMP Management Plans and standalone management plans and are referenced in the ERAPS.
	(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 SSI;	This CEMP Appendix C Section 7.1 Section 12	An initial risk assessment has been undertaken in the form of the Environment and Sustainability Risk and Opportunity Register (Appendix C). Section 7.1 and Section 12 of this CEMP outline the risk analysis process and ongoing analysis frequency. Risk assessment and review would be undertaken monthly, or when required.
	(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 listed in Condition A1; and (ii) manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;	This CEMP Section 5.3 Section 5.4 Section 12 Appendix C	The performance outcomes outlined in the RtS and the CEMF, and commitments included in the REMMs have been summarised in Table 5-2 and 5-3 with cross-referencing to how they are met in the applicable Sections throughout the CEMP. Identified risks would be continually assessed and managed through regular environment and sustainability risk and opportunity workshops on a monthly basis (Section 12 of this CEMP). The Environment and Sustainability Risk and Opportunity Register (Appendix C) contains specific mitigation and management measures that relate to identified risks/opportunities.
	(e) an inspection program detailing the activities to be inspected and frequency of inspections;	This CEMP Section 12	A summary of the inspection program, including internal/external inspections and frequency, are

CoA #	Condition Requirement	Document Reference	How Addressed
			detailed in Section 12 of this CEMP. A complete and current register of inspections is maintained in the Environment and Sustainability Management Register
	(f) a protocol for managing and reporting any: (i) incidents; and (ii) non-compliances with this approval or statutory requirements;	This CEMP Section 10.2 Section 12.3	This CEMP details the response to environmental incidents, reporting requirements during incident/event occurrence and when site shutdowns would be triggered (Section 10.2) Approval and statutory environmental issues and non-compliances are discussed in Section 10.2 and Section 12.3
	(g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	This CEMP Section 10.2 Section 12.3	Environmental issues and non-compliances that may have led to potential incidents are discussed in Section 10.2 Environmental issues and non-compliance breaches that have resulted from auditing or inspections processes, are discussed in Section 12.3.
	(h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C6. Where staged construction of the SSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction;	This CEMP Section 7.3	The CEMP sub-plans specifically required by C6 as well as relevant other management plans that relate to this CEMP, are described in Section 7.3 The relationship of these Management Plans as well as standalone management plans to the CEMP is also described within this section.
	(i) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;	This CEMP Section 8	A description of the roles and environmental responsibilities for relevant employees are detailed in Section 8 of this CEMP. Their relationship with the ER is also detailed.
	(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;	This CEMP Section 9	Training requirements and sessions and what's included in the RSU induction, is detailed in Section 9 of this CEMP.
	(k) for periodic review and update of the CEMP and all associated plans and programs.	This CEMP Section 12.4	Periodic review of the CEMP and relevant Management Plans are detailed in Section 12.4. Specific review periods for Management

CoA #	Condition Requirement	Document Reference	How Addressed
			Plans are also captured in the relevant Management Plans themselves.
C4	The CEMP must be submitted to the ER for approval before the commencement of construction or where the construction is staged, before the commencement of that stage. Construction must not commence until the ER has approved the CEMP and all CEMP Sub-plans. The CEMP and all CEMP Sub-plans must be implemented for the duration of construction.	This CEMP	This CEMP has submitted and approved to the ER for approval before the commencement of construction (from January 2021).
C5	The approved CEMP and CEMP Sub-plans must be made publicly available before the commencement of construction.	This CEMP	The CEMP has been made publicly available before the commencement of construction.
AIR QUALITY			
D1	In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction of the SSI.	This CEMP Section 7.12	The CEMP covers air quality risks, impacts and recommended mitigation measures within Section 7.12
PLACE, DESIGN AND VISUAL AMENITY			
D32	The SSI must be constructed and operated with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the SSI must be consistent with the requirements of AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces. All construction and operational lighting must also be consistent with City of Sydney Council's relevant design codes and standards for lighting, including Sydney Lights: Public Domain Design Code, in areas outside of the rail corridor. Additionally, the Proponent must provide mitigation measures to manage any residual night lighting impacts to protect properties adjoining or adjacent to the SSI, in consultation with affected landowners.	This CEMP Section 7.13	The CEMP covers visual amenity risks, impacts and recommended mitigation measures within Section 7.13

5.3 Revised Environmental Mitigation Measures

Relevant Revised Environmental Mitigation Measures (REMMs) taken from the approved Redfern Station Upgrade – New Southern Concourse Response to Submissions (Transport for NSW, September 2020) are listed in Table 5-2. This includes reference to where in CEMP or relevant environmental documentation the required mitigation measures have been addressed and a brief description of how the CEMP meets the commitments/requirement.

Other REMMS applicable to heritage, noise and vibration, soil, erosion, contamination and water, hazardous material, traffic and transport, property, biodiversity and biosecurity as well as sustainability, are captured in the relevant CEMP Management Plans and standalone management Plans.

Table 5-2 Revised mitigation measures relevant to this CEMP

Reference	Management and mitigation measures	Document Reference	How Addressed
Landscape and visual			
LV2	Provide cut-off or directed lighting within the construction areas, with lighting location and direction considered to ensure glare and light spill is minimised.	This CEMP Section 7.13.2	This has been incorporated into mitigation measures that address visual amenity management in the ERAPS under 7.13.2
LV3	Construction personnel to keep the construction areas clean and tidy, including refuse placed in appropriate waste bins.	This CEMP Section 7.14.2	This has been incorporated into mitigation measures that address Waste management in the ERAPs under 7.14.2
Social			
SE5	Construction activities undertaken in proximity to businesses would maintain visibility of business frontage, associated signage and access points, where possible. Temporary signage would be provided in the vicinity of a business if construction works obstruct views to the business. Business impacts resulting from changes to amenity or access would be managed in line with mitigation measures identified for other relevant environmental issues.	This CEMP Section 7.13.2	This has been incorporated into mitigation measures that address visual amenity management in the ERAPS under 7.13.2
Air Quality			
AQ1	An Air Quality Management Plan would be developed to manage the potential air quality impacts relevant to the construction of the Project. This sub-plan would be part of the CEMP. The sub-plan would identify potential dust and exhaust emission sources and outline appropriate mitigation measures to ensure that the performance objectives noted in the EIS are achieved. Locations within the Project area with contaminants of potential concern at unacceptable levels would be identified within the Air Quality Management Plan and specific measure put in place to manage risks associated with this material.	This CEMP Section 7.12	This Air Quality Management Plan has been integrated into the CEMP under Section 7.12.
AQ2	The Air Quality Management Plan would include contingency measures to address air quality complaints if received.	This CEMP Section 11	This requirement of an Air Quality Management Plan has been integrated into the CEMP under Section 7.12.

Reference	Management and mitigation measures	Document Reference	How Addressed
AQ3	Work activities would be reviewed if the air quality management measures are ineffective in minimising dust or other emissions	This CEMP Section 7.12	This has been incorporated into mitigation measures that address dust and air quality management under Section 7.12
AQ4	The Air Quality Management Plan would include measures to manage dust emissions. These would include the following: • when using machinery to handle dusty/dust-generating materials, minimise the distance between where the material is stored and its final location • vehicles carrying loose or potentially dusty material to or from the Project area would be adequately covered • water would be sprayed on unsealed access roads and open areas during conditions conducive to dust generation • a wheel cleaning/washing system would be established for vehicles entering and leaving the Site • on-site vehicle speed limits would be established and enforced to prevent dust emissions • water-assisted dust sweepers would be used on internal access tracks and local roads, to remove material tracked out of the Project area • stockpiled material would be appropriately managed and shaped to reduce wind erosion and covered as appropriate • stockpiles containing contaminated material would be bunded and covered when not being actively managed, and removed from site as soon as possible in accordance with contaminated waste procedures • during extreme weather events where dust generation cannot be effectively minimised (such as high winds), dust generating works would cease until adequate controls can be implemented or until adverse weather conditions subside • demolition of buildings and structures would be carried out using techniques and practices that minimise dust generation. This may include soft stripping inside buildings before demolition.	This CEMP Section 7.12	This RtS REMMS requirement of an Air Quality Management Plan has been integrated into the CEMP under Section 7.12.
AQ5	Measures to manage exhaust emissions would include the following: ▪ plant, machinery and vehicles would be turned off while not in use, where safe to do so	This CEMP Section 7.12	This has been incorporated into mitigation measures that address dust and air quality management under Section 7.12

Reference	Management and mitigation measures	Document Reference	How Addressed
	▪ equipment (including all internal combustion engines) would be properly maintained and would run efficiently to ensure exhaust emissions are minimised, where practicable ▪ construction plant, machinery or vehicles producing excessive visual exhaust would be turned off, tagged 'out of order' and not used ▪ all emission controls used on vehicle and equipment would comply with standards listed in Schedule 4 of the Protection of the Environment Operations (Clean Air) Regulation 2010 ▪ emissions from plant would be considered as part of pre-acceptance checks.		
AQ6	Construction site layout and placement of plant would consider air quality impacts to nearby receivers	This CEMP Section 7.12	This has been incorporated into mitigation measures that address dust and air quality management under Section 7.12
AQ7	In the event that odour emissions are generated, work would cease until the source and nature of the odour can be determined and an appropriate course of action carried out. This may include further assessment to determine potential impacts on the nearest sensitive receptors	This CEMP Section 7.12	This has been incorporated into mitigation measures that address dust and air quality management under Section 7.12
Hazards and risk			
HRS4	The CEMP would include emergency and incident response procedures, as specified by the CEMF. The procedures would specify: • roles and responsibilities • notification and reporting protocols • action and investigation requirements • training programs to ensure that all staff are familiar with the plan • design and management measures to address the potential environmental impacts of an emergency situation	This CEMP Section 10	Section 10 of this CEMP details emergency preparedness and response measures including incident response and classification and reporting obligations.
Waste			
WM1	A Waste Management Plan would be prepared as part of the CEMP. The Plan would: • identify requirements consistent with the waste and resource management hierarchy and cleaner production initiatives • include relevant measures from the National Waste Policy: Less Waste, More Resources (Department of Agriculture, Water and the Environment, 2018) • ensure resource efficiency is delivered through the design and construction practices	This CEMP Section 7.14 Appendix J (Project Waste Strategy)	This RtS REMMS requirement of a Waste Management Plan has been integrated into the CEMP under Section 7.14.

Reference	Management and mitigation measures	Document Reference	How Addressed
	• provide consistent clear direction on waste and resource handling, storage, stockpiling, use and reuse management measures • outline procedures for stockpiling of wastes (refer to mitigation measure WM2) • set out processes for disposal, including on-site transfer, management and the necessary associated approvals/permits. All waste generated would be regularly removed from site as required by licensed contractors, in order to avoid potential issues associated with odour, visual amenity and attracting animals/pest species • outline that waste generated within the Project area would be segregated at source and suitably stored in designated waste management areas within the Project area • include material tracking measures to track waste and recyclables generated from the Project and removed from the Project area. Material tracking records would include types, volumes and management measures for waste and resources arising from/used for the Project • outline an unexpected finds protocol to manage the potential for unexpected finds during construction of the Project (i.e. asbestos or other hazardous materials) • include a process for auditing, monitoring and reporting	Unexpected Contaminated Land and Asbestos Finds Procedure Partially covered in the Soil, Contamination and Water Management Plan	
WM2	Stockpiled wastes would be: ▪ appropriately segregated to avoid mixing and contamination ▪ appropriately labelled ▪ appropriately stored to minimise risk of erosion ▪ less than three metres in height with an appropriate height to length batter ratio (e.g. 1:3) ▪ located as far away as practical from sensitive receivers, ecological areas and watercourses.	This CEMP Section 7.14	This has been incorporated into mitigation measures that address Waste management under Section 7.14
WM3	Where a NSW EPA Resource Recovery Order exists for a specific waste material the opportunity to re-use the waste under that order should would be considered prior to disposal. Current orders (and exemptions) are found on the NSW EPA website: https://www.epa.nsw.gov.au/your-environment/recycling-andreuse/resource-recovery-framework/current-orders-and-exemption The current orders would be periodically reviewed during construction for applicability.	This CEMP Section 7.14	This has been incorporated into mitigation measures that address Waste management under Section 7.14
WM4	All waste would be assessed, classified, managed and disposed of (where they cannot be re-used) in accordance with the Waste Classification Guidelines (NSW EPA, 2014a).	This CEMP Section 7.14	This has been incorporated into mitigation measures that address Waste management under Section 7.14

Reference	Management and mitigation measures	Document Reference	How Addressed
WM5	Waste segregation bins would be located at various locations within the Project area, if space permits, to facilitate segregation and prevent cross contamination.	This CEMP Section 7.14	This has been incorporated into mitigation measures that address Waste management under Section 7.14

5.4Environmental Performance Outcomes

Relevant Environmental Performance Outcomes (EPO's) taken from the Redfern Station Upgrade – New Southern Concourse Response to Submissions (Transport for NSW, September 2020) and Redfern Station Upgrade – New Southern Concourse Construction Environmental Management Framework (Transport for NSW, October 2020) are listed in Table 5-3. This includes reference to where in CEMP or relevant environmental documentation the required performance outcomes have been addressed and a brief description of how the CEMP meets the commitments/requirement.

Other relevant CEMF requirements are captured throughout the Plan underneath the relevant sections and reference back to the applicable CEMF section.

This CEMP references and discusses the applicable EPOs from the RtS and the CEMF in the body of this Management Plan. Other EPOS applicable to heritage, noise and vibration, soil, erosion, contamination and water, hazardous material, traffic and transport, property, biodiversity and biosecurity as well as sustainability, are captured in the relevant CEMP Management Plans and standalone management Plans.

Table 5-3 Environmental Performance Outcomes (EPOs) relevant to this CEMP

Environmental Performance Outcomes (EPOs)	Document Reference	How Addressed
Air quality Management		
During construction, dust is managed to minimise the release beyond the site boundaries so that dust complaints are avoided	This CEMP Section 7.12	This has been incorporated into mitigation measures that address dust and air quality management under Section 7.12
During construction, tracking or spilling of soil/spoil from the Project onto offsite areas is minimised, and clean up offsite road surfaces at the end of each day is undertaken so that they are free of visible, loose soil/spoil material (which may be washed away in runoff or otherwise cause complaints)		

Environmental Performance Outcomes (EPOs)	Document Reference	How Addressed
Dust impacts from soil waste stockpiles are prevented by removing these stockpiles as soon as practicable by an appropriately licenced contractor.		
Waste Management		
Waste from construction and operation of the Project is classified in accordance with the Waste Classification Guidelines (NSW EPA, 2014a)	This CEMP Section 7.14	This has been incorporated into mitigation measures that address Waste management under Section 7.14
Waste types once classified are reviewed against appropriate guidelines to manage waste appropriately		
At least 80 percent (by volume) of non-contaminated spoil excavated during construction is diverted from landfill, either by reusing suitable material on site or identifying other sites/re-purposing facilities where suitable material may be re-used		
Contaminated and asbestos contaminated wastes are safely disposed of in accordance with their relevant waste classification		

5.5Construction Environmental Management Framework (CEMF)

Requirements from the Redfern Station Upgrade – New Southern Concourse Construction Environmental Management Framework (Transport for NSW, October 2020) pertaining specifically to the CEMP are summarised in Table 5-4.

Table 5-4 CEMF requirements for the CEMP

Reference	Management and mitigation measures	Document Reference	How Addressed
Section 3.3, pg. 5 & 6	A Construction Environmental Management Plan (CEMP) and associated sub-plans, described further below, will be developed to address the requirements of the relevant planning approval documentation, the conditions of all other applicable permits and licences, the environmental provisions of the contract documentation and requirements and processes defined under the Construction Environmental Management Framework. The CEMP and sub-plans will prepared in consultation with relevant stakeholders in accordance with the conditions of approval. The CEMP and sub-plans will include a section on stakeholder comments and responses. Following internal Alliance approval, the CEMP and sub-plans will be reviewed and	This CEMP Consultation Summary Report	The CEMF requirements of the CEMP generally align with the requirements of CoAs C1 to C5. The CEMP has been prepared in consultation with City of Sydney Councill. Consultation has been captured in the Consultation Summary Report

Reference	Management and mitigation measures	Document Reference	How Addressed
	approved by an independent Environmental Representative (ER) (see Section 3.12) prior to any construction works commencing.		
	The CEMP will be prepared in accordance with DPIE's Environmental Management Plan Guideline (DPIE, 2020). A preparation checklist is included in Appendix B.	This CEMP Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment, 2020)	This CEMP has been prepared with regard to Environmental Management Plan Guideline for Infrastructure Projects. The CEMP follows the EMP structural recommendations and notes DPIE processes and expectations.
	As a minimum the CEMP will: - Include a description of applicable activities to be undertaken during construction until asset handover	This CEMP Section 6	Section 6 describes the types of activities proposed to be undertaken during construction until asset handover
	- Include an environmental risk and opportunities methodology as described in further detail under Section 3.4 below	This CEMP Appendix C Section 7.1 Section 12	An environmental risk and opportunity methodology has been established and discussed within Section 7.1. The Environment and Sustainability Management Register (Appendix C) captured the output of the risk assessments
	- For the CEMP and each sub-each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent referencing where each requirement is addressed	This CEMP Section 5.2 Appendix B	Section 5 of this CEMP covers the contractual requirements and compliance obligations with information on how the requirement has been addressed within this document
	- For the CEMP and each sub-plan under the CEMP, establish and implement objectives and targets, from the project-defined performance outcomes	This CEMP Section 4.1 Section 5.4	Section 4.1 of this CEMP describes the methodology used to determine the Project objectives and targets as well as the objectives and targets. The performance outcomes outlined in the CEMF, have been included in the CEMP and sub-plans.

Reference	Management and mitigation measures	Document Reference	How Addressed
	- For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure	This CEMP Section 8	Roles and responsibilities are described in Table 8-1 under Section 8 of this CEMP
	- Assign the responsibility for the implementation of the CEMP to the Contractor's Environmental Manager, who will have appropriate experience. The Contractor's Project Director or equivalent will be accountable for the implementation of the CEMP	This CEMP Section 8	This is described in Section 8 of this CEMP
	- Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.10	This CEMP Section 9	Induction requirements, competency verification and training requirements, are summarised in Section 9 of this CEMP
	- Management strategies for reviewing the effectiveness of mitigation measures	This CEMP Section 12	Section 12 of this CEMP describes the measures to assess the adequacy of implemented mitigation measures and environmental controls e.g. audits and inspections
	- Detailed processes and methodologies for surveillance and monitoring, auditing and review, and reporting on environmental and sustainability performance including compliance tracking	This CEMP Section 12	This is captured in Section 12 under the relevant sub-sections of the CEMP
	- Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action	This CEMP Section 10	This is captured in Section 10 of this CEMP
	- Include procedures for the control of environmental records.	This CEMP Section 13	Document control is discussed in Section 13 of this CEMP

6 Construction Works

The Construction work has been assessed under the approved EIS and RtS. These approval documents contain the extent of, scope and detail the proposed works.

Any subsequent scope and methodology modification identified for Construction has been assessed under Consistency Assessment (01). Consistency Assessment (01) includes the following work scope:

- Earthing and bonding scope for the retaining wall on Platform 10
- Screen perforations for the new southern concourse
- Removal of a portion of Platform 10 retaining wall in relation to utility feeds to the lift 6 riser
- Change in position of relocated Platform 1 Office Building and removal and where necessary the relocation or salvage of the two existing buffer stops
- Provision of renewable energy for 125-127 Little Eveleigh Street
- Additional vegetation removal and pruning that are not captured in the EIS (see the Ecological Management Plan for proposed vegetation removal)
- Proposed road networks for heavy vehicle movement to and from the project work site
- Hydrant booster and pump for fire, life and safety change in location i.e. proximity to Cornwallis and Marian Streets.

Consistency Assessment (03) includes the following scope:

- Relocation of approximately 20 parking spaces (including 18 resident/restricted parking spaces, one accessible parking space and one car share scheme parking space)
- Utility adjustments.
- Upgrade of Marian Street/Cornwallis Street/Rosehill Street area
- Extension of existing shared zone including part of Rosehill Street
- Safety improvements to vehicle, cyclist and pedestrian interactions including footpath widening
- Improvements to streetscape such as lighting, drainage, landscaping and pavements as well as utility adjustments
- Changes to street parking arrangements including removal of approximately 16 parking spaces (including relocation of one car share scheme parking space).

Consistency Assessment (05) includes the following scope:

- Removal of four (4) trees;
- Retention of five (5) trees;
- Likely retention of at least 16 trees; and
- Further investigation of nine (9) trees.

Consistency Assessment (06) includes the following:

- Minor relocation of the car park within Transport Asset Holding Entity (TAHE) land adjacent to Little Eveleigh Street. This includes relocation of kerb lines and driveway to provide an exclusion zone from the car park and heritage items
- Construction of a reinforced concrete wall including drainage to stabilise the car park earthworks, adjacent to the sandstone heritage wall
- Construction of the DDA pedestrian pathway and pram ramp, including landings, to the north-western side of the driveway
- Construction of a blockwork retaining wall (including drainage) along the western embankment where the pedestrian pathway will cut into the existing batter slope
- Vegetation removal for construction of the car park, pedestrian pathway and retaining wall
- Installation of fencing around the car park, along the retaining wall to tie into the Sydney Trains gated entrance
- Installation of an area of roughly about 8 m of pre-cast concrete pavers at the driveway entrance.

Consistency Assessment (07) includes the following:

- Lighting and conduit installation on Platform 10 heritage retaining wall.
- Minor reduction and relocation of bike hoops on the north end of Little Eveleigh Street Station Entrance and on Marian Street Station Entrance.
- Retaining of existing street lighting on Marian Street shared zone as well as on Little Eveleigh shared zone. Existing street lighting has been assessed and meets the Australian Standard 1158 for electric lighting system for road and other outdoor public areas.
- Extension of Marian St shared zone will no longer occur. Proposed scope on Cornwallis St has been removed from the shared zone as it is already considered a shared zone. Existing shared zone on Cornwallis St intersection with Marian St would be matched with the proposed one on Marian St.
- Instalment of fire booster on a small brick wall, within a garden bed, on the intersection between Marina St and Cornwallis St, including an underground pipe to be instated to the underside through concrete pad.

Additional scope and design changes as captured in the latest Consistency Assessment (CA009):

- safety initiatives to support the LES shared zone including:
  - provision of a pedestrian crossing at the Lawson Street and LES intersection, with kerb ramps and associated change to road furniture
  - change to existing loading zone/police parking/car share to make provision for additional kiss and ride on Lawson Street (eastbound direction) and modifications to kiss and ride spaces in the west bound direction on Lawson Street
  - changes to the operation of LES, including a change of traffic direction, provision of a loading zone, no parking zone and removal and adjustment of bicycle hoops to suit the reversed traffic direction

  - closed section of Wilson Street to be opened as a shared zone extension to the LES shared zone
  - permanent access arrangement to LES carpark and Sydney Trains compound via Ivy Street and Wilson Street shared zone or Carriageworks Way and exit via Ivy Lane or Carriageworks Way
  - partial road closure on Wilson Street to vehicle traffic into Wilson Street and LES shared zones, with provision of associated island, road furniture and marking
  - retention of temporary cycleway detour on Ivy Street and changes to right-turn ban from Abercrombie Street into Ivy Street
- permanent relocation of the shuttle bus stop from Lawson Street to Gibbons Street
- removal of Gibbons Street kiss and ride upgrade works from scope, retaining three existing car parking spaces
- conversion of a single car parking space on Cornwallis Street to a loading zone

Environmental Review (ER13) includes the following scope:

- Removal of small step (1 course of brickwork, 4 metres long) behind Platform 10 retaining wall due to clash with the permanent foundations of the new SSER building.

The CEMP and supporting CEMP management plans covers the scope of activities associated with construction, including:

- The 125-127 Eveleigh Street and Little Eveleigh Street car park demolition works including:
  - power isolations, removal and disposal/relocation of redundant utilities
  - other required utility connections
  - removal of hazardous materials componentry and disassembly and removal of non-HAZMAT items
  - penetration works and partial demolition of interior features (including walls and doors)
  - enlargement of openings for the station entrance and concourse connection.
  - fit-out of new concourse
  - ancillary works and services - fittings and fixtures (cladding, painting, light fixtures, electrical, mechanical, hydraulic and fire life safety services)
  - facade restoration and installation of an internal lift.

Note: Intent is retain as much of the original shell of the building including retention of the façade adjacent to Little Eveleigh Street.

- Overhead wiring scope:
  - platform excavation works (Footings for OHW - platforms 4/5 and Illawarra Dive Countryside of Redfern)
  - decommissioning of existing gantries extending from platforms 1-10 (SW1+304 and SW 1+267) due to conflict with proposed sky bridge and stairs
  - erection and installation of gantries for OHW, platforms 4/5, 6/7, 8/9 and 10.

- The relocation of the Platform 1 heritage building structure to facilitate Platform 1 stair/lift access:
  - isolation and removal of redundant/existing services including hazardous materials (where applicable)
  - demolition of the existing timber walls and roof of associated annex structure
  - excavation, piling and FRP works required for new footings and also to allow for movement of structure
  - relocation and re-assembly (where required)of the remaining structure approximately 10 metres west along the platform.
- The installation of the pedestrian footbridge:
  - Earthworks and FRP ground works for Marian Street Concourse Area
  - Main columns and headstock (combination of Pre-cast and Cast In-situ concrete)
  - bridge pre-cast girder installation
  - bridge decking (cast in-situ)
  - bridge deck structural steel works
  - Marian Street Concourse structural steel work
  - framework and bridging enclosure.
- The installation of lift and stairs infrastructure:
  - excavation works for lift shaft
  - lift shaft piling and FRP works
  - Lift shaft structural steelwork installation
  - stair construction (combination of pre-cast and cast in-situ steps and steelwork side supports)
  - Erection of structural steelwork stair canopies
  - demolition works – lift shaft for ESR (platforms 11-12) (where applicable).
- Ancillary works and services of the pedestrian footbridge, lifts and stair and concourse landings:
  - fittings and fixtures (cladding, painting, light fixtures, electrical, mechanical, hydraulic and fire life safety services)
- Electrical HV route works:
  - remaining conduit works including trenching/cut-cover and provision of conduits (instances where crossings existed within the platform)
  - cable winching installation of 11kV to newly provided conduit infrastructure (GST, buried and URX) from Early Works
  - excavation of new HV route (including buried conduit, cabling and jointing) from 11kV platform to new SSER footprint location
  - construction of the SSER building including the installation and commissioning of 2 new Padmount transformers

  - provision of conduit LV supplies to concourse/bridge areas
  - isolation and switch-over of new 11kV supplies and cut-over and trench and decommission redundant 11kV cable feeders 512/3 & 515/3.
- Platform services relocation:
  - cable winching installation of LV and communications cables to newly provided conduit infrastructure (from Early Works) on platforms 2/3; 4/5; 6/7 and 8/9
  - cables to be connected to existing distribution boards housed on platforms 4/5; 6/7 and 8/9
  - cables to be connected to distribution board housed within the Northern Concourse via aerials (stairs location)
  - isolation and switch-over of new LV and communications supplies and cut-over and trench and decommission redundant platform located services.
- Other platform activities:
  - resurfacing works as required following excavation, trenching works associated with cabling and main Bridge work activities
  - demolition of privacy screens at the western end of heritage buildings on Platforms 4 to 9
  - relocation of platform seats adjacent to heritage platform buildings.
- Share zones and ancillary road works:
  - stormwater/sewer piping
  - drainage works, installation of stormwater pits (pre-Cast concrete/in-situ)
  - minor earthworks and concrete surface works for eastern and western ends of Station as required.

General site layout/location plans/figures aligned in accordance with the Environmental Management Plan Guideline for Infrastructure Projects (Department Planning, Industry and Environment, 2020), are displayed in Figure 6-1 - Figure 6-4.

Complete site layout plans for each stage of construction that show indicative plant and equipment to be used as well as the scheduling of the aforementioned activities proposed to be undertaken at that stage is detailed in Appendix D.

For site layout plans with implemented mitigation measures and controls, refer to Section 7.2 and Appendix E for the Environmental Control Map/s.

Figure 6-1 Site Layout boundary – Project boundary and approved disturbance footprint (as approved in EIS)

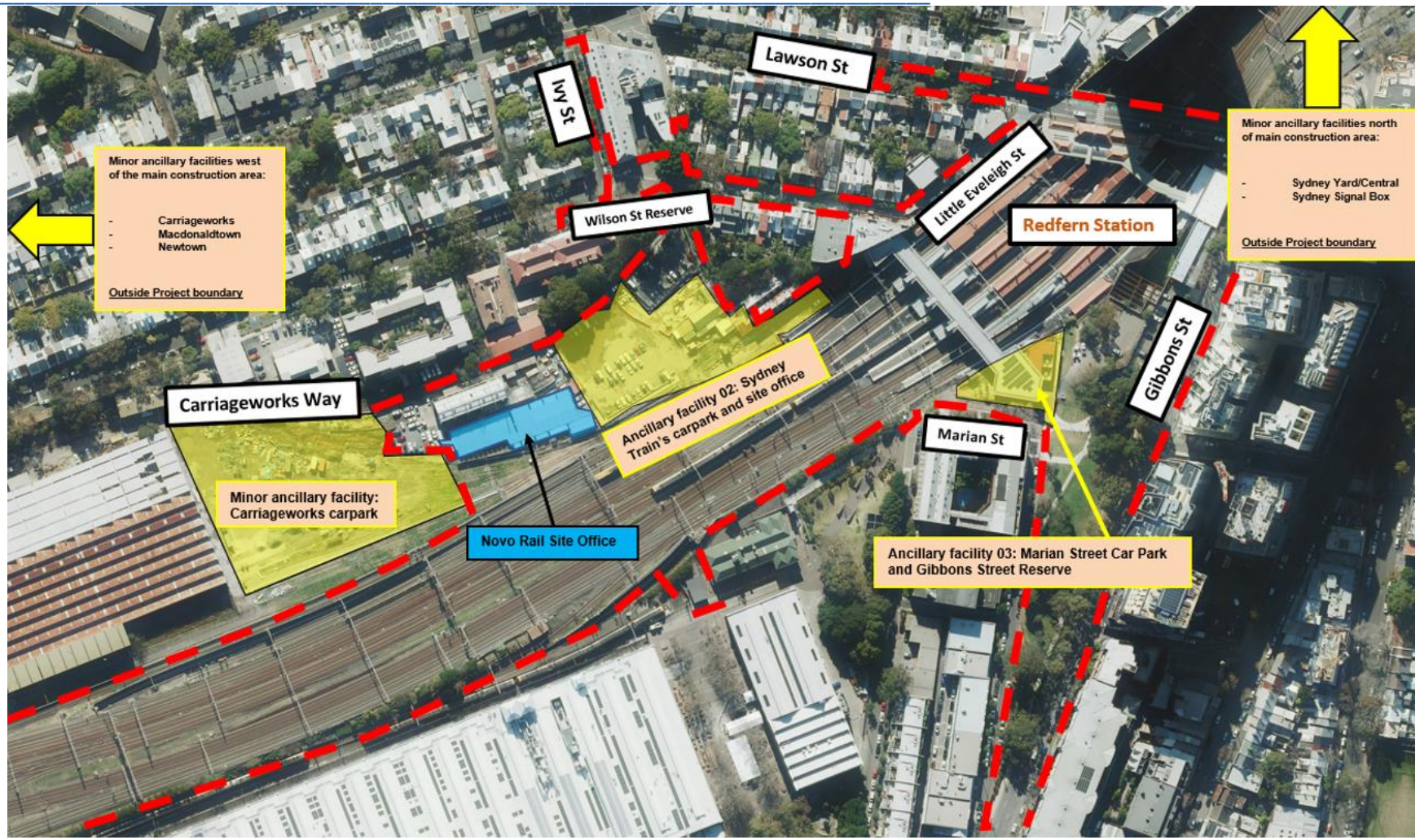
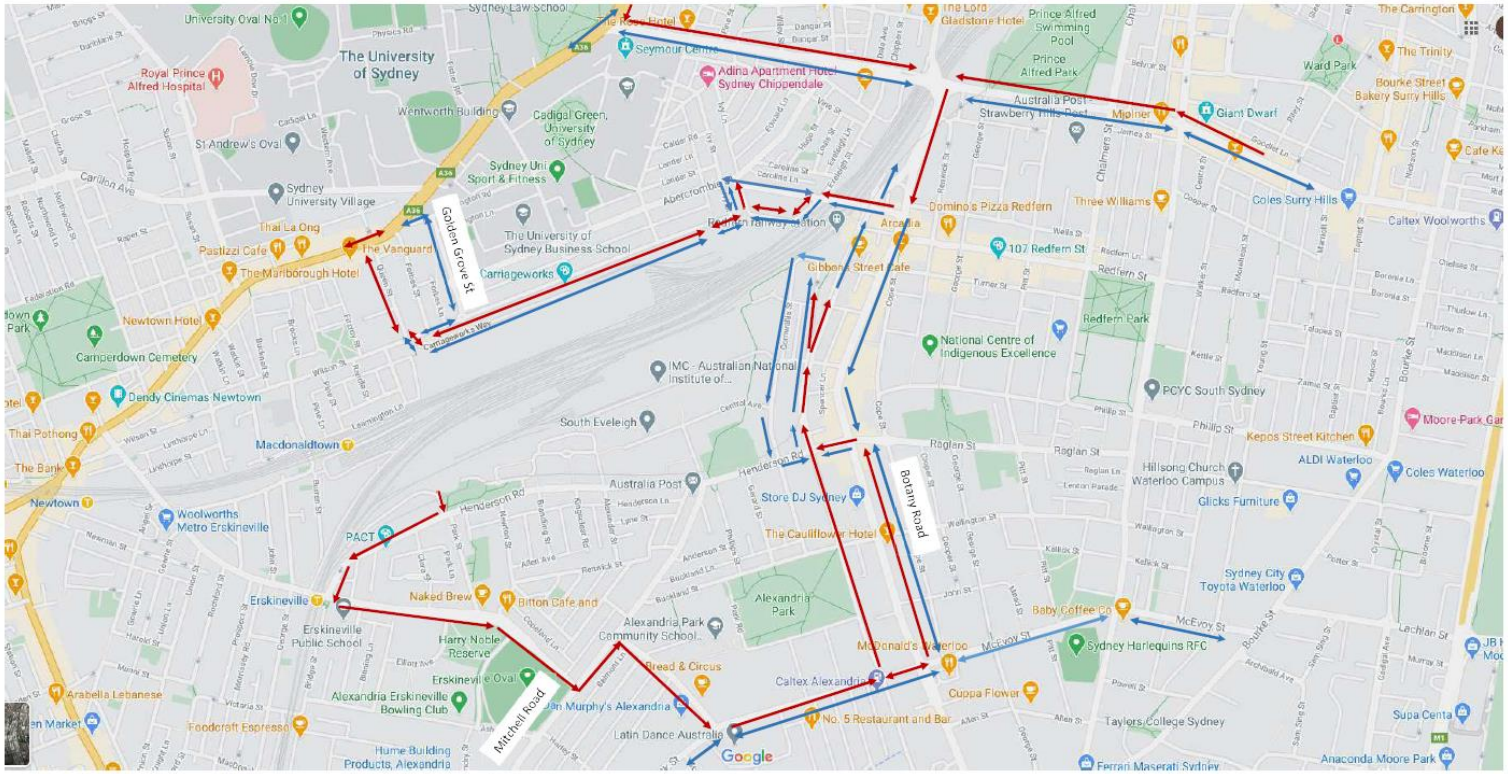


Figure 6-2 Site layout plan – ancillary work locations/laydown areas and rail corridor access points



Travel paths in Figure 12-1 of the EIS Adjustments and expanded routes

The paths identified by the red colour are the routes shown in the EIS. The blue routes are adjustments or additions.

Suggested changes and identified issues in the existing route identified:

• Cleveland Street – adjust to two way traffic, not just incoming	• Regent Street /Botany Road – adjust to two way traffic, not just southbound	• McEvoy Street – extend the route, state road connector
• Gibbons Street – extend route northbound to Cleveland Street connection	• Identify outbound route for Marian Street work, exiting via Cornwallis Street – one way road system – to Henderson Road	• Henderson Road – direct exiting traffic to Botany Rd
• Little Eveleigh Street – one way southbound, not two way	• Carriageworks – Queen Street is one way northbound and road narrow, not two way • CoS, SCO and TMC previously reviewed the route and identified access via Darlington Road and Golden Grove Street as shown in blue on map	

Figure 6-3 Site layout plan – traffic haulage routes. *Note: This is the main map that shows the entire detours put in place for the project. Other maps showing specific zones are used as required and can be found in the RSU Traffic Management Plan.*

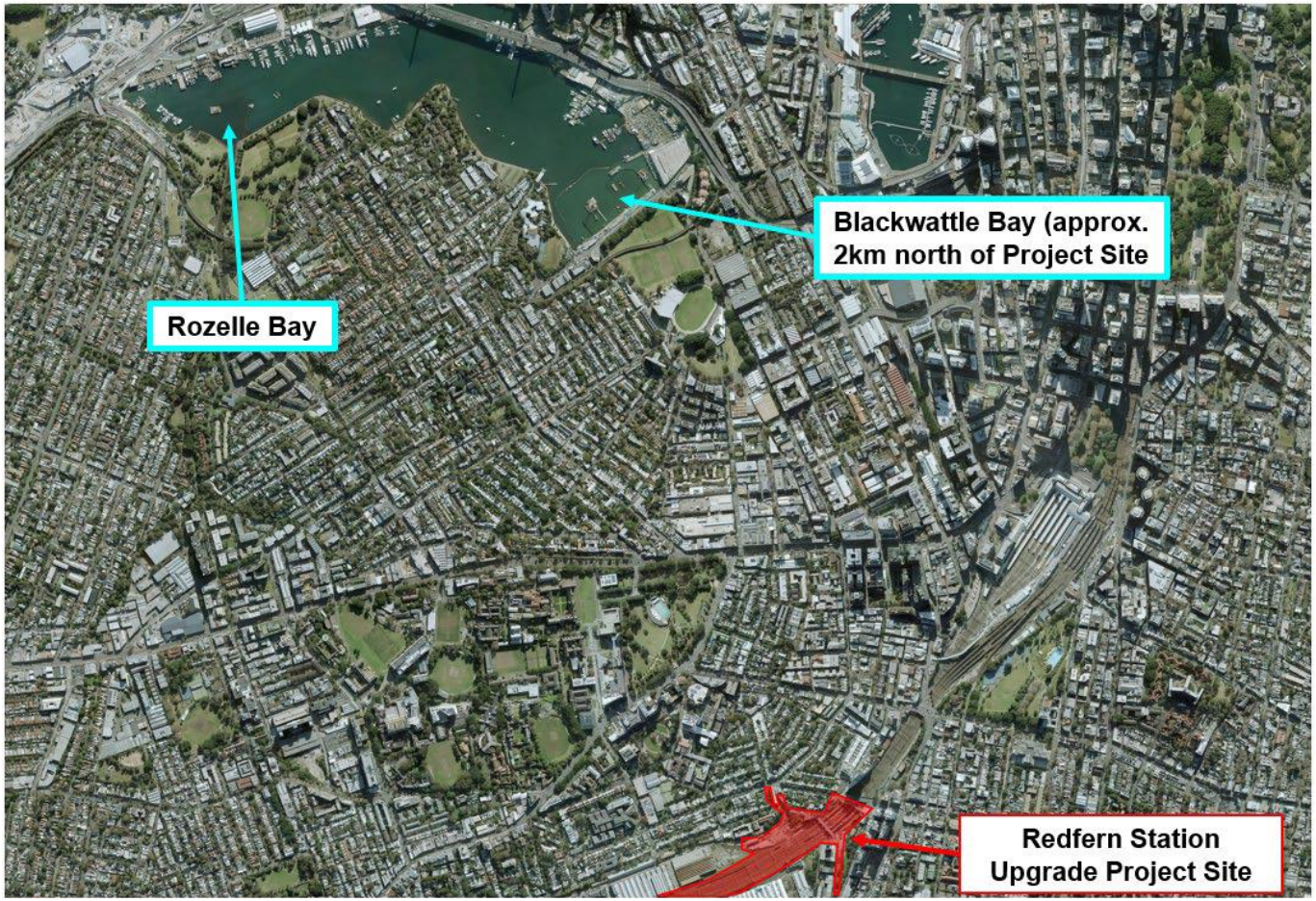


Figure 6-4a: Nearest waterway receptor (Blackwattle Bay) – source: *Metromap* August 2023

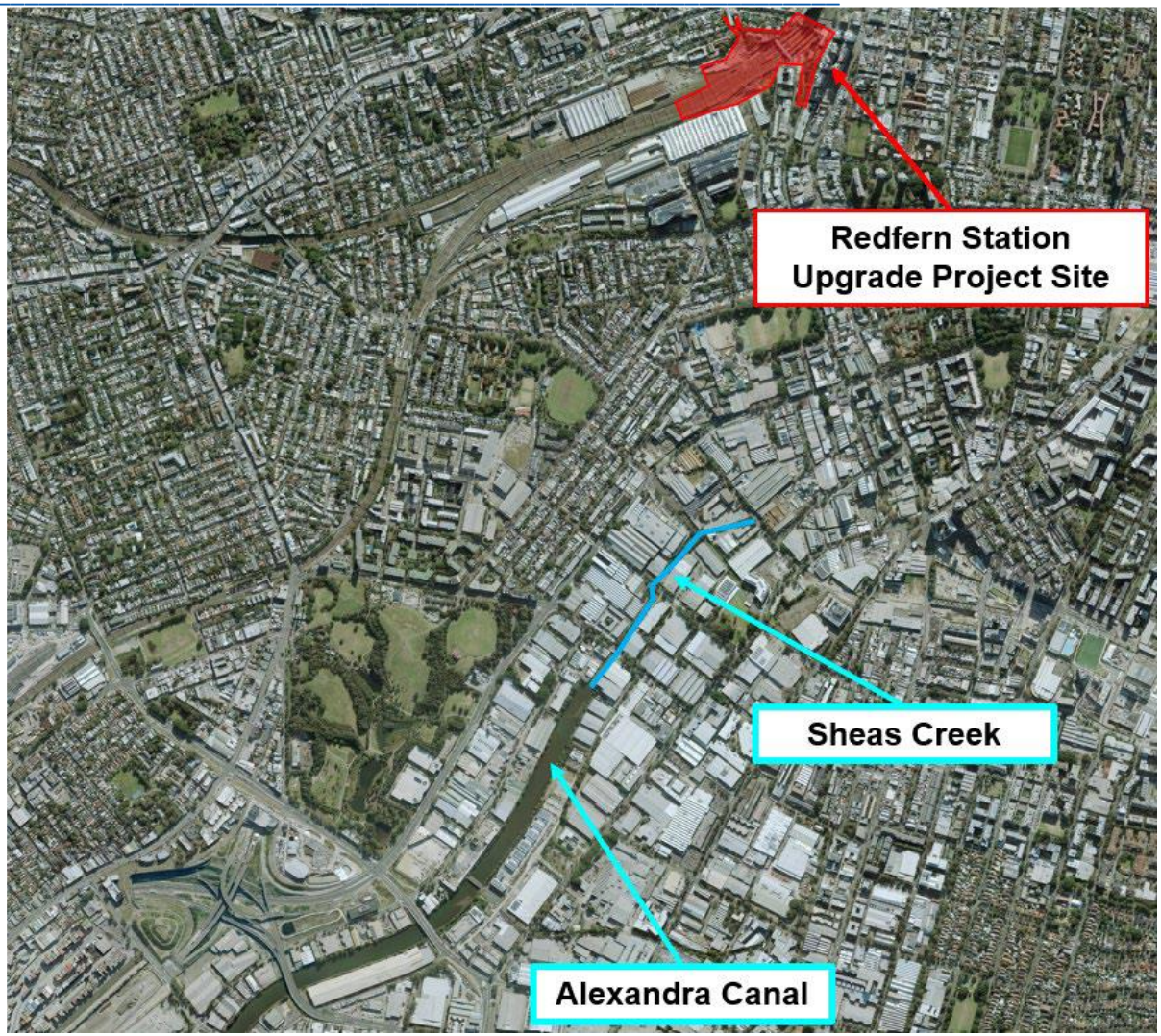


Figure 6-5ab Nearest waterway receptor (Alexandra Canal and the Seas Creek) – source: *Metromap* August 2023

7 Environmental Management

7.1Environment risks and opportunities

Project wide environmental risks and opportunities are required to be assessed throughout the Project and documented under the Project's Environmental and Sustainability Risk and Opportunities Register, noting that the Project has embraced a holistic approach in managing the Project's environmental risk profile by considering other business risks e.g. procurement, commercial and stakeholder engagement. Relevant risks and the potential for related impacts have been considered in an initial risk assessment in the Environment and Sustainability Risk and Opportunities Register (Appendix C).

A methodology has been established to address the management and implementation of environmental risks and opportunities.
This process addresses the following:

- identification of applicable activities to be undertaken during construction until asset-handover
- identification of project-specific environmental hazards and opportunities associated with the identified activities
- ascertain the extent of risk and beneficial opportunities where applicable
- determine suitable mitigation measures proportionate to the extent of the risks and opportunities identified in order to avoid and minimise risk and realise beneficial opportunities where applicable
- allocation of defined responsibility for managing the risks and opportunities.

The environmental risks and opportunities will be maintained within a register under the CEMP. The register will be reviewed by relevant stakeholders at periodic intervals to assess the effectiveness of controls in place. The register's review frequency is to be observed based on the risk profile and other relevant influences including but not limited to, the introduction of new/altered processes of significance; change in scope impacting on the controls under the Project; significant internal restructuring and legislative and regulatory change impacting upon the Project.

The identified risks and opportunities will be communicated to relevant individuals through updates to relevant documentation including the CEMP, project inductions, pre-work briefings, plant startup checks and toolbox talks and training and awareness sessions. Refer below to Section 3.11 Training, Awareness and Competence for further information.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.4, pg. 6)

Note: Sustainability specific risks and opportunities are discussed in the Sustainability Management Plan (TAP04-PLN-MG-0011).

A 'Traffic-Light' based system is used for the Project's Environmental and Sustainability Risk and Opportunity Register (Appendix C) and the ERAPS in this CEMP to readily identify the local risk profile at hand. This 'Traffic-Light' system is summarised in Table 7-1.

Table 7-1 'Traffic-Light' risks and opportunity classification system

Category	Description	Probability of occurrence without suitable controls
Green	Environmental impacts associated with the action are generally constrained to the project site and in accordance with the environmental assessment documentation	Low probability
Amber	Environmental impacts associated with the actions have the potential to result in offsite impacts, where the environment recovers over the medium term	Moderate probability
Red	Environmental impacts that have significant offsite impacts. The environment recovers over the long term, there is impacts to the local community. Impacts result in the destruction of protected species, sensitive habits or other impacts not envisaged as part of the environmental assessment process. The environment is not able to recover without substantial intervention.	High probability

The ERAPs have been developed for relevant environmental issues that have a low risk rating required by the CEMF. The ERAPs addresses strategic mitigation and control measures to minimise the impact of the risk rating and potential.

Activities, aspects and potential impacts with a medium to high residual risk (i.e. those with a high risk after all reasonable mitigations and controls have been implemented), have a CEMP Management Plan or standalone management plan that addresses applicable risks.

Key environmental risks that were determined through the initial risk assessment process include:

- **Land degradation –** The Project requires land disturbance, including vegetation removal and reshaping of topography. These activities will leave the soil vulnerable to the risk of erosion. Soil removed by erosion may become airborne and generate dust or be carried by water into natural waterways. Due to the soil erosion of the exposed and loose earth, it may impact water quality in the surrounding water bodies due to siltation. This can result in mud floods and flash floods in immediate or downstream areas during heavy downpours.
- **Noise and vibration -** Noise and vibration can be generated by various activities and equipment/plant used in construction of this Project. Noise and vibration levels due to construction activities in the Project area vary depending on the types of equipment used, the location of the equipment, and the operating mode. Adverse impacts resulting from construction noise and vibration are generally limited to areas adjacent to the Project, known as the 'sensitive receivers', and are temporary in nature.
- **Aboriginal and non-aboriginal heritage –** Heritage fabric will be impacted as a result of the Project, mitigation measures will be implemented to minimise this impact. Vibration arising from planned construction or excavation works may impact heritage fabric, resulting in potential impacts to structural integrity. Noise and vibration assessments were carried out for the Project to assess the potential impact of vibration.
- **Flora and Fauna –** Vegetation will be impacted by the Project, therefore there is a risk of remove and trimming excess vegetation. There is risk to fauna loss and/or injury if left unmitigated. Planning is essential to ensure no fauna is impacted during

construction. Fauna and flora impact will be minimised, and suitable protection shall be put in place, where feasible.

If additional risks and opportunities are encountered on site during the delivery phase, these will be reflected under the Environmental and Sustainability Risk and Opportunity Register (Appendix C) and under the ERAPs (where applicable).

7.2Environmental Control Maps (ECMs)

Environmental Control Maps (ECMs) are to be implemented throughout construction to address specific environmental control measures as part of the planning and delivery under the project.

The maps are specific to the work site/area and shows the location of the protection measures, monitoring requirements and environmentally sensitive areas (e.g. known heritage items, threatened species, trees to be removed/retained inclusive of TPZs, sensitive receivers, key drainage and watercourse locations, etc). The maps identify the locations of physical protection measures as well as when and where environmental monitoring is to occur and how environmental control measures are communicated to personnel. The construction ECM/s are captured under Appendix E of this CEMP.
The ECMs are to be communicated prior to the works (e.g. project inductions, workshops and toolbox talks) and made readily accessible to project personnel. The ER is to review and endorse the ECMs as required.

Environmental Control Maps (ECMs) will provide detailed illustrative maps that outline controls for managing potential environmental impacts and opportunities within the Project area. The ECMs will be prepared in accordance with TfNSW Guide to Environmental Control Map DMS-SD-015 and will contain the following as a minimum:

- Reflect current and proposed representation of work areas
- Indicate which environmental procedures or environmental approvals are applicable
- Illustrate work areas showing significant structures, work areas and boundaries
- Illustrate environmental control measures and environmentally sensitive receivers
- Are endorsed by the Contractor's Environmental Manager or delegate
- Will be included in relevant training programs to ensure the requirements are understood.

ECMs are to be revised to reflect changes within the Project area as needed. This may be required where changes to the physical site introduce new potential environmental impacts requiring additional and/or refined controls. Revised ECM's are to be adequately communicated to project personnel through suitable means such as project-induction, pre-work briefings, plant start-up checks and toolbox talks and training and awareness sessions.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.6, pg. 6 & 7)

7.3 Significant environmental risks and opportunities

The assessment for significant environmental risks and opportunities is based on risk matrix established as per the Laing O'Rourke Risk Management procedure and the Risk and Opportunity Register.

Project risk and opportunity assessments are to be reviewed and updated as the project progresses and as a minimum as part of the Environmental Management Plan Management Review process. The Project's Risk and Opportunity Register is to be maintained on a monthly basis or, when required and must include project wide environmental risks and opportunities.

Aspects/activities that have been identified as high to medium risk have a separate CEMP Management Plan or standalone management Plan associated with it to effectively manage the item. Potential risks and associating impacts are discussed in the relevant sections of this CEMP. The CEMP Management Plan and/or standalone management plan addresses the strategic mitigation and control measures determined following the initial risk assessment.

Works site planning processes for high environmental risk activities and also sustainability opportunities are outlined in the Laing O'Rourke Environmental System Requirements Environmental Planning document. The purpose of the LORA Environmental Planning document system requirement (SR) is to outline the process and requirements necessary to deliver the environmental performance outcomes from the Laing O'Rourke Environmental Policy and other compliance obligations. Details of high-risk activities are provided in this system requirement document.

This also applies to supply chain partners operating on the site. Supply chain partners involved in activities that represent a high risk to the environment are to comply with the requirements of the CEMP in their activity methodologies and method statements. Supply chain partners involved in these activities are to complete an environmental risk assessment workshop prior to the commencement of the activity.

7.3.1 Severe Environmental Risks (SERs)

Under the Project EMS, the Laing O'Rourke Severe Environmental Risks (SERs) are the critical or high environmental impacts that could eventuate, resulting in permanent or long-term damage to the environment that is not easily rectified. The focus of these risks is on high consequence environmental harm risks rather than those that have regulatory consequences. The SERs Control Standards provides clear guidance on managing these risks.

The SERs that are relevant to the Project include biodiversity, heritage (Aboriginal and European), water quality and wastewater storage, erosion and sedimentation, piling and rail maintenance. The SERs are an EMS requirement in addition to the risk assessment undertaken in Appendix C and would be applied, where applicable for the duration of the Project.

It is an organisational requirement and to comply with the Project's EMS to undertake regular SER inspections to ensure that high risk items are appropriately managed. Monthly SER inspections would be undertaken and include the following outcomes:

- Monthly checks of field and system criteria would be recorded in the FieldView application or similar
- System-based controls are to be reviewed for application and effectiveness within the bounds of the project's construction environmental management plan

- The monitoring activity frequency will be dependent on the programming of activities with the potential to cause high-consequence environmental impact on the project and reflect the current construction risk processes and methodologies. Refer to MAP for additional guidance

The Severe Environmental Risks Assessment Tool is to be used as guidance for the implementation of the standard. The Severe Environmental Risks Control Adequacy Assessment Work Instruction defines the procedural requirements for completing the monitoring activities.

7.3.2CEMP Sub-Plan and standalone management Plans

The CoAs requires four (4) CEMP Sub-Plans to be developed and undergo consultation with relevant government agencies. These include:

- Construction Noise and Vibration Management Plan (TAP04-PLN-EN-0005)
- Traffic Management Plan (TAP04-PLN-SA-0005)
- Soil, contamination and water Plan (TAP04-PLN-EN-0013)
- Construction Heritage Management Plan (TAP04-PLN-EN-0012)

The CoA CEMP Sub-Plans are referred to as Management Plans, however are sub-plans of the CEMP.

These Management Plans have gone out to the relevant agencies for consultation. Details for consultation are captured in the Consultation Summary Report. This is summarised in Table 7-2.

Table 7-2 Sub-Plan consultation requirements

CEMP Sub-Plan	Relevant government agency consultation
Noise and Vibration Management Plan (TAP04-PLN-EN-0005)	City of Sydney Council Heritage NSW
Traffic Management Plan (TAP04-PLN-SA-0005)	City of Sydney Council
Soil, contamination and water Management Plan (TAP04-PLN-EN-0013)	Sydney Water and City of Sydney Council (if it is proposed to discharge to or impact on their assets)
Construction Heritage Management Plan (TAP04-PLN-EN-0012)	Heritage Council of NSW Heritage NSW City of Sydney Council

In addition to the required CEMP Sub-Plans, there are additional management Plans that would address any medium to high risk items and that are not captured in detail as part of the CEMP and CEMP ERAPS. These include the:

- Hazardous Material Management Plan (S-00911.HMMP_202009_V1)
- Ecological Management Plan (TAP04-PLN-EN-0011)
- Property Management Plan (TAP04-PLN-MG-0013)
- Sustainability Management Plan (TAP04-PLN-MG-0011)
- Communications Strategy (TAP04-PLN-CC-0001).

It is important to note that the Construction Heritage Management Plan is the overarching Plan that primarily discusses the risks and impacts of construction to built heritage fabric elements, but also governs and directs the reader towards the Historical Archaeological Research Design (HARD) Report (TAP04-PLN-EN-0008), the Aboriginal Cultural Heritage

Management Plan (ACMP; TAP04-PLN-EN-0007) and the Unexpected Heritage Finds and Human Remains Procedure (TAP04-PLN-EN-0014).

7.4Heritage Management

7.4.1Aboriginal

Potential impacts in relation to construction

The EIS identified a single aboriginal site (AHIMS site #45-6-2597) within the project area, however evidence of its presence and historic bulk excavation of the area, indicate its existence invalid. The EIS concluded that consultation with Metropolitan Local Aboriginal Land Council and NSW Department of Premier and Cabinet would be required to amend the status of the site on the AHIMS register. Construction works could potentially impact this Aboriginal site and objects if appropriate safeguards are not implemented or if construction personal are not trained in effective management measures.

The ACHMP determined that, alongside the aboriginal site located within Gibbons Street Reserve identified within the EIS, that an Aboriginal sensitivity zone is situated adjacent to one of the Project work zones. Both areas of potential cultural heritage are outside direct impact, with low potential for intact aboriginal objects and/or features to be present.

The HARD Report outlined the following construction activities which may potentially impact aboriginal heritage at site:

- Geotechnical testing such as core sampling
- Excavation is necessary to install the temporary site compound
- Demolition of buildings or ground
- Tree removal
- Decommissioning or installation of services
- Removing existing footings
- Piling
- Excavations for infrastructure modifications or construction.

Mitigation measures and controls

Heritage (Aboriginal and Non-Aboriginal) has been identified as a high or significant risk for the Project and as such has required the preparation of a CEMP Sub-Plan. The overarching Aboriginal Cultural Heritage Management Plan (ACHMP) (TAP04-PLN-EN-0007) has been developed by a qualified and experienced Heritage specialist to effectively detail the main risks/potential impacts of construction on Aboriginal heritage, as well as provide tailored mitigation measures and environmental controls to address these items.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the CHMP (TAP04-PLN-EN-0012), HARD (TAP04-PLN-EN-0008), ACHMP (TAP04-PLN-EN-0007) and the Unexpected Heritage Finds and Human Remains Procedure (TAP04-PLN-EN-0014) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register

(Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.4.2Non-Aboriginal

Potential impacts in relation to construction

The Redfern Railway Station Group is listed on both the State Heritage Register (#01234) and RailCorp Section 170 Heritage and Conservation Register (#4801095). The Redfern Railway Station Group is a State significant heritage item associated with the growth and development of Redfern as a place, as well as being an important element and transportation hub associated with the NSW Railways. This is displayed in Figure 7-1

The Eveleigh Railway Workshops are one of the finest historic railway engineering workshops in the world, containing intact late 19th century and early 20th century forge installations and a collection of cranes and power systems. They are listed on the State heritage Register (#01140) and the RailCorp Section 170 Heritage and Conservation Register (#4801102). The Eveleigh Chief Mechanical Engineers Office and moveable relics is listed on the SHR (#01139) and RailCorp Section 170 Heritage and Conservation Register (#4801126). This is displayed in Figure 7-2.

The EIS raised the following activities/works which would impact Non-Aboriginal heritage items:

- The construction of proposed concourse, platform canopies, stair and lifts – this may potentially have major adverse impact on the aesthetic significance of Redfern Station Railway Group
- Potential moderate historic, aesthetic and rarity values impact to Redfern Station Railway Group may also be caused by relocation of Platform 1 office building
- The construction of the concourse and Platform 1 office building relocation and carpark have potential adverse impacts on both the aesthetic and technical values of the Eveleigh Railway Workshops. Construction of the concourse may also result in indirect impacts on the aesthetic values of the station
- The proposed works to 125-127 Little Eveleigh Street has potential for minor adverse impact on the Darlington Heritage Conservation Area
- The relocation of Platform 1 office building has a major impact on the historical significance of the station and minimal impacts to the heritage streetscape of Little Eveleigh Street.

Consistency Assessment 01 (approved by TfNSW on 17 December 2020) raised the following:

- There would be some additional adverse impacts on non-Aboriginal heritage as a result of the work, compared to that of the approved project
- The proposed moving of the Platform 1 Heritage Building several metres further than previously proposed within the EIS is considered to be able to be adequately managed through relevant mitigation measures including an extensive methodology to protect the significant fabric during the process.
- Additional impacts on the Platform 10 retaining wall compared to the approved project. Further design detail is required to ensure that the construction methodology in this location adequately minimises impacts on this heritage fabric.

Consistency Assessment 02 (approved by TfNSW on 23 April 2021) raised the following:

- There would be some additional adverse impacts on non-Aboriginal heritage as a result of the work, compared to that of the approved project

- Introduction of an LV supply as well as cable installation in GLT could potentially generate a visual impact upon existing Wilson Street setting. However, it is noted that the LV supply is a temporary measure and would be subsequently removed at the delivery of the project.

Consistency Assessment 03 (approved by TfNSW on 11 July 2021) – later updated as Consistency Assessment 06 (approved on 26 November 2021) raised the following:

- There would be some additional adverse impacts on non-Aboriginal heritage as a result of the work, compared to that of the approved project.
- The proposed relation of the car park within the TfNSW owned land adjacent to Little Eveleigh Street was due to the necessity of minimise any impacts on the nearby sandstone wall, the Eveleigh Chief Mechanical Engineers Office SHR (#01139) and in general on the Redfern Railway Station Group, that is listed on both the State Heritage Register (#01234) and RailCorp Section 170 Heritage and Conservation Register (#4801095).

Consistency Assessment 05 (approved by TfNSW on 20 January 2022) raised the following:

- There would be some additional adverse impacts on non-Aboriginal heritage as a result of the work, compared to that of the approved project.
- The proposed additional tree(s) removal on Little Eveleigh Street could potentially have had impacts on the Redfern Railway Station Heritage Group. However, the removal of additional tree would result in a minor adverse herniate impact only. Heritage impacts will be neutral as the replacement trees will mature and the streetscape will remain cohesive with the character of the new entrance.

Consistency Assessment 09 (prepared by TfNSW – December 2023) raised the following:

- There will not be physical impacts on heritage items as the proposed design is limited to contemporary roadway elements and traffic measures. However, if the installation of proposed loading zone is to disturb the kerbing, these should be salvaged and re-used in their current locations.

Mitigation measures and controls

Heritage (Aboriginal and Non-Aboriginal) has been identified as a high or significant risk for the Project and as such has required the preparation of a CEMP Sub-Plan. The overarching Construction Heritage Management Plan (CHMSP) (TAP04-PLN-EN-0012) has been developed by a qualified and experienced Heritage specialist to effectively detail the main risks/potential impacts of construction on heritage, as well as provide tailored mitigation measures and environmental controls to address these items.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the CHMSP (TAP04-PLN-EN-0012), HARD (TAP04-PLN-EN-0008), ACHMP (TAP04-PLN-EN-0007) and the Unexpected Heritage Finds and Human Remains Procedure (TAP04-PLN-EN-0014) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

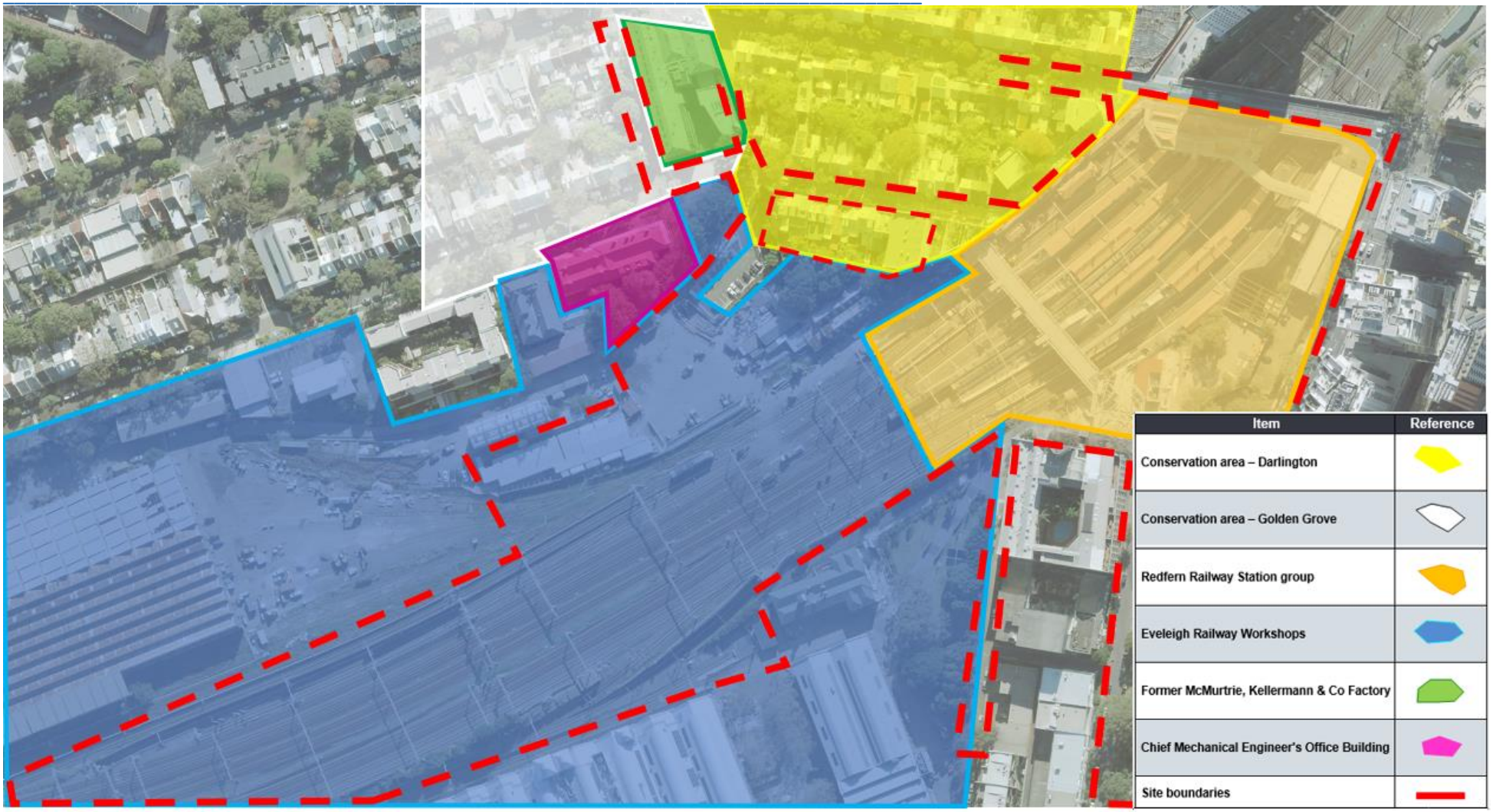


Figure 7-1 'Redfern Railway Station Group' SHR: 01234 on the S170 Register (4801095) and Eveleigh Railway Workshops (SHR 01104; S.170 listing: 4801102) – overview map

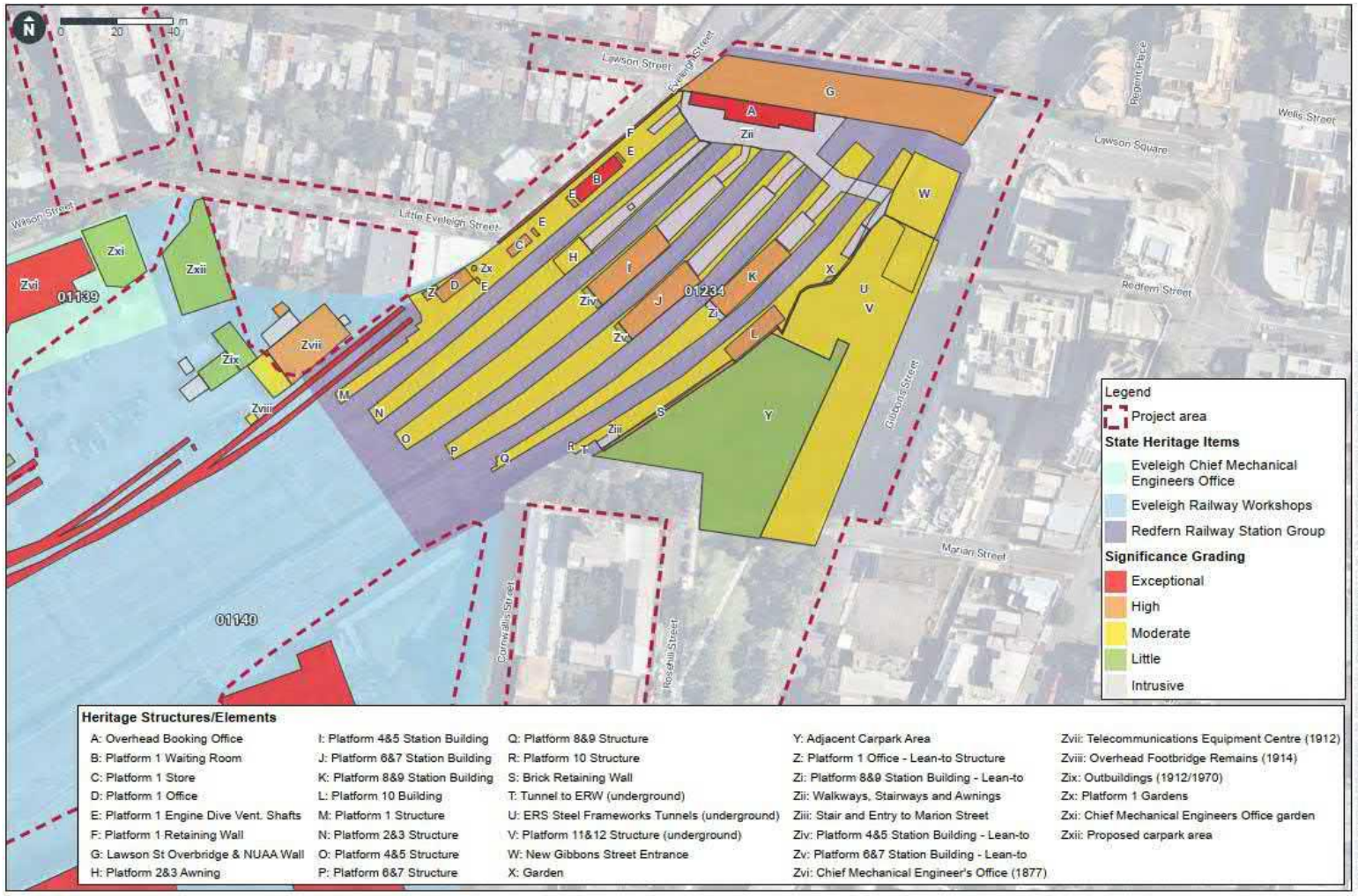


Figure 7-2 Heritage Structures/elements (Technical Report 5, Non-Aboriginal Heritage, EIS, Redfern Station Upgrade, New Southern Concourse [May 2020])

7.5Noise and vibration

7.5.1Potential impacts in relation to construction

Chapter 13 of the EIS discusses residential and non-residential receivers that were assessed against the standard hours and the out of hours Noise Management Levels (NML's) across seven construction phases expected for the Project. The following five construction phases were expected to generate highest construction noise out of the seven assessed: Site establishment and enabling works; Building modification works, Utility and overhead wiring relations/adjustments, Main construction works – Station entrances/ installation of concourse and Roadworks.

The majority of out of hours work (OOHW) would occur during rail shutdown and is anticipated to occur over 20 scheduled Possessions.

The following potential noise impacts were observed/concluded:

- The greatest number of exceedances of NML's would occur in residential receivers area NCA 2 (Hollis Park, Darlington Public School, Saint Michael the Archangel Melkite Cathedral, University of Sydney, Church of the Assumption of Our Lady, TAFE NSW – Eora, Charles Kernan Reserve, Hugo Street Reserve, Redfern community centre/playground). Across all NCA'S up to 100 residential buildings are predicted to be 'highly affected' at times during Roadworks
- Non-residential receivers are predicted to exceed NML's across all construction stages, again the greatest level of exceedances was expected to occur during Roadworks
- Sleep disturbance screening level criteria was expected to be exceeded at 399 residential buildings during site establishment and enabling works, 361 during utility and overhead wiring relations/adjustments, 127 during main construction works – Station entrances/ installation of concourse 4 and 559 during road works across all NCA's
- Construction traffic noise was not expected to exceed 2dB(A), with only 20 heavy and 40 light vehicle movements expected per day at peak construction periods
- The following heritage listed buildings may be located within the minimum working distances for vibration intensive works: (1) Platform 1 and Retaining walls, (2) Platform 1 Store and Office Building, (3) Engine Dive and Ventilation Shafts, (4) Telecoms Equipment Centre, (5) Interlocking Store, Southern Store, Northern Store and Brick Toilet, (6) Platform 1 to 10 facings, (7) Platform 4 to Buildings and (7) Platform 11 and 12 below ground structures

The Consistency Assessment (approved by TfNSW on 17 December 2020) raised the following:

- The proposed additional vegetation removal scope has the potential for noise impacts to local receivers within the NCA 2, 3 and 4 catchment area.

The CNVMP developed for the project states that, in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) and the TfNSW Construction Noise and Vibration Strategy, the ground-borne noise criteria is not expected to be exceeded for this project. Ground-borne noise is not expected to be intrusive to the amenity of sensitive receivers. Based on the proposed construction activities, the predicted airborne noise levels are above those of the ground-borne noise criteria.

The CNVMP predicts that sensitive receivers within residential areas NCA 2, NCA 3 and NCA 4 will potentially exceed sleep disturbance criteria and will also be Highly Noise affected.

7.5.2 Mitigation measures and controls

Noise and vibration has been identified as a high or significant risk for the Project and as such has required the preparation of a CEMP Sub-Plan. The Construction Noise and Vibration Management Plan (CNVMP) (TAP04-PLN-EN-0005) has been developed by a qualified and experienced acoustic engineer to effectively detail and assess the main risks/potential impacts of noise and vibration impacts, as well as provide tailored mitigation measures and environmental controls to address these high risk items.

The Project has prepared an Out of Hours Works Protocol (*CNVMP, Appendix A*) which describes the project requirements for planning, assessing and managing out-of-hours works.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the CNVMP (TAP04-PLN-EN-0005) and the Out of Hours Work Protocol (TAP04-PLN-EN-0016) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.6 Soil, contamination and water

7.6.1 Potential impacts in relation to construction

The EIS indicated that the Project would require temporary exposure to untouched ground surface and sub-surface areas during construction activities. The exposure of soil can lead to off-site runoff and wind can potentially result in increased soil erosion. Similarly, poor stockpile management may also result in soil erosion. The EIS also identified the potential transportation of materials off-site into the catchment waterways via stormwater runoff.

Low level soil contamination was identified within the Project area. Out of the six (6) boreholes drilled, BH1 (located near the end of Platform 1 behind 125-127 Little Eveleigh Street) showed Copper and Zinc exceedances of the ecological screening levels (ESLs), and BH4 (located southwest of Platform 9) showed an ESL exceedance of Zinc. The EIS outlined the potential impact to surrounding environmental receivers by identified and potential soil contaminants. Additionally, it was identified that mobilisation and migration of surface and subsurface contaminants via runoff and/or subsurface flow, may impact nearby soils, surface water and ground water.

The EIS and supporting geotechnical investigations showed that it unlikely to encounter groundwater during construction.

The SCWMSP outlined the potential impacts as:

- contamination of soil and receiving waters by leaks/spills of fuels or hazardous chemicals during construction
- discharge of contaminated wastewater impacting water quality or ecosystem function
- sediment runoff or offsite tracking entering drainage lines and resulting in pollution
- increased volumes of contaminated waste by inappropriate management of impacted soil
- alterations of surface and sub-surface flows could cause disturbances hydrology and hydraulics.

7.6.2 Mitigation measures and controls

Soil and water has been identified as a high or significant risk for the Project and as such has required the preparation of a CEMP Sub-Plan. The Soil, contamination, and water Management Plan (TAP04-PLN-EN-0013) has been developed by a qualified and experienced environmental consultant to effectively detail and assess the main risks/potential impacts of Soil, contamination and water, as well as provide tailored mitigation measures and environmental controls to address these items.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the SCWMP (TAP04-PLN-EN-0013) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.7 Hazardous material

7.7.1 Potential impacts in relation to construction

Hazardous materials assessment/s have been undertaken within buildings requiring modifications or demolition. This is an explicit requirement of the EIS and the RtS under REMM's SC2 and SC3 for the Project.

Where the proposed works are likely to disturb hazardous materials identified within these assessment reports, the items must be removed in accordance with any applicable legislative guidelines. Poor removal methodologies and insufficient control measures may result in further contamination of the building structures or the surrounding ground surfaces by generation of associated dust and debris. Although asbestos or lead contamination was not identified within the Project area , if encountered and not managed appropriately, continuation of construction activities may also result in further contamination of surrounding surface and/or sub-surface soils.

Identified hazardous materials which are not affected by the scope of the Project and therefore to remain in-situ, if not suitably managed, planned construction or future occupation activities pose a risk of disturbing these materials, potentially resulting in further contamination as mentioned previously. Inadequate removal or management of hazardous materials also has serious health implications for workers or future occupants by exposure to harmful airborne or chemical contaminants.

7.7.2 Mitigation measures and controls

Hazardous materials have been identified as a moderate risk for the Project and as such has required the preparation of a standalone management Plan. The Hazardous Materials Management Plan (S-00911.HMMP_202009_V1) has been developed by a qualified and experienced HAZAMT specialist to effectively detail and assess the main risks/potential impacts of hazardous materials exposure and environmental contamination, as well as provide tailored mitigation measures and environmental controls to address these items. Should unexpected contamination be encountered during the project, an Unexpected Contaminated Land and Asbestos Finds Procedure has been prepared and will be followed.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the Hazardous Materials Management Plan (S-00911.HMMP_202009_V1) and the Unexpected Contaminated Land and Asbestos Finds Procedure have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment

and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.8Traffic and transport

7.8.1Potential impacts in relation to construction

The EIS observes that potential impacts from construction of the Project to traffic, transport and access include:

- Pedestrians - Disruptions to existing pedestrian facilities surrounding the station, particularly for pedestrian access to the station when construction works for the station entrances, platforms and surrounding footpaths are being undertaken
- Public transport - Construction works for the project requires around 20 scheduled track possession periods which will potentially impact public transport by cancelled train services and extended travel times due to extra buses on the road network. Construction zones established at the station will restrict customer movement, affect bus services due to temporary traffic diversions and altered bus stops
- Cyclists - Cyclist routes and parking spaces are expected to be impacted by construction activities on Little Eveleigh Street and by increased vehicular movements resulted by construction of Ancillary Facility 2. Cycle routes between Cornwallis Street and Rosehill Street, and between Rosehill Street and Gibbons Street will potentially be impacted due to construction of Ancillary Facility 3 with Gibbons Reserve.
- Kiss and ride - Informal pick-up and drop-off activity is likely to be impacted by increased vehicular movement on Marian Street and will be ceased on Little Eveleigh Street during construction of the project.
- Parking - Construction activity for the project is expected to remove or restrict current parking in Gibbons Street, Lawson Street, Little Eveleigh Street, Marian Street/Cornwallis Street/Rosehill Street Loop, Ivy Street and within Sydney Trains staff car park.
- Traffic - The Project is likely to generate marginal traffic movements of around 20 heavy and 40 light vehicles per day during construction; with most of these movements anticipated during construction of the concourse and works along Little Eveleigh Street and Marian Street.
- Property access – Access will be maintained during construction but may be temporarily disrupted by pedestrian, cyclist or vehicle diversions. Minor impacts to waste collection efficiency due to relocation of waste bins.
- Relocation of approximately 20 parking spaces (including 18 resident/restricted parking spaces, one accessible parking space and one car share scheme parking space)
- Changes to street parking arrangements including removal of approximately 16 parking spaces (including relocation of one car share scheme parking space).

The Consistency Assessment (approved by TfNSW on 17 December 2020) raised the following:

- Minor additional vehicular movement is noted for the local access points proposed for laydown storage areas required under the project

- A revised heavy vehicle haulage route was consulted with City of Sydney Council. Heavy vehicles are required to travel on roads approved by the relevant road authority while travelling throughout the national road network to their destination.
- A revised temporary access route during Little Eveleigh Street road closure via Wilson Street has been approved by TfNSW under ER10 on 13 December 2021 and is considered consistent with the approved EIS and Response to Submissions Report. This ha neglectable impacts on the community, and the environment, including the heritage fabric.

The Traffic Management Plan (TAP04-PLN-SA-0005) advises that negligible traffic flow impacts on the key local and regional access routes as traffic from the Project would result in only minor percentage increases in traffic volumes for these key routes.

No noticeable impacts are expected on traffic signal operations on Gibbons Street due to construction vehicles accessing or egressing the road network or Reserve. The extent of impacts on on-street parking immediate road network depending on the construction activity at the time. The TMP reflects similar expectations of impacts of the Project to public transport as the EIS, in that's train services will be ceased during railway corridor works and bus routes will be affected by heavier traffic flow, with altered routes and stops. The Project will result in temporary disruptions at various stages of work to the existing pedestrian and cycle routes around the station, in Little Eveleigh Street, Lawson Street, Ivy Street and within the Rosehill/Marian/ Cornwallis street loop. Volumes of project generated construction traffic are planned to be light, with widely spaced individual vehicles only integrating into road network traffic flows, the effects on traffic are expected to be very minor.

7.8.2Mitigation measures and controls

Traffic and transport has been identified as a moderate risk for the Project and as such has required the preparation of a standalone management plan. The Traffic Management Plan (TAP04-PLN-SA-0005) has been developed by a qualified consultant to effectively detail and assess the main risks/potential impacts of traffic and transport impacts, as well as provide tailored mitigation measures and environmental controls to address these items.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the TMP (TAP04-PLN-SA-0005) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.9Property

7.9.1Potential impacts in relation to construction

Chapter 12 of the EIS identified that the Project would be mainly located on land that forms part of the existing rail corridor and adjacent land owned by the NSW Government or City of Sydney Council. Temporary and permanent land use requirements include:
(1) Relocation of existing tenant of 125-127 Little Eveleigh Street to construct station entrance,
(2) Temporary loss of public open, passive recreation space at Gibbons Reserve to construct ancillary facility,
(3) The railway corridor as temporary use as a worksite,

(4) Temporary use of Eveleigh Maintenance Centre as a worksite and
(5) Temporary restrictions of road reserves within Marian Street, Railway Parade, Cornwallis Street, Rosehill Street, Gibbons Street, Gibbons Reserves, Little Eveleigh Street and Ivy Street.

The Property Management Plan (TAP04-PLN-MG-0013) indicates that damage to property structures is not anticipated and areas of temporary land use will be restored to their prior condition prior to construction.

7.9.2Mitigation measures and controls

Property management has been identified as a moderate risk for the Project and as such has required the preparation of a standalone management plan. The Property Management Plan (TAP04-PLN-MG-0013) has been developed by a qualified consultant to effectively detail and assess the main risks/potential impacts of land use, property condition and damage, as well as provide tailored mitigation measures and environmental controls to address these items. This Plan also outlines the process for property damage claims.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the PMP (TAP04-PLN-MG-0013) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.10 Biodiversity and biosecurity

7.10.1 Potential impacts in relation to construction

Chapter 16 of the EIS assesses potential direct and indirect impacts to biodiversity associated with construction of the Project. These include:

- Vegetation impacts expected include the requirement to remove and trim portions of vegetation within indicative areas (where possible trees will be retained)
- Stockpiling of equipment/ materials has potential to affect vegetation if this occurs over structural root zones of trees
- Removal of threatened species of *Eucalyptus scoparia* is required, An Assessment of Significance concluded that the Project would not result in a significant impact to the flora species as removal would not place them at risk of local extinction or decline
- Due to extensively urbanised context, it is unlikely that threated flora or fauna populations would rely on habitat resources within the Project area, therefore a significant impact to these populations is considered unlikely
- Potential indirect impacts include: (1) risk of spills of fuels/lubricants/paint from machinery or equipment could cause harm to ecosystems or waterways, (2) Machinery/vehicles/personnel dispersing weeds throughout the Project area, as well as during removal of spoil offsite, (3) increased light and noise causing disturbance to nocturnal, mobile or roosting species, (4) movement of plant/machinery causing accidental fauna strike and (5) increased movement of dust and soil leading to disturbance to vegetation and associated habitat.

The Consistency Assessment 01 (approved by TfNSW on 17 December 2020) raised the following:

- A total of 29 additional trees are to be removed including 16 mature trees and 24 native trees. The trees to be removed also includes three Eucalyptus scoparia individuals.

- A further 90 trees (approximately) would require trimming (including one E. scoparia individual), predominantly to allow for heavy vehicles and large equipment to manoeuvre along local roads to access the construction site. The additional impacts to non-threatened tree species would be offset through the implementation of the TfNSW Tree Offset Policy.
- An updated Assessment of Significance was prepared for the removal/trimming of Eucalyptus scoparia. The updated assessment concluded that the Project would not result in a significant impact upon Eucalyptus scoparia species or their habitat such that they would be placed at risk of local extinction or other significant decline.
- Consistency Assessment 05 raised the following changes to trees along Little Eveleigh Street:Removal of four (4) trees;
- Retention of five (5) trees;
- Likely retention of at least 16 trees; and
- Further investigation of nine (9) trees.

The above EIS expected impacts are supported by assessments made as part Ecological Management Plan (TAP-PLN-EN-0011), with biodiversity impacted by removal or trimming of vegetation and indirect ecological impacts that may arise from Project construction activities. The vegetation removal clearance footprint is captured in the Ecological Management Plan (TAP-PLN-EN-0011).

7.10.2 Mitigation measures and controls

Biodiversity and biosecurity management has been identified as a moderate risk for the Project and as such has required the preparation of a standalone management plan. The Ecological Management Plan (TAP-PLN-EN-0011) has been developed by a qualified environmental consultant to effectively detail and assess the main risks/potential impacts of fauna, flora and biosecurity issues, as well as provide tailored mitigation measures and environmental controls to address these items.

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) and other supporting management/assessment documents such as the EcMP (TAP-PLN-EN-0011) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.11 Dust and air quality

7.11.1 Potential impacts in relation to construction

Chapter 19 of the EIS assesses potential direct and indirect impacts dust and air quality associated with construction of the Project. These include:

- Construction requires excavation, handling and management of soils and other construction materials which could potentially create dust that could adversely affect people and the property in the local area
- The main potential air quality impact during construction would be associated with generation of dust

- Low levels of soil contamination have been identified within the soils of the project area, if soils containing these contaminants are managed poorly then there is potential risk that dust containing contamination could leave site - although this is unlikely
- Hazardous materials have also been identified within buildings located within the Project area. The release of dust from the Project area during demolition potentially creates a pathway for these contaminates to adversely affect onsite or offsite receptors
- Without implementation of adequate mitigations measures, dust emissions form the afore mentioned construction activities would result in reduced local air quality and dust deposition at nearby sensitive receivers to the construction works in the Project area
- The close proximity of residential receivers around the project area means that there would be potential dust exposure impacts from the Project. The scale of works when compared to the sensitivity of the receivers around the Project area means that, unmitigated, there is a risk of dust affecting the local community
- Total petroleum hydrocarbons and BTEXN compounds were not identified above the reporting limit in the contamination assessment (*Redfern Station Investigation Works - Contamination Investigation Report, Jacobs, 2018*), therefore no potential impacts relating to odour are likely to occur from exposure of contaminated soils
- Odours from paint and adhesive applications would be released during construction which may pose a risk to workers and potentially adjacent sensitive receivers
- Minor localised emissions of carbon monoxide, oxides of nitrogen, sulphur dioxide and volatile organic compounds will be generated during construction. Welding fume would also be generated during welding activities. Considering the existing air quality around the Project area, these minor emissions from construction plant, machinery and equipment would be unlikely to significantly affect local air quality at the nearest sensitive receivers.

Further assessment and evaluation of the staging diagrams show that during Construction, potential dust generation sources would come from movement of spoil (if vehicles left uncovered), stockpiles and movement of materials to and from stockpiles and the general movement of materials around ancillary facilities. Emission sources would primarily be a result of work vehicles (heavy and light) moving materials to and from ancillary facilities and to the construction site.

7.11.2 Mitigation measures and controls

Dust and air quality has been identified as a low risk for the Project and as such has required the preparation of a ERAP as per the CEMF requirement. The ERAP (Table 7-3) summarises the main mitigation measures and environmental controls to address these items.

Table 7-3 Dust and air quality ERAP

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
DA1	Spraying formations and exposed work areas to suppress dust using water carts, tankers and other suitable equipment	Construction Supervisor All personnel	During works
DA2	Minimise traffic on exposed areas – create designated haul roads	All personnel	Prior to works

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
DA3	When using machinery to handle dusty/dust-generating materials, minimise the distance between where the material is stored and its final location	All personnel	Prior to works
DA4	Cover haul vehicles loads & ensure tail gates are closed when operating on public roads. Vehicles carrying loose or potentially dusty material to or from the Project area would be adequately covered	All personnel	During works
DA5	Water would be sprayed on unsealed access roads and open areas during conditions conducive to dust generation	All personnel	During works
DA6	On-site vehicle speed limits would be established and enforced to prevent dust emissions	Construction Supervisor	Prior to works During works
DA7	Water-assisted dust sweepers would be used on internal access tracks and local roads, to remove material tracked out of the Project area	Construction Supervisor	During works where required
DA8	Stockpiled material would be appropriately managed and shaped to reduce wind erosion and covered as appropriate	Construction Supervisor	During works where required
DA9	Stockpiles containing contaminated material would be bunded and covered when not being actively managed, and removed from site as soon as possible in accordance with contaminated waste procedures	Construction Supervisor	During works where required
DA10	During extreme weather events where dust generation cannot be effectively minimised (such as high winds), dust generating works would cease until adequate controls can be implemented or until adverse weather conditions subside	Construction Supervisor	During works where required
DA11	Demolition of buildings and structures would be carried out using techniques and practices that minimise dust generation. This may include soft stripping inside buildings before demolition.	Construction Supervisor ESTR	Prior to works During works where required
DA12	Provide shaker grids or rumble strip at site egress points or similar such as aggregate at entrance points to site *Note: where aggregate is used, minimum size is 150mm*	Construction Supervisor	During works
DA13	Remove mud from haul vehicles prior to entering public roads. A wheel cleaning/washing system may be established for vehicles entering/leaving sit	All personnel	During works
DA14	Remove spilt mud by construction equipment or vehicles on public roads	All personnel	During works
DA15	Reprogram dust generating work during periods of high wind	Construction Supervisor	During works
DA16	Provide awareness training in the need to minimise dust during site inductions and toolbox talks	Environmental and Sustainability Manager Environmental Adviser	Prior to works
DA17	Regular visual monitoring of dust generation	Site Manager Construction Supervisor	During works

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
DA18	Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes. Maintenance of Plant & Equipment as per manufacturers requirements	Construction Supervisor	Prior to and during works
DA19	Plant, machinery and vehicles would be turned off while not in use, where safe to do so	All personnel	During works
DA20	Equipment (including all internal combustion engines) would be properly maintained and would run efficiently to ensure exhaust emissions are minimised, where practicable	All personnel Site Supervisor	During works
DA21	Construction plant, machinery or vehicles producing excessive visual exhaust would be turned off, tagged 'out of order' and not used	All personnel	During works
DA22	All emission controls used on vehicle and equipment would comply with standards listed in Schedule 4 of the Protection of the Environment Operations (Clean Air) Regulation 2010	All personnel	During works
DA23	Construction site layout and placement of plant would consider air quality impacts to nearby receivers.	All personnel	During works
DA24	In the event that odour emissions are generated, work would cease until the source and nature of the odour can be determined and an appropriate course of action carried out. This may include further assessment to determine potential impacts on the nearest sensitive receptors.	All personnel	During works
DA25	If air quality complaints occur as a result of works, works would cease and dust/odour generating activities would be re-assessed to reduce community impact	ESTR	During works

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.12 Visual amenity

7.12.1 Potential impacts in relation to construction

The EIS Chapter 9 concluded that visual impacts during construction is high however the nature of the works is temporary. The following visual elements have been considered and their impacts:

- From the surrounding streetscape, site hoarding and fencing are anticipated to be visible surrounding rail corridor construction.
- Within the streets, visible construction elements include site shed, site hoarding, noise attenuation fencing and fencing of work sites, car parking facilities, mobile construction equipment, lighting and elevated work platforms including cranes and scissor lifts

- The removal of trees and vegetation to allow for the Marian Street entrance, the concourse, the roadworks on Little Eveleigh Street, and the new car park off Eveleigh Street.
- Road works and associated landscaping would be visible within the upgraded streets of Little Eveleigh Street and Marian Street.

The Consistency Assessment (approved by TfNSW on 17 December 2020) raised the following:

- Some loss of visual amenity is noted with the removal and pruning of additional vegetation, although impacts are considered minimal due to the extent of the work
- Potential light pollution from temporary lighting impact from additional laydown areas and associated vehicular movement to these locations is anticipated to be minimal based on the locations being distanced from receivers

7.12.2 Mitigation measures and controls

Visual amenity has been identified as a low risk for the construction phase of the Project and as such has required the preparation of an ERAP as per the CEMF requirement. Longer term and/or operational visual impacts, have been addressed in the Urban Design and Public Domain Plan through Design planning.

The visual amenity ERAP (Table 7-4) summarises the main mitigation measures and environmental controls to address construction visual impacts.

Table 7-4 Visual amenity ERAP

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
VA1	The maintenance of outward facing elements of site hoarding or noise barriers, including the removal of graffiti and weeds	Site Supervisor	During works
VA2	Boundary screening made from plywood and acoustic attenuation barriers must be erected around all ancillary facilities that are adjacent to sensitive receivers for the duration of construction of the Project. Location and arrangement of the screening will be considered to assist in reducing impacts to sensitive receivers.	Site Supervisor	Prior to and during works.
VA3	Wherever feasible and reasonable, vegetation around the perimeter of the construction sites will be maintained	Environmental and Sustainability Manager	During planning of works and to be implemented during works
VA4	Temporary site lighting, for security purposes or night works will be installed and operated in accordance with AS4282:1997 Control of the Obtrusive Effect of Outdoor Lighting	Site Supervisor	Prior to and during works
VA5	Provide cut-off or directed lighting within the construction areas, with lighting location and direction considered to ensure glare and light spill is minimised.	Lead Engineer Site Supervisor	During planning of works and to be implemented during works
VA6	Community artwork, graphics and images to enhance the visual appearance of temporary works in high visibility locations	Environmental and Sustainability Manager	During planning of works and to be implemented during works
VA7	Signage on fencing or hoardings surrounding construction ancillary facilities must include the SSI name and application number	Environmental and Sustainability Manager	During planning of works and to be implemented during works

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
		Community and Stakeholder Engagement Representative	
VA8	Community information, including contact numbers for enquiries / complaints must be available on site boundary fencing / hoarding at each construction site and ancillary facility before the commencement of construction. This information must also be provided on the website.	Community and Stakeholder Engagement Representative	During planning of works and to be implemented during works
VA9	Construction activities undertaken in proximity to businesses would maintain visibility of business frontage, associated signage and access points, where possible. Temporary signage would be provided in the vicinity of a business if construction works obstruct views to the business. Business impacts resulting from changes to amenity or access would be managed in line with mitigation measures identified for other relevant environmental issues.	Environmental and Sustainability Manager Community and Stakeholder Engagement Representative	During planning of works and to be implemented during works
VA10	Relevant safety and environmental control measures, including signage with relevant safety and site information would be installed	Environmental and Sustainability Manager Site Supervisor	Prior to and during works
VA11	The design of all temporary works will require TfNSW approval in relation to urban design and visual impacts and TfNSW will stipulate the design of hoarding artwork, including NSW Government logos and branding	Project Leader Environmental and Sustainability Manager TfNSW Representative	During planning of works and to be implemented during works
VA12	Construction hoardings, scaffolding and acoustic sheds will be regularly inspected for defects and repaired and kept clean and free of dust build up. Graffiti on construction hoardings, scaffolding or acoustic sheds will be removed or painted over promptly in line with the following timeframes: - Offensive graffiti must be cleaned or covered within 24 hours - Highly visible yet non-offensive graffiti must be cleaned or covered within one week - Graffiti that is neither offensive nor highly visible must be cleared or covered during normal operations within	Site Supervisor	During works
VA13	The principles of Crime Prevention Through Environmental Design will be applied to all works, including temporary works that have a public interface.	Project Leader Environmental and Sustainability Manager	During planning of works and to be implemented during works
VA14	Minimise clearing of vegetation and undertake replacement planting where required in consultation with Stakeholders	Environmental and Sustainability Manager Lead Engineer Design Lead	During planning of works and to be implemented during works
VA15	Where appropriate, use landscape and structural screening treatments including screening fences, and vegetation screening	Environmental and Sustainability Manager	During planning of works and to be implemented during works
VA16	Provide well-presented and maintained construction hoarding and site fencing with shade cloth (or similar material) (where necessary) to	Lead Engineer Design Lead	During planning of works and to be implemented during works

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
	minimise visual impacts on key viewpoints during construction. The construction ancillary facilities would be designed to limit or deter graffiti. Hoardings, site and acoustic fencing would be removed following construction completion.		
VA17	Ancillary facility gates will be kept locked when the facility is not in use, and the boundary fence will be maintained during occupation of the facility.	Lead Engineer Design Lead	During planning of works and to be implemented during works
VA18	The telephone number, postal address and email address required under Condition B6 of this approval must be made available on site boundary fencing / hoarding at each construction site and ancillary facility before the commencement of Work and for the duration of construction. This information must also be provided on the website required under Condition B10 of this approval		

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.13 Waste Management

7.13.1 Potential impacts in relation to construction

Chapter 21 of the EIS concluded the following impacts:

- Project construction activities are expected to generate reasonable volumes of waste, primarily spoil.
- The EIS states that opportunity for waste material to be re-used should be considered to mitigate against additional waste going to landfill
- Waste materials should also be classified correctly against relevant government and construction guidelines, such as EPA waste classification guideline for soils, to minimise adverse environmental implications to the Project area and surrounding receivers
- All waste generated should be regularly removed from site as required by licenced contractors, in order to prevent potential issues associated with odour generation, decreased visual amenity and creating environments that attract animals/pest species
- Neither the EIS nor the SMP have office waste predictions. Office waste predictions range up to 18 tonnes per month dependant on site activities. Estimated spoil and waste volumes are captured in the Soil, contamination and water management plan and also the RtS.

The Consistency Assessment (approved by TfNSW on 17 December 2020) raised the following:

- Ground breaking works associated with the removal of tree stumps and root structures as part of the vegetation scope and temporary local utility supplies for the Novo Rail Temporary Office may potentially expose waste classification types other than general solid waste (GSW)

7.13.2 Mitigation measures and controls

Waste management has been identified as a low risk for the Project and as such has required the preparation of a ERAP as per the CEMF requirement. The ERAP (Table 7-5) summarises the main mitigation measures and environmental controls to address these items.

Table 7-5 Waste Management ERAP

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
W1	Establish an area on site for regulated materials to be handled (where required) and temporarily stored in a secure manner	Construction Supervisors	Prior to works
W2	Regulated waste area to be clearly signed and isolated/ barricaded	Construction Supervisor Project Engineers	During planning of works and to be implemented during works
W3	Awareness training, inductions and information will be provided to project personnel in relation to waste management including temporary storage of regulated waste, waste classification, transport and disposal of regulated wastes (where required)	Environmental and Sustainability Manager Environmental Adviser	Prior to works
W4	Waste classification of suspected Regulated Waste is to be undertaken by competent persons	Environmental and Sustainability Manager	During works
W5	Third-party lab analysis to be undertaken as required for waste classification purposes to determine required transport means and a suitable waste facility to lawfully accept and dispose/treat the material	Environmental and Sustainability Manager Third-party laboratory personnel	During works
W6	EPA Licensed Waste Contractor is required for the transport of Restricted Solid Waste and/or Hazardous Waste for quantity amounts in excess of 200kg/litres	Environmental and Sustainability Manager EPA Licensed Waste Contractor	During works
W7	Registration as a transporter of Asbestos Waste and utilisation of Waste Locate for the transport of >100kg of asbestos soils (non-friable) or 10m2 of asbestos sheeting (non-friable) and any quantity of friable waste	Environmental and Sustainability Manager	During works
W8	No more than 5 tonnes of liquid waste or special waste (other than waste tyres) Restricted Solid Waste and/or Hazardous Waste generated off-site can be stored at the project site	Environmental and Sustainability Manager	During works
W9	Regulated waste tracking documents, i.e. Consignment Authorisation Notices (CANs) are to be provided prior to waste leaving the project site	Contractor/waste transporter	During works
W10	Maintain and update a Waste Management Register	Environmental and Sustainability Manager Sustainability Lead/Adviser	During works
W11	All waste materials removed from the sites will be directed to an appropriately licensed waste management facility	Environmental and Sustainability Manager Sustainability Lead/Adviser	During works

Ref. #	Environmental controls / mitigation measures	Responsible person	Timeframe for implementation
W12	The use of raw materials (noise hoarding, site fencing, etc.) will be reused or shared, between sites and between construction contractors where feasible and reasonable	Sustainability Lead/Adviser Site crew	During works
W13	Recyclable wastes, including paper at site offices, will be stored separately from other wastes.	Environmental and Sustainability Manager Sustainability Lead/Adviser	During works
W14	Construction personnel to keep the construction areas clean and tidy, including refuse placed in appropriate waste bins.	All personnel	During works
W15	Stockpiled wastes located at ancillary facilities would be: - appropriately segregated to avoid mixing and contamination - appropriately labelled - appropriately stored to minimise risk of erosion - less than three metres in height with an appropriate height to length batter ratio (e.g. 1:3) - located as far away as practical from sensitive receivers, ecological areas and watercourses.	Site Supervisor All personnel	During planning of works and to be implemented during works
W16	Stockpile heights at ancillary facilities will be minimised where possible to be not visible above the fence line (line of sight), or if not possible, covered.	Site Supervisor All personnel	During planning of works and to be implemented during works
W17	All waste would be assessed, classified, managed and disposed of (where they cannot be re-used) in accordance with the Waste Classification Guidelines (NSW EPA, 2014a).	Site Supervisor All personnel	During planning of works and to be implemented during works
W18	All waste generated would be regularly removed from site as required by licensed contractors, in order to avoid potential issues associated with odour, visual amenity and attracting animals/pest species	Site Supervisor All personnel	During works
W19	Outline that waste generated within the Project area would be segregated at source and suitably stored in designated waste management areas within the Project area	Site Supervisor All personnel	During works

The conclusions of the approved Redfern Station Upgrade – New Southern Concourse Environmental Impact Statement (Transport for NSW, May 2020) have been considered when developing and reviewing the Environment and Sustainability Risk and Opportunity Register (Appendix C). Mitigation measures and controls have also been incorporated into the Environment and Sustainability Risk and Opportunity Register (Appendix C). These measures and controls would be communicated and applied through the ECMs, toolbox talks and pre-starts.

7.14 Dangerous Goods

7.14.1 Potential impacts in relation to construction

Dangerous goods are classified on the basis of immediate physical or chemical effects, such as fire, explosion, corrosion and poisoning. An accident involving dangerous goods could seriously damage property or the environment.

Potential impacts on the environment can be just as devastating: killing organisms in a lake or river, destroying animals and plants in a contaminated area, causing major reproductive complications in animals, or otherwise limit the ability of an ecosystem to survive. Certain hazardous substances also have the potential to explode or cause a fire, threatening animal populations.

Some hazardous substances produce toxic effects in the environment after a single, episodic release. These toxic effects are referred to as the acute toxicity. Other hazardous substances produce toxic effects in the environment after prolonged exposure to the substance, which is called chronic toxicity.

7.14.2 Mitigation measures and controls

The following mitigation measures should be implemented to achieve the nominated environmental
outcomes and performance criteria. Relevant approvals and mitigation measures which are required to undertake the task will be compiled in site specific documents.

- Undertake the storage and transport of any hazardous materials or dangerous goods (including fuel and hazardous waste) in accordance with relevant Australian standards, legislative requirements, and guidelines
- Safety Data Sheets (SDS) must be kept on site for all hazardous materials and dangerous goods
- Undertake refuelling and maintenance activities within designated bunded areas to minimise the potential for soil and water contamination from these activities
- All chemical and fuel storage areas are to be designed to comply with Australian Standards, including Australian Standard (AS) AS 1940: Storage and Handling of Flammable and Combustible Liquids 2004 and AS 3780: The Storage and Handling of Corrosive Substances 2008
- Spill response equipment commensurate of the type and quantity of hazardous substances being stored is provided at appropriate locations on site, in close proximity to storage and handling areas
- Undertake refuelling and maintenance activities in appropriately located designated bunded areas to avoid the potential for soil and water contamination
- Undertake regular inspections of tanks, bunds and storage areas to ensure the integrity of all facilities

8 Organisational structure, resources and responsibilities

The safeguard of the environment under the Project encourages the individual commitment and drive from all personnel of varying levels to implement this CEMP. Roles and responsibilities in implementing these environmental controls and their relationship with the ER are summarised in Table 8-1.

The Project Manager is ultimately responsible for ensuring that the specific roles and responsibilities as well as lines of report for the project are clearly defined and communicated to all relevant personnel. A dedicated Environmental and Sustainability Team exists within the structure and reports to the Alliance General Manager. The Team comprises of an Environmental and Sustainability Manager, an Environmental Adviser and a Sustainability Adviser. It is the responsibility of the Environmental and Sustainability Manager to implement this CEMP.

Subcontractors, subcontractor employees and subcontractor systems, will need to comply with the subcontractor agreement, Novo rail systems and requirements, approved EIS, approved CoAs as well as this CEMP. Subcontractors are required to adopt the same responsibilities including the requirement to report environmental incidents and issues to the Environmental team.

A summary of Project staff and an indicative organisation chart is captured in Role and Responsibilities (TAP04-PLN-MG-0004).

TfNSW will engage an independent Environmental Representative (ER) to provide oversight of environmental and planning performance and assist with achieving compliance with the Project Approval, management plans, and relevant legislation and policy. The role and responsibilities of the ER will be consistent with DPIE's Environmental Representative Protocol (DPIE, 2018) and will undertake the following, along with any additional roles as required under the Project Approval:

- Review, provide comment on, endorse and/or approve (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, relevant standards and this CEMF
- Monitor, recommend improvements and report to TfNSW, Novo Rail and DPIE on the implementation and performance outcomes of the above-mentioned documentation and other relevant documentation
- Make written statements to DPIE regarding the approval and implementation of the abovementioned documentation, or other relevant documentation required by DPIE
- Provide independent guidance and advice to TfNSW, Novo Rail and DPIE in relation to environmental risks and compliance issues and the interpretation of planning approval conditions
- Consider and recommend to TfNSW, Novo Rail and DPIE any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community
- Provide advice on environmental incidents, non-compliances and the Contractor's corrective and preventative actions
- Undertake regular site inspections including additional inspections for critical or high-risk construction activities, unexpected environmental impacts, incidents or emergencies,
- Ensure that environmental monitoring and auditing is undertaken in accordance with all relevant project requirements
- Be the principal point of advice for the DPIE in relation to all questions and complaints concerning the environmental performance of the project
- Provide monthly reporting to TfNSW and DPIE on the ER's activities and environmental performance and compliance of the Project.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.13, pg. 12 & 13)

Table 8-1 Roles and responsibilities

Role	Item	Responsibilities	Relationship with ER
Project personnel undertaking work activities	Daily/shift preparation activities	Pre-work briefings, plant start-up checks and tool-box talks addressing environmental controls	No direct relationship/interaction with the ER on a regular basis. May interact with the ER when the ER is undertaking site inspections or audits.
Line Supervisors		Periodic daily site inspections	No direct relationship/interaction with the ER on a regular basis
Supervisors/Site Engineers/ ESTR /Management Representatives	Inspections	Internal weekly environmental and sustainability inspections	The Project personnel have minimal to no interaction with the ER in this context as it relates to internal inspections
Supervisors/Site Engineers/ESTR/Management Representatives/TfNSW Representative		TfNSW monthly environmental inspections	The Project personnel may have regular interaction with the ER in this context as it relates to external inspections, more specifically with TfNSW staff. The relationship of the ESTR and the TfNSW team with the ER is more direct and occurs on a regular basis. Environmental issues and performance monitoring is relayed to and from the ER to the relevant parties.
Supervisors/Site Engineers	Maintenance of local environmental controls	Signage and up-keep of no-go zones through barricades, bunting, etc; re-stocking of spill response equipment and maintenance of skip/bin covers and hessian screening of fencing for the containment of dust within the project work-zones and the maintenance of drain-covers and siltation fencing	No direct relationship/interaction with the ER on a regular basis. May interact with the ER when the ER is undertaking site inspections or audits.
Site Engineers/ESTR/ER	Monitoring	Tracking of waste movement, wastewater discharge; environmental noise and vibration; local air quality; heritage preservation/conservation; ensure that environmental records and files are collected and maintained	The ER would regularly monitor the compliance and overall environmental performance in accordance with the CoAs. The ER would liaise closely with the TfNSW and ESTR to achieve monitoring requirements.
Line Supervisors/Site Engineers/ ESTR/Management Representatives	Risk management	Contributions and input in actively identifying environmental hazards and assessing the extent of risks and the identification of suitable control measures; liaise with project personnel on environmental	No direct relationship/interaction with the ER on a regular basis. May interact with

Role	Item	Responsibilities	Relationship with ER
		issues, including the written notification of environmental issues (incidents, emergencies or deviations from this Plan);	the ER when the ER is undertaking site inspections or audits. The ER may interact with TfNSW and ESTR staff in relation to environmental issues.
ESTR/Management Representatives/ER	Monitoring	Tracking of legislative and regulatory compliance including Planning Approval requirements under the Project; ensure compliance with all relevant statutes, regulations, rules, procedures, standards and policies; report on the performance of the system and improvement opportunities;	The ER is required to track and monitor compliance under the CoAs. They would accomplish this through direct interaction and close co-ordination with the ESTR
ESTR/Management Representatives including Commercial		Tracking of compliance with contractual obligations under the Project	The ER is required to track and monitor compliance under the CoAs. They would accomplish this through direct interaction and close co-ordination with the ESTR
Project personnel undertaking and/or influencing work activities/ESTR	Hazard Reporting/Incident Notification/Non-compliance reporting	Pro-active hazard and incident/complaint reporting to Line Supervisors and Environmental Representatives for actioning; ensure that environmental issues, including non-compliances, and environmental incidents are recorded, and written reports provided to the TfNSW Representative and Environmental & Sustainability Manager within timeframes commensurate with the extent and nature of the non-compliance, and/or environmental issues. Refer to Environmental Incident Classification and Reporting - 9TPPR-105	The TfNSW, the Department and the ER must be notified within the specific timeframes (Section 10.2) for environmental incidents. Environmental issues and non-compliances will be communicated in accordance with the project's reporting protocols. The ESTR has overall responsibility to report to relevant parties.
Line Supervisors/Site Engineers/ESTR/Management Representatives/ER	Resourcing	Ensuring adequate resourcing (labour, pollution control equipment-bunding, acoustic noise enclosures, stormwater protection materials; information technology such as electronic devices and applications; knowledge-base and expertise) is budgeted and in place for managing environmental risks; ensure that environmental controls, materials and equipment are maintained	N/A
Project personnel undertaking and/or influencing work activities/ER	Training/learning	Delivery and participation in environmental workshops an training, e.g. spill-response drills for site environmental incidents; ensure that all personnel on site receive appropriate environmental induction and training and are aware of their environmental responsibilities under relevant legislation and the contract	N/A
Project personnel undertaking work activities; Line Supervisors/Site		Implementation of lessons learned including collective insights	N/A

Role	Item	Responsibilities	Relationship with ER
Engineers/ESTR/Management Representatives			
Management Representatives	Change management	Introduction of new/altered processes of significance; change in scope impacting on the controls under the project; significant internal restructuring; legislative and regulatory change impacting upon the project	The ER is required to review an array of documentation under the CoAs including this CEMP and CEMP Management Plans. Changes that involve significant internal restructuring and legislative changes may impact on these documents. The ESTR may be required to make significant changes to documents that the ER is required to review.
Procurement and ESTR	Audits	Vendor audits of the supply chain (moderate-high risk activities)	N/A
Quality and ESTR		Internal audits for assessing performance against environmental compliance obligations (legislative and regulatory, contractual, system)	N/A
Independent Auditor; TfNSW		External audits (as above)	N/A
ESTR		Sustainability audits as required. See the Sustainability Management Plan	N/A
Alliance Leadership Team	Management review/Performance	Management review (six-monthly intervals at a minimum) of environmental performance	N/A
ER	Key responsibilities	Provide oversight of environmental and planning performance and assist with achieving compliance with the Project Approval, management plans, and relevant legislation and policy. Refer to Sections 3.10, 3.13 of the CEMF and CoA A29 for further details.	N/A

9 Training and competency

9.1 Training requirements

Requirements for training, awareness and competency for environmental risks and opportunities for the Project are outlined in this Plan. This Section would be reviewed and updated, where necessary, to ensure relevance to Project.

Environmental requirements will be communicated to employees during site induction and on-going training via tool box meetings, pre-start briefings, notifications and the like.

Workforce personnel are to receive induction and training and/or awareness in the following:

- Applicable Environmental and Sustainability Policies and Commitments
- Site environmental objectives and targets
- Understanding individual authorities and responsibilities
- Site environmental rules and hold points
- Potential consequences of departure from rules
- Emergency procedure and response (e.g. Spill clean-up)
- Basic understanding of their legal obligations
- Sustainability in regard to specific training and learning requirements.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.11, pg. 11)

All Novo Rail project personnel will be provided with training in the requirements and implementation of this CEMP. All training and tool box meeting attendance will be recorded through a sign-off sheet.

All employees, contractors and subcontractors would receive an environmental induction. As a minimum the induction must include:

- all relevant Project specific and standard noise and vibration mitigation measures
- relevant licence and approval conditions
- permissible hours of work
- any limitations on noise generating activities with special audible characteristics (noise with characteristics that can cause annoyance and disturbance, containing noticeable factors such as tonality, low frequency noise, impulsive or intermittent noise events)
- location of nearest sensitive receivers
- construction employee parking areas
- designated loading/unloading areas and procedures
- site opening/closing times (including deliveries)

- environmental incident procedures and complaint handling procedures.

Note: Sustainability training requirements are covered in the Sustainability Management Plan (TAP04-PLN-MG-0011).

Toolbox talks will be held on a regular basis and as required in line with the risk profile in order to provide a project or site wide update, including any key or recurring environmental issues. An indicative list of training topics is outlined in Table 9-1 with details of training topics covered in the Environmental and Sustainability Management Register. Training is required for all personnel and is communicated in the Project induction and regular toolbox talks.

A Training Needs Analysis will be conducted which:

- Identifies that all staff are to receive an environmental induction and undertake environmental awareness training
- Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans
- Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements
- Implements and documents as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.11, pg. 11)

Table 9-1 Toolbox talks

Training	Description
Emergency spill response	This topic addresses the use and location of spill kits, spill control, emergency response procedures, presentation and assessment, spill response drills, and identification of hydraulic hose fatigue.
Erosion and sediment control	This topic addresses the communication of standard erosion and sediment controls from the 'Landcom Blue Book', the implementation of these controls onsite and communication of the Erosion and Sediment Control Plans (ESCPs). This includes stormwater drain protection measures such as geofabric covering, sandbags and visual monitoring.
Heritage awareness	This topic addresses the procedures and processes around stopping of works, reporting protocols for the discovery of previously unknown heritage and archaeological items, protection of existing heritage items/fabric and mitigation measures to reduce heritage impact.
Contamination awareness	This topic addresses the communication of contamination status of the site and the stop works protocols for unidentified potential contamination (i.e. hydrocarbons, asbestos, etc)
Environmental legal and compliance obligations	This training involves communication of the requirements under the POEO Act and compliance obligations captured in the Project Compliance Matrix, any applicable finds and prosecutions, and environmental incident notification and reporting requirements.
Air quality	This topic addresses environmental controls to minimise potential dust impacts at the project site e.g. dust suppression, covering stockpiles and/or excavated areas, application of shade cloth and similar
Noise and vibration	This topic addresses potential noise sources generated at the project site and control measures for implementation purposes e.g. working within OOHW permits and application of acoustic attenuation controls such as noise barriers and shrouds for plant/equipment.

Biodiversity	This topic addresses the wildlife status of the Project and surrounds, protocols of when to stop work and reporting procedures for injured wildlife, measures to stop feral animals coming to site, and vegetation clearance footprints. This Observance of tree protection for trees required to be retained under the project.

9.1.1 Visitors

Visitors to site will be accompanied at all times while onsite by a fully inducted person, and that visitors obey all site rules. Hosts are responsible for the actions of and conduct of their visitors and will need to ensure that visitors undertake a visitor induction.

Visitor inductions typically cover:

- Key health and issues including emergency response procedures
- Key environmental issues such as identified and mapped environmentally sensitive areas
- Exclusion zones
- Minimum PPE requirements for site
- Hazard reporting
- Site access/egress
- Site amenities.

Visitors will be required to participate in and sign onto the daily pre-start discussions.

9.1.2 Subcontractors

Novo Rail will check subcontractors for compliance to their own safety systems as well as alignment with the principles in this CEMP and the CoAs before subcontractor engagement. This will form part of pre-qualification evaluation and the continual assessment throughout their engagement.

Subcontractors are required to be fully inducted onto the project as well as show an understanding of the environmental risks, procedures, mitigation measures and compliance requirements, including the CoAs. A record of all subcontractors inducted onto site and the Project will be maintained.

Subcontractors are ultimately are responsible for the selection, screening, training and verifying competency of their own staff, as well as maintaining and providing (when requested) all records of inductions and training of staff.

9.2 Competency requirements

All project staff are required to have their licences (e.g. Drivers licence) and relevant tickets (e.g. general construction induction card, RIW card, etc).

Copies of certificates of competency for the operation of plant will need to be provided and retained by Novo Rail, as well as verification of competency to operate plant for its intended use. Tickets and licences would need to be kept on the person and be available for inspection throughout the Project.

All records of inductions, licences, tickets, certificates and permits, are recorded in the project's training and competency matrix as well as copies retained in Novo Rail's records management system.

Contractors' competency in the use of the CEMP would be determined via the induction (i.e. key sections of the CEMP and induction requirements included with a question based quiz at the end). Induction records would be kept and maintained as evidence of competency.

Toolbox talks would also capture key requirements of contractor competency as this includes workshops, live scenarios and discussions with the team. Evidence of competency would be captured via the Toolbox talk sign-on sheet.

10 Emergency preparedness and response

During emergency events and incidents, the client, the ER and relevant agencies will also be informed as per the emergency response and incident management procedures detailed in this Section. Emergency Services contact numbers available at the main project site office and active work zones as required. The emergency response process is to be periodically tested via an environmental emergency drill at intervals not exceeding 12 months and/or as specified under the Project's CoAs.

An environmental incident is an occurrence or set of circumstances, as a consequence of which:

- pollution (air, water, noise, or land) has occurred, is occurring, or is likely to occur
- an adverse environmental impact has occurred, is occurring, or is likely to occur.
- causes or threatens to cause material harm
- may or may not be or cause a non-compliance.

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 incident management process will be established as part of the CEMP and will be prepared in accordance with the TfNSW Environmental Incident Classification and Reporting Procedure, DMS-PR-105.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.12, pg. 12)

Potential emergency scenarios with preparation and response measures are captured in Appendix G.

10.1 Site Shutdown Planning

Site shutdown periods must be planned and coordinated to ensure the risk of environmental impact is minimised. Shutdown periods are considered to be any period in which construction activities are not planned to take place on the site for more than 3 consecutive days, excluding possession related work. This includes public holidays and RDO periods.

Planning activities must ensure that inspections, resources and contingency measures are agreed and implemented for the shutdown period. This includes mitigation measures such as on-call project personnel for environmental incidents, on-going weather monitoring, additional erosion and sediment control measures in place including surplus materials and inspections prior, during and post unfavourable weather conditions.

The process will address the following:

- Emergency Services contact information to be made readily accessible through appropriate means to relevant workforce personnel and the contact information is to be maintained through the life of the Project.
- All applicable workforce personnel are to be made aware of their responsibilities in managing incidents and emergency preparedness and response.
- The process to define a classification system for incident and emergency types based on set criteria including legislative and regulatory requirements and potential or actual environmental impact and impact on property and infrastructure. Consideration is to include items such as the nature of on-site hazards (e.g. flammable liquids, storage tanks, compressed gasses) and the most likely type and scale of an incident and/or emergency situation.
- Incident and emergency notification and reporting requirements to relevant external parties, where required including, but not limited to TfNSW, the ER, NSW EPA, DPIE or EES, Local Government, Ministry of Health and SafeWork NSW.

The process is to also include other stakeholders, where applicable such as owners or occupiers, impacted by the incident and/or emergency.
- An outline of appropriate escalation processes for incident types
- Suitable personnel are to be nominated under the process that hold the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of the EPA).
- Information in the handling of hazardous materials and which is to be contained in the SDS file or similar means.
- Scenario-based drills for assessing the effectiveness in managing incident and emergency response situations are be undertaken at a minimum every 12 months and as required. This frequency interval may need to be revised in accordance with project specific CoAs.

The environmental incident management process will also include a pro-active component in addressing potential environmental incidents. This includes the observation of a range of activities including environmental and sustainability inspections at periodic intervals proportionate to risk, noncompliance events that don't necessarily trigger an incident and the observance of hold-points. This will include a requirement that good site practices be acknowledged and reported to encourage a bestpractice culture within the environmental and sustainability field.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.12, pg. 12)

10.2 Incident management

An incident is defined as an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance (Definitions, CoAs).

An environmental emergency or incident may include:

- Pollution to land or water from a spillage or leak of a substance
- Unauthorised harm or damage to native flora and fauna
- Failure of erosion and sediment control devices leading to pollution of waterways
- Unexpected finds of hazardous materials or heritage
- Damage to heritage items or protected flora or fauna species
- Any contractual or compliance breaches.

Incidents will be documented and addressed during the Project's asset life-cycle and through the Novo Rail Corrective and Preventative Action process as per the Project Quality Management Plan - TAP04-PLN-QA-0001 and through the TfNSW INX system in line with the Environmental Incident Classification and Reporting PR-105. Applicable information is also to be recorded using Laing O'Rourke's Impact Assurance application. Note: LOR Impact includes a NCR facility.

If an incident does occur, all project personnel are required to cease works immediately and follow the processes in line with the TfNSW Environmental Incident Classification and Reporting PR-105 procedure, and notification and reporting requirements outlined in this Section.

10.2.1 Incident notification and reporting

The management, investigation, reporting and notification process for environmental incidents, is to be undertaken in accordance with the TfNSW Environmental Incident Classification and Reporting - PR-105 and in line with CoA.

10.2.1.1 Incident notification

All environmental incidents must be immediately reported to ESTR who will verbally notify the TfNSW Environment representatives. The verbal notification must occur immediately on becoming aware of the incident. ER is to be notified of all incidents within the timeframe specified in Table 10.1 below. Additionally, the ER is notified through INX reporting and the Environmental Compliance Report.

Table 10-1 Incident classification matrix

Incident type	Impact on environment	Material Harm (Y/N)	Legal	Immediate internal notifications	External notifications	Report form*	Investigation
Class One (Actual/or potential Incident)	Incidents create permanent or long term damage to the environment. This damage will result in the environment taking 12 months or more to return to pre-existing conditions.	Y	Major environmental investigation and potential for large prosecution.	Novo Rail SPM; Manager, AGM; Laing O'Rourke Environmental Leader, HSE General Manager and Head of Legal via the Project Leader.	TfNSW Project Manager (immediate) TfNSW Environment and Planning Manager (immediate) TfNSW Senior Environment and Planning Manager (immediate) ER (immediate) State & Federal Authorities as required (immediate)	Environmental Incident and Complaint Report	Class 1 incidents shall be subject to an ICAM or Tap Root investigation.
Class Two (Actual/ or potential Incident)	Incidents create short to medium term damage to the environment.	Y	Potential for prosecution or infringement notice	Novo Rail SPM; Manager, AGM; Laing O'Rourke Environmental Leader, via the Project Leader. *(potential to result in regulatory action)*			Recognised investigation protocol
Class Three	Incidents typically cause short term or nuisance damage. The damage is easily rectified usually within one day. Class 3 incidents do not cause medium or long term damage	N	Potential for infringement notice	Novo Rail Project Manager or immediate supervisor and Project Environmental Adviser are to be informed.	TfNSW Project Manager (within 4 hours) TfNSW Environment and Planning Manager (within 4 hours) ER (within 4 hours)	EI&CR Report is at the discretion of the Project Manager in consultation with the ESTR	Follow-up inspection
Failures in hydraulic equipment	Note: Events typically proportionate to a class three	N		No immediate notification required, however it would captured in monthly reporting	Captured through monthly reporting process	Hydraulic Incident Notification	

*All incidents are to be directly recorded on INX (4 hours) and IMPACT (48 hours) of occurrence

The Department would be notified as soon as possible and no later than 24 hours after Novo rail and TfNSW becomes aware of an incident that caused or had the potential to cause material harm. The initial advice can be via telephone and must identify the SSI (including the application number and the name of the SSI), time, date, location and nature of the incident. Subsequent written notification is given to the Department and reports submitted to the Planning Secretary in accordance with Appendix I.

All Potential and Actual incidents, including complaints, must be reported so that they can be investigated and prevented from recurring. Where complaints are received involving the media or where the Project and company image is likely to be affected, they shall be documented on the HSE Internal Incident Notification form and logged into Consultation Manager. Complaints will be handled by a Community and Stakeholder Engagement Representative.

Management system environmental issues and recurring environmental incidents will be handled in accordance with the Laing O'Rouke iGMS procedure Continual Improvement Corrective and Preventative Action. Where an environmental non-compliance or incident is identified, corrective and preventive actions shall be developed and may include:

- Review and improve existing environmental controls and job safety analyses/ work method statements
- Site rehabilitation
- Increased site inspections and monitoring
- Modify construction or installation methods
- Increase environmental awareness including re-training and tool-box meetings.

Each incident shall be sufficiently investigated to allow specific and detailed corrective and preventative actions to be identified, actioned and closed out as outlined on the Environmental Incident and Complaint Report (EI&CR) (under the IMPACT system) or suitable alternative (ICAM, etc).

10.2.1.2 Incident reporting

Incident Reporting & Investigation from the project sites is to be recorded in IMPACT, LORA's Online Incident Investigation Reporting Tool and INX, TfNSW's reporting tool. IMPACT can be accessed from the LORA Intranet Home Page or remotely connected via the Internet where connection is possible and direct access to the LORA Intranet is not available. Incidents are to be logged in Impact within 48 hours of occurrence and INX within 4 hours of occurrence. For Class 1 and Class 2 incidents, an investigation must also be logged in IMPACT.

The Novo Rail Project Manager, Alliance Manager and the Laing O'Rourke Environmental Leader, HSE General Manager and Head of Legal shall be notified by telephone as soon as practicable after any Actual or Potential Class 1.

The Novo Rail Project Manager, Alliance Manager and the Laing O'Rourke Environmental Leader are to be notified in the event of Class 2 Incidents which have the potential to result in regulatory action.

HSE Internal Incident Notification shall be completed for all Actual & Potential Class 1 Incident within 24 hours of the incident occurring and sent (email/fax) to the Distribution List as below:

- ESTR (Novo Rail – Redfern Project)
- Project Leader (Novo Rail)
- Environmental Leader (LORA Representative)
- HSE General Manager (LORA)
- Head of Legal (LORA)

The NSW EPA must be notified immediately of all pollution incidents that cause or threaten "material harm" to the environment. "Material harm" to the environment is if the effect (or potential effect) from an incident on the health or safety of humans or ecosystems is not trivial and or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000. The notification would need to include information on:

- The time, date, nature, duration and location of the incident
- The location of the place where pollution is occurring or is likely to occur
- The nature, the estimated quantity or volume and the concentration of any pollutants involved
- The circumstances in which the incident occurred (including the cause of the incident, if known)
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution
- Other information prescribed by the regulations.

The following table details the order for emergency contacts in the instance of pollution incidents that constitute Material Harm (Table 10-2). The order of contact in the following table for emergency contacts will change depending on if there is an immediate threat to human health or property, in which case 000 would need to be contacted first before the others.

Table 10-2 Emergency contacts (TfNSW Environmental Incident Classification and Reporting Procedure - PR-105)

Authority	Contact number
DPE	131 555
Fire and Rescue NSW	000 / 1300 729 579
EPA environment line	131 555
Ministry of Health	1300 066 055
SafeWork NSW	131 050
City of Sydney	(02) 9265 9333 (24 hours)

Environmental incidents relating to the *Environmental Protection and Biodiversity Conservation Act* 1999 must be notified to the Secretary of the Department of Agriculture, Water and the Environment within 7 days of the event.

Senior Leaders Environmental incident review

For all Class 1 & Class 2 incidents, within 3 days the Project Manager will convene a briefing with the Alliance GM to provide an update on the incident investigation. This is to facilitate involvement and feedback from the Alliance GM as part of the investigation process. The briefing will include discussion on the progress of the investigation and any specific initial findings. A status report on any rectification work or maintenance activities to the relevant environmental controls will also be provided.

The following information relating to the incident investigation shall be forwarded to the Senior Business Leader/Area/Operations Manager and Regional HSE Manager.

- The condition of the environment and the status of any rectification or remediation works,
- The completed incident investigation report, including appropriate causal analysis and corrective actions,
- Program for the implementation of the corrective actions and any maintenance activities,
- A completed HSE Learning Bulletin template to be included in the monthly Learning Bulletin,
- Any other relevant information.

11 Communication and community engagement

Internal and external communication would be achieved via a number of mediums/methods for communication. These are summarised in Table 11-1.

Community liaison and complaints handling will be undertaken in accordance with TfNSW's Construction Complaints Management System and will include:

- The Contractor will manage complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly
- A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within 7 days.
    - **(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S4.4, pg. 17)**

The Communications Strategy/Community Liaison Management Plan (TAP04-PLN-CC-0001) has been approved prior to the commencement of any consultation between government agencies and other stakeholders. The Strategy describes the management and communication processes employed to satisfy, as far as practicable, the concerns perceptions and expectations of the stakeholders associated with the Project.

The Department and City of Sydney Council must be notified in writing of the dates of commencement of construction and operation at least five (5) business days before those dates. This is detailed in the Communications Strategy/Community Liaison Management Plan.

Generally, community notifications would be issued regularly and at a minimum monthly (as per the Communications Strategy/Community Liaison Management Plan). Notifications would outline forthcoming work activities, any impacts and work progress. Consultation with stakeholders will be ongoing during delivery of the Project as outlined in the Communications Strategy/Community Liaison Management Plan.

Notification of an indicative schedule of likely out-of- hours work will be provided at three monthly intervals within the regular community notification and notice of work activities and impacts included in the notices with an invitation for feedback.

Additional mitigation measures such as temporary alternative accommodation, will be offered/ made available to residents affected by out-of-hours Work (including where utility works are being undertaken for the SSI or Work is being undertaken during a rail possession or under a road occupancy licence). Offers of respite will be provided to any affected community in line with the CoA and CNVS.

Where complaints are received at project sites or workplaces involving the media or where the Project and company image is likely to be affected, they shall be documented on the HSE Internal Incident Notification form. Complaints will be reported to external authorities in accordance with specific approval requirements.

A complaints management system has also been established and would be maintained for the duration of the Project to facilitate community enquiries and manage complaints. The preferred management system selected for the duration of the Project is Consultation Manager. This system would be maintained for the duration of construction and for a minimum of 12 months following completion of construction of the SSI.

Table 11-1 External and internal communication methods

Internal communication	External communication
Internal communication is communication internally within the organisation between employees, subcontractors and visitors. Methods include: ■ Digital Contract Reviews ■ Management Reports ■ Site inspection Reports ■ Audit reports ■ Incident reports ■ Noticeboards ■ Site meetings ■ Employee induction, training and tool box sessions ■ Briefings, notifications and alerts.	External communication includes communications with the media, general public and Council. Direct communication with external parties regarding the project is not permitted. Methods include: ■ Site meetings with the TfNSW ■ All incidents notified to TfNSW ■ Project reports to client at progress meetings and in the Project Report ■ Meetings and correspondence with interested parties (e.g. Local council and NSW EPA) as necessary ■ Discussions with adjoining land owners / neighbours and the community who may be affected by the project.

12 Monitoring, measurement, analysis and evaluation

Environmental audits and inspections will be undertaken to evaluate compliance and system conformance to environmental management system and other requirements.

Note: for details on Sustainability audits and inspections required, refer to the Sustainability Management Plan (TAP04-PLN-MG-0011).

12.1 Audits

12.1.1 Internal

Where an environmental and/or sustainability audit is conducted, the outcomes of the auditing process will be provided to project team for review and the actioning of any environmental issues, including non-compliances. The relevant HSE Leader, in consultation with the project leadership team, will decide on the frequency, scope and timing of project/site internal audits. The audit will be carried out on a quarterly basis and an audit report will be issued to management for action. Actions will be followed up for close-out of actions within one (1) month of the issue of the audit report and/or as agreed by both parties prior to undertaking the audit process. Findings from the audit will also be included as part of Novo Rail's management review process.

Auditing of the project Environmental Management System will be carried out in accordance with the Laing O'Rourke Environmental System Requirement Compliance - Review and Assurance.

Internal audits for the Project would be carried out in accordance with the schedule summarised Table 12-1.

Internal environmental audits will be undertaken and will include:

- Compliance with any approval, permit or licence conditions
- Compliance with the CEMF, CEMP, SMP, sub-plans and procedures
- Community enquiry and complaint response
- Environmental training records
- Environmental monitoring and inspection results.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.15, pg. 13 & 14)

Table 12-1 Internal audit schedule

Monitoring type	Description	Frequency	Participants	Responsible for reporting
Audit	Undertaken by ESTR for assessing performance against environmental compliance obligations (legislative and regulatory, contractual, system, etc) and the compliance with this CEMP	Quarterly	ESTR	ESTR
	Laing O'Rourke Environmental Management System audit	As per Laing O'Rourke's schedule	ESTR Laing O'Rouke Environment team representative	ESTR

12.1.2 External

TfNSW would seek the written agreement of the Planning Secretary to the independent auditor(s) no later than one (1) month following commencement of Work and prior to the commencement of an Independent Audit. The Planning Secretary may direct TfNSW to undertake additional Independent audits when considered necessary to address a particular issue.

The *Independent Audit Post Approval Requirements (DPIE, 2020)* requires the first construction compliance audit within 12 weeks of commencement of Construction, and subsequent audits at no more than 26 week intervals thereafter. It is expected that the independent auditor would undertake at least 4 scheduled audits during the construction and operational handover periods (from December 2020 to December 2022).

External audits for the Project would be carried out in accordance with the schedule summarised in Table 12-2.

Table 12-2 External audit schedule

Monitoring type	Description	Frequency	Participants	Responsible for reporting
Audit	Independent compliance and system audits	Within 12 weeks of commencement of Construction, and subsequent audits at no more than 26 week intervals thereafter	Independent Auditor TfNSW representative ESTR	TfNSW / Independent Auditor
	Independent audit as a result of a written requirement or direction of the Planning Secretary, including in relation to an audit of the construction of the operation of the SSI	As advised by DPIE	Independent Auditor TfNSW ESTR	TfNSW / Independent Auditor
	ER audit as a result of a direction or request by DPIE	As advised by DPIE	ER TfNSW	ER

Monitoring type	Description	Frequency	Participants	Responsible for reporting
			ESTR	

12.2 Inspections

Environmental inspections provide an important function under the project in identifying and addressing environmental hazards and mitigating potential incidents and also in acknowledging good site practices being implemented at site. This process further facilitates and fosters knowledge sharing and positive behaviours and due diligence in mitigating risk through various solutions and innovations.

Regular environmental inspections would focus on environmental controls and implementation of the mitigation measures, including:

- Hoardings and boundary fences around construction areas
- Waste storage, collection and disposal practices
- Erosion and sediment controls
- Measures to prevent tracking of material onto the surrounding road network
- Temporary lighting orientated to minimise glare and light spill
- Vegetation protection measures
- Limit the potential for dust generation
- Chemical and fuel storage.
- Traffic Control Plan measures (including safe motorist, pedestrian and cyclist access).

12.2.1 Internal

Internal environmental and sustainability inspection activities are to be carried out as per the Projects Schedule available on the SharePoint page and as described below. The Schedule is to be made available to relevant Novo Rail Project staff and TfNSW to facilitate scheduled inspections throughout year. Internal Environmental and Sustainability Inspections are to be issued to the Project Leader overseeing the applicable works. Issues identified during the inspection requiring further action beyond normal practice or maintenance are to also be logged into IMPACT or retained in FieldView as defined in the project procedures.

Internal inspections for the Project would be carried out in accordance with the schedule summarised in Table 12-3.

Table 12-3 Internal inspection schedule

Monitoring type	Description	Frequency	Participants	Responsible for reporting
Inspections	An environmental inspection undertaken by the Site Leader and an ESTR to assess implemented	Weekly – requirement of the TSR Environmental Requirements Man-4 Inspection and Auditing credit	Site Leader ESTR	ESTR

Monitoring type	Description	Frequency	Participants	Responsible for reporting
	environmental controls and their adequacy.	*Note: inspections will alternate between day and evening shifts for construction*		

12.2.2 External

Alliance inspections are regularly carried out to ensure that environmental controls and the implementation of mitigation measures are maintained.

An Independent Environmental Audit Program will be prepared in accordance with Independent Audit: Post Approval Requirements (DPIE, 2020) and any Project Approval requirements
(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.15, pg. 13 & 14)

External inspections for the Project would be carried out in accordance with the schedule summarised in Table 12-4.

Table 12-4 External inspection schedule

Monitoring type	Description	Frequency	Participants	Responsible for reporting
Inspections	An regular environmental inspection undertaken by the Novo rail alliance team, TfNSW representatives and ER to assess implemented environmental controls and their adequacy.	Fortnightly (during construction)	TfNSW representative ESTR ER	ER
	ER inspections during possessions, during high risk activities, following incidents and in relation to complaints received.	Where advised	TfNSW representative ESTR ER	ER
	Acoustic advisor inspections during high risk noise activities. Inspections to generally align with TfNSW and ER regular inspections.	As required	AA ESTR	AA

12.3 Environmental Issues and non-compliances

An environmental issue is an 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 shall be recorded in the internal system-based folder. Environmental Issues are rectified through the regular review of practices and the addition of mitigation measures to prevent reoccurrence through means such as briefing the team via lessons

learned and training where required. Environmental Issues will be reported through the relevant project protocols and or directly as requested by TfNSW and the ER as necessary.

The following Environmental Issues are to be included within project systems as corrective actions:

- Outcomes from internal inspections that cannot be rectified immediately – actions nominated on the Inspection Report and Management H & S and Environmental Checklist (where applicable) – to be recorded in Field View
- Outcomes from ER inspections – actions to be recorded in the project's environmental actions register
- Environmental incidents and associated corrective actions – to be recorded in INX, project systems folder and Impact
- Findings from internal audit– Project Corrective Action Register and Impact
- Findings from client audits - Project Corrective Action Register
- Notices or action from regulatory authorities – to be recorded in Impact

A Non-compliance, for the purpose of this Project, is defined in the Conditions of Approval as an occurrence, set of circumstances or development that is a breach of the approval but is not an incident.

Where a potential non-compliance is identified, it shall be investigated and the ESTR will report this immediately to the TfNSW environmental representative and the ER.

Non-compliances will be reported to DPE in accordance with the project's reporting protocols. Non-compliances are also reported through the Environmental Compliance and Performance Report (ECPR).

Non-compliances shall be recorded and addressed by raising a non-compliance Report in INX and logged into IMPACT. Corrective actions will be developed to prevent recurrence.

> Corrective actions will be developed to rectify non-compliances and preventative actions in order to prevent a re-occurrence of the non-compliance. A register of non-compliances, corrective actions and preventative actions will be maintained. TfNSW or the ER may raise non-compliances against environmental requirements.
>
> **(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.16, pg. 14)**

The ECPR has been prepared 6-montly during construction. During final stages of construction, the final ECPR will report on an extended period in order to accommodate the last stages of works. At the time of writing, the final ECPR would include the period from July 2023 to March 2024, dependent on final scope of works. When final reporting period is confirmed, TfNSW will notify the AA, ER and the Planning Secretary on the submission of

the final ECPR. The ECPR will document project environmental performance, compliance related issues and the associated corrective and preventative actions and opportunities for improvement.

A Compliance Monitoring and Reporting Program will detail the schedule of compliance reporting to be undertaken in accordance with the Compliance Reporting; Post Approval Requirements (DPIE, 2020) and Project Approval requirements. The compliance reports will include evidence and any outcome of any environmental monitoring and environmental surveillance activity including internal and external audits (refer to Section 3.14). Compliance reporting will be reviewed and endorsed by the ER and provided to DPIE.

(Redfern Station Upgrade Response to Submissions Appendix C CEMF, S3.16, pg. 14)

12.4 Environmental performance monitoring and review

12.4.1 Environmental performance monitoring

As part of Novo rails commitment to ensuring continual compliance with the Project EMS, an environmental system self-check schedule has been developed Table 12-5. Monitoring requirements relevant to construction are identified in Table 12-6.

Table 12-5 Environmental System Self-Check

System requirement	Criteria	Frequency
Severe Environmental Risk Program	Program implemented and actions complete	Monthly
Site inspection implementation	Site inspections have been completed weekly where active construction works are being undertaken	
Event management	Environmental incidents and complaints have been reviewed, investigations completed and actions closed out.	
Waste management	Project waste management register is up to date including spoil management, logging of trackable wastes and recording of receiving facilities for recycling, reprocessing and disposal	

Table 12-6 Monitoring Program

Item	Scope	Frequency	Timing	Reporting
Noise and Vibration	Noise and vibration monitoring of construction will occur at the nearest sensitive receiver as defined in the Noise and Vibration Management Plan (TAP04-PLN-EN-0005). The noise and vibration monitoring data will be used to assess the adequacy of mitigation measures.	As required by the Noise and vibration management Plan	Duration of construction	Monthly environmental report
Waste	Waste tracking as detailed in the Waste Strategy (Appendix J) and in Section 7.14.	During generation of waste.	Duration of construction	Waste tracking register.
Weather forecasts	Monitoring of weather forecasts to determine when adverse weather conditions are predicted. Specific notifications will be made if: ▪ Winds >25 km/hr and/or ▪ Temperature >30ºC are forecast ▪ High rainfall events. This would assist in determining if implemented controls are sufficient i.e. able to withstand the conditions and contain enough capacity, to withstand extreme weather conditions	Daily checks of weather forecast.	Duration of construction	Email alerts Pre-starts
Traffic and transport	Road Safety Audits	At the 80 – 100% design stage (during the pre-construction period) Pre-opening inspection Operational audits as required by SCO, Traffic Management Centre or City of Sydney Council (during post-construction period)	Pre-construction As required	Road Safety Audit
	Road Condition Reporting	Once during the pre-construction period Once post-construction	December 2020 Mid 2022	Road Condition Report

12.4.2 Monthly reporting

The Novo Rail Environmental and Sustainability Manager is responsible for ensuring environmental and sustainability performance information is included as part of the monthly Project Report for TfNSW.

The Novo Rail Alliance's monthly report is to include the following:

- Summary discussion on key project risks and opportunities.
- Environmental performance outcomes, improvement initiatives or corrective measures
- Client and stakeholder feedback on project environmental performance
- Environmental incident and event management including the outcomes from incident investigations and tracking of corrective actions
- Specific sustainability content utilising TAP03 Sustainability Report template – refer to Sustainability Management Plan, TAP04-PLN-MG-001

Subcontracts and supply chain agreements must include supply chain reporting requirements as necessary. This may include the following:

- Environmental and sustainability management reporting requirements and key performance indicators
- Waste management reporting
- Project specific conditions of approval or environmental compliance reporting requirements
- Greenhouse gas and life cycle reporting
- Supply chain environmental and sustainability performance reporting shall be used as necessary to inform project and workplace environmental reporting.

12.4.3 Continuous Improvement

Continuous improvement of this Plan 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-compliances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-compliances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

12.4.4 CEMP Review

The review of this Plan and Management Plans ensures the continual suitability, effectiveness and continual adequacy of the CEMP for construction.

The initial issue of CEMP has been reviewed by the Environmental & Sustainability Manager to ensure it meets the requirements of Project's Planning Approvals including the CoAs, EMS, Commitments, specifications and standards.

The CEMP is internally endorsed for use on the project by the RSU-TAP04, Novo Rail Senior Project Manager. TfNSW will also review and endorse the CEMP prior to ER review/approval. Evidence of review and approval is captured on the cover sheet of this CEMP.

The ER as nominated by the Planning Secretary is required to review and approve the CEMP and CEMP Sub-plans in alignment with the CoAs and other documents as identified by the Planning Secretary under the Project's Planning Approval.

Revisions shall be reviewed and endorsed by the Senior Project Manager, prior to issuing to the ER for approval. TfNSW will also review and endorse the CEMP prior to ER review and approval. Updates to this Plan and associated documentation are numbered consecutively and issued to holders of controlled copies.

Revisions to this CEMP and CEMP Sub-Plans are to occur 6-monthly or as required. Revisions may result from:

- Management Review
- Audit (either internal or by external parties)
- Client complaints or non-compliance reports
- Changes to the Company's standard system and change in project scope
- Changes in legislative or regulatory requirements.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Management review

A management review of the CEMP and EMS would occur on a 6-monthly basis or when changes to the scope/content in relation to risk and/or activities occur to ensure the continual suitability, adequacy and effectiveness of the CEMP and EMS.

The management review would also involve:

- The status of actions from previous management reviews including the determination of effectiveness of the correct and preventative actions
- Changes in external/internal issues that impact the EMS
- Changes in the needs and expectations of interested parties, including compliance obligations
- An assessment or review of its significant environmental impacts
- An analysis of the results of incident investigations and root cause analyses of non-compliances and breaches
- The extent to which the environmental objectives and targets have been achieved

- Information on Novo Rails environmental performance
- An assessment of the adequacy of resources
- Any significant or relevant communication from interested parties or stakeholders, including complaints
- Identification of areas of opportunity for improved environmental performance.

The outcomes and actions of the management review may involve changes to the CEMP and related documentation and will be recorded in INX InControl with actions followed up. Meeting minutes would be undertaken as a record of evidence of management reviews with assigned actions.

13 Document Control

Documents are developed and maintained in line with TfNSW specific requirements and AS/NZS ISO 9001 Quality Management Systems.

The Master controlled copies of this CEMP and supporting documents, will be held within the Project's document management system, Asite, where copies of these documents are accessible to project personnel and relevant stakeholders as necessary. This document would be made publicly available on the Project website in accordance with Condition B10.

Environmental management documentation under the Project would also be recorded through correspondence means via TeamBinder.

All controlled documents once printed are considered "uncontrolled". The control of records includes identification, storage, protection, retention periods and disposition with records being kept for a minimum of five (5) years or as otherwise specified in contracts and/or environmental planning approval documentation.

APPENDIX A: Environment and Sustainability Commitments

APPENDIX B: RSU Compliance Matrix (PDF printed)

APPENDIX C: Environmental and Sustainability Risk and Opportunity Register

APPENDIX D: Construction Staging Diagrams

APPENDIX E: Environmental Control Map/s (ECM/s)

NOTE: The ECM has been included as an appendix as a guide. Any future revisions to the ECM will be submitted to TfNSW and the ER

APPENDIX F: Class 1 Incident Management

Not found

Note – Immediate regulatory reporting requirement for incidents involving "material harm"
There are additional authorities to be notified including the following:
The Ministry of Health - Public Health Unit – (02 9391 9000)
SafeWork NSW (13 10 50)
Sydney City Council (02 9265 9333)
Fire and Rescue NSW on 000

Actual or Potential Class 1 Environmental Incident Occurs

Ensure that the incident cause has been rectified where safe to do so and that any spill or result of the incident minimises environmental harm. Ensure the safety of personnel or public

Assess risks

Ensure site has been secured

Novo Rail must provide initial Incident details via the TfNSW INX Reporting System after the Alliance/contractor becomes aware of the incident or non-compliance
This is to enable-TfNSW to NSW EPA 131 555, where required
Initial verbal notification immediately after the alliance/contractor becomes aware of the incident or non-compliance

Report the incident immediately to the HSE General Manager and Head of Legal. Register on IMPACT within 1 hour
Notify the TFNSW PM and EMR

Notification to the external environmental regulators to be recorded.

Is Client reporting required?

Yes

Reporting requirements as per the contract
Refer to Section 19-Incidents, Complaints, Corrective and Preventative Action of the CEMP

Document factual reporting to Client in strict accordance with the contract

No

Brief Management / Investigation Team

Novo Rail Lead Incident Investigator to coordinate the collection of evidence

Consider the need for resources and operations

Inform workforce and other stakeholders

Debrief witnesses

Role	Name	Number
HSE General Manager	Simon Davis	[redacted]
Head of Legal	Annabel Crookes	[redacted]
Laing O'Rourke Environmental Lead and Quality Manager	Chris Greenaway	[redacted]
Alliance General Manager	Jerome Cargnino	[redacted]
Alliance Construction Manager	John Robertson	[redacted]
Alliance Project Engineer	Letarcia Hurt	[redacted]
Alliance Sustainability Lead	Eloise Doyle	[redacted]
Alliance Environmental Manager	Tommaso Buratti	[redacted]
TfNSW Senior Project Manager	Michael Childs	[redacted]
TfNSW Environment and Planning Manager	Rosemary Snowdon	[redacted]
TfNSW Deputy Project Manager	Carl Bachner	[redacted]
TfNSW Senior Environment and Planning Manager	Tara Wilcoxon	[redacted]
Independent Environmental Representative	Michael Woolley	[redacted]

APPENDIX G: Emergency preparedness and response scenarios

The types of environmental emergencies that could occur on this site are tabulated below.

Note: This plan is designed to supplement the Client's site emergency response plan/s where available. In case of conflict, the Client's plan will apply.

Emergency	Preparation	Response	Responsibility
Significant adverse dust event due to weather conditions: High winds	Monitor meteorological conditions for the area - develop contingency for wind speeds in excess of 16m/s (55km/hr) 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 ESTR
Discovery of friable asbestos	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 Engage licensed/approved removal and disposal organisation Complete post removal verification	Project Manager Site Supervisor ESTR Safety Representative
Flooding	Monitor meteorological conditions – develop contingency strategy for rainfall > 100mm in 24hours or potential for > 1in 5 ARI 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 Secure plant that cannot be removed Review site drainage flow paths: Redirect site drainage to prevent flooding of residential/business premises	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 ESTR

Emergency	Preparation	Response	Responsibility
	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		
Temporary erosion and sediment controls are damaged during rainfall.	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 an Environmental Representative and Site Supervisor. Controls to be repaired or replaced within 24 hours of detection, immediately if inclement weather current.	Site Supervisor ESTR
Damage to sediment basin	Check basins for suitability to project requirements; size, treatment type, etc Basin outlet to be designed to remain functional in 1 in 20 ARI event Ensure basin construction is in accordance with QA requirements including relevant ITPs.	Water in damaged basin to be pumped to another secure basin, or discharged if it meets the site criteria. Damage to be repaired as soon as practical. Repairs to be monitored when basin brought back online.	Site Supervisor ESTR
Spill of hazardous or toxic substance (< 20L)	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	Report spills immediately to Site Manager and/or the Project Environment Representative 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. Site Manager and Supervisors to coordinate the response, clean up and disposal of the material Material to be disposed of in accordance with the manufacturers' recommendations and applicable legislation.	Site Supervisor ESTR
Major spill of hazardous or toxic substance off site or to environmentally sensitive area (> 20L)	Awareness training of appropriate response and procedures to be incorporated into Environmental and Safety Induction SDS on site for all materials and kept up to date	Report spill immediately to Project Leader and/or Site Manager who will notify the client 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	Project Manager Site Supervisor ESTR

Emergency	Preparation	Response	Responsibility
	Adequate supply of absorbent materials available in the site compound and on vehicles in work location Emergency telephone numbers for Emergency Response organisations/fire brigade prominently displayed around office and issued to supervisors Initial contact to be made with relevant organisations at project commencement	containers, use of geotextile or silt fencing to contain the spill, transferring remaining material. Implement procedures to notify the relevant authorities. Site Manager to coordinate the response, clean up Fire brigade or emergency organisations should be called if spill cannot be controlled by site resources. Evacuation procedures are to be implemented to remove non-essential personnel from the affected area On site client personnel are informed of the incident, internal reporting as per potential Class 1 matter. Access and egress to the area is established to ensure the appropriate vehicles have effective access and congestion is minimised. Senior Officer from fire brigade /emergency organisation assumes control of the operation with Novo Rail personnel assisting as required. Commence data gathering and investigation once emergency is contained	
Fire	Awareness training of appropriate response and procedures to be incorporated into Environmental and Safety Induction Fire extinguishers maintained, clearly labelled and distributed around site compound and vehicles Training in the use of fire extinguishers and which one to use for each type of fire First Aid supplies are stocked and adequate Emergency telephone numbers for Emergency Response organisations/fire brigade prominently displayed around office and issued to supervisors	For small fires, attempts to be made to extinguish the fire or limit its spread with available fire extinguishers or water hoses if appropriate. Supervisor is to be informed immediately. Supervisor to contact client and external services where necessary (fire, ambulance) as a precautionary measure. All personnel in the vicinity to be assembled in the Evacuation Assembly Area and a head count performed Any resulting fuel or chemical spill to be handled as detailed above	Site Supervisor ESTR

Emergency	Preparation	Response	Responsibility
	Initial contact to be made with relevant organisations at project commencement	Supervisor to coordinate with emergency services and provide assistance as required.	
Vibration causing structural damage	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.	ESTR Project Manager
Unapproved clearing / damage to protected vegetation – threatened/endangered species	Clearly demarcate site boundaries Clearly demarcate clearing areas and brief site personnel Identify/mark vegetation to be retained or that is protected. Identify species that may be impacted, include material within the project induction Included requirements within construction planning documentation.	Immediately cease activities Engage consultant to assess damage to vegetation and presence of any endangered or threatened communities.	Site Supervisor ESTR
Injury/death to protected/endangered/threatened fauna	Identify potentially impacted species prior to commencement on site. Identify species that may be impacted, include material within the project induction Review/inspect vegetation to be cleared prior to clearing – utilise ecologist/spotter where there is the potential for endangered/threatened species Engage with local vet/WIRES representative on the appropriate contact/procedure 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 ESTR
Damage / destruction of indigenous heritage item	Ensure site investigations detail any heritage items on or in proximity to the site.	Cease works and stabilise the area, under the direction of the Environmental & Sustainability Manager. The	ESTR

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

APPENDIX H: Environment and Sustainability Inspection Form

Not found in folder

APPENDIX I: Written incident notification and reporting requirements (CoAs, Appendix A)

1. A written incident notification addressing the requirements set out below must be submitted to the Department via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given even if the Proponent fails to give the notification required under Condition A36 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
   - (a) identify the SSI and application number;
   - (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   - (c) identify how the incident was detected;
   - (d) identify when the Proponent became aware of the incident;
   - (e) identify any actual or potential non-compliance with conditions of approval;
   - (f) describe what immediate steps were taken in relation to the incident;
   - (g) identify further action that will be taken in relation to the incident; and
   - (h) identify a project contact for further communication regarding the incident.
   - (i) Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Proponent must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
   - (j) The Incident Report must include:
   - (k) a summary of the incident;
   - (l) outcomes of an incident investigation, including identification of the cause of the incident;
   - (m) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   - (n) details of any communication with other stakeholders regarding the incident.

APPENDIX J: Project Waste Strategy

The following strategy is an indicative guide to identify and state the type of waste that is intended to be controlled and recycled where practical.

Project Waste Management Strategy

Project Waste Management Criteria

Project Start Up

OBJECTIVE
To comply with contractual and legislative requirements and ensure that waste from construction activities does not have the potential to escape from the site and cause an environmental nuisance / harm.

REQUIREMENTS/REGULATIONS
- Client Requirements
- Planning Approval Conditions
- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Avoidance and Resource Recovery Act 2001
- Local Government Act 1993
- DECCW Waste Classification Guidelines, 2014

TARGETS
- No incidences where waste is stored in a position where it has the potential to move off-site.
- All off site movements of waste will be tracked.
- The principles of the waste management hierarchy will be adopted, where practicable.
- At least 90% of construction waste diverted from landfill and either recycled or reused.
- Waste will be minimised where ever possible.
- Compliance with the GREP/WRAPP targets

Project targets to be fed to procurement and design teams

Waste Minimisation Strategies – Design & Procurement

Strategy Implementation and Monitoring

PROCUREMENT STRATEGY
Aspects to consider:
- Location of supplier and logistics (check operational licenses and storage requirement).
- Recyclability or recyclable content of item.
- Longer life spans and durability.
- Biodegradability/non-toxic.
- Environmental endorsements.
- Emergency response equipment requirements
- Sustainable site office fit-out

Procurement and Design Teams

RECYCLING STRATEGY
Assess viability to recycle based on:
- Carbon third party cost;
- Logistical costs;
- Sale price;
- Indirect savings; and
- Ongoing monitoring and improvement.

Procurement and Design Teams

EDUCATION STRATEGY
- Toolbox talks
  - Housekeeping
  - Hazardous Substance Disposal
  - Office Recycling
- Emergency Response and Spill Management
- Pre-starts
- Waste Posters
- Enviro Alerts
- Bin and Skip Signage

Environment Team

Waste Management Strategies – Construction

All Personnel on Site

GENERAL WASTE

General Solid (non-putrescible)
- Non-recyclable waste materials
- Broken Glass
- Dried sediment collected from stormwater management systems
- Garden waste
- Drained oil filters
- Rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids
- Building rubble

General Solid (putrescible)
- Food waste
- Putrescible Organi
- Manure

Dispose to general waste skip bins or office bins

RECYCLABLE WASTE

General Solid (non-putrescible)
- Excess dried concrete
- Steel off cuts
- Reinforcing steel
- Timber
- Scrap Metal
- Paper and cardboard
- Comingled containers – milk bottles, drink bottles, cans, etc
- Non-putrescible cleared vegetation may be mulched and reused for landscaping or ground stabilisation if no invasive weeds included

Place in labelled skip bins or office bins

HAZARDOUS WASTE

Liquid
- Waste oils
- Paints

Solid
- Asbestos containing material including spoil from earthworks
- Empty oil and paint containers
- Oily rags
- Contaminated soil

Dispose to specific hazardous waste bin on site.

Asbestos is only to be handled or removed by occupational hygienist or appropriately licenced removal contractor (Class A - to remove friable asbestos, Class B - to remove non friable asbestos).

Specific oily rag bin to be used for oily rags, used spill kit material, etc.

Licensed waste contractors only to collect and remove all wastes from site
Novo Rail to ensure the waste facility is fully licensed to accept the types of waste being sent offsite
Transport and waste facility dockets required within 3 days of disposal from site
Novo Rail to input and interpret data from waste tracking spreadsheet

Specific Strategies

GENERAL WASTE
- Non-recyclable office waste will be placed in the bins located at site ancillary facilities and compounds
- Vegetation waste will mulched and potentially reused onsite
- Any mixed building rubble such as bricks/plasterboard/etc will be placed in the appropriate designated bins and sent to a resource recovery facility for sorting and recycling.

RECYCLABLE WASTE
- Office waste bins will be segregated into the following recycling streams; Comingled / Paper & Cardboard / Organics / Bottle & Can Return and Earn bin
- Steel waste will be collected in the steel waste bin

Dried concrete waste will be collected in the appropriate bin

HAZARDOUS WASTE
- Any oily rags or used spill kit material to be placed in the oily waste bin and disposed of to a licenced facility
- Asbestos containing waste is only to be handled or removed by occupational hygienist or AS1/AS2 removal contractor
- Waste oil/paints will be stored in bunded drums at Ancillary Facility 2: Sydney Trains carpark

PROCUREMENT
- Identify procurement initiatives specific to the project including packaging reduction and return, bulk loads
- Incorporation of reusable temporary works such as proprietary formwork systems

Waste to be tracked using the Project's Waste Management Register.

APPENDIX K: Environmental Representative Endorsement

Not found

APPENDIX L: Ancillary Facilities Management