

Appendix B9

Construction Contaminated Land Management Sub-plan

Infrastructure Works (Package 4)

Parramatta Light Rail – Stage 1

September 2021

PLR1INF-CPBD-ALL-LD-PLN-000001 Rev 8

Construction Contaminated Land Management Sub-plan

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Document Control

The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project Director is responsible for updating this plan to reflect changes to the project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director and/or client before being distributed / implemented.

Revision	Details
Rev A	CPBD JV internal review
Rev B	Incorporation of CPBJV review comments
Rev 0	First draft submitted to TfNSW and ER. Revision issued for external stakeholder consultation.
Rev 1	Second draft submitted to TfNSW and ER for consultation.
Rev 2	Issued to ER for endorsement.
Rev 3	Revised to address ER comments and issued to ER for endorsement.
Rev 4	Revised to address stakeholder comments and issued to ER for endorsement.
Rev 5	Incorporation of ER endorsement letter and submission to the DPIE for information.
Rev 6	Incorporation of measures to identify, handle and manage potential contaminated soils, materials and groundwater identified in Site Contamination Reports.
Rev 6.1	Update following Stage I Preliminary Site Investigations.
Rev 6.2	Revised to address ER comments and issued to ER for endorsement.
Rev 7	Minor updates as part of annual review.
Rev 8	Minor updates as part of annual review.

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Glossary / Abbreviations

Abbreviations	Expanded text
ACM	Asbestos containing material
AEI	Area of Environmental Interest
AEP	Annual Exceedance Probability
AS	Australian Standard
ASS	Acid Sulfate Soil
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
CLMP	Contaminated Land Management Plan
CoA	Conditions of Approval
CoPC	City of Parramatta Council
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSSI	Critical State Significant Infrastructure
DPIE	NSW Department of Planning, Industry and Environment (the responsibilities of the former Department of Planning and Environment are now administered by the Department of Planning, Industry and Environment).
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence 21347
ETS	Electronic Ticketing System
Infrastructure Works	Package 4 – Infrastructure Works
JV, the	CPB Contractors and Downer EDI Works Joint Venture (Parramatta Connect)

Abbreviations	Expanded text
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013)
OEHS	Office of Environment and Heritage
PPE	Personal Protective Equipment
REMMM	Revised Environmental Mitigation and Management Measure
SaM	Stabling and Maintenance Facility
SDS	Safety Data Sheet
SOM	Supply, Operate and Maintain
SPIR	Submissions and Preferred Infrastructure Report
SWMS	Safe Work Method Statement
Stage 1	Parramatta Light Rail – Stage 1 (Westmead to Carlingford)
TfNSW	Transport for NSW
UST	Underground Storage Tank

1 Introduction

1.1 Context

This Contaminated Land Management Sub-plan (CLMP or Sub-plan) forms part of the Construction Environmental Management Plan (CEMP) for the Parramatta Light Rail Stage 1, Package 4 Infrastructure Works (Infrastructure Works). This CLMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA) SSI-8285, the revised environmental mitigation and management measures (REMMMs) and Environmental Performance Outcomes (EPO's) listed in *Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement* (the EIS), as amended by the *Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (February 2018)* (the SPIR). In addition, this Sub-plan addresses all applicable legislation and contractual requirements, including the PLR Stage 1 Infrastructure Contract Project Deed (ISD-17-6721).

1.2 Background

1.2.1 Parramatta Light Rail – Stage 1 description

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

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

Stage 1 will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

In summary, the key features of Stage 1 include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)

- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design works along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts
- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.

An overview of Parramatta Light Rail Stage 1 route is shown in **Figure 1-1**.

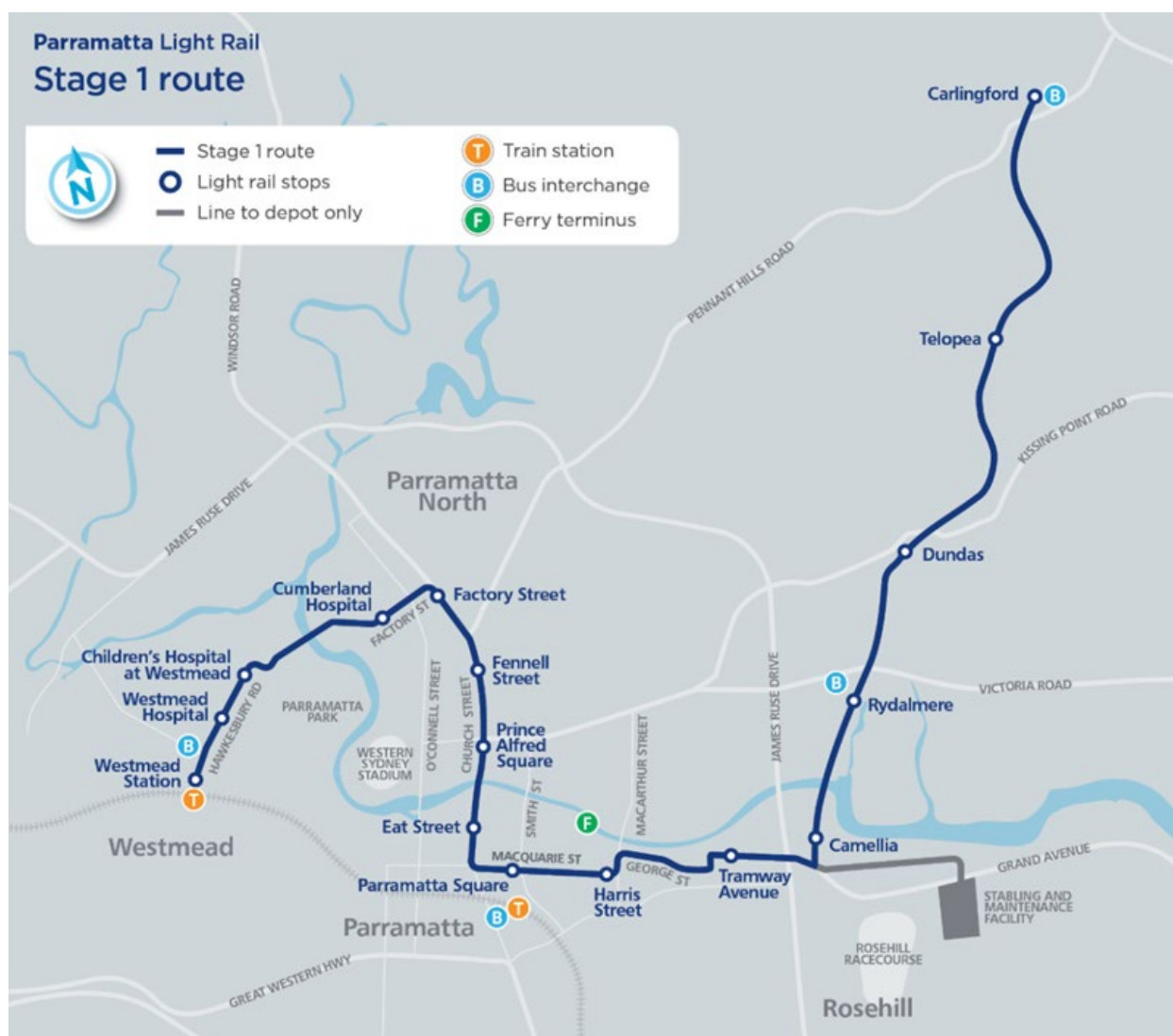


Figure 1-1: Parramatta Light Rail Stage 1 Route

1.2.2 Statutory Context

The Parramatta Light Rail is subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as Critical State Significant Infrastructure (CSSI). The EIS assessed impacts for Parramatta Light Rail Stage 1 (Westmead to Carlingford). This covered the light rail and associated works including road enabling work.

Stage 1 received Infrastructure Approval from the Minister for Planning under Section 5.19 of the EP&A Act on 29 May 2018 (Critical State Significant Infrastructure Application SSI-8285), subject to the conditions provided in the Instrument of Approval, specifically Schedule B – Ministerial Conditions of Approval (CoA).

The Infrastructure Approval was subsequently modified under Section 5.25 of the EP&A Act on 21 December 2018 and 25 January 2019.

The planning approval, modifications and related environmental assessment documents are located at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285.

1.2.3 Stage 1 Delivery Strategy

Delivery of Stage 1 is achieved through the following five packages of work:

- **Enabling Works (Package 1)** – Local road network improvements including O’Connell Street and George Street (off-alignment)
- **Westmead Precinct Works (Package 2)** – Hawkesbury Road widening and demolition at Cumberland Hospital (east and west Campus)
- **Early Works (Package 3)** – Remediation of the Stabling and Maintenance (SaM) Facility
- **Infrastructure Works (Package 4)** (the subject of this Sub-plan) – Design and construction of civil works, public domain and light rail infrastructure up to road level/top of rail and to the top of the concrete slab at stops, including provision of utility services (excluding high-voltage power supply and cabling for rail systems), and decommissioning of the T6 Carlingford Line
- **Supply, Operate and Maintain Works (Package 5)** – Design and construction of the light rail systems, high-voltage power supply and stops above slab level, the supply of light rail vehicles, and the design and construction of the SaM Facility, including all light rail operations, customer service and asset management.

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

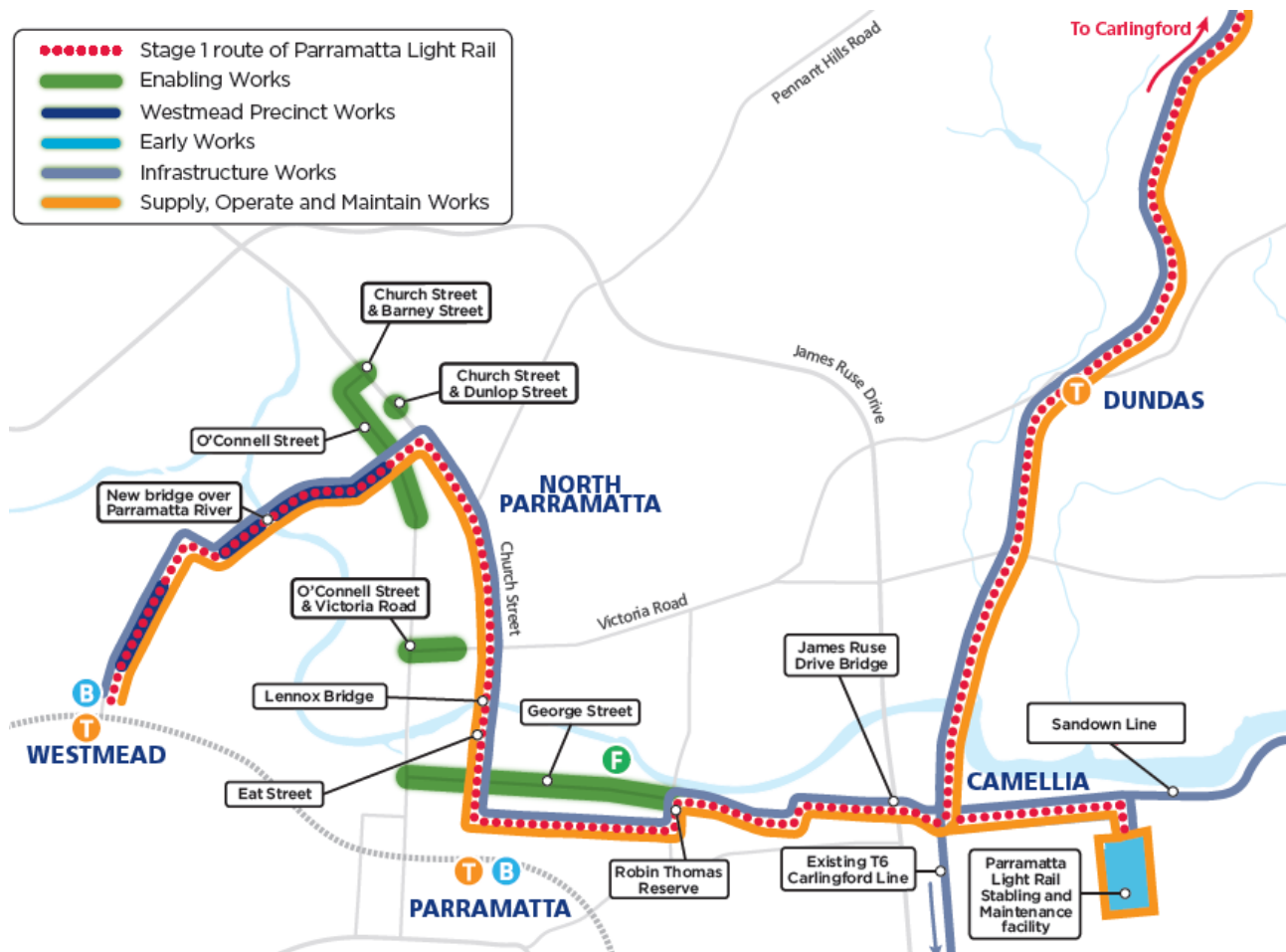


Figure 1-2: Parramatta Light Rail Stage 1 Delivery Strategy

1.3 Infrastructure Works

The CPB Contractors and Downer EDI Works Joint Venture (JV), Parramatta Connect, has been engaged to deliver Package 4 – Infrastructure Works (Infrastructure Works). In summary the Infrastructure Works include:

- Utility services adjustment and relocation works (for more than minor impact)
- Property demolition to make space for the light rail tracks and ancillary facilities
- Decommissioning of the existing Carlingford T6 heavy rail line and disused Sandown Line
- Earthworks and retaining structures
- Drainage works
- Intersection signalling works
- The light rail civil infrastructure and stop slabs
- Urban and architectural design and finishes of the corridor and public domain
- Rail, track slabs, ballasted track and grass tracks
- Footpath and kerb realignment including intersection works and road upgrades to accommodate light rail and other traffic (both temporary and permanent)
- New light rail bridges carrying the light rail over the Parramatta River (at Cumberland Hospital), James Ruse Drive, Vineyard Creek and Kissing Point Road and bridge strengthening and modifications to existing bridges as required

- Provision of the Active Transport Link for pedestrians and cyclists
- Staff and passenger facilities at each light rail terminus
- Rail/road interaction including traffic signals and road sharing
- Testing and commissioning of the Infrastructure Works.

1.4 Relationship with SOM

The Infrastructure Works is closely aligned to the Package 5, Supply, Operate and Maintain (SOM) Works which is being delivered by the Great River City Light Rail consortium. A graphical representation of the split in scope between the two packages is depicted in **Figure 1-3**.

The reasoning for dividing this work into two stages is to ensure that suitably qualified and experienced sub-contractors are in place for each specialised component; civil infrastructure, and operational systems. The Infrastructure Works will deliver the civil infrastructure components of Stage 1 and will not trigger the operational conditions with the exception of those that relate to detailed design.

An interface between the two Joint Ventures has been established to monitor cumulative impacts and the coordination of environmental complaints management, site management controls, and the delineation of incident reporting and non-conformance management. Opportunities to share information, materials and resources will also be explored to support management of contaminated material and land.

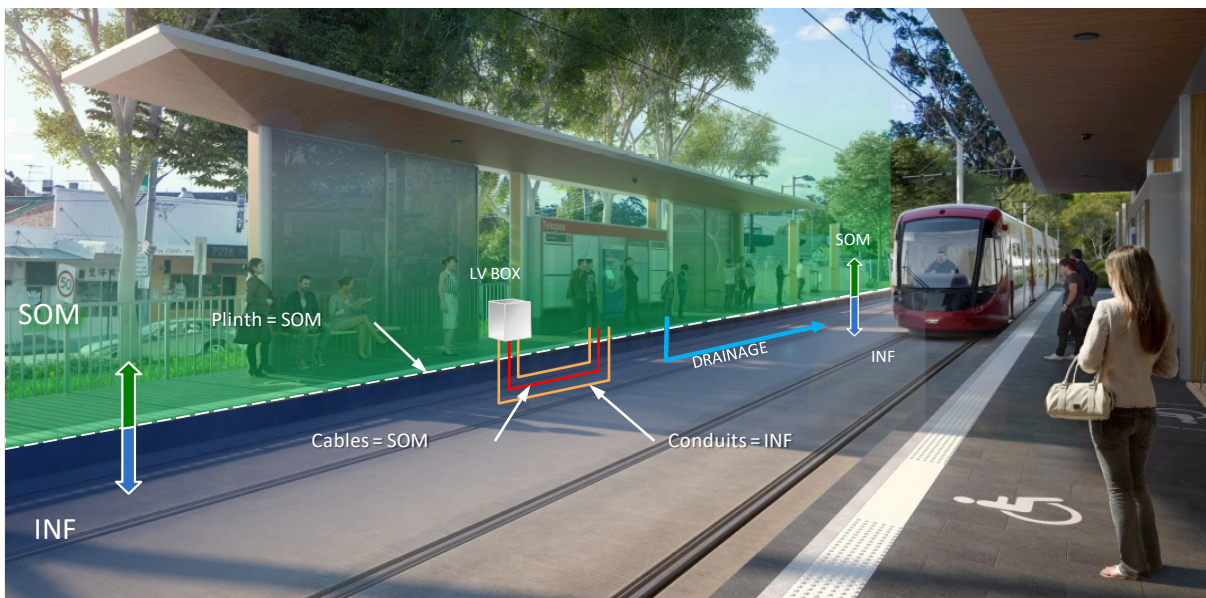


Figure 1-3: Relationship between Infrastructure Works and Supply, Operate and Maintain Works

1.5 Scope of the Sub-plan

This Sub-plan outlines the mitigation and management measures the CPB Contractors and Downer EDI Works Joint Venture (the JV) will use to address potential impacts arising from contaminated land management during design and construction of the Infrastructure Works, while complying with relevant approval, statutory and contract requirements. Sections 3.2, 3.3 and 3.4 provide compliance tables identifying where in this Sub-plan relevant requirements are addressed.

This Sub-plan is applicable to all activities during construction of the Infrastructure Works, including all areas where physical works will occur or areas that may be otherwise impacted by the construction works, and under the control of the JV. All the JV staff and sub-contractors are

required to operate fully under the requirements of this Sub-plan and related environmental management plans, over the full duration of the construction program.

1.6 Environmental management systems overview

The environmental management system overview is described in Section 1.5 of the CEMP and detailed in **Figure 1-4**.

Key interactions for this Sub-plan with other management plans include:

- Waste and Resource Management Sub-plan details the controls and requirements for classifying and disposing contaminated soils
- Soil and Water Management Sub-plan which details the control and requirements for management of soil and water including erosion and sediment controls and receiving waters monitoring program
- Site Establishment Management Plan which details controls and requirements for the establishment of ancillary facilities
- Delivery Phase Sustainability Management Plan defines the sustainability targets, addresses the tracking and reporting of contaminated soils and asbestos
- Safety Management Plan details the procedures for managing asbestos containing materials.

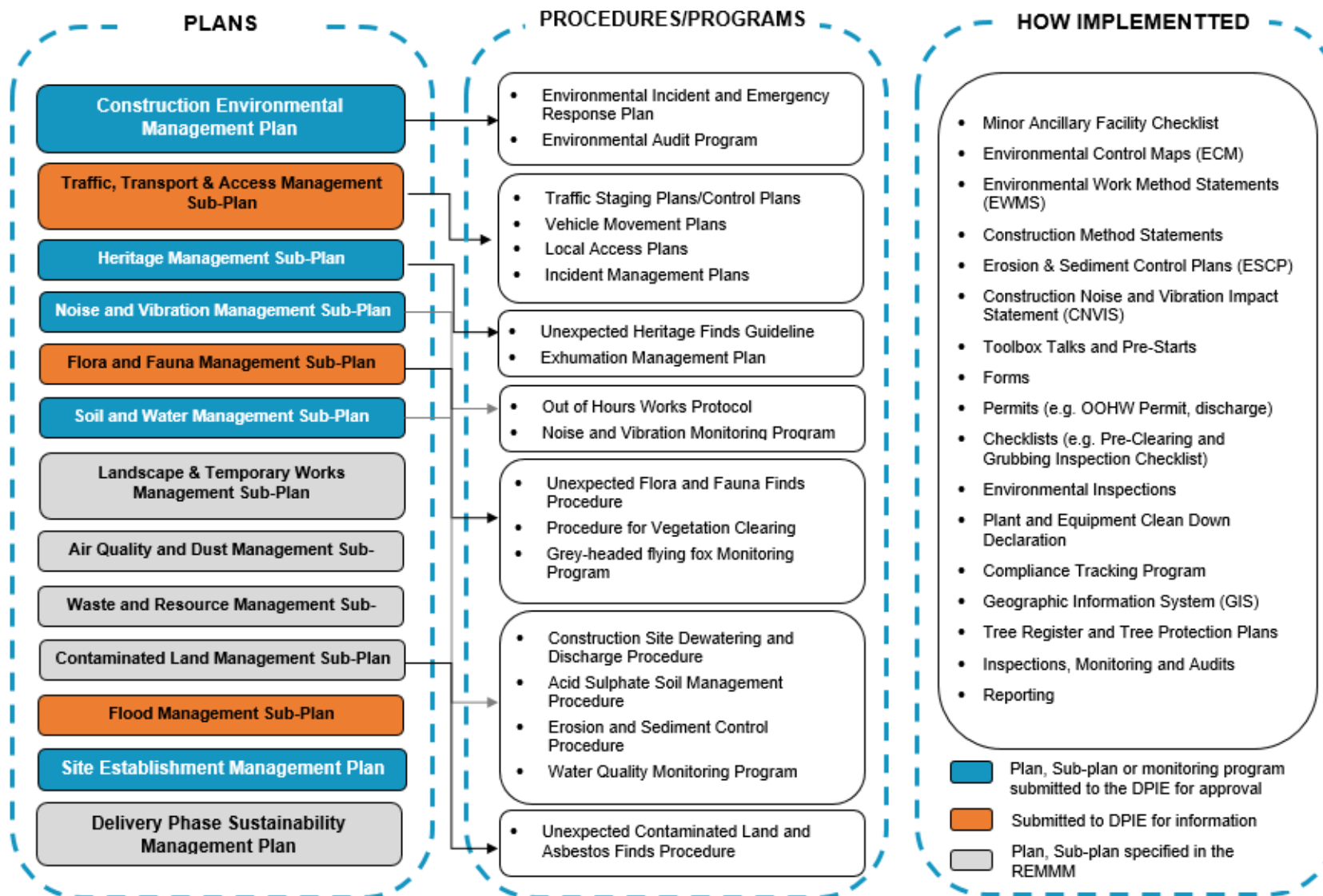


Figure 1-4: Environmental Management System

2 Purpose and objectives

2.1 Purpose

The purpose of this CLMP is to define the procedures that will be implemented by the JV to manage contaminated land (including asbestos) during the Infrastructure Works.

2.2 Objectives

The key objective of this CLMP is to ensure all CoA, REMMMs, EPOs and licence/permit requirements relevant to contaminated land are described, scheduled and assigned responsibility as outlined in:

- Environmental Impact Assessment prepared for Parramatta Light Rail – Stage 1
- Submissions and Preferred Infrastructure Report prepared for Parramatta Light Rail Stage 1
- Conditions of Approval granted to the project on 29 May 2018 and modifications
- Project Deed (PLR Stage 1 Infrastructure Contract)
- PLR Sustainability Strategy.

2.3 Targets

The following targets have been established for the management of contaminated land during the Infrastructure Works:

- Conduct site investigation, remediation and management works in full compliance with relevant legislative requirements, CoA, REMMMs and EPOs
- Develop and implement adequate controls to minimise or avoid impacts from contaminated land
- Undertake remediation works as necessary to appropriately mitigate potential health, safety and environmental risks and achieve land use standards specified in the Project Deed
- Ensure remediation options will be selected using a sustainability hierarchy.

3 Environmental Requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

All legislation relevant to this CLMP is included in Appendix A1 of the CEMP.

3.1.2 Additional approvals, licences, permits and requirements

Refer to Appendix A1 of the CLMP.

3.1.3 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this Sub-plan include:

- AS 1940-1993 – The Storage and Handling of Flammable and Combustible Liquids
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) (2018)
- Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009)
- Landcom Managing Urban Stormwater 'Blue Book' (2004)
- NSW Environment Protection Authority (EPA) - Waste Classification Guidelines – Part 1: Classification of waste (2014)
- NSW Environment Protection Authority (EPA) Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd edition) (2017)
- NSW State Environmental Planning Policy 55 – Remediation of Land
- NSW Office of Environment and Heritage (2011) Guidelines for Consultants Reporting on Contamination Sites
- NSW Environment Protection Authority (EPA) - Contaminated Sites - Sampling Design Guidelines (1995)
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM 1999, as amended 2013)
- Office of Environment and Heritage (OEH) - Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (2009).

3.2 Minister's Conditions of Approval

The CoA relevant to this Sub-plan are listed in **Table 3-1** below. A cross reference is also included to indicate where the condition is addressed in this Sub-plan or other project management documents.

Table 3-1: Conditions of Approval relevant to the CLMP

CoA No.	Condition Requirements	Document Reference	How Addressed
C4	The CEMP Sub-plans must state how:	-	-
(a)	the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Section 3.4	The relevant environmental performance outcomes for the Infrastructure Works are outlined in Section 3.4 together with actions taken to achieve implementation.
(b)	the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Section 3.3	The contaminated land initiatives that are identified in the documents listed in Condition A1 are reflected in the management measures and controls listed in Table 7-2. These will be implemented during pre-construction and construction phases and communicated through the processes described in Section 8.2.
(c)	the relevant terms of this approval will be complied with; and	Section 3.2 Section 8	The terms of this approval are outlined in Section 3.2 and will be complied with through the preparation and implementation of this CLMP. Confirmation of compliance with the terms of approval will be undertaken in accordance with Section 8.

CoA No.	Condition Requirements	Document Reference	How Addressed
(d)	issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.	Section 6 Section 7	Contamination issues that may require management during construction are outlined in Section 6, together with the predicted impacts. The process for ongoing environmental risk analysis is outlined in the CEMP in Section 1.5.1 and 3.1.1. The environmental risk register for the Infrastructure Works is detailed in the CEMP (Appendix A2). The risk register is reviewed annually, at minimum, and in response to significant issues, incidents and non-compliances. The controls to manage risks associated with contaminated land are outlined in Section 7. The mitigation measures will be implemented during the pre-construction and construction phases of the Infrastructure Works.
C5	The CEMP Sub-plans must be developed in consultation with relevant government agencies (including Relevant Council(s)). Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including all copies of correspondence from those agencies, must be provided to the Secretary with the relevant CEMP Sub-plan.	Section 4	This CLMP will be developed in consultation with the City of Parramatta Council (CoPC) and relevant agencies. The results of this consultation will be incorporated into the final Sub-plan and summarised in Section 4.
C6	Any of the CEMP Sub-plans may be submitted along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.	Section 2.1	This requirement does not apply to the CLMP.

CoA No.	Condition Requirements	Document Reference	How Addressed
E118	Notification must be provided and, where relevant, approvals must be sought directly from the EPA before commencement of any works which will intersect or disturb the surface of sites which are regulated by the EPA under the Contaminated Land Management Act 1997.	Section 7	Section 7 specifies that notification will be provided, and approvals will be sought directly from EPA prior to disturbance of any site surface which is regulated under the <i>Contaminated Land Management Act 1997</i> .
E119	Before commencement of any activities that would result in the disturbance of land and/or soil in Areas of Environmental Interest (AEI) identified as having a high risk of contamination, or identified as medium risk subject to further desktop assessment as specified in the documents listed in Condition A1, a Site Contamination Report must be prepared by a suitably qualified person(s) in accordance with the requirements of the Contaminated Land Management Act 1997 and associated guidelines. The Site Contamination Report must outline the potential contamination risks from the AEIs to human health and receiving waterways and detail, where relevant, whether the land is suitable (for the intended land use) or can be made suitable through remediation. For AEIs where there is insufficient information and data available to draw such conclusions, the Site Contamination Report must also detail the outcomes of Phase 2 site contamination investigations within those AEIs.	Section 7.1	The process by which Site Contamination Reports will be prepared for medium and high risk sites is detailed in Section 7.1.
E120	For those AEIs where a Site Contamination Report is to be prepared in accordance with Condition E119, where the investigations identify that the site is suitable for the intended operations and that there is no need for a specific remediation strategy, measures to identify, handle and manage potential contaminated soils, materials and groundwater must be	Section 7.1 Section 7.1.1 Table 7-2	The process by which Site Contamination Reports will be prepared is addressed in Section 7.1. It is noted in Section 7.1.1 that where Stage I investigations included a complete site history which clearly demonstrates that site activities have been non-contaminating, further investigation or site sampling is not required. In such cases, relevant measures to identify,

CoA No.	Condition Requirements	Document Reference	How Addressed
	identified in the Site Contamination Report and incorporated into the CEMP or relevant sub-plan.		handle and manage potential contaminated soils, materials and groundwater have been identified in the Site Contamination Report (as summarised in the Contaminated Land Summary Report) and incorporated into this Sub-plan (Table 7-2).
E121	For those AEIs where a Site Contamination Report concludes the site can be made suitable for its intended land use subject to remediation, the Site Contamination Report must include a Remediation Action Plan to address disturbed areas, and how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil or groundwater.	Section 7.1 Section 7.1.3	The process by which Remedial Action Plans (RAP) will be prepared is defined in Section 7.1.3. Reflecting the requirements of this condition, RAPs will include relevant procedures and control measures to be implemented during remediation to manage risks to human health and the environment.
E122	For those AEIs where remediation is required, the Site Contamination Report and Remediation Action Plan must be accompanied by a Site Audit Statement(s), prepared by a NSW EPA Accredited Site Auditor under the Contaminated Land Management Act 1997, verifying that the disturbed area has been or can be remediated to a standard consistent with the intended land use. Where land is remediated, a final Site Audit Statement(s) must be prepared by an accredited Site Auditor, certifying that the contaminated and disturbed areas have been remediated to a standard consistent with the intended land use. <i>Note: Terms used in Condition E121 and E122 have the same meaning as in the Contaminated Land Management Act 1997.</i>	Section 7.1.4	The requirement to prepare a Site Audit Statement is detailed in Section 7.1.4. It is noted that the remediated land will not be used for the purpose approved under the Project Approval until a Site Audit Statement, prepared by a NSW EPA Accredited Site Auditor, determines that the land is suitable for the intended use and any conditions have been addressed.

CoA No.	Condition Requirements	Document Reference	How Addressed
E123	For those AEIs where remediation is required, the land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement determines that the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.	Section 7.1.4	The requirement to prepare a Site Audit Statement is detailed in Section 7.1.4. It is noted that the remediated land will not be used for the purpose approved under the Project Approval until a Site Audit Statement, prepared by a NSW EPA Accredited Site Auditor, determines that the land is suitable for the intended use and any conditions have been addressed.
E124	A copy of the final Site Audit Statement must be submitted to the Secretary and Relevant Council no later than one month before the commencement of CSSI operations.	Section 7.1.4	The requirement to prepare a Site Audit Statement is detailed in Section 7.1.4. A copy of the final Site Audit Statement will be submitted to the Secretary and relevant Council no later than one month before the commencement of CSSI operations.
E125	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be implemented should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction. This can be provided as part of the CEMP or relevant sub-plan.	Appendix A	The Unexpected Contaminated Land and Asbestos Finds Procedure is outlined in Appendix A . The procedure outlines the steps should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.
E126	The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout construction.	Appendix A	The Unexpected Contaminated Land and Asbestos Finds Procedure will be implemented throughout construction, as stated in Appendix A .
E131	Asbestos or asbestos-contaminated materials that are discovered during demolition and construction activities of the CSSI must be strictly managed in accordance with the requirements under the Protection of the Environment Operations (Waste) Regulation 2014 and any guidelines or requirements in force at the date of this approval and issued by the EPA in relation to those materials.	Section 7.3 Appendix A	The Unexpected Contaminated Land and Asbestos Finds Procedure in Appendix A outlines the steps that will be undertaken following the discovery of asbestos. This will be managed in accordance with the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> .

3.3 Revised Environmental Mitigation and Management Measures

Relevant REMMMs are listed in **Table 3-2** below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-2: Revised Environmental mitigation and management measures relevant to this CLMP

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Desktop Risk Assessment for Area of Environmental Interest (AEI).	CM-1	During detailed design, a desktop risk assessment would be carried out for the following Areas of Environmental Interest (AEI) to confirm high or medium risk of contamination: • 435 Church Street, Parramatta (AEI 9) • 1A Barrack Lane, Parramatta (AEI 13) • 142-154 Macquarie Street, Parramatta (AEI 14) • 127 Alfred Street Parramatta (AEI 16) • Former James Hardie Property at 181 James Ruse Drive, Rosehill and 1 Grand Avenue, Rosehill (AEI 21 and AEI 22) • 6 Grand Avenue, Rosehill (former Akzo Nobel site) (AEI 27).	Detailed Design	Section 7.1.1	The process by which Areas of Environmental Interest will be assessed is detailed in Section 7.1. Specifically, a Stage 1 preliminary site investigation has been undertaken for nominated sites (including those listed in this commitment) to determine if further investigation and assessment is warranted.
Site investigation for high risk AEIs	CM-2	Prior to the commencement of construction in the vicinity of these sites, site investigations would be carried out at the following high-risk AEI: • Former gas works at Queens Wharf Reserve (AEI 15) • 13A Grand Avenue, Camellia (AEI 21).	Pre-construction	Section 7.1.1	Prior to commencement of construction, Stage 1 preliminary site investigations have been undertaken of the former gas works at Queens Wharf Reserve (AEI 15) and 13A Grand Avenue, Camellia (AEI 21). The Site Contamination Report process is detailed in Section 7.1.1.

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Determining any need for remediation from the site investigations	CM-2	The results from the site investigations would be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013) to determine any need for remediation.	Pre-construction	Section 7.1.2	As detailed in Section 7.1.2, the results from the Stage 2 investigations will be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013) to determine whether the land is suitable for the intended land use or can be made suitable through remediation.
Remediation works management	CM-2	Remediation works would be performed in accordance with the hierarchy of preferred strategies in the Guidelines for the NSW Site Auditor Scheme (DECCW 2006). Where practical, remediation works would be integrated with excavation and development works performed during construction.	Pre-construction	Section 7.1.3 Table 7-2	In defining the remediation goals, the hierarchy of preferred strategies will be applied as referenced in the Guidelines for the NSW Site Auditor Scheme (DECCW 2006) and detailed in the Assessment of Site Contamination Policy Framework of Schedules A and B of the NEPM. This mitigation measure has also been included in Table 7-2 (CL03).
Management of low and medium risk contaminated sites	CM-3	For low and medium risk sites, environmental management measures would be applied as detailed in a Construction Contaminated Land Management Plan (CCLMP), as a sub-plan to the CEMP.	Construction	Table 7-2	For low and medium risk sites, environmental management measures have been outlined in Table 7-2 to mitigate the impacts of contaminated land.

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Management of site-specific contaminated sites	CM-3	The measures would be tailored to address any specific locations where contamination is identified through the current contaminated land investigations. This includes worker health and safety measures.	Construction	Section 7.1.1 Table 7-2	The AEIs that warrant site specific measures are identified in Section 7.1.1. Site specific measures, including worker health and safety measures, are detailed in Table 7-2 (CL25 – CL32).
Implementation of inspection and monitoring to identify potential contamination	CM-4	Visual inspections and monitoring would be performed during excavation activities at medium risk AEIs to identify potential indicators of contamination. If suspected contamination is encountered, the materials would be subject to sampling and analysis to determine management requirements and suitability for reuse, recycling or remediation.	Construction	Table 7-2	This mitigation measure has been included in Table 7-2 (CL06). Visual inspections and monitoring will be performed during the excavation activities at medium risk AEIs. Sampling and analysis will occur if suspected contamination is encountered during the excavations.
Asbestos management	CM-5	Construction activities within AEI 23 (Sandown Line, including 27 Grand Avenue, Camellia) would be carried out under asbestos control and removal conditions by an appropriately licensed asbestos contractor.	Construction	Table 7-2	Asbestos control and removal conditions will be implemented by an appropriately licensed asbestos contractor. This mitigation measure has been included in Table 7-2 (CL25).

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Implementation of Unexpected Finds of Contaminated Land and Asbestos Procedure	CM-6	An unexpected finds procedure would be developed and implemented as part of the project CCLMP, outlining a set of potential contamination issues which could be encountered, and detailing the corrective actions to be implemented.	Construction	Appendix A	The Unexpected Finds Procedure for Contaminated Land and Asbestos is provided in Appendix A . The procedure outlines the contamination issues which could be encountered and outlines the steps should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.
Management of hazards and risks	HR-5	Environmental management measures relating to hazards and risk would be developed and implemented as part of the CEMP. These would include:	Construction	Table 7-2	Measures for managing hazards and risks are outlined in Table 7-2 . Specific references are provided below.
Management of hazards and risks	HR-5	Potential environmental hazards and risks associated with construction activities would be identified prior to construction.	Pre-construction	Section 6 Section 7.1	The potential environmental risks associated with the Infrastructure Works are outlined in Section 6 and include contamination of surrounding areas and risk of exposure to the workers. The Site Contamination Report will be completed separately from this CLMP and will include the results of the additional investigations for unknown areas.

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Management of hazardous materials	HR-5	The storage of hazardous materials, and refuelling/maintenance of construction plant and equipment would be carried out in clearly marked and bunded areas within the construction site that are designed to contain spills and leaks in accordance with Australian Standards and DECCW guidelines.	Construction	Section 7.5 Table 7-2	The storage and use of hazardous materials is detailed in Section 7.5. Table 7-2 details relevant mitigation measures, including (CL09, CL10, CL15, CL16 and CL17).
Management of hazardous materials	HR-5	Hazardous materials would not be stored below the ten per cent AEP flood level flood level.	Construction	Table 7-2 FMP	This mitigation measure has been included in Table 7-2 (CL09). Refer to the Flood Management Sub-plan (FMP) for further detail regarding the storage of hazardous materials.
Implementation of chemical spill kits	HR-5	Chemical spill kits would be readily available and accessible to construction workers. Kits would be kept at site compounds and on specific construction vehicles, and all hazardous materials spills and leaks would be reported to site managers and actions would be immediately taken to remedy spills and leaks.	Construction	Section 7.5 Table 7-2	Section 7.5 outlines the use of chemical spill kits. Specific mitigation measures relating to chemical spill kits have been included in Table 7-2 (CL14).
Implementation of chemical spill kits	HR-5	Employees would be trained in the correct use of spill kits.	Construction	Section 8.2	As part of the induction program, employees will receive training on the correct use of spill kits, as outlined in Section 8.2.

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Management for new environmental hazards/risks	HR-6	A process for regularly reviewing work practices/procedures would be implemented throughout construction to identify, report and respond to any new environmental hazards/risks.	Construction	CEMP	The process for ongoing environmental risk analysis is outlined in the CEMP in Section 1.5.1 and 3.1.1. The environmental risk register for the Infrastructure Works is detailed in the CEMP (Appendix A2). The risk register is reviewed annually, at minimum, and in response to significant issues, incidents and non-compliances.
Hazardous materials management during demolition	AQ-1	Ensure that structures are inspected by a suitably qualified person to confirm that they do not contain any hazardous materials (e.g. asbestos) which could be broken and mobilised during demolition. Where such materials are identified, adhere to the requirements for removal and disposal listed in the Work Health and Safety Act 2011, and Work health and Safety Regulation 2011.	Construction	Table 7-2 AQMP	This mitigation measure has been included in Table 7-2 (CL22). The Air Quality and Dust Management Sub-plan details the inspection process to determine if structures contain hazardous materials.
Dust generation management with any uncovered contaminated or hazardous materials	AQ-1	Apply odour suppressing agents to materials as necessary to minimise related impacts should any contaminated or hazardous materials be uncovered during the works.	Construction	Table 7-2 Section 8	This mitigation measure has been included in Table 7-2 (CL08). As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant Environmental Control Maps (ECMs).

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
Management of contaminated land	HY-6	Minimise the extent and duration of exposed surfaces (particularly those works that have the greatest potential to disturb soils that are contaminated or have a high erosion and runoff hazard).	Construction	Table 7-2 Section 8	This mitigation measure has been included in Table 7-2 (CL11). As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant ECMs.
Management of contaminated land	HY-6	Areas of potential contamination concern would be identified and works in these areas managed to minimise disturbance.	Construction	Table 7-2 Section 8	This mitigation measure has been included in Table 7-2 (CL07). As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant ECMs.
Handling procedure of contaminated materials	HY-6	Excavate pre-classified contaminated materials and transfer such materials directly into haulage trucks for off-site disposal at a waste facility licensed to accept the contaminated material.	Construction	Table 7-2 Section 8	This mitigation measure has been included in Table 7-2 (CL18). As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant ECMs.
Assessment, handling and stockpiling management of	HY-6	Develop procedures for the assessment, handling and stockpiling of potentially contaminated materials, in accordance with OEH's Waste Classification Guidelines (2016).	Construction	Table 7-2 Section 8 Waste and Resource	This mitigation measure has been included in Table 7-2 (CL18 and CL19). Additional information is provided in the Waste and Resource Management Sub-plan (Material Tracking and

Outcome	Ref #	Commitment	Timing	CLMP Reference	How Addressed
contaminated materials				Management Sub-plan (Material Tracking and Environmental Management Plan Appendix A)	Environmental Management Plan, Appendix A) As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant ECMs.
Compliance with guidelines in treating and discharging any water collected from the worksites	HY-7	During construction, any water collected from the worksites would be treated and discharged in accordance with current guidelines to avoid any potential contamination or local stormwater system impacts. These guidelines include: • The Blue Book - Managing Urban Stormwater: Soils and Construction (Landcom, 2004 and DEC 2008). • Transport for NSW Water Discharge and Reuse Guideline 7TP-SD-024.	Construction	Table 7-2 Section 8	This mitigation measure has been included in Table 7-2 (CL20). As detailed in Section 8, this requirement will be communicated during the site induction, toolbox talks, and daily pre-starts and will be documented within the relevant ECMs.
Implementation of spill and refuelling management procedure	GW-4	Hazardous material procedures (including procedures for managing spills and refuelling and maintaining construction vehicles/equipment) would be developed and implemented as part of the CEMP to minimise potential for groundwater quality impacts due to chemical spills.	Construction	Section 7.5 Table 7-2	Section 7.5 outlines a procedure for minimising the potential for groundwater quality impacts due to spills and refuelling. This mitigation measure has been included in Table 7-2 (CL12 – CL17).

3.4 Environmental performance outcomes

Relevant Environmental Performance Outcomes (EPOs) are listed in **Table 3-3** below. This includes reference to requirement outcomes, the timing of when the commitment applies, and relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-3 Environmental Performance Outcomes relevant to this CLMP

Environmental Performance Outcome	Timing	CLMP Reference	How Addressed
There would be no impacts on aquatic environments associated with the disturbance of ASS during construction.	Construction	Section 5.1.2	There will be no disturbance of ASS within Parramatta River during construction. As such, there will be no impacts on aquatic environments. ASS will be identified in the JV's GIS system and included in ECMs where relevant.
Any contamination on project sites would be remediated to suit future land use.	Construction	Site Contamination Report Section 7.1	Remediation Action Plans will be prepared as required and implemented to ensure nominated sites are suitable for future land use.

4 Consultation

In accordance with the CoA C5, this CLMP as a Sub-Plan to the CEMP is required to be developed in consultation with relevant local Councils and agencies. This Sub-plan will be submitted along with, or subsequent to, the submission of the CEMP, no later than one month before construction.

This consultation is intended to assist in the development and finalisation of the Sub-plan. **Table 4-1** will be updated on completion of the consultation and will summarise relevant stakeholder reviews and responses.

Table 4-1 Summary of Consultation and Approval

Agency	Requirement	Status	Response	Date
City of Parramatta Council	No comment	-	-	5/07/19
Cumberland Council	No comment	-	-	17/7/19
EPA	No comment	-	-	9/7/19
Sydney Water	SPS 067 to be included in the list of Areas of Environmental Interest	Addressed	Closed	6/8/2019

5 Existing Environment

This section describes the existing environment of Stage 1, specific to contaminated land. It also summaries previous contaminated land investigations undertaken to date and outlines further investigation required.

5.1 Previous investigations

5.1.1 Desktop searches

A search of the NSW EPA record of notices under Section 58 of the *Contaminated Land Management Act 1997* (CLM Act) and notifications under Section 60 of the CLM Act identified a total of 13 registered sites within 500 metres of the project boundary that were either regulated or had been notified to the NSW EPA. All properties are located outside of the disturbance footprint with the exception of the service station at Church Street, Parramatta, the Former James Hardie Factory at James Ruse Drive/Grand Avenue, Rosehill, and the Sandown Railway Line.

Parramatta Gasworks was historically located in Parramatta on George Street. It was determined that the gasworks was located at the southern end of Gas Works Bridge (MacArthur Street) and included a portion of Queen's Wharf Reserve on the southern bank of the Parramatta River. While the extent of the former gas works is unknown, Queen's Wharf Reserve is partially located within the project boundary.

There are no known landfills, waste transfer stations or waste processing facilities within 500 metres of the Infrastructure Works.

5.1.2 Acid sulfate soils

The Atlas of Australian ASS compiled by CSIRO was reviewed as part of the EIS to assess the probability of ASS occurrence within the disturbance footprint. The ASS risk plan indicates there is low or extremely low probability of ASS occurring within the disturbance footprint. There is a high probability of ASS occurring within sediments of the Parramatta River (as far west as the footbridge within Parramatta Park and north of the Western Sydney Stadium (Bankwest Stadium), however disturbance of these sediments is not proposed during the Infrastructure Works.

Consistent with the CSIRO Atlas, the ASS Planning Maps published by NSW Department of Planning show sediments within Parramatta River to the footbridge in Parramatta Park are classified as Class 1. Disturbance of Class 1 land is not proposed during the Infrastructure Works. The ASS Planning Maps also indicate that land within the disturbance footprint at the eastern portion of the Sandown Line (within Lot 11/ DP603547) is Class 3 land, however works in this area would be limited to the removal of the existing rail tracks.

If detailed investigations determine high-risk ASS, then it will be identified on relevant ECMs and should works require impacts to ASS, the works will be undertaken in accordance with the Acid Sulfate Soil Management Procedure (Soil and Water Management Sub-plan, Appendix C).

5.1.3 Areas of environmental interest

Areas of Environmental Interest (AEI), or potential sources of contamination, for the Infrastructure Works were identified in the EIS. Potential receptors from contamination, if present, were considered to comprise:

- Civil contractors, site visitors, future site users and adjacent site users from dermal contact, ingestion and inhalation of dust, vapours and asbestos fibres
- Future site users from vapour intrusion and inhalation where buildings are proposed to be constructed

- Sensitive environmental receptors including aquatic marine ecosystems of the Parramatta River.

The AEIs identified in the EIS as being within or adjacent to the project boundary are outlined in **Table 5-1** and **Figure 5-1**. Three high risk AEIs were identified within the project boundary, all of which will be further investigated (Section 6).

5.1.4 Stakeholder Input

As part of stakeholder consultation undertaken during the preparation of this Sub-plan, an additional area of environmental interest was identified at Grand Avenue North. The site, a Sydney Water Sewerage Pumping Station identified as SPS 067 (Lot 1 DP 549496 and Lot 1 DP 669378), is subject to a Contaminated Land Management Plan (ENSure, 12 April 2019) and Asbestos Management Plan (JBS&G, 14 July 2016). As detailed in Table 7-2 (CL25), Infrastructure Works undertaken within the boundary of this site must be conducted in accordance with the Contaminated Land Management Plan (ENSure, 12 April 2019) and Asbestos Management Plan (JBS&G, 14 July 2016).

Table 5-1 Areas of Environmental Interest (AEI)

Site number	Site description	Description of issues	Location
High Risk			
AEI 15	Former gas works at Queens Wharf Reserve	Potential for contamination, if waste materials were left on site, or used as fill at the former gas works site, and if remediation was not carried out.	Within disturbance footprint
AEI 23	Existing rail corridor – Sandown Line including 27 Grand Avenue, Camellia	Potential for contamination due to fill materials for rail formation and use of the land. Presence of capped non-friable and friable asbestos impacted soils within the rail corridor along the Sandown Line.	Within disturbance footprint
AEI 26	13A Grand Avenue, Rosehill	Potential for contamination associated with use of the site as a scrap yard. Observations of site conditions indicate the site has been operated under poor environmental management practices, resulting in the likely contamination of underlying soils and groundwater. The property is likely to have been reclaimed by filling over the alluvial deposits. Potential for chrome ore processing residue fill at the site and leaching of chrome residue into groundwater.	Within disturbance footprint
Medium Risk			
AEI 1	Fill along existing roadways, road reserves and properties	Historically uncontrolled fill, potentially containing asbestos, ash, building and industrial wastes etc. Potential utility structures including conduits made of asbestos.	Within disturbance footprint
AEI 2	Fill within river banks adjacent to Parramatta River	Potential for Parramatta River banks to contain uncontrolled fill.	Within disturbance footprint

Site number	Site description	Description of issues	Location
AEI 3	Westmead Hospital NSW	Potential contamination from current land use and fill material of unknown origin.	Within disturbance footprint
AEI 4	The Children's Hospital at Westmead	Potential contamination from current land use and fill material of unknown origin.	Within disturbance footprint
AEI 6	Parramatta River	Migration and accumulation of potentially contaminated sediment from erosion and surface runoff.	Within disturbance footprint
AEI 7	Parramatta North Urban Transformation Area	Potential for contamination due to historical market gardens, former fuel storage and dispensing facilities, onsite disposal of ash and wastes, and former vehicle and plant maintenance activities.	Within disturbance footprint
AEI 8	St Patrick's Cemetery (1 Pennant Hills Road, North Parramatta)	Potential for contamination associated with imported uncontrolled fill, leaching of chemicals from body preservation and coffins, and use of pesticides, fertilisers and weed killers.	Partially within the disturbance footprint
AEI 9	435 Church Street, Parramatta	Potential petroleum hydrocarbon impacts at this site due to use as a service station. The site is listed on the NSW EPA List of Notified Sites with status of contamination 'under assessment'.	Within disturbance footprint
AEI 10	Victoria Road and Church Street intersection	Asbestos waste from James Hardie site.	Within disturbance footprint
AEI 13	1A Barrack Lane, Parramatta	Potential contamination associated with its former use as a substation and potential for imported uncontrolled fill. Substation has been decommissioned by Endeavour Energy.	Within disturbance footprint

Site number	Site description	Description of issues	Location
AEI 14	142-154 Macquarie Street, Parramatta	Potential for contamination due to past historical land uses. The site is currently under redevelopment.	Partially within the disturbance footprint
AEI 16	127 Alfred Street, Parramatta	Potential for contamination, if waste materials were left on site, or used as fill at the former gas works site, and if remediation was not carried out.	Within disturbance footprint
AEI 17	1 River Road West, Parramatta	The property is used for several automotive workshops.	Adjacent to disturbance footprint
AEI 18	139 Arthur Street, Parramatta	The property is used as an automotive workshop.	Adjacent to disturbance footprint
AEI 20	113 Hassall Street, Rosehill	The property is used as a service station.	Adjacent to disturbance footprint
AEI 21 and AEI 22	Former James Hardie Property (181 James Ruse Drive and 1 Grand Avenue, Rosehill)	The former James Hardie Factory site, which was historically used for the manufacture of building products containing asbestos, exists on either side of the existing T6 Carlingford Line. It is regulated by NSW EPA under the CLM Act.	Within disturbance footprint.
AEI 24	Existing rail corridor – T6 Carlingford Line – Camellia to Parramatta Road	Potential for contamination due to fill material associated with railway use.	Within disturbance footprint.

Site number	Site description	Description of issues	Location
AEI 27	6 Grand Avenue, Rosehill (former Akzo Nobel site)	The site is currently notified under the CLM Act. Soils and groundwater at the site are known to contain hexavalent chromium, volatile chlorinated hydrocarbons and asbestos due to historical industrial activities. The site would be remediated (subsurface) to a commercial/industrial land use under NSW EPA audit scheme prior to the commencement of construction of the stabling and maintenance facility (separate planning approval process).	Within disturbance footprint.
AEI 28 and AEI 29	13 Grand Avenue, Rosehill (AEI 28) 15 Grand Avenue, Rosehill (AEI 29)	Both properties are on the list of contaminated sites notified to the NSW EPA and are either under assessment (13 Grand Avenue) or listed as regulation being finalised (15 Grand Avenue). These properties are likely to have been reclaimed by filling over the alluvial deposits. There is the potential for chromium impact associated with chrome ore processing residue in fill.	Partially within the disturbance footprint
AEI 39	Existing rail corridor – T6 Carlingford Line	Potential for contamination due to fill materials for rail formation. Any contamination (if present) is typically localised and superficial.	Within disturbance footprint.
AEI 42	Fill within the river bank adjacent to Vineyard Creek	Potential for uncontrolled fill within the banks of Vineyard Creek.	Within disturbance footprint.
AEI 47	57 Adderton Road, Telopea	The property was used as a workshop and service station.	Adjacent to disturbance footprint
AEI 48	Former Producers Co- Op site, off Thalon Street, Carlingford	Presence of trace organochlorine compounds and metal impacted soils have been identified previously. There are also reports of historical underground storage tanks (USTs) which, if leaked, present potential petroleum hydrocarbons groundwater contamination risks.	Adjacent to disturbance footprint

Site number	Site description	Description of issues	Location
Low Risk			
AEI 19	110A Hassall Street, Rosehill	Asbestos waste from James Hardie site.	Adjacent to disturbance footprint
AEI 30	33A Grand Avenue, Rosehill	The property is used for metal processing and has been notified to the NSW EPA. However, contamination was not significant enough to warrant regulation.	Adjacent to disturbance footprint
AEI 43	213 Victoria Road, Rydalmere	Suspected fragments of non-friable ACM identified on the ground surface and photographs indicate incineration of waste has occurred on open ground during redevelopment works.	Adjacent to disturbance footprint
AEI 46	52 Rock Farm Avenue, Oatlands	Asbestos waste from James Hardie site.	Adjacent to disturbance footprint

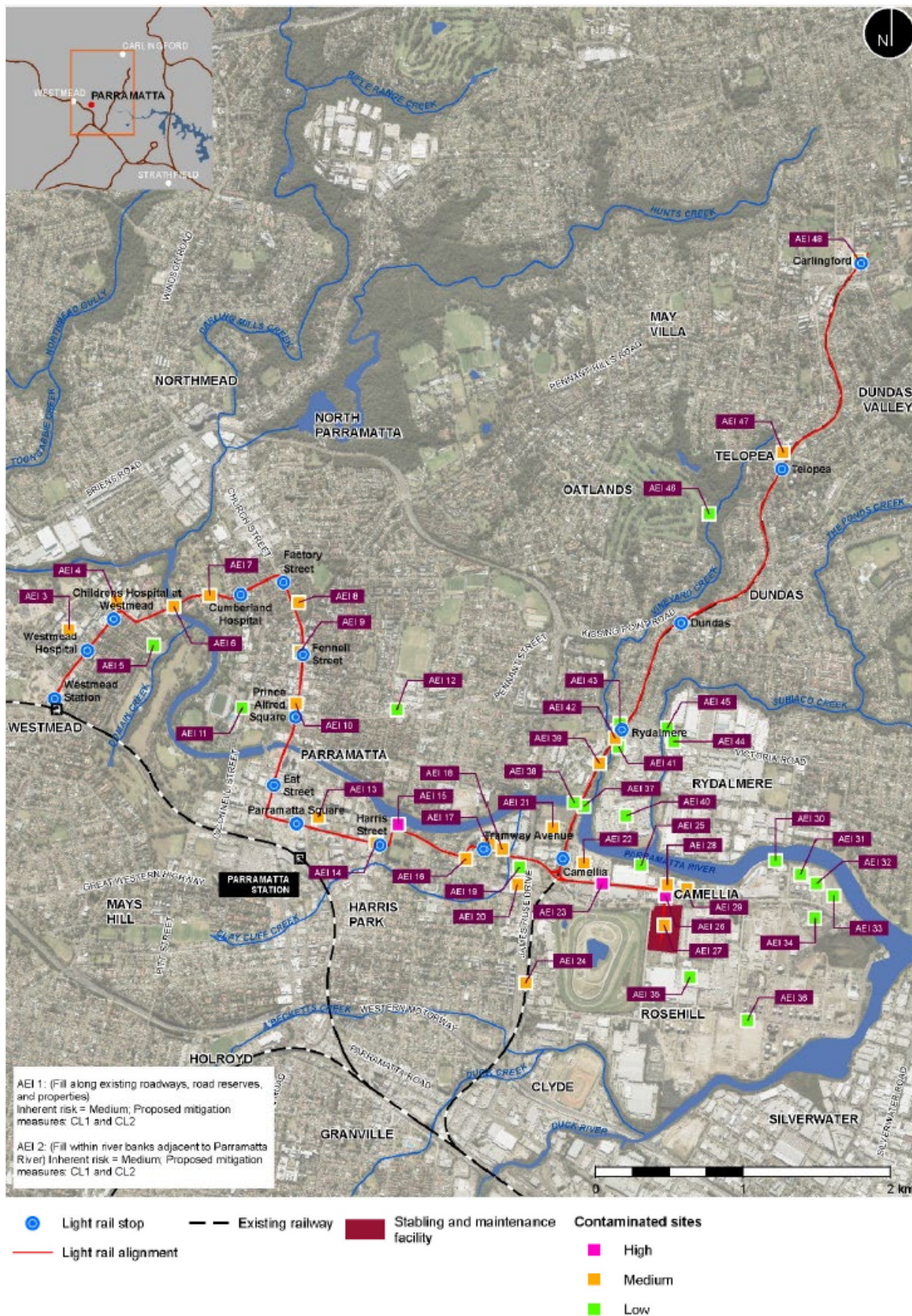


Figure 5-1 Location of Area of Environmental Interest (AEI)

6 Environmental aspects and impacts

6.1 Construction activities

Key aspects of the Infrastructure Works that could result in contamination to soil and water include:

- Pre-construction activities including utility adjustment, site access provisions, property adjustments
- General and bulk earthworks
- Building and structure demolition (contaminants may include asbestos)
- Removal of redundant utilities
- Construction of site compounds and stockpile areas
- Temporary access roads during construction
- Storage of spoil, drilling mud and hazardous materials.

Refer to Appendix A2 of the CEMP – Environmental Risks Register.

6.2 Impacts

The potential for contaminated land disturbance and impacts will depend on a number of factors. Primarily impacts will be dependent on the nature, extent and magnitude of construction activities and their interaction with known and potential contaminated land sources.

In general, the sources of contamination within the Stage 1 alignment include:

- Land reclamation and other uncontrolled fill material
- Former and current industrial land uses
- Historical railway activities
- Spills and leaks of fuel, oils and other hazardous material from fuel storage infrastructure (contaminants may include hydrocarbons and heavy metals).

Potential impacts from contaminated land include:

- Risk of exposure to petroleum hydrocarbons, asbestos and other hazardous material during excavation/demolition through inhalation and/or direct contact
- Contamination of surrounding areas via leaching, overland flows, and/or subsurface flow with the potential to impact on flora, fauna or groundwater dependent ecosystems
- Disturbance of unidentified contaminated land and subsequent generation of contaminated run-off.

Relevant aspects and the potential for related impacts have been considered in a risk assessment at Appendix A2 of the CEMP. Section 7 provides a suite of mitigation measures that will be implemented to avoid or minimise identified impacts.

7 Environmental control measures

7.1 Management of AEIs

Reflecting the outcomes of the EIS and the requirements of the Project Approval and REMMMs, a Site Contamination Report will be prepared for high risk AEIs and nominated medium risk AEIs (subject to the outcomes of a desktop risk assessment). A framework of staged investigations will be undertaken in accordance with guidelines “made or approved” by the NSW EPA under Section 105 of the *Contaminated Land Management Act 1997*.

Broadly, the investigations framework will consist of the following stages, each of which are described in the sections that follow:

- Stage 1 – Preliminary Site Investigation
- Stage 2 – Detailed Site Investigation
- Stage 3 – Remedial Action Plan
- Stage 4 – Remediation, validation and monitoring.

It is noted that a NSW EPA Accredited Site Auditor has been engaged to review all contamination reports and to evaluate site suitability during and post construction. In addition, site investigations and remediation are being carried out by a consultant who holds a current and valid certification under one or more of the contaminated land consultant certification schemes endorsed by the NSW EPA.

The remaining medium risk AEIs (which do not require a Site Contamination Report) and all low risk AEIs will be reflected on the ECM together with relevant controls from Table 7-2 (including CL01, CL02, CL06, CL09, CL12, CL19, CL20, CL21, and CL22).

7.1.1 Stage 1 – Preliminary Site Investigation

Prior to commencement of construction, Stage 1 preliminary site investigations were undertaken of high risk AEIs and nominated medium risk AEIs (**Table 7-1**).

The scope of the investigations included an assessment of:

- All past and present potentially contaminating activities
- Potential contamination types
- Site condition
- Need for further investigations.

Where the Stage I investigations included a complete site history which clearly demonstrates that site activities have been non-contaminating, further investigation or site sampling is not required. In such cases, the identification, handling and management of potential contaminated soils, materials and groundwater is to be undertaken in accordance with this Sub-plan and other relevant Sub-plans (i.e. Waste and Resource Management Sub-plan, Air Quality and Dust Management Sub-plan and Soil and Water Management Sub-plan). Where additional site-specific measures have been identified as part of the Stage I investigations (**Table 7-1**), these controls are detailed in **Table 7-2**.

Table 7-1: Stage I Preliminary Site Investigations

Site Number	Site Description	Level of Investigation	Site Specific Measures
High Risk			
AEI 15	Former gas works at Queens Wharf Reserve	Stage 1 and Stage 2; additional investigations pending outcomes of Stage 2	Site specific measures to be developed on completion of investigations
AEI 23	Existing rail corridor – Sandown Line including 27 Grand Avenue, Camellia	Contaminated Land Management Summary	Refer to Table 7-2 (CL26)
AEI 26	13A Grand Avenue, Rosehill	Stage 1 and Stage 2; additional investigations pending outcomes of Stage 2	Site specific measures to be developed on completion of investigations
Medium Risk			
AEI 9	435 Church Street, Parramatta	Stage 1 and Stage 2; additional investigations pending outcomes of Stage 2	Site specific measures to be developed on completion of investigations
AEI 9	17 Harold Street, Parramatta 439-441 Church Street, Parramatta 431 Church Street, Parramatta	Stage 1 only	Refer to Table 7-2 (CL27)
AEI 13	1A Barrack Lane, Parramatta	Stage 1 and Stage 2	Refer to Table 7-2 (CL33)
AEI 14	142-154 Macquarie Street, Parramatta	Stage 1 only	Refer to Table 7-2 (CL28)
AEI 16	127 Alfred Street, Parramatta	Stage 1 only	Refer to Table 7-2 (CL29)
AEI 21	Former James Hardie Property (181 James Ruse Drive)	Stage 1 only	Refer to Table 7-2 (CL30)
AEI 22	Former James Hardie Property (1 Grand Avenue, Rosehill)	Stage 1 only	Refer to Table 7-2 (CL30)
AEI 27	6 Grand Avenue, Rosehill (former Akzo Nobel site) ¹	Stage 1 only	Refer to Table 7-2 (CL31)

Site Number	Site Description	Level of Investigation	Site Specific Measures
Additional			
N/A	137 George Street, Parramatta	Stage 1 only	Site specific measures are not warranted
N/A	1B Grand Avenue (Endeavour Energy Substation)	Stage 1 only	Refer to Table 7-2 (CL32)

Notes

1. Stage I Preliminary Site Investigation undertaken by Package 4 was limited to the road and verge located north of 6 Grand Avenue. Remaining portions of the site are within the scope of Package 5 (Supply, Operate and Maintain Works).

7.1.2 Stage 2 – Detailed Site Investigation

Where contaminating activities are suspected or known to have occurred, or if the site history is incomplete, further intrusive investigations will be required. The purpose of Stage 2 investigations is to assess whether contaminated soil and/or groundwater poses an unacceptable risk to human or ecological receptors during both the construction and operational stages of the works.

Stage 2 will require the preparation of a Sampling Analysis and Quality Plan (SAQP) to guide intrusive investigations of nominated sites. In accordance with the Project Deed, the SAQP will be submitted to TfNSW for approval prior to commencement of works. Where investigations will intersect or disturb the surface of sites which are regulated by the EPA under the *Contaminated Land Management Act 1997*, notification will be provided and, where relevant, approvals will be sought directly from the EPA prior to commencement.

The results from the Stage 2 investigations will be assessed against criteria contained within the National Environment Protection (Assessment of Site Contamination) Measure 1999 (2013) to determine whether the land is suitable for the intended land use or can be made suitable through remediation. In the event that remediation is required, a site will progress to Stage 3.

7.1.3 Stage 3 – Remedial Action Plan

The Remedial Action Plan (RAP) defines the remediation goals that will be adopted to ensure that the site is suitable for the intended land use and will pose no unacceptable risk to human health or the environment. In addition, the RAP will document relevant procedures and control measures to be implemented during remediation to manage risks to human health and the environment.

In defining the remediation goals, the hierarchy of preferred strategies will be applied as referenced in the Guidelines for the NSW Site Auditor Scheme (DECCW 2006) and detailed in the Assessment of Site Contamination Policy Framework of Schedules A and B of the NEPM. Specifically, on-site treatment of contamination will be adopted in preference to off-site treatment. Where treatment options are not practicable, containment will be pursued in preference to removal to an approved site or facility. In the event that remediation will have no net environmental benefit or result in an adverse environmental effect, a management strategy will be developed.

7.1.4 Stage 4 – Remediation, validation and monitoring

Remediation works will be undertaken in accordance with the RAP and under the guidance of a certified contaminated land consultant. Where practicable, remediation works will be integrated with excavation and development works performed during construction.

The scope of the remediation works will include post-remediation testing and validation to verify conformance with the RAP clean-up criteria. The validation report will also include relevant information to demonstrate that all compliance obligations have been addressed.

In the event that ongoing monitoring or management is required, a Long Term Environmental Management Plan (LTEMP) will be prepared for the site. The LTEMP will detail the monitoring and/or management strategy including the monitoring parameters, locations and frequency. Reporting requirements will also be defined within the LTEMP.

The remediated land will not be used for the purpose approved under the Project Approval until a Site Audit Statement, prepared by a NSW EPA Accredited Site Auditor, determines that the land is suitable for the intended use and any conditions have been addressed. A copy of the final Site Audit Statement will be submitted to the Secretary and relevant Council no later than one month before the commencement of CSSI operations.

7.2 Management of Additional Contamination

In the event that contamination is identified that is in addition to the AEIs (defined in the Project Deed as Additional Contamination), the material must not be intermixed with clean material or other contaminated material.

A notice must be provided to the TfNSW Environment and Planning Manager within five days of the event. A report detailing the proposed management approach must be submitted within 10 days of a request from TfNSW.

7.3 Unexpected Finds Procedure of Contaminated Land and Asbestos

The discovery of Additional Contamination, unexpected contaminated land or asbestos will be managed in accordance with the Unexpected Finds Procedure of Contaminated Land and Asbestos. Refer to **Appendix A** of this CLMP for Unexpected Finds Procedure of Contaminated Land and Asbestos.

7.4 Asbestos management

The discovery of asbestos or asbestos-contaminated materials (ACM) during demolition and construction activities will be strictly managed in accordance with the *Protection of the Environment Operations (Waste) Regulation 2014*, *Work Health and Safety Regulation 2011*, the Parramatta Connect Asbestos and Air Quality Management Plan – Construction Works (JBS&G Australia Pty Ltd, 17 December 2019) and the requirements of this Sub-plan (Table 7-2).

Asbestos removal, transfer and disposal will be tracked in accordance with the requirements of the Waste and Resource Management Sub-plan (Appendix A, Material Tracking and Environmental Management Plan). If unexpected asbestos is discovered during construction activities, refer to the Unexpected Finds Procedure for Contaminated Land and Asbestos (**Appendix A**).

7.5 Hazardous materials measures

Hazardous materials may be transported to and used on-site to facilitate construction. Hazardous material procedures (including procedures for managing spills and refuelling and maintaining construction vehicles/equipment) will be implemented to minimise potential for harm during works (refer to **Table 7-2**).

Hazardous substances will be stored and used on-site in well secured containers in accordance with the manufacturer/supplier instructions. Storage and handling of flammable or combustible liquids will be in accordance with AS 1940-2017: The Storage and Handling of Flammable and Combustible Liquids. The use and storage of Hazardous Materials will also be consistent with the TfNSW Chemical Storage and Spill Response Guidelines - 9TP-SD-066.

A register of hazardous substances will be maintained onsite at all times. The hazardous substances will be clearly labelled and will have Hazardous Chemicals and Safety Data Sheets (SDS) affixed or available nearby. The SDS will be used to determine compatibility of hazardous

chemicals to be stored together, i.e. no flammables with corrosives, not all corrosives compatible with each other etc.

The use of hazardous substances that could result in a spill will be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds. A bund sized to 110% of the largest stored receptacle will be established around any storage area for hazardous substances.

Construction plant, vehicles and equipment will be refuelled off-site, or in designated re-fuelling areas located onsite. Pre-start checks and maintenance (in accordance with manufacturer's requirements) will be undertaken on all plant and equipment to minimise potential for leaks and spills from vehicles.

Emergency spill kits will be maintained on-site at all times. All workers will undergo training on spill response (Section 8.2).

7.6 Management and mitigation measures

Specific measures and requirements to address contract specifications, CoA and REMMMs in relation to impacts on contaminated land are detailed in **Table 7-**.

Table 7-2 Contaminated Land management mitigation measures

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL01	Training will be provided to workers on spill kits, contamination requirements and identification of potentially contaminated materials.	Project training (induction, toolbox or specific training)	Construction	Environment and Sustainability Manager	REMMM HY-5
CL02	Personal Protective Equipment (PPE) will be worn at all times. Any additional PPE required for the removal and disposal of asbestos, will be worn during these construction activities (refer to the Parramatta Connect Asbestos and Air Quality Management Plan – Construction Works, JBS&G Australia Pty Ltd, 17 December 2019).	SWMS	Construction	Safety Manager	REMMM CM-3
CL03	When there is a need for remediation, works will be performed in accordance with: - the hierarchy of preferred strategies in the Guidelines for the NSW Site Auditor Scheme (DECCW 2006) - the sustainability indicators in Table 1 of 'A Framework for Assessing the Sustainability of Soil and Groundwater Remediation'.	Remedial Action Plan	Construction	Environment and Sustainability Manager	REMMM CM-2
CL04	Where practicable, remediation works will be integrated with excavation and development works performed during construction.	Remedial Action Plan	Construction	Environment and Sustainability Manager Construction Manager	REMMM CM-2

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL05	AEIs will be managed in accordance with the management measures outlined in the CLMP and any additional reports required (e.g. Site Contamination Report(s), Site Audit Statement(s), and Remedial Action Plan(s)).	Site Contamination Reports Site Audit Statements Remediation Action Plans	Construction	Environment and Sustainability Manager Construction Manager	REMMM CM-3
CL06	For medium and low risk AEIs, visual inspections will be performed during excavation activities to monitor for potential indicators of contamination such as the presence of fill materials, stained soils, odours, suspected ACM, discoloured groundwater, phase separated hydrocarbons.	Environmental Control Map	Construction	Environment and Sustainability Manager Construction Manager	REMMM CM-4
CL07	All known contaminated areas will be clearly demarcated within the Environmental Control Maps. Works in these areas that have the greatest potential to disturb soil that are contaminated will be managed to minimise disturbance.	Environmental Control Map	Construction	Environment and Sustainability Manager Construction Manager	REMMM HY-6
CL08	Odour suppressing agents will be applied as necessary to minimise impacts associated with contaminated or hazardous materials uncovered during the works.	Environmental Control Map	Construction	Construction Manager Site Superintendent	REMMM AQ-1
CL09	Hazardous materials will not be stored below the 10 per cent AEP flood level.	Environmental Control Map	Construction	Construction Manager Site Superintendent	REMMM HR-5

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL10	Hazardous substances will be stored and used on-site in well secured containers within bunded areas.	Environmental Control Map	Construction	Construction Manager Site Superintendent	REMMM HR-5
CL11	The extent and duration of exposed surfaces (particularly those works that have the greatest potential to disturb soils that are contaminated or have a high erosion and runoff hazard) will be minimised.	Environmental Control Map	Construction	Construction Manager Site Superintendent	REMMM HY-6
CL12	Pre-start checks and maintenance (in accordance with manufacturer's requirements) will be undertaken on plant and equipment to minimise potential for leaks and spills from vehicles.	Pre-start Checklist	Construction	Construction Manager	REMMM HY-6 REMMM GW-4
CL13	All spills will be immediately reported and managed in accordance with the Environmental Incident and Emergency Response Plan (refer to Appendix A5 of the CEMP).	Environmental Control Map	Construction	Construction Manager Site Superintendent	REMMM HR-5 REMMM GW-4
CL14	Spill kits will be readily available and maintained at site compounds and relevant construction vehicles. Spill kits will be utilised in the event of inadvertent spills of fuels, oils, hydraulic fluids and other hazardous wastes.	Environmental Control Map	Construction	Environment and Sustainability Manager Construction Manager	REMMM HY-5 REMMM GW-4

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL15	Fuels, oils, lubricants, chemicals and similar products will be stored in accordance with AS 1940-2017, within designated secondary containment areas (e.g. internally bunded shipping containers or purpose-built structures). Bulk storage areas for fuels, oils and chemicals used during construction will be contained within an impervious bund to retain any spills of more than 110% of the volume of the largest container in the bunded area.	Environmental Control Map	Construction	Construction Manager Superintendent	REMMM HR-5 REMMM GW-4
CL16	Refuelling and maintenance of mobile plant will be undertaken offsite (where practicable) or within a designated lined and bunded area.	Environmental Control Map	Construction	Construction Manager	REMMM HR-5 REMMM GW-4
CL17	Where refuelling and maintenance is undertaken on-site, the site will be a minimum of 40 m away from surface water features such as creeks, rivers, drains, swales, stormwater pit inlets etc.	Environmental Control Map	Construction	Construction Manager Superintendent	REMMM HR-5 REMMM GW-4
CL18	Pre-classified contaminated materials that are not suitable for reuse (refer to Appendix A of the Waste and Resource Management Sub-plan) will be excavated and transferred directly into haulage trucks for off-site disposal at a waste facility licensed to accept the contaminated material.	Environmental Control Map	Construction	Construction Manager Superintendent	REMMM HY-6

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL19	All potentially contaminated spoil will be stockpiled on a bunded, covered and impermeable surface to prevent wind blow and potential erosion.	Environmental Control Map	Construction	Construction Manager Superintendent	REMMM HY-6
CL20	During construction, any water collected from nominated sediment and settling containers will be treated (where required) discharged in accordance with the Environment Protection Licence (EPL 21347) and the following guidelines to avoid any potential contamination or local stormwater system impacts: • The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom, 2004 and DEC 2008) • Transport for NSW Water Discharge and Reuse Guideline (7TP-SD-024) • Remedial Action Plan (where prepared). Refer to the Soil and Water Management Sub-plan for further guidance. Site water from AEI where a RAP has not been developed will be subject to laboratory testing prior to discharge / disposal.	Environmental Control Map Water Discharge Permit (contained within SWMP)	Construction	Environment and Sustainability Manager Construction Manager Superintendent	REMMM HY-7
CL21	Any unexpected finds will be managed through the Unexpected Finds Procedure for Contaminated Land and Asbestos found in Appendix A of this CLMP.	Environmental Control Map	Construction	Environment and Sustainability Manager Construction Manager Superintendent	REMMM CM-6

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL22	Conduct a hazardous materials survey prior to the demolition or impact of buildings and structures. Where such materials are identified, adhere to the requirements of the Waste and Resource Management Sub-plan and the Air Quality Management Sub-plan.	Work Area Plan (WAP) risk assessment	Construction	Construction Manager Superintendent	REMMM AQ-1
CL23	Intermixing of contaminated materials with clean material or any other type of contamination is generally not permissible. However, intermixing may be undertaken subject to further assessment and approval of the Environment and Sustainability Manager.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
CL24	Apply the Material Tracking and Environmental Management Plan (Waste and Resource Management Sub-plan, Appendix A) to the movement and tracking of contaminated material.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
Site Specific Measures					
CL25	Sydney Water Sewerage Pumping Station Work undertaken within the boundary of the Sydney Water Sewerage Pumping Station (SPS 067) located at Grand Avenue North (Lot 1 DP 549496 and Lot 1 DP 669378) must be undertaken in accordance with the Contaminated Land Management Plan (ENSure, 12 April 2019) and Asbestos Management Plan (JBS&G, 14 July 2016).	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL26	Former Sandown Line, Camellia (AEI 23) • Pavement, soil/fill and/or ballast disturbance works will be undertaken by an appropriately licensed asbestos contractor and in accordance with Safe Work Method Statements (SWMS), the Air Quality and Dust Management Sub-plan and the Unexpected Contaminated Land and Asbestos Finds Procedure (Appendix A). • Ensure sediment controls and stormwater run-off is strictly controlled in accordance with the Soil and Water Management Sub-plan. • Manage excess soil and other waste materials (including concrete pavement and ballast) in accordance with this Sub-plan, the Waste and Resource Management Sub-plan and the NSW EPA Waste Classification Guidelines. • Ensure that the relocation and reuse of materials within the premises is managed in accordance with the Excavated Materials Management Plan. • Ensure adequate controls are reflected in SWMS to limit worker exposure to potentially contaminated groundwater and/or vapour intrusion. Contaminated groundwater, if encountered, is to be managed in accordance with relevant NSW EPA guidelines, relevant NSW legislation, this Sub-plan and the Waste and Resource Management Sub-plan.	Environmental Control Map	Construction	Environment and Sustainability Manager	REMMM CM-5 Best Practice

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL27	17 Harold Street, 439-441 Church St, and 431 Church St, Parramatta (AEI 09) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
CL28	142-154 Macquarie Street, Parramatta (AEI 14) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
CL29	127 Alfred Street, Parramatta (AEI 16) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL30	181 James Ruse Drive, Rosehill (AEI 21) and 1 Grand Avenue, Rosehill (AEI 22) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed. - Any intrusive works shall be reinstated with care after excavations to ensure no asbestos containing material is visible on the ground surface. The Licensed Asbestos Assessor must complete a final ground surface site inspection for the presence of visible asbestos containing material.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
CL31	6 Grand Avenue, Rosehill (AEI 27) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice

ID	Measure/Requirement	How Implemented	When to implement	Responsibility	Reference
CL32	1B Grand Avenue, Camellia (Additional Site 1) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice
CL33	1A Barrack Lane, Parramatta (AEI 13) - Undertake works in accordance with the Asbestos and Air Quality Management Plan. - Monitor odours in accordance with the Odour Monitoring Procedure (Appendix C) at all times when malodour material is being disturbed.	Environmental Control Map	Construction	Environment and Sustainability Manager	Best Practice

8 Compliance management

8.1 Roles and responsibilities

The JV Project Team's organisational structure and overall roles and responsibilities are outlined in Section 3.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 7 of this CLMP.

8.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to contaminated land management, including:

- Use of spill kits
- Location of identified potential contaminated land sites
- Plant/equipment refuelling locations
- Procedure to be implemented in the event of the unexpected finds of contaminated land or asbestos
- Specific roles and responsibilities for contaminated land management.

Targeted training in the form of toolbox talks, pre-starts or specific training will also be provided to personnel with a key role in contaminated land management. Examples of training topics include:

- Site access restrictions
- Correct use of PPE
- Decontamination procedures
- Waste handling procedures
- Water quality and leachate controls
- Dust control measures and performance measures.

Further details regarding staff induction and training are outlined in Section 3.4 of the CEMP.

8.3 Monitoring and inspections

Monitoring requirements and responsibilities in relation to inspections are documented in Section 3.8 of the CEMP.

On completion of Site Contamination Reports, Table 7-2 will be revised to include site-specific requirements.

8.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Sub-plan, CoA and other relevant approvals, licences and guidelines.

Audit requirements are detailed in Section 3.8.4 of the CEMP.

8.5 Reporting

Reporting requirements and responsibilities are documented in Section 3.8.6 of the CEMP.

9 Review and improvement

9.1 Continuous improvement

Continuous improvement of this Sub-plan will be achieved through the ongoing evaluation of performance against environmental policies, objectives and targets. Specific actions to be undertaken include:

- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement.

9.2 CLMP update and amendment

The processes described in Section 3.8 to Section 3.11 of the CEMP may result in the need to update or revise this Sub-plan.

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

A copy of the updated Sub-plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 3.12.1 of the CEMP.

Appendix A – Unexpected Contaminated Land and Asbestos Finds Procedure

The purpose of this procedure is to detail the actions to be undertaken when unexpected contaminated land and/or asbestos is encountered during construction activities. It is applicable to all activities conducted by construction personnel that have the potential to uncover contaminated land and asbestos.

Potential contamination issues

The potential contamination issues relating to asbestos and contaminated land for the Infrastructure Works are addressed in Section 6 of the CLMP.

Likelihood of contamination

Where potentially contaminated material is uncovered, the Environment and Sustainability Manager will determine the likelihood of this classification through consideration of the following criteria:

- Unusual odour from soils that are not detected in other similar areas
- Discolouration or staining of soil or rock
- Seepage of unusual liquids from soil or rock
- Unusual odours or sheen on groundwater and/or surface water
- Unusual metal objects
- Unexpected underground storage tanks, buried drums or machinery
- Presence of waste or rubbish above or below ground
- Potential asbestos containing material
- Unusual colour in soil, groundwater and/or surface water
- Testing in adjacent excavated areas or trend analysis indicates the potential presence of contaminated materials.

Should none of the above criteria be detected and the material was not assessed as contaminated as part of the design investigation program in situ testing, the Environment and Sustainability Manager is to document this decision and the justification on the Environmental Inspection Form.

Should any of these factors be identified, the Environment and Sustainability Manager is to consider the material to be possibly contaminated and implement the requirements of this procedure.

Unexpected Finds Procedure

If potential contamination is discovered, the following procedure will be implemented:

1. All work in the vicinity of the discovery is to immediately cease.
2. Delineate the area of potential contamination to prevent access by other workers and public and cross contamination with clean material or other contaminated material.
3. Notify the Site Supervisor and the Environment and Sustainability Manager immediately.

4. Engage a suitably experienced and qualified contaminated land consultant to assess the unexpected finds, determine the type and extent of contamination and advise on management requirements.
5. If the area of potential contamination contains asbestos containing material, a suitably qualified asbestos assessor will be engaged immediately. Refer to Section 7.3 of this CLMP for asbestos management.
6. If the material requires off-site disposal or reuse on-site, the material will be classified in accordance with NSW EPA guidelines by a suitably qualified contaminated land consultant. Waste disposal will be undertaken as per the Waste and Resource Management Sub-plan.
7. The Environment and Sustainability Manager will advise when works can recommence (i.e. the contamination has been removed or a management process has been established).

Appendix B – Stakeholder and Agency Consultation

Table B-1 Log of consultation with Sydney Water Corporation as per A5(b) and (c)

In / Out	Date and time	Method of contact	Details of contact
Out	19/06/19	Workshops	PLR Infrastructure Package CEMP and Sub-plan briefing sessions (attended).
Out	21/06/19, 18:12	Email	Issue of Contaminated Land Management Sub-plan for review.
Out	10/07/19, 20:00	Email	Resent link to Management Plans
In	19/07/19, 09:15	Email	Response to Contaminated Land Management Sub-plan received.
Out	31/07/19, 19:15	Email	Email response to comments on the Contaminated Land Management Sub-plan.
In	5/08/19, 10:47	Email	Provision of additional information on SP0067.
Out	5/08/19, 18:59	Email	Email response to additional information (SP0067).
In	6/08/19, 10:41	Email	Response confirming that Sydney Water is satisfied with the response to the comments.

Table B-2 Log of issues raised by Sydney Water Corporation (SWC) as per A5 (d) and (e)

Reference	Comment	How addressed	Management plan reference location
1	SPS 067 to be included in the list of Areas of Environment Interest (AEI)	Areas of Environmental Interest (AEIs) were defined in the Environmental Impact Assessment. The site SPS 067 was not identified in the EIS as an AEI. However, an additional section was added to the Contaminated Land Management Sub-plan (Section 5.1.4) to reflect information provided by Sydney Water on SPS 067. This is further captured in Table 7-2 (control CL25).	Section 5.1.4 Table 7-2
2	Sydney Water to be added to Table 4-1 as a stakeholder once the consultation is complete.	Sydney Water has been added to Table 4-1 as a stakeholder.	Table 4-1

Table B-3 Log of consultation with City of Parramatta Council as per A5(b) and (c)

In / Out	Date and time	Method of contact	Details of contact
Out	19&20/06/19	Workshops	PLR Infrastructure Package CEMP and Sub-plan briefing sessions (attended).
Out	21/06/19, 17:36	Email	Issue of Contaminated Land Management Sub-plan for review.
In	05/07/19, 17:01	Email	Response to CEMP and Sub-plan review received. No comments provided for the Contaminated Land Management Sub-plan.

Table B-4 Log of consultation with Cumberland Council as per A5(b) and (c)

In / Out	Date and time	Method of contact	Details of contact
Out	19/06/19	Workshops	PLR Infrastructure Package CEMP and Sub-plan briefing sessions (attended).
Out	21/06/19, 18:40	Email	Issue of Contaminated Land Management Sub-plan for review.
In	11/07/19, 17:01	Email	Response to CEMP and Sub-plan review received. No comments provided for the Contaminated Land Management Sub-plan.
Out	16/07/19, 19:16	Email	Email requesting confirmation that Cumberland Council has no feedback on the Contaminated Land Management Sub-plan.
In	17/07/19, 9:11	Email	Email confirming that Cumberland Council has no feedback on the Contaminated Land Management Sub-plan.

Table B-5 Log of consultation with EPA as per A5(b) and (c)

In / Out	Date and time	Method of contact	Details of contact
Out	19/06/19	Workshops	PLR Infrastructure Package CEMP and Sub-plan briefing sessions (attended)
Out	21/06/19, 18:40	Email	Issue of Contaminated Land Management Sub-plan for review.
In	09/07/19, 17:21	Email	Response to CEMP and Sub-plan review received. No comments provided for the Contaminated Land Management Sub-plan.

Appendix C – Odour Monitoring Procedure and Form

Purpose

The purpose of this procedure is to define the odour monitoring requirements associated with the Infrastructure works.

Scope

This procedure must be implemented during the handling, receipt or excavation of malodorous materials within the premises boundary.

Procedure

During the handling, receipt or excavation of malodorous materials within the premises boundary, odour monitoring shall be undertaken by the appointed Environmental Consultant or Environmental Coordinator.

Location

Undertake odour monitoring at the downwind boundaries of each active soil retention area and each active work area. During each monitoring event, a reading must be taken from a minimum of three locations spaced no greater than 20m.

Frequency

Conduct odour monitoring:

- Hourly during periods of receipt or handling of potentially malodorous materials
- Minimum of twice daily at material reuse sites.

Equipment

Undertake odour monitoring with a 'Nasal Ranger' field olfactometer. Personnel who undertake odour monitoring must be non-smokers and free of any nasal/sinus conditions that may affect the ability to detect/recognise odours.

Reporting

Obtain a single odour measurement at each monitoring location. Where an odour strength of 2-4 odour units or greater is recorded, an additional four odour measurements shall be undertaken on a 1 minute basis. Odour measurements shall be recorded on the Odour Monitoring Form.

Where three (or more) of the total five readings record an odour strength of or in excess of 2-4 odour units, apply odour suppressing agents as necessary to minimise impacts.

Responsibilities

The Environment and Sustainability Manager or nominated delegate must ensure that the requirements of procedure are implemented on the worksite.

Odour Monitoring Form						
Date:						
Name:						
7am	Malodorous material handled:	☐ Yes			☐ No	
	Wind direction and velocity:					
	Monitoring locations:	1.	2.	3.		
	Measurements:	OM	OM	OM		
	Additional measurements:	OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
8am	Malodorous material handled:	☐ Yes			☐ No	
	Wind direction and velocity:					
	Monitoring locations:	1.	2.	3.		
	Measurements:	OM	OM	OM		
	Additional measurements:	OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
9am	Malodorous material handled:	☐ Yes			☐ No	
	Wind direction and velocity:					
	Monitoring locations:	1.	2.	3.		
	Measurements:	OM	OM	OM		
	Additional measurements:	OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
10am	Malodorous material handled:	☐ Yes			☐ No	
	Wind direction and velocity:					
	Monitoring locations:	1.	2.	3.		
	Measurements:	OM	OM	OM		
	Additional measurements:	OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
		OM	OM	OM		
11am	Malodorous material handled:	☐ Yes			☐ No	
	Wind direction and velocity:					
	Monitoring locations:	1.	2.	3.		
	Measurements:	OM	OM	OM		
	Additional measurements:	OM	OM	OM		

Odour Monitoring Form				
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
12pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
1pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
2pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
3pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
4pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM

Odour Monitoring Form				
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
5pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM
6pm	Malodorous material handled:	☐ Yes		☐ No
	Wind direction and velocity:			
	Monitoring locations:	1.	2.	3.
	Measurements:	OM	OM	OM
	Additional measurements:	OM	OM	OM
		OM	OM	OM
		OM	OM	OM
		OM	OM	OM

Appendix D – Environmental Representative Endorsement



18 September 2021

Transport for NSW

Attention to: [REDACTED]
Senior Manager Environment
Parramatta Light Rail
130 George St, Parramatta, NSW 2150

**Review of Appendix B9 – Construction Contaminated Land
Management Sub-Plan.
Infrastructure Works (Package 4) - Parramatta Light Rail – Stage 1
(PLR1INF-CPBD-ALL-LD-PLN-000001 Rev 8)**

Pursuant to SS18285 Condition of Approval A23 (d) ii), as the approved Environmental Representative, I confirm that I have reviewed the updated document, Appendix B9 – Construction Contaminated Land Management Sub-Plan. Infrastructure Works (Package 4) - Parramatta Light Rail Stage 1 (PLR1INF-CPBD-ALL-LD-PLN-000001, Rev 8), dated 1 September 2021, prepared by Parramatta Connect, for consistency with the requirements of the Submissions Report (incorporating Preferred Infrastructure Report) (SPIR).

The amendments to the aforementioned document are noted as editorial in nature and are approved in accordance with Condition of Approval C8. The updated document continues to be consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development, including the SPIR.

Yours sincerely,

Australian Quality Assurance & Superintendence Pty Ltd (AQUAS)

[REDACTED]

Filename : *AQ1148.05 PLR CPBD CLMP rev8 endorsement 211015*

For more information about the Parramatta Light
Rail project, visit Parramattalightrail.nsw.gov.au

Call: 1800 139 389

Email: Parramattalightrail@transport.nsw.gov.au

