Bank Street Park
Blackwattle Bay / Tjerruing

SSD-53386706

Appendix AD

Preliminary Construction Environmental Management Plan (JBS&G)

December 2023

Preliminary Construction Environmental Management Plan

Infrastructure NSW

Bank Street Park | SSD-53386706

JBS&G 65624 | 154,702

24 November 2023

We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community.

We pay respect to Elders past and present and in the spirit of reconciliation, we commit to working together for our shared future.

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Abbreviations

Term	Definition
BDAR	Biodiversity Development Assessment Report
CEMP	Construction Environmental Management Plan
CLM Act	*Contaminated Land Management Act 1997*
DP	Deposited Plan
EMP	Environmental Management Procedure
EPA	Environment Protection Authority
ESCP	Erosion and Sediment Control Plan
INSW	Infrastructure NSW
JBS&G	JBS&G Australia Pty Ltd
LGA	Local Government Area
NML	Noise Management Level
NPfI	Noise Policy for Industry
PC	Principal Contractor
POEO Act	*Protection of the Environment Operations Act 1997*
PTMP	Pedestrian Traffic Management Plan
RAP	Remedial Action Plan
RFS	Rural Fire Service
SEARs	Planning Secretary's Environmental Assessment Requirements
SSD	State Significant Development
SSDA	State Significant Development Application
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*

Planning Secretary's Environmental Assessments Requirements

This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application SSD-53386706. Table 1-1 addresses the relevant SEARs requirements and provides a project response.

Table 1-1: Secretary's Environmental Assessments Requirements

Item	SEARs	Relevant report section(s)
14. Construction impacts	Provide an assessment of likely construction impacts including hours of work, noise, vibration, traffic and pedestrian, air quality, soil, water and waste management.	Refer to EIS
	Address cumulative impacts associated with the proposal.	Section 7
	Provide a Construction Pedestrian and Traffic Management Plan that includes: • a considered approach to route identification and scheduling of construction vehicle movements. • the indicative number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements). • construction worker parking and management. • the nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements). • access constraints and impacts on public transport (infrastructure and services), pedestrians and cyclists. • the need to close, divert or otherwise reconfigure elements of the road, pedestrian and cycle network associated with construction of the project and the duration of these changes.	Construction Pedestrian and Traffic Management Plan (Refer Transport and Accessibility Impact Assessment and Preliminary Construction Pedestrian Traffic Management Plan (JMT 2023)).
	Address impacts to on-street parking, loading, servicing, and drop off and pick up including to residents and businesses.	Refer to EIS
15. Ground and Water Conditions	Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site, including soil erosion, salinity, and acid sulfate soils.	Refer to EIS
	The EIS must map features relevant to water and soils including acid sulfate soils, rivers, streams, wetlands, estuaries, groundwater and groundwater dependent ecosystems, and proposed intake and discharge locations.	Acid Sulfate Soils Management Plan (Refer Bank Street Acid Sulfate Soil Management Plan (JBS&G 2023))
	The EIS must describe background conditions for any water resource likely to be affected by the development, including existing surface and groundwater, hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations	Refer to EIS
	Provide a Surface and Groundwater Impact Assessment that: • describes any works/activities that may intercept, extract, use, divert or receive surface water and/or groundwater. This includes the description of any development, activities or structures that will intercept, interfere with or remove groundwater, both temporary and permanent.	

Item	SEARs	Relevant report section(s)

	• details of the water balance including quantity, quality and source and take for the life of the project and post closure where applicable. This is to include water taken directly and indirectly, and the relevant water source where water entitlements are required to account for the water take. If the water is to be taken from an alternative source confirmation should be provided by the supplier that the appropriate volumes can be obtained.
	• details of Water Access Licences (WALs) held to account for any take of water where required, or demonstration that WALs can be obtained prior to take of water occurring. This should include an assessment of the current market depth where water entitlement is required to be purchased. Any exemptions or exclusions to requiring approvals or licenses under the Water Management Act 2000 should be detailed by the proponent.
	• assesses potential impacts on:
	  ○ surface water resources (quality and quantity) including related infrastructure, hydrology, dependent ecosystems, drainage lines, downstream assets and watercourses.
	  ○ groundwater resources in accordance with the Groundwater Guidelines.
	• identifies and assesses all works/activities located on waterfront land including an assessment against Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).
	• mitigates the effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options.
	• identifies the proposed monitoring of hydrological attributes.	

	Assess the impact on the Sydney Metro West substratum directly beneath the land including: • details of any proposed penetrative subsurface investigations (e.g. boreholes) 2m or deeper to be drilled within the first or second protection reserve • consideration of the Sydney Metro Underground Corridor Protection Guidelines and Sydney Metro at Grade and Elevated Sections Guidelines.	
16. Stormwater and Wastewater	Provide an Integrated Water Management Plan for the development that: • is prepared in consultation with Council and any other relevant drainage or water authority. • details the proposed drainage design for the site including any on-site treatment, reuse and detention facilities, water quality management measures, and the nominated discharge points. • demonstrates compliance with Council or other drainage or water authority requirements and avoids adverse impacts on any downstream properties, including during construction. • identify mitigating effects of the proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options. • outline any sustainability initiatives that will minimise/reduce the demand for drinking water, including any alternative water supply and end uses of drinking and non-drinking water that may be proposed, and	EMP06

Item	SEARs	Relevant report section(s)
	demonstrate water sensitive urban design (principles are used), and any water conservation measures that are likely to be proposed.	
	Where water and drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards, the local council or other drainage or water authority.	
18. Waste Management and Servicing	Identify, quantify, and classify the likely waste streams to be generated during construction and operation.	Refer Bank Street Waste Management (Mott MacDonald 2023) EMP07 EMP09
	Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	
	Include a framework for how the proposed development will incorporate circular economy and zero waste principles advocated for in the NSW Circular Economy Policy Statement into the design, construction and operation of the development.	
	Identify appropriate servicing arrangements for the site showing storage areas away from public access for waste and recyclables during demolition and construction.	
	If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	
19. Contamination	In accordance with *SEPP (Resilience and Hazards) 2021*, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.	RAP (Refer Bank Street Remedial Action Plan (JBS&G 2023))
22. Construction and Operation Staging	If staging is proposed, provide details of how construction and operation would be managed, and any impacts mitigated.	Should staging be adopted for the project, this would be captured in the Contractor's CEMP

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by Infrastructure NSW (INSW) to prepare a Preliminary Construction Environmental Management Plan (CEMP) to support the State Significant Development Application for the construction of a new waterfront public park within Blackwattle Bay (Bank Street Park). Bank Street Park is located at 1A-19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay.

1.1 Project Description

1.1.1 Blackwattle Bay Precinct

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly government owned land located on the western edge of the Pyrmont Peninsula and adjoining the waters of Blackwattle Bay (**Figure 1-1**).

Figure 1-1 Blackwattle Bay Precinct. (Source: INSW)

The precinct was rezoned in December 2022 to facilitate a new mixed-use community, providing for around 2,000 new residents and 5,600 new jobs and creating a vibrant 24/7 economy. Updated planning and land use controls were incorporated into the Sydney Local Environmental Plan 2012, along with site specific design guidance in the Blackwattle Bay Design Guidelines.

A critical part of the Blackwattle Bay Precinct is the high quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

1.1.2 Bank Street Park

Development consent (as per SSD-53386706) is being sought for a *recreation area* for the primary purpose of a *public park*, comprising:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use;
- Demolition of three existing buildings at 1-3 Bank Street;
- New and adapted facilities for community use, including:
    - New single storey building to accommodate flexible community space, café, and marina office/store facilities, with green roof and photovoltaics;
    - Adaptive reuse of Building D for public amenities, bin and other storage;
    - Boat launching ramp and pontoon for passive watercraft, including dragon boats and kayaks;
    - Boat storage building with change facilities for dragon boat users with publicly accessible rooftop deck;

- Public domain works, including:
    - ‘Interpretation Garden’ in existing building ‘ruins’ at 1-3 Bank Street;
    - Split level foreshore promenade;
    - Multi-purpose court with edge seating and partial fence;
    - Nature-based inclusive playspace for ages 2-12;
    - Fitness equipment;
    - Public plaza and grassed open space areas;
    - New tree plantings and planter beds;
    - Public art, wayfinding and interpretative signage, lighting, bike parking and seating;
- Harbour works including:
    - Overwater boardwalk;
    - Land/water interface works, including sandstone terracing into water and support structure, to improve marine habitat;
    - Demolition and construction of a new timber launching ramp for dragon boats;
    - Kayak/passive craft pontoon; and
    - Restoration, repair and alterations to the existing seawall for new stormwater outlets.
- Works to Bank Street road reserve, including:
    - Road space reallocation to provide separated cycleway;
    - Cycleway transition to Bank Street to continue south as part of future works;
    - Reinstatement of existing on-street parallel parking;
    - Tree planting;
    - Accessible parking space; and
    - Loading zone adjacent 1-3 Bank Street.

1.2 Purpose

This Preliminary CEMP has been prepared to support a State Significant Development Application (SSDA) for a new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (SSD-53386706). Bank Street Park is located at 1A-19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay and adjacent areas of Blackwattle Bay.

This Preliminary CEMP has been designed to provide a framework for the implementation of several ongoing monitoring and management measures pertaining to the proposed construction works on the site, the risk to human populations in proximity of the site and the surrounding environment is acceptable. This Preliminary CEMP provides a framework from which the key themes would be adopted by the Principal Contractor (PC) in the development of the project CEMP.

1.3 Responsibilities

The development of the site would be undertaken under the direction of the PC who would be responsible for the implementation of the majority of procedures provided in the Preliminary CEMP. It is noted that where the specific procedures are technical or complex in nature then the PC may appoint appropriately qualified

agents (i.e. environmental consultants) to fulfil the requirements of the procedure, or advise the appropriate implementation of the procedure.

A list of procedures is provided for the Preliminary CEMP based on an assessment of potential environmental impacts from anticipated site works required for the construction works. Specific responsibilities are nominated for the implementation of these procedures.

1.4 Environmental Management Procedures

This Preliminary CEMP includes several example procedures, or Environmental Management Procedures (EMPs) to manage environmental aspects and mitigate potential impacts (as detailed in **Section 7** and summarised in **Table 1-1**), as follows:

- EMP01 Air Quality
- EMP02 Biodiversity
- EMP03 Heritage
- EMP04 Noise and Vibration
- EMP05 Traffic
- EMP06 Erosion and Sediment Control
- EMP07 Waste Management
- EMP08 Stockpile Management
- EMP09 Soil and Contamination
- EMP10 Acid Sulfate Soils
- EMP11 Harbour Works
- EMP12 Environmental Emergency Response
- EMP132 Training
- EMP14 Non-Compliance
- EMP15 Incident Reporting
- EMP16 Record Keeping
- EMP17 CEMP Review

Table 1-1: Construction Activity and Applicable Example Environmental Management Procedures

Activity	Environmental Considerations	Example Environmental Management Procedure
Earthworks	Noise generation Dust generation Traffic impacts Sediment migration Contamination	EMP01 Air Quality EMP02 Biodiversity EMP03 Heritage and Archaeological Impacts EMP04 Noise and Vibration Control EMP05 Traffic EMP06 Erosion and Sediment Control EMP07 Waste Management EMP08 Stockpile Management EMP09 Soil and Contamination EMP10 Acid Sulfate Soils EMP11 Harbour Works EMP12 Environmental Emergency Response EMP15 Incident Reporting

Activity	Environmental Considerations	Example Environmental Management Procedure
Delivery of construction materials	Noise generation Traffic impacts	EMP04 Noise and Vibration Control EMP05 Traffic
Off-site disposal of soils and wastes	Noise generation Dust generation Waste management Sediment migration Traffic impacts	EMP01 Air Quality EMP04 Noise and Vibration Control EMP05 Traffic EMP06 Erosion and Sediment Control EMP08 Stockpile Management EMP07 Waste Management EMP12 Environmental Emergency Response EMP15 Incident Reporting
Storage of soils (during earthmoving works)	Noise generation Dust generation Sediment migration Waste management	EMP01 Air Quality EMP02 Biodiversity EMP03 Heritage and Archaeological Impacts EMP04 Noise and Vibration Control EMP05 Traffic EMP06 Erosion and Sediment Control EMP07 Waste Management EMP08 Stockpile Management EMP09 Soil and Contamination EMP10 Acid Sulfate Soils EMP12 Environmental Emergency Response EMP15 Incident Reporting
Construction	Noise generation Dust generation Traffic impacts Importing soil	EMP01 Air Quality EMP04 Noise and Vibration Control EMP05 Traffic EMP09 Soil and Contamination EMP10 Acid Sulfate Soils EMP11 Harbour Works EMP12 Environmental Emergency Response EMP15 Incident Reporting

2. Summary of Site Condition

2.1 Site details

The site is located at Bank Street, Pyrmont NSW as shown in **Figure 1-1** and the proposed site layout is shown on **Figure 2-1**. The site details are summarised in **Table 2-1** and described further below.

Table 2-1: Site details summary

Lot and Deposited Plan (DP) (at time of writing)	The site comprises the following legal properties: Lot 1 in DP188671- Transport for NSW Lot 1 in DP439245 - Infrastructure NSW Lot 1 in DP85206 - Transport for NSW Lot 1 in DP1089643 – Infrastructure NSW Lot 2 in DP1089643 - Infrastructure NSW Lot 19 in DP803159 - Transport for NSW Lot 20 in DP803159 - Transport for NSW Lot 21 in DP803159 - Transport for NSW Lot 22 in DP803159 - Transport for NSW Lot 5 in DP803160 - Transport for NSW Lot 6 in DP803160 - Transport for NSW Lot 5 in DP1209992 – Roads and Maritime Services (Transport for NSW) Lot 107 in DP1076596 - Transport for NSW Part Bank Street road reserve - City of Sydney Council
Address	1A-19 Bank Street, Pyrmont
Local Government Area	City of Sydney
MGA Coordinates (GDA 94 - MGA56) of approximate centre of the site	E: 332398 N: 6250815
Site Zoning ***Sydney Local Environmental Plan (2012)***	Land: RE1 Public Recreation Harbour: Zone 1 Maritime Waters
Previous Use	Holding yard, Blackwattle Marina Bay – industrial purposes and public road
Proposed Use	Public open space / Public park
Site Area	Approximately 1.9 ha, including 0.7 ha of harbour

Bank Street Park is located at 1A-19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA) and includes harbour development in Blackwattle Bay.

Bank Street Park is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

Figure 2-1 Site context map, with the indicative site boundary outlined in red (Source: : SixMaps with Architectus edits (2023)

Figure 2-2 Bank Street Park site location within Blackwattle Bay State Significant Precinct, with indicative site boundary shown in red. (Source: Blackwattle Bay Design Guidelines with Architectus edits (2023))

3. Application, Enforcement and Regulatory Requirements

3.1 Application of Preliminary CEMP

This Preliminary CEMP provides a framework of indicative control measures which applies to the construction works including minor earthworks and construction of the Bank Street Park and associated facilities.

The Preliminary CEMP is intended to provide guidance to the environmental management of construction activities within the subject site which involves:

- Earthmoving works;
- Harbour construction works;
- Construction of buildings / facilities within the internal areas of the site; and
- Transport of construction materials, wastes etc to and from the site.

For the purposes of this CEMP, the activities during the construction phase will be referred to as construction.

3.2 Implementation of CEMP

The Preliminary CEMP is intended to provide guidance to the environmental management of construction activities on the project. It is anticipated that contactor for the construction of the project will prepare their own CEMP which could draw on relevant and applicable elements and management control examples from this Preliminary CEMP (as applicable to their construction methodology and environmental management system) requirements. It is expected that the contractor's CEMP would also address the requirements of the EIS and Conditions of Consent.

3.3 Regulatory Requirements

Future activities on site would be required to be completed in accordance with several sections of environmental and occupational health and safety legislation and associated regulations. The primary Acts, Regulations and Guidelines are listed below with a brief summary of their applicability. Please note that this list is not intended to be a comprehensive listing of acts and regulations. The site owner and contractors are required to satisfy themselves that all applicable legislation is adhered to, relevant permits and licences have been obtained, and their conditions satisfied.

Regulations that are to be considered as part of this Preliminary CEMP include the following:

Work Health and Safety Act 2011

The overarching Act for NSW setting law relating to employee health and safety and employer responsibilities.

Work Health and Safety Regulation 2017

Sets Regulations and details the duties for employers to achieve required employee health and safety performance.

Protection of the Environment Operations Act 1997 (POEO Act)

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of environment protection legislation administered by the EPA.

Waste Avoidance and Resource Recovery Act 2001 (WARR Act)

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) replaced the *Waste Minimisation and Management Act 1995* and controls waste generation and waste reduction.

Waste Classification Guidelines (EPA 2014)

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline. Where wastes require immobilisation prior to off-site disposal an immobilisation approval shall be sought in accordance with Part 2 of this guideline.

***Contaminated Land Management Act 1997* (*CLM Act*)**

The *Contaminated Lands Management Act 1997* (CLM Act) controls the assessment of contamination and requirement of remediation of soils and groundwater. The act also contains guidance for the determination of whether a site presents a significant risk of harm and allows for accreditation of Site Auditors.

State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021* relates to the decision-making process in undertaking remediation of land and making planning decisions in regard to contaminated and potentially contaminated land.

National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPC 2013)

National guidelines for the assessment of land contamination endorsed by NSW Environment Protection Authority (EPA). These guidelines include recommended soil and groundwater assessment criteria for a variety of land uses.

Ports and Maritime Administration Act 1995

The Ports and Maritime Administration Act 1995 (PMA Act) establishes statutory State owned corporations to:

- operate the State's port facilities in the major ports;
- transfer waterways management and other marine safety functions to the Minister;
- enable Transport for NSW to exercise those waterways management functions;
- provide for port charges, pilotage and other marine matters;
- dissolve the Maritime Services Board and its subsidiaries;
- repeal certain existing marine legislation and to amend other legislation;
- and for other purposes.

Section 110 of the Ports and Maritime Administration Regulation 2021 requires written permission of the relevant harbour master prior to disturbance of the bed of a port as listed in schedule 4 of the regulation, which includes Sydney Harbour.

4. General Site Management

Key general site management requirements are outlined below.

4.1 Key Dates

Milestone dates for the proposed Bank Street Park are:

- Construction commencement: Q3 2024;
- Construction finalisation: Q1 2026;
- Operation: Q2 2026.

4.2 Hours of Operation

It is expected work associated with the proposal would be carried out during the City of Sydney Standard Construction Hours outlined in City of Sydney Code of Practice 1992 - Construction Hours/Noise within the Central Business District. The proposed construction hours are:

- Weekdays: 7.00am – 5.30pm;
- Saturdays: 7.30am – 3.30pm;
- Sundays and public holidays: No work.

These hours of construction are consistent with those in place for the new Sydney Fish Market project, also located within the Blackwattle Bay precinct.

The appointed PC would be responsible for instructing and controlling all subcontractors regarding the hours of work. Any work outside the approved construction hours would be subject to specific prior approval.

4.3 Site Induction

All personnel and contractors would complete a site induction upon arrival at the site, and prior to the commencement of any work tasks. The site induction would be facilitated by the Environmental Coordinator or delegate and include details of:

- General site and project orientation;
- Work tasks to be performed by the inductees and any special requirements or approvals;
- Key environmental risks and worker health and safety risks associated with the work tasks;
- Driver code of conduct to minimise vehicular traffic and noise impacts;
- Permitted access routes to and from the construction site, and limited parking arrangements;
- Specific requirements and responsibilities under the Development Conditions of Consent (once determined); and
- Worker obligations and reporting requirements for with environmental incidents or near-misses.

The induction would ensure that the principles of the Preliminary CEMP would be considered by all site personnel. A less detailed induction may be completed by site visitors who would not be undertaking work tasks.

5. Implementation and Operation of the Plan

The proposed roles and responsibilities, training and communication mechanisms are detailed in the following sections. The actual roles and responsibilities will be included in the contractor's CEMP.

5.1 Roles and Responsibilities

Effective management of environmental aspects and promoting environmental awareness during construction of the Project is key to responsible project management. The roles and responsibilities of key personnel during the construction of the Project are outlined below in **Table 5-1**.

Table 5-1: Proposed Roles and Examples of Responsibilities During Construction

Proposed Role	Examples of Responsibilities
Project Manager	• Overarching responsibility for the Project • Hold overall responsibility for environmental management of the Project
Environmental Manager	• Directly responsible for the environmental management of the Project • Managing the environmental approval process • Directly responsible for the overseeing and fulfilling the commitments contained in the CEMP • Coordinating management reviews, external and internal audits and reporting progress against environmental targets and objectives • Conducting incident investigations and performing environmental risk assessments • Providing general environmental support • Environmental incident investigation and reporting • Reports to Project Manager
Environmental Coordinator	• Oversees CEMP implementation • Monitors the activities of contractors and assesses compliance with the CEMP • Coordinates environmental supervision of clear-and-grade and other key activities of PC • Coordinates the monitoring and audit program • Represents the Project on environmental matters with stakeholders • Reports to Environmental Manager
Subcontractors and other site workers	• Implement environmental controls as directed • Report any environmental issues • Reports to the Environmental Coordinator

5.2 Induction and Training

5.2.1 Training and Competencies

The PC would develop, implement, monitor and review a documented process that controls and governs all aspects of the management of training and competency in accordance with all laws and good industry practice.

The process must apply to all contractors and sub-contractors engaged to work on the Project to ensure all workers are qualified, trained, certified, adequately experienced and appropriately licensed to undertake all tasks for their individual roles. The training and competencies component would address as a minimum:

- The operation of vehicles and mobile plant;
- The operation of equipment and plant;
- All activities that require Australian High-Risk Licences; and

- All specialist certification (e.g. working at heights, rescue activities, work in confined spaces or any other applicable activity).

Job-specific training relevant to roles would also be undertaken and records maintained of induction and attendees.

5.2.2 Site Specific Inductions

All Project personnel would undertake site specific induction training prior to the commencement of any construction works for the Project. Site specific inductions would address:

- Background of the Project;
- Approval conditions and an overview of the Preliminary CEMP requirements;
- Legislative requirements of the company and individuals;
- Key personnel and roles;
- Emergency response procedures including fire season education and associated risks and restrictions;
- Environmental issues within the Project area and relevant management plans and procedures including for cultural heritage;
- Community issues related to the Project and relevant management plans and procedures;
- Penalties for non-compliance with required plans and procedures;
- Hazard and incident reporting and management procedures; and
- Any other site-specific issues.

The provision for delivering site specific induction would be the responsibility of the Subcontractor, with records of attendees maintained.

5.3 Emergency Preparedness and Response

A site-specific Emergency Control Plan would be developed prior to construction. The Emergency Control Plan would detail as a minimum:

- Appropriate procedures to follow if an emergency occur during Project construction, such as fire, lightning strikes, chemical spill, explosion, flooding, wildlife injury, damage to existing infrastructure and personnel injury; and
- Incident and corrective action records, which detail the procedures to record, document and follow up on environmental incidents and key personal that are to be involved.

Environmental Emergency Response procedures are outlined **EMP11, Section 7**.

5.4 Environmental Inspections and Monitoring

A compliance monitoring inspection program must be implemented during construction works in order to monitor compliance with the conditions of consent (once determined) for the project.

The effectiveness of environmental protection measures described in this Preliminary CEMP and sub plans would be assessed on a three-monthly basis by the PC. During which, the following activities would be undertaken:

- Provide a surveillance tool to ensure that safeguards are being implemented;
- Identify where problems might be occurring;
- Identify where sound environmental practices are not being implemented; and

- Facilitate the identification and early resolution of problems.

Weekly environmental inspections would monitor aspects including:

- Review of relevant works approvals and permits;
- Erosion and sediment controls and review of associated plans;
- Drainage/groundwater protection;
- Air quality, odours, dust emissions and mitigating controls;
- Heritage impacts;
- Noise and vibration management including approved working hours, required respites and safe working distances;
- Hazardous substances and dangerous goods (including fuels and chemicals); and
- Waste management, recycling and recovery.

Any non-conformances identified would be highlighted discussed at regular project meetings by the Environmental Coordinator where rectification actions are discussed with all site teams.

The checklist would remain 'open' until:

- The issue has been resolved;
- A new or revised procedure has been established and implemented; or
- Training has been provided to relevant personnel/ sub-contractors.

Regular inspections to assess environmental management would be undertaken and documented as appropriate.

5.5 Reporting and Compliance

Contractors would report all environmental and safety events to the Environmental Coordinator (or their representative) within one hour of the incident occurring, or if not reasonably practicable, as soon as possible.

The PC would report to relevant government agencies as required by approval conditions and legislation.

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

A non-compliance is generally defined as an occurrence, set of circumstances or development that is a breach of the project consent.

These requirements are included within **EMP13** Non-Compliances and **EMP14** Incident Reporting in Section 7.

5.6 Review of the CEMP

It is expected that the contractor's CEMP would be a working document that would be reviewed and updated as required during the construction phase of the Project to ensure that it reflects current best practice environmental management.

Review of the CEMP would include a process of adaptive management, whereby the effectiveness and performance of current controls and mitigation measures are assessed and improved to ensure robust environmental performance. The review process would examine:

- The implemented mitigation and environmental management controls;
- Incident reporting and procedures for preventative actions;

- Complaints handling procedures; and
- Emergency response procedures for environmental incidents.

These requirements are also included within **EMP16** CEMP Review procedures in **Section 7**.

6. Communications and Complaint Management

6.1 Site Communications

Communication during site works is critical to the safety and effectiveness of the work program. Examples of pathways of communication include:

- Communication between site personnel, including PC and subcontractors;
- Communication between the Environmental Coordinator and all site personnel via daily prestart and toolbox meetings. This communication would establish the operational and environmental conditions for the day and for the following planned day ahead (at relevant prestart and toolbox meetings). These meetings would discuss the environmental controls and restrictions on work tasks to mitigate environmental impacts and would be documented in the daily field notes for the project;
- The Environmental Coordinator would report to the Project Manager information that encompasses all parameters required for the continued compliance to the Preliminary CEMP. Communication would be via telephone or email, as the circumstances require; and
- The Environmental Coordinator with the assistance of the Project Engineer would report results and data collected over the course of site work to the Project Manager. This would be communicated via telephone/email daily summaries.

Prior to site works, the contractor's CEMP would be prepared and include a list of key persons and relevant stakeholders affiliated with activities at the site and their relevant contact information. In the event that a significant issue develops at the site, including, but not limited to, a chemical spill, or uncontrolled release to land, water or atmosphere; an unauthorised visitor; or a significant change in project scope, authorised persons can consult the contractor's CEMP.

All contact information would be verified and updated as necessary during the works.

6.2 Community Engagement

6.2.1 Complaints and Feedback Protocol

A complaints register shall be maintained by the PC.

An interaction would be recorded as a complaint if the stakeholder expresses a dissatisfaction in relation to the project or the proponent, consistent with the definition of a complaint as described in the *Australian and New Zealand Guidelines for Complaint Management* (ISO 10002:2018, NEQ).

If a complaint or feedback is received via the contact telephone number or email address, the Environmental Coordinator would investigate and resolve the complaint directly with the complainant.

If a complaint is received face-to-face on/near the project site by a project team member to their supervisor is to be advised who would then notify the Environmental Coordinator. The Environmental Coordinator may be notified initial by telephone or verbally, and a follow-up written notification shall be provided via email. The Environmental Coordinator is to then add this to the complaints register and contact the complainant.

Recording and responding to (if required) complaints are to be actioned immediately and closed out within five business days, unless escalation is required.

7. Cumulative construction impacts

Review of the DPE Major Projects Planning Portal indicated there are two SSD projects within proximity of the proposed Bank Street project (**Table 7-1**). Potential cumulative impacts include increased pressure on local parking, traffic, air quality and noise.

To avoid or minimise cumulative impacts, projects would interface and coordinate to ensure scheduling of noisy or dust generating works would not overlap, and to ensure the source of impacts are easily identified should complaints be received or potential non-compliances during construction be identified.

Table 7-1: SSD Projects in proximity of Bank Street

Application number	Project Title	Description	Determination	Construction
SSD-8925	The new Sydney Fish Market - Stage 2	Construction of a new building, new foreshore promenade and landscaping, marina, upgrade works to Bridge Road.	Approved 12/06/2020	Commenced Anticipated completion late 2024
SSD-7874	Harbourside Shopping Centre Redevelopment	Redevelopment of the shopping centre, and construction new residential apartment tower, basement parking, remediation.	Approved 25/06/2021	Commenced Anticipated completion 2026

8. Example Environmental Management Procedures

This section outlines environmental objectives and mitigation and management controls for Project construction activities. These have been developed based on the impacts and management measures identified and assessed in technical studies prepared to inform the EIS and standard environmental safeguards.

Example management strategies for the following matters are addressed in this Preliminary CEMP:

- EMP01 Air Quality
- EMP02 Biodiversity
- EMP03 Heritage
- EMP04 Noise and Vibration
- EMP05 Traffic
- EMP06 Erosion and Sediment Control
- EMP07 Waste Management
- EMP08 Stockpile Management
- EMP09 Soil and Contamination
- EMP10 Acid Sulfate Soils
- EMP11 Environmental Emergency Response
- EMP12 Harbour Works
- EMP13 Training
- EMP14 Non-Compliance
- EMP15 Incident Reporting
- EMP16 Record Keeping
- EMP17 CEMP Review

It is expected that the contractor would draw on the above example environmental management strategies as appropriate in their development of their own CEMP. The contractor's CEMP would be specific to their construction methodology and environmental management system requirements, as well as address the requirements of the EIS and Conditions of Consent.

Key legislative considerations and measures to be implemented in order to avoid and / or minimise environmental impacts are highlighted for each matter. The mitigation and management controls represent the minimum requirements that would be adopted during the construction phase.

In addition, the following project-specific plans have been prepared in accordance with the Planning Secretary's Environmental Assessment Requirements (SEARs) separate to this Preliminary CEMP:

- Construction Pedestrian and Traffic Management Plan
- Erosion and Sediment Control Plan
- Remedial Action Plan
- Acid Sulfate Soils Management Plan
- Waste Management Plan.

These procedures are to be updated with revised sub-plans as required by consent conditions, once determined.

Air quality	EXAMPLE EMP01
Responsibility:	PC
Frequency:	Continuous
Objective:	To minimise generation of dust emissions from earthworks

Background

Key potential sources of dust have been from the following sources:

- Dust emissions from earthworks activities (e.g. excavation and loading of soils to trucks);
- Wind-generated dust from disturbed surfaces and stockpiles;
- Dust emissions and particulate matter emissions in diesel exhaust emissions from on-site plant and equipment and construction traffic movements; and
- Particulate matter associated with exhaust emissions from increased/congested traffic emissions due to road closures or diversions.

Based on a preliminary risk assessment, site activities that are likely to cause dust are summarised as follows (highest to lowest risk):

- Earthworks
- Construction
- Track out

Statutory requirements

All operations on site are to be conducted so that concentrations of dust satisfy those stipulated in accordance with the *Protection of the Environment and Operations Act 1997* (NSW) and NSW EPA published and endorsed guidelines, including:

- NEPC (1998) 'National Environment Protection Measure for Ambient Air Quality' and
- Environmental criteria provided to NSW DEC (August 2005) 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales'.

Mitigations and control measures

The following mitigation measures should be implemented where relevant:

Communications

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the Environmental Coordinator.
- Display the head or regional office contact information.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.

Monitoring

- Perform daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary.

- Carry out regular site inspections to monitor compliance with management plans, record inspection results, and make an inspection log available to the local authority, when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions

Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that is at least as high as any stockpiles on site.
- Avoid site runoff of water or mud
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below
- Stabilise stockpiles to prevent wind erosion, for example by covering, seeding or fencing the stockpiles.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable
- Ensure all vehicles switch off engines when stationary - no idling vehicles
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)

Waste Management

- No bonfires and burning of waste materials.

Construction

- Any exposed surfaces and stockpiles are suppressed by regular watering;
- Avoid scabbling (roughening of concrete surfaces) if possible
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate
- Use enclosed chutes and conveyors and covered skips
- Minimise drop heights from loading shovels and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate
- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods

Trackout

- Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Record all inspections of haul routes and any subsequent action in a site logbook.

Air quality	EXAMPLE EMP01
• Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	

Biodiversity	EXAMPLE EMP02
Responsibility:	PC
Frequency:	Continuous
Objective:	To eliminate potential impacts to potentially sensitive ecological receptors

A Biodiversity Development Assessment Report (BDAR) and an Aquatic Ecology Assessment were prepared to support the SSDA for the Bank Street Park.

The BDAR was prepared by Eco Logical Australia Pty Ltd (ELA 2023a) to meet the requirements of the *Biodiversity Assessment Method (BAM) 2020* and the SEARs pertaining to biodiversity for SSD–53386706. The BDAR found that potential indirect impacts of the proposed works would include sediment runoff, mitigated by using sediment barriers, and light spill to adjacent open waterbody (potential foraging habitat for Southern Myotis), mitigated by intentional direction of lighting.

A Marine Ecology Assessment was undertaken by Eco Logical Australia Pty Ltd (LEA 2023b) which identified that the proposed stepped sandstone seawall, dragon boat ramp relocation, construction of new kayak gangway and pontoon, partial wharf removal, overwater boardwalk and construction of three new stormwater outlets would:

- not have a significant impact on any aquatic threatened species, population or community
- not trigger the need for a Species Impact Statement, nor referral to a Commonwealth body for aquatic species
- require fauna management in regard to survey and relocation of seahorses prior to construction
- have a neutral impact on Type 2 (moderately sensitive) Key Fish Habitat and Type 3 (minimally sensitive) Key Fish Habitat, meeting DPI Fisheries' policy of 'no net loss' of Key Fish Habitat
- have a long-term benefit to marine ecology due to an improved seawall and habitat connectivity if additional rocky rubble is included, plus other benefits if seahorse hotels or other fish habitat are installed
- meet the development controls for Water Catchments under the Biodiversity and Conservation SEPP.

Statutory requirements

All operations on site are to be conducted in accordance with the *Biodiversity Conservation Act 2016 (NSW)* and *Environmental Protection and Biodiversity Conservation Act 1999 (Cwth)*

Mitigations and control measures

Terrestrial ecology

- Appropriate controls are to be utilised to manage exposed soil surfaces and stockpiles to prevent sediment discharge into retained lands.
- Soil and erosion measures such as sediment fencing, clean water diversion must be in place prior the commencement of the construction work.
- Construction lights or development lights should be positioned to prevent shine into waterbody. Proposed street lights are required under the SSDA, and should use ecologically sensitive designs including use of shields and timers and positioned away from waterbodies.
- Noise should be limited to construction hours only.
- Dust should be managed through appropriate dust control management plan.
- Vehicles, machinery should be cleaned of soil prior to entry into the subject land as external soil may contain pathogens or disease.
- Where possible within construction timelines, avoid clearing works in later winter/spring during breeding/ nesting season for animals.
- Retain microbat foraging areas in the north west and south east corners of the site.
- Waste bins to be present on site. Covers to be used to prevent blown litter and the entry of pest animals or rain. Removal and appropriate disposal of general rubbish.
- Temporary fencing and signage to be installed at the edge of the subject land to prevent entry into the adjacent waterbody.

- Construction staff to be briefed prior to work commencing to be made aware of any sensitive biodiversity values present and environmental procedures such as:
  - Site environmental procedures (vegetation management, sediment and erosion control, exclusion fencing and weeds, control of construction waste)
  - What to do in case of environmental emergency (chemical spills, fire, injured fauna)
  - Key contacts in case of environmental emergency.

Marine Ecology

- Positioning of barges, drilling and pile driving should occur during calm conditions.
- Avoid shallow water when turning vessels. Large vessels/barges should avoid macroalgae at low tide.
- All mooring lines should be suspended off the seafloor to minimise drag across benthic habitat.
- Use of a floating boom with silt curtain encompassing full works area. The curtain is to remain in place until all suspended material has settled (no visible plumes).
- All waste material should be disposed of on land and not reused in the construction or left on the seafloor.
- Waste storage on vessels will be such that the risk of waste falling into the harbour is minimised.
- Care should be taken not to introduce Caulerpa taxifolia. For example, a drill head or anchor used at another site with Caulerpa should be thoroughly cleaned of plant propagules and sediment before being used at another location. Fragments of Caulerpa can remain viable for up to three days out of the water. Best hygiene practices are outlined in the NSW Control Plan for the Noxious Marine Alga Caulerpa taxifolia (NSW I&I 2009).
- Gentle start-up hammering is recommended to allow undetected aquatic fauna to leave the area and avoid hearing damage. Include staged breaks, such as 10 mins loud, 30 min quiet. Work should be stopped if large fauna is observed nearby.
- An inspection for seahorses should occur two weeks prior to demolition of submerged piles/supports or where works will remove or directly damage macroalgae, or at a time recommended by the diver. The diver must operate under a s.37 licence (FM Act) and Seahorse Relocation Plan approved by DPI Fisheries. The relocation site should be selected by the diver in a nearby area (<200 m) with similar habitat that would not be impacted by known future work.
- Maintain the sediment controls (e.g. floating boom and/ or silt curtain) around the piling and excavator barges during and after their works until the water quality inside the curtain is equal to the water quality or the harbour
- Establish a spoil storage area to appropriately contain spoil generation from piling.
- Storage of excavated material will occur on site in pre-determined stockpile locations away from drainage lines or waterways, as per Environmental Control Map/s. These stockpiles will be safeguarded against erosion and sedimentation to protect receiving waters and associated aquatic habitats.
- Maintain small storages of fuel ie: for pumps or generators in designated hazardous substances goods storage areas.
- Refuel mobile plant and equipment in a designated refuelling area.
- Maintain vessels, vehicles and equipment in good working order, clean prior to use and monitor for any potential leaks.
- In the event of a spill, shut down work at the spill site and activate spill response procedures. Measures will be put in place to prevent recurrences.
- All waste to be managed as per Waste Management Plan to avoid risk of injury or death to marine ecology
- Environmental awareness training, including sensitive environment maps will be provided, by the Contractor, to all field personnel and subcontractors. Regular reinforcement (such as at toolbox talks) covering ecology impacts will be undertaken.
- Measures will be taken to ensure biological hygiene to eg prevent spread of noxious species on and off the site, including washing all equipment prior to and after use at the site.
- Barge positioning to be low-impact to prevent propeller scouring and thrust wash onto benthic habitats along the foreshore

Biodiversity	EXAMPLE EMP02

- The works footprint will be minimised, and no-go zones will be established in shallow habitats, especially on macroalgae beds
- Refer EMP11 for sediment control measures for works within the harbour.

Heritage	EXAMPLE EMP03
Responsibility:	PC
Frequency:	Continuous
Objective:	To minimise potential impacts to Aboriginal and non-Aboriginal heritage items during construction

Background

The following assessments have been prepared to support Application SSD 53386706.

- Bank Street Park, Draft Aboriginal Archaeological and Cultural Assessment Methodology, October 2023 (GML Heritage)
- 1A to 19 Bank Street, Pyrmont, Draft Statement of Heritage Impact for Bank Steet Park SSDA, October 2023 (GML Heritage)
- Bank Street Park, Blackwattle Bay Precinct, Draft Historical Archaeological Assessment, October 2023 (GML Heritage)
- Bank Street Park, Draft Maritime Archaeological Assessment, October 2023 (Comber Consultants)
- Bank Street / Tjerruing Park Preliminary Heritage, October 2023 (GML Heritage).

Non-Aboriginal heritage

The following heritage items were identified at the site:

- Anzac Bridge (S170 4305018)
- 1–3 Bank Street is an unlisted potential heritage item. It has heritage significance at a local level as a rare example of an early twentieth century maritime industrial complex in Blackwattle Bay.
- Sea walls
- No heritage items, Aboriginal or non-Aboriginal, are currently listed in the marine section of the proposed development.

Glebe Island Bridge (State Heritage Register 01914) adjoins the site.

Aboriginal heritage

The ACHAR identified an Aboriginal archaeological deposit within the site, the potential for additional areas of potential archaeological deposits (PADs) and Aboriginal cultural values associated with the site.

Statutory requirements

All operations on site are to be conducted in accordance with the *Heritage Act 1977* and *National Parks and Wildlife Act 1974*.

Mitigations and control measures

Non-Aboriginal Heritage

- Localised salvage is to be undertaken where required during excavation works
- At the proposed dragon boat site, archaeological testing is to be undertaken during excavation works to locate and record significant archaeology
- A historical archaeological research design (HARD) should be prepared by a qualified archaeologist prior to undertaking any ground works.
- A heritage induction should be provided to all construction personnel. The induction should include information about the archaeology, obligations under the Heritage Act, and the role of the archaeologist on site.
- Archaeological monitoring is to be undertaken during excavation works. The archaeological monitoring program should be undertaken in accordance with the methodology in the HARD. Sufficient time in the construction program should be allowed to undertake the required archaeological works.
- A final report on the archaeological investigations should be prepared. The report should include detailed descriptions of the findings, artefact catalogue and analysis, response to the research design, reassessment of archaeological significance and details of public outcomes/interpretation.
- A salvage schedule should be prepared during detailed design stage which identifies early or original fabric at 1-3 Bank Street that should be salvaged for reuse in the design or interpretation in Bank Street Park. The salvage schedule should provide clear guidance on the appropriate removal, storage and reuse of salvaged material, including how these items will be catalogued and stored during construction.

Non-Aboriginal Archaeology – Unexpected Finds (terrestrial)

If any non-Aboriginal archaeological relics are uncovered during any works being carried out for the development:

1. all work in the immediate vicinity of the suspected relic(s) must cease immediately;
2. Heritage NSW must be contacted immediately; and
3. the suspected relic(s) must be evaluated, recorded and, if necessary, excavated by a suitably qualified and experienced expert in accordance with the requirements of Heritage NSW.

Non-Aboriginal Archaeology – Unexpected Finds (marine)

In the event of unexpected finds of potentially significant cultural material during construction works:

4. Activity in the immediate area of that find should cease.
5. The find should be reported to the appropriate site supervisor.
6. Advice sought from a suitably qualified archaeologist with experience in working with and managing items from a submerged environment.
7. If the item is assessed by the archaeologist as being a relic of heritage significance, advice should subsequently be sought from Heritage NSW.
8. No further work in the vicinity of that item should be undertaken until approval is received from Heritage NSW.

Aboriginal Heritage

The following measures are to be implemented during construction:

- Impact avoidance: in areas of the site where avoidance of PAD cannot be implemented, further archaeological management may be required in accordance with the following recommendations.
- Archaeological monitoring: a program of Aboriginal archaeological monitoring will be undertaken during works that have the potential to expose or impact areas of PAD.

- Aboriginal archaeological investigation: should deposits with PAD be identified during construction as an unexpected find, during archaeological monitoring or during historical archaeological testing/ localised salvage, further Aboriginal archaeological investigation will be undertaken.
- Heritage induction: a heritage induction should be developed to inform all workers involved in the proposed development of the actual and potential heritage resource, the procedure to follow in case of an unexpected fin, and key contact details for heritage management for the project.
- Ongoing artefact management: an artefact management strategy of the present and potential future artefact assemblage identified at the site should be developed in consultation with the project Registered Aboriginal Parties and other key First Nations stakeholders, and should detail the long-term management and storage or Aboriginal objects recovered from the site.

Aboriginal Heritage– Unexpected Finds

- If any item or object of Aboriginal heritage significance is identified on site:
  1. all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately;
  2. A 10 m wide buffer area around the suspected item or object must be cordoned off; and
  3. The project archaeologist must be contacted to inspect the item(s).
  4. Should the items be Aboriginal in origin, the project archaeologist will advise on how to proceed. Works cannot recommence in the area of the unexpected find until sign-off has been given by the archaeologist. This may involve consultation with project Registered Aboriginal Parties and Heritage NSW to discuss the management of the Aboriginal object(s) .
  5. Details of the unexpected find is to be documented.
  6. Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

Discovery of human remains

Heritage	EXAMPLE EMP03
Human skeletal remains are of the highest significance and importance to Aboriginal people, and all care, respect and dignity will be extended by all parties should human remains be uncovered. In addition to the steps outlined above for Unexpected Finds, should any human remains or unidentifiable bone be found, work is to stop in that area immediately and an area of 15m cordoned off surrounding the remains/bone in high visibility fencing and the NSW Police and/or the NSW Coroner's Office is the be notified. The Metropolitan Local Aboriginal Land Council should also be contacted in the event that human remains of actual or suspected Aboriginal origin are identified. .	

Noise and Vibration	EXAMPLE
Responsibility:	PC
Frequency:	Where activities are undertaken that may potentially cause noise or vibration Continuous
Objective:	To minimise impacts of noise and vibration on surrounding land

Background

A Construction Noise and Vibration Assessment (Stantec, August 2023) has been prepared for the SSD Application. The findings are summarised herein.

There are a total of five sensitive receivers identified in proximity of the site. Four of the receivers are residential and two are commercial.

Construction Limits - Noise

Rating background noise levels (RBLs) were determined for the daytime periods at the site as defined in the Noise Policy for Industry (EPA 2017) (NPfI). The RBLs were used to determine the Noise Management Level (NML) for residential and commercial sensitive receivers, identified in **Table 8-1**. Sensitive receivers are shown in **Figure 8-1**.

Predicted noise levels for two scenarios (early works and demolition, and structural works) indicate that it is not predicted that identified sensitive receivers will be highly noise affected by the construction works.

Table 8-1: Noise Management Levels for the site.

Receiver	Type	Noise Management Level ($L_{Aeq,15min}$ dB
2 Bowman Street	Residential	71
1 Distillery Drive	Residential	67
50 Bank Street	Residential	71
120 Bank Street	Commercial	71
21-35 Bank Street	Commercial	71

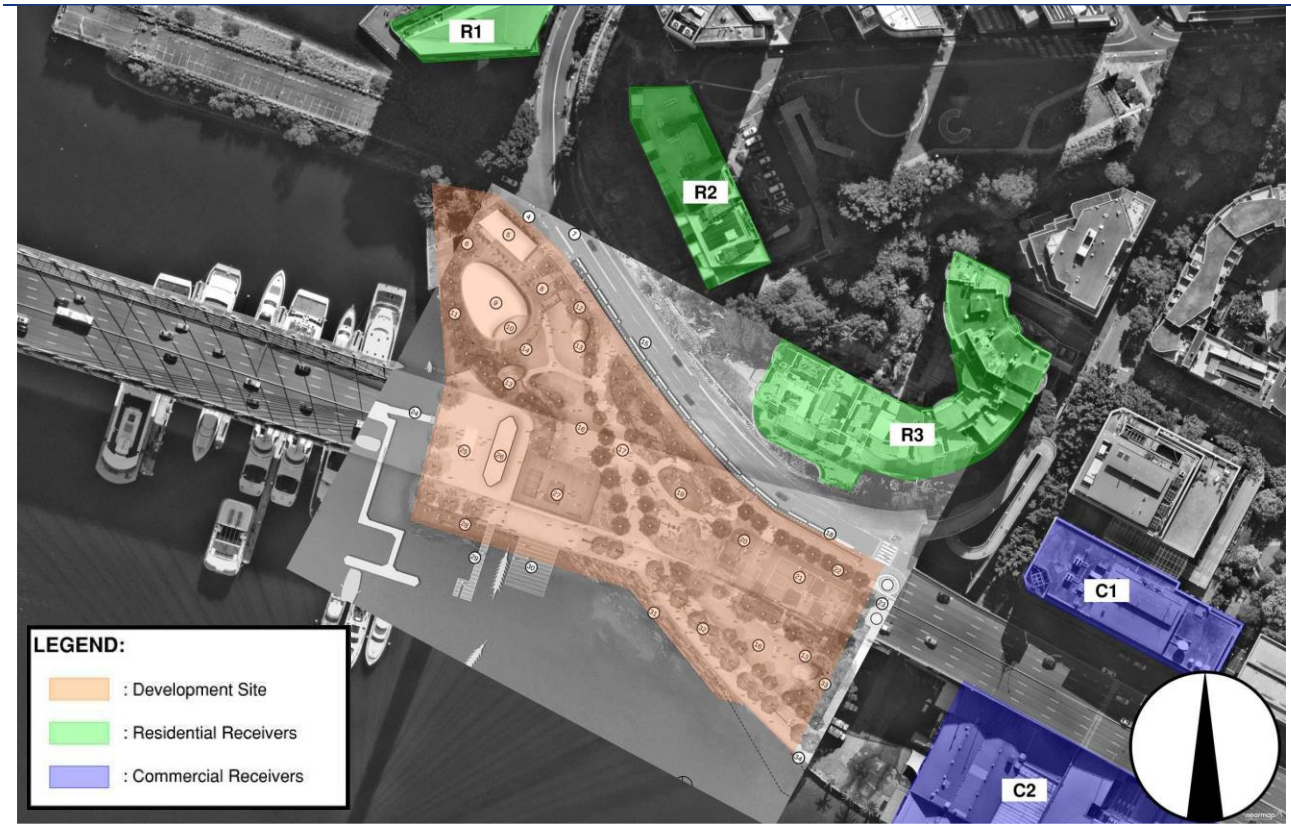


Figure 8-1: Identified sensitive receivers in proximity of the Bank Street site (Source: Stantec 2023)

Baseline Construction Limits - Vibration

Human Comfort – Continuous and Impulsive Vibration

Maximum allowable magnitudes of building vibration with respect to human response are shown in **Table 8-2** and **Table 8-3**. It should be noted that the human comfort for vibration criteria is more stringent than the building damage criteria.

Table 8-2: Preferred and maximum weighted RMS values for continuous and impulsive vibration (Source: Stantec 2023)

Location	Assessment Period	Preferred values		Maximum values	
		z-axis	x-axis and y-axis	z-axis	x-axis and y-axis
Continuous vibration					
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night time	0.007	0.005	0.014	0.010
Impulsive vibration					
Residences	Daytime	0.30	0.21	0.60	0.42
	Night time	0.10	0.071	0.20	0.14

Table 8-3: Acceptable Vibration Dose Values for Intermittent Vibration (m/s1.75) (Source: Stantec 2023)

Location	Daytime (7:00am to 10:00pm)		Night time (10:00pm to 7:00 am)	
	Preferred value	Maximum value	Preferred value	Maximum value
Residences	0.2	0.4	0.13	0.26
Offices, schools, educational institutions and place of worship	0.40	0.80	0.40	0.80

Structural Damage – Vibration

Structural damage criteria are presented in German Standard DIN4150-Part 3 "Structural vibration in buildings – Effects on structures" and British Standard BS7385-Part 2: 1993 "Evaluation and Measurement for Vibration in Buildings". **Table 8-4** indicates the vibration limits presented in DIN4150-Part 3 to ensure structural damage doesn't occur. **Table 8-5** indicates the vibration criteria for the nearest residential and commercial properties to the development.

Table 8-4: Guideline value of vibration velocity, vi, for evaluating the effects of short-term vibration (Source: Stantec 2023)

Line	Type of structures	Vibration velocity, vi, in mm/s			
		Foundation (at frequency of)			Plane of floor of uppermost full story
		< 10Hz	10-50Hz	50-100Hz*	All frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order	3	3 to 8	8 to 10	8

* For frequencies above 100Hz, at least the values specified in this column shall be applied

Table 8-5: Construction vibration criteria summary (Source: Stantec 2023)

Location	Period	Human comfort vibration objectives			Building damage objectives – Velocity (mm/s)
		Continuous mm/s2 (RMS)		Intermittent $m/s^{1.75}$ (VDV)	
		Z-axis	x-axis and y-axis		
Residential	Daytime	10-20	7-14	0.20-0.40	5
	Night time	7-14	5-10	0.13-0.26	5
Commercial	Any time	20-40	14-28	0.40-0.80	20

Statutory requirements

All operations on site are to be conducted in accordance with the *Protection of the Environment and Operations Act 1997 (NSW)*, *Noise Policy for Industry 2017*, NSW EPA, *NSW Interim Construction Noise Guideline 2009*, Department of Environment and Climate Change (ICNG), German Standard DIN 4150-12) vibration guidelines and *Assessing Vibration: A Technical Guidelines 2006*, Department of Environment and Conservation.

Mitigations and control measures – Noise

- The following will be considered prior to commencement of noisy activities:
  - Increasing the distance between noise sources and sensitive receivers.
  - Reducing the line-of-sight noise transmission to residences or other sensitive land uses using temporary barriers (stockpiles, shipping containers and site office transportable can be effective barriers).
  - Constructing barriers that are part of the project design early in the project to introduce the mitigation of site noise.
  - Installing purpose-built noise barriers, acoustic sheds and enclosures.
- Procedure outlined in **Figure 8-2** shall be followed to minimise the impact associated with construction activities.
- Noise generated from the use of a diesel operated crane will be addressed with the use of an appropriate silencer on the muffler and acoustic screen around the engine bay to attenuate the noise emission.
- Non-tonal reversing beepers are to be used on all site vehicles. This may include Broadband audible alarms, or variable level alarms.
- Complaints associated with noise and vibration generated by site activities shall be recorded on a complaint form.
- Vehicle noise – trucks must turn off their engines during idling (unless required during concrete pumping). Minimise truck reversing. Plant and equipment should be off when not in use.
- Vehicles for construction activity must arrive and depart site within approved hours of work
- Deliveries should use straps in place of chains for handling materials wherever possible. Deliveries should be scheduled during less sensitive time periods wherever practical (after 9am)
- When selecting construction equipment to be used on the project, the noise levels of plant and equipment should be considered whereby equipment selected ha an equivalent or lower sound power level than the predictive sound power levels of equipment maintained within this report.
- A conscientious effort should be made to avoid works near the nearest sensitive receivers wherever feasible. Compounding high generating activities simultaneously near receivers should be avoided where possible
- All employees, contractors and sub-contractors are to undergo an environmental induction which outlines noise management techniques
- Unnecessary shouting should be avoided on site, and appropriate signage should be installed to remind workers of their responsibility to reduce noise impacts where feasible. Loud music from radios and stereos is not permitted.
- Materials should be placed gently and not thrown
- During the construction stage and where practical and safe to do so, handheld construction equipment should be used within the building shell to minimise noise impacts on adjacent receivers
- Maximum delivery vehicle speed of 10km/h through service road.
- Acoustic barrier – barriers can be located at either the noise source or receiver and is most effective for static plant. Consideration should be made for use of acoustic barriers to reduce identified potential noise impacts to sensitive receivers.
- Silencing devices – where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding or special industrial silencers fitted to exhausts
- Material handling – the installation of rubber matting over material handling areas should be considered and can reduce the sound of impacts due to material being dropped by up to 20 dB(A).

- Treatment of specific equipment – consideration should be made to specially treat equipment to reduce the sound levels emitted where possible or necessary. These may take the form of engine shrouding or special industrial silencers fitted to exhausts.
- Construction vehicles accessing the site should not queue in residential streets and should only use the designated construction vehicle routes, loading of vehicles should occur as far as possible from any sensitive receiver.
- Site practices should be established to reduce impacts to sensitive receivers, including locating fixed plant as far as possible from residents, and rotating plant and equipment to provide respite to receivers.
- Noise monitoring will be undertaken in accordance with the Construction Noise and Vibration Management Plan
- In the event that complaints are made from neighbouring properties regarding noise impacts from the site, noise monitors will be installed at the property boundaries of the neighbouring properties nearest to the site to monitor noise levels. Noise data will be processed and presented with reference to the site noise management levels and provided to the client on a fortnightly basis for any monitoring undertaken.

Where non-compliances or noise complaints are raised, the following methodology will be implemented:

- Determine the offending plant/ equipment/ process
- Relocate the plant/ equipment/ process further away from the affected receiver(s) if possible
- Implement additional acoustic treatment in the form of localised barriers, silencers etc where practical
- Select alternative equipment/ process where practical
- If necessary, set up noise and vibration monitoring devices at locations representing the nearest noise/ vibration affected receivers and provide data for each complaint time period. Analysis would then be required to determine suitable mitigation measures.

Mitigations and control measures – Vibration

- Vibratory compacts or smooth drum rollers must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in **Table 8-5**.

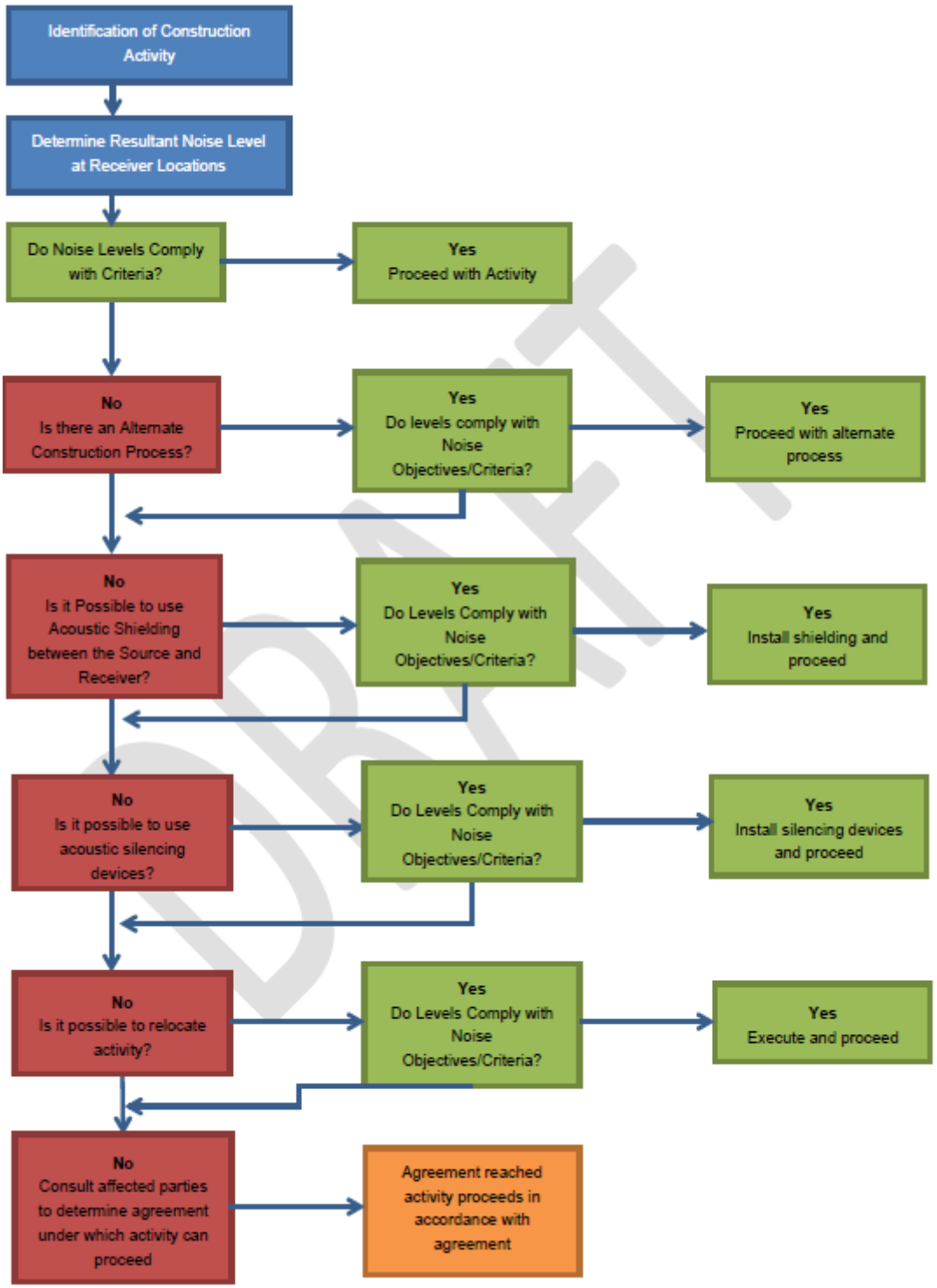


Figure 8-2: EMP04 Noise Impact Assessment Procedure (Source: Stantec 2023)

Traffic	EXAMPLE EMP05
Responsibility:	PC
Frequency:	Heavy vehicle movements as generated by site works
Objective:	To minimise impacts on local road network

Background

A Transport and Accessibility Impact Assessment and Preliminary Construction Pedestrian Traffic Management Plan (PTMP) (JMT Consulting, 2023) has been written for the site. The plan's requirements are summarised as herein.

The following was identified in the PTMP:

- No road closures are envisaged to facilitate the construction of the Bank Street Park.
- It is not expected that public transport services would be affected by the works.
- Workers will be encouraged to use public transport as a means of access. There will be limited or no on-site parking for the Contractor, employees of relevant subcontractors or visitors to the job site.

Baseline Data

It is expected the construction works may generate the following level of vehicle activity:

- 5 vehicles per hour and 20 vehicles per day on a typical workday
- 10 vehicles per hour and 40 vehicles per day on a busy workday

Proposed construction vehicle access routes are presented in Figure XX and departure routes are shown in Figure XX.

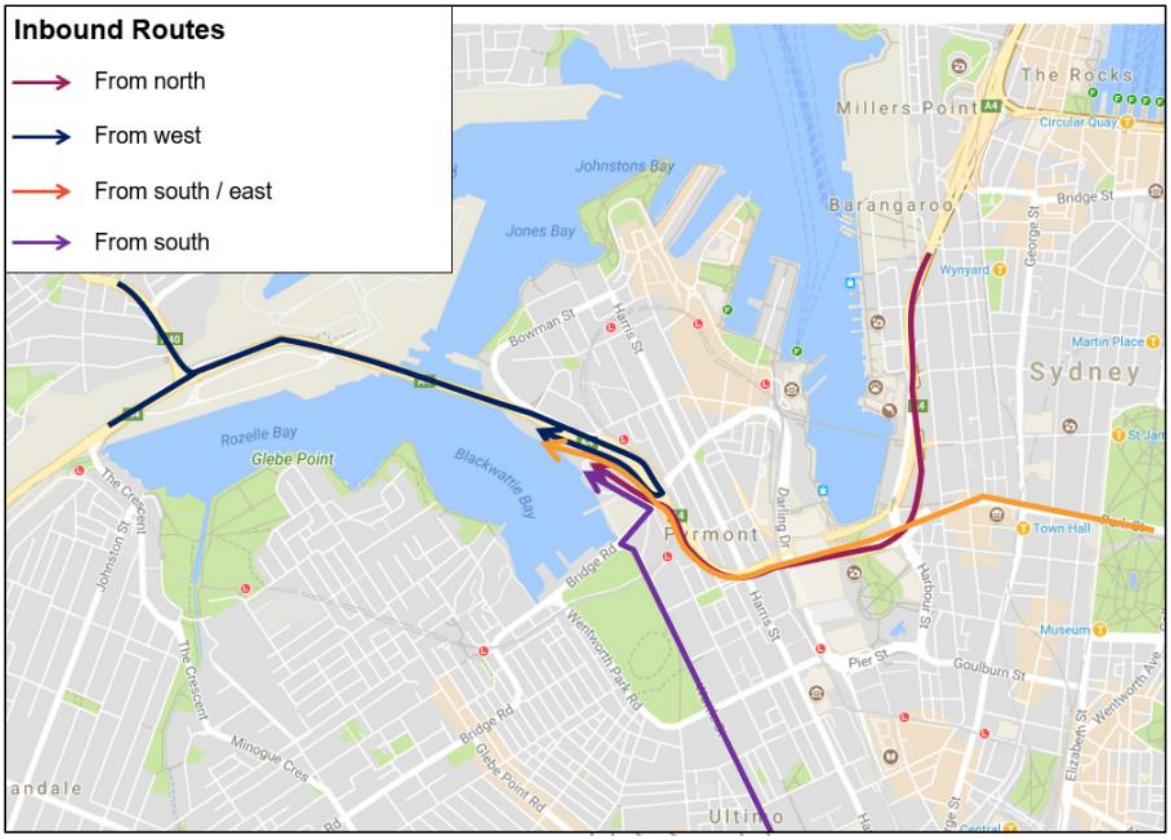


Figure 8-3: Construction traffic access routes

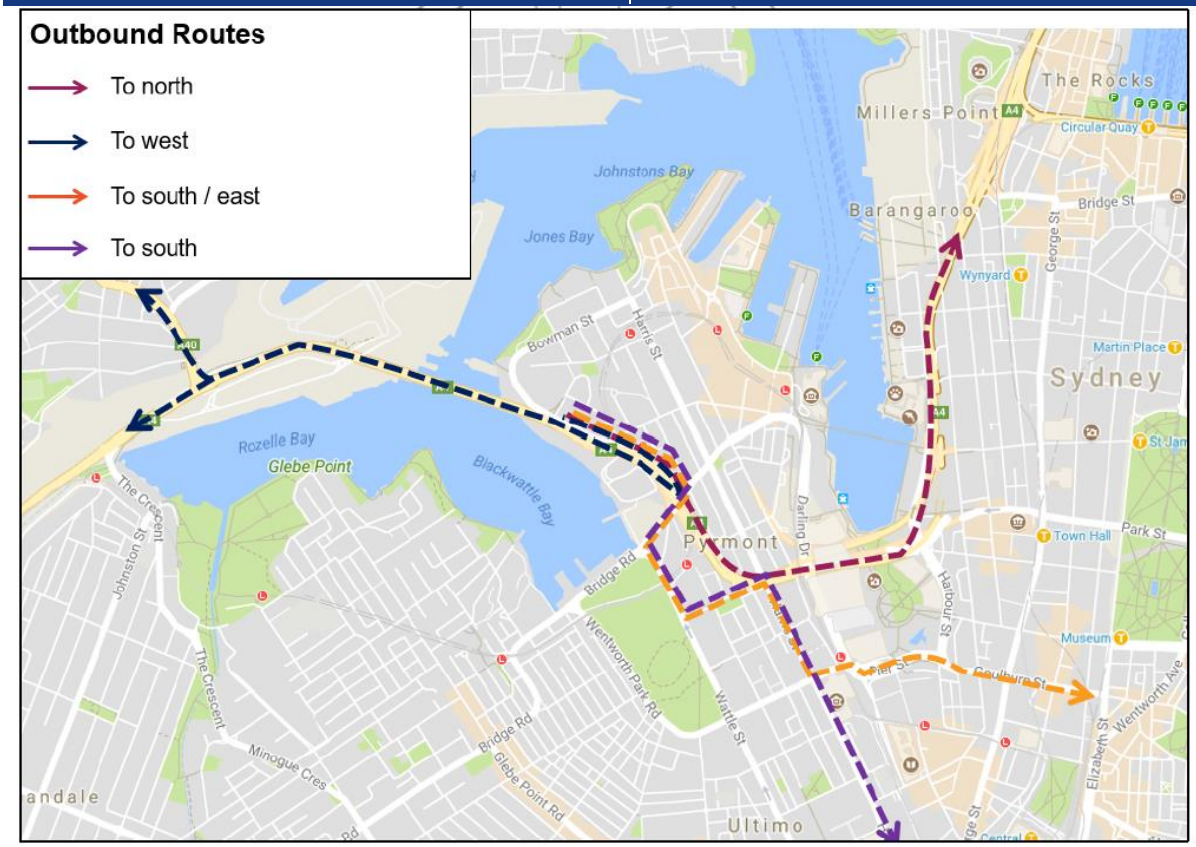


Figure 8-4: Construction departure routes

Statutory requirements

All operations on site are to be conducted in accordance with the *Roads Act 1993 (NSW)*.

Mitigations and control measures

- Manage and control construction traffic movements on the adjacent road network and vehicle movements to and from the site;
- Trucks to enter and exit the site in a forward direction;
- Limited amount of parking to be provided for construction workers;
- Restrict construction vehicle activity to designated truck routes;
- Construction access driveways to be managed and controlled by certified site personnel;
- Pedestrian movements across construction access driveways and to/from public transport facilities will be managed and controlled by site personnel where required;
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;
- Construction activity to be carried out in accordance with the approved hours of work;
- Truck loads would be covered during transportation off-site;
- Establishment and enforcement of appropriate on-site vehicle speed limits which would be reviewed depending on safety requirements;
- Activities related to the works would not impede traffic flow along local roads;
- Materials would be delivered and spoil removed during standard construction hours;
- Construction vehicles not to queue on public roads and be wholly accommodated within the site; and

Traffic	EXAMPLE EMP05

- Minimal construction traffic movements to/from the site will be made during peak hours to minimise the impact on the wider road network.
- A schedule for deliveries of materials and goods will be established prior to the day of delivery to ensure that no queueing occur on the public road network.
- Traffic Controllers will maintain radio contact with construction vehicles at all times
- All drivers shall adhere to the Driver Code of Conduct, to be outlined in the CTMP.
- Vehicles shall be tracked upon entry and exit of the Site from the temporary access to ensure that vehicles are abiding by both the timed restrictions and construction volume constraints.
- Temporary exclusion fencing will be erected along the entire boundary of the site and will be maintained for the duration of the construction program.
- Site access gates will be provided and will be closed at all times outside of the permitted construction hours
- No dirt or debris from the construction vehicles is to be tracked on to the public road network;

Erosion and Sediment Control	EXAMPLE EMP06
Responsibility:	PC
Frequency:	Disturbance of soils or storage of exposed soils
Objective:	To control potential sediment generation and migration

Background

A site-specific Erosion and Sediment Control Plan (ESCP) has been prepared for the site. The plan's requirements are summarised as herein.

Mitigations and control measures

General

The following controls will be implemented during construction:

- Vehicular traffic shall be controlled during development confining access where possible to proposed or existing road alignments. Areas to be left undisturbed shall be marked off.
- Minimise dust by watering when required.
- Topsoil from all areas to be disturbed shall be stockpiled and later respread to aid revegetation in those areas.
- Spoil and topsoil stockpiles shall be located away from drainage lines and areas where water may concentrate.
- If stockpiles are to be in place for longer than 14 days then they shall be stabilised by covering with a mulch, temporary vegetation, geofabric or polymer binder.
- Following construction, topsoil shall be respread to a minimum depth of 100mm on the bare soil surfaces and revegetate.

ESCP

The Sediment and Erosion Plan requires the following to be implemented during the works:

- Measures outlined in the Sediment & Erosion Control Plan must be implemented prior to and maintained during and after the construction works.
- All drainage works shall be constructed and stabilised as early as possible during development.
- Management devices identified in the ESCP shall be maintained on a regular basis. Where cleaning is required, the sediment shall be removed to a point nominated by the engineer.
- Management devices identified in the ESCP to remain until the end of the maintenance period.
- All sediment and soil erosion control measures are to be installed in accordance with Managing Urban Stormwater: Soils and construction - Volume 1 (*The Blue Book*, Landcom 2004). The PC is to ensure appropriate measures are in place and maintained at all times during construction works.
- Geotextile inlet filter or mesh gravel inlet filter is to be provided to all stormwater pits and inlets as constructed.
- Sediment basins are to be maintained at all times to ensure any overflow into Blackwattle Bay meets City of Sydney Council requirements.
- Sediment basins will be maintained during construction, including ensuring adequate settlement times or flocculation and pumping clean water to reach the minimum storage volume at the lower level of the settling zone.

Stockpiles

- Stockpiles shall be placed more than 2m (preferably 5m) away from existing vegetation, concentrated water flows, roads and hazard areas.
- Construct on the contour as low, flat, elongated mounds.
- Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.

- Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
- Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope

Earth Bank – Low Flow

- Build with gradients between 1 and 5 percent
- Avoid removing trees and shrubs if possible – work around them
- Ensure the structures are free of projections or other irregularities that could impede water flow
- Build the drains with circular, parabolic or trapezoidal cross sections, not V-shaped
- Ensure the banks are properly compacted to prevent failure
- Complete permanent or temporary stabilisation within 10 days or construction

Sediment Fence

- Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
- Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
- Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire ties or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
- Join sections of fabric at a support post with a 150-mm overlap.
- Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile

Geotextile Inlet Filter

- Fabricate a sediment barrier made from geotextile or straw bales
- Follow standard drawing 6-7 and standard drawing 6-8 for installation procedures for the straw bales or geofabric. Reduce the picket spacing to 1 metre centres
- In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing
- Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

Waste Management	EXAMPLE EMP07
Responsibility:	PC
Frequency:	Continuous
Objective:	To minimise the amount of waste generated during construction

Background

A Waste Management Report (Mott Macdonald, August 2023) has been prepared for the SSD Application. The findings are summarised herein.

The following materials are expected to arise throughout the construction and demolition stages:

- Hardcore such as concrete, bricks, paving, road material
- Soil
- Wood
- Hard plastics
- Metals
- Glass
- Vegetation from landscaping
- Packaging such as cardboard, plastic film
- Materials for reuse – such as buildings or certain elements of buildings

Statutory requirements

All operations on site are to be conducted in accordance with the:

- NSW EPA Resource Recovery Orders and Resource Recovery Exemptions
- NSW EPA's Waste Classification Guidelines 2014
- *Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011*, and
- *Waste Avoidance and Resource Recovery Act 2001.*

Mitigations and control measures

The following is to be implemented during the works:

Waste Avoidance Strategies

- Effective management of materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only waste that cannot be cost effectively reused or recycled will be sent to landfill or appropriate disposal facilities.
- Investigating leased equipment and machinery rather than purchase and disposal
- Waste separation (see section below) to ensure efficient recycling of wastes
- Store wastes on-site appropriately to prevent cross-contamination and/or mixing of different waste types
- Reducing packaging waste by:
  - Returning packaging to suppliers where practicable to reduce waste further along the supply chain
  - Purchasing in bulk
  - Requesting cardboard or metal drums rather than plastics
  - Requesting metal straps rather than shrink wrap, and
  - Using returnable packaging such as pallets and reels
- Arranging deliveries of materials 'as needed' to mitigate degradation, weathering or moisture damage which would lead to waste, and
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures

Re-use, Recycling and Disposal

- The following will be considered where feasible:
  - Concrete, tiles and bricks reused or recycled off-site
  - Steel recycled off-site, and all other metals recycled where economically viable
  - Framing timber recycled off-site
  - Windows, doors and joinery off-site, where possible
  - All glass that can be economically recycled will be recycled
- All solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner
- Materials will be re-used on-site where possible
- Waste bins for recyclable and non-recyclable general wastes are to be separated.
- Excavation spoil is to be assessed by a suitably qualified professional for contamination status and beneficial re-use.
- Cardboard, glass and metal wastes to be recycled.
- Provide sufficient space for storage of garden waste and other waste materials on-site
- Dispose of all asbestos, hazardous and/or intractable wastes in accordance with SafeWork NSW and NSW EPA requirements
- All used crates will be stored for reuse unless damaged

Waste Separation and Storage

- C&D waste must be segregated on-site and any materials for off-site recycling, sorting, or reprocessing stored in appropriate containers prior to collection.
- Different materials streams arising from the C&D activities should be sorted and temporarily stored in containers on-site where possible.
- If there is insufficient space on-site for full separation of waste types, the Environmental Coordinator, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled before removal from the site.

Waste Storage Areas

In accordance with good practice waste management, areas designated for waste storage will:

- Allow unimpeded access by site personnel and waste disposal contractors

- Take into account environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow sufficient space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety and accessibility in their selection,
- Not present hazards to human health or the environment, and
- Be kept away from the public realm.

Signage

Standard signage will be posted in all waste storage and collection areas. All waste containers will be labelled correctly and clearly to identify stored materials.

Contaminated Waste

- Contaminated material must be managed in accordance with the RAP (JBS&G 2023)
- All asbestos and other hazardous waste must be handled according to appropriate legislation and regulation including the *Work Health and Safety Regulation 2011* and disposed of in accordance with the SafeWork NSW and relevant EPA requirements.
- Correct segregation of waste using clear signage on waste containers and adequate training should prevent cross-contamination of materials that may render them unrecyclable or unsuitable for reuse.
- The containers used for collecting waste must also be adequate to prevent overspill or runoff that may contaminate the soil.
- Waste should be deposited in containers as soon as possible after generation to prevent ground contamination.

Waste Servicing and Record Keeping

The Environmental Coordinator or equivalent role will:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
    - Descriptions and estimated amounts of all waste materials removed from site
    - Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables
    - Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
    - Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during approved hours.
- If skips and bins are reaching capacity, removal and replacement will be organised as soon as possible. All site generated building waste collected in the skips and bins will leave the site and taken to a site lawfully able to accept them.

Waste Transfer Tracking

- A paper-based manifest system may be utilised to organise and track all waste movements off site.
- The construction copy of the construction waste manifest is signed, stamped and received by the waste carrier, main contractor and end route location for each waste load removed from site.
- Paper dockets or receipts from the waste collector should be signed by the contractor and retained on site throughout the development process.
- The quantity and type of materials removed should be recorded at all times.
- The waste receipts should also show the licensed facility that is the destination of the collected waste, whether it be recycling/recovery or landfill.

Stockpile Management	EXAMPLE EMP08
Responsibility:	PC
Frequency:	Continuous
Objective:	To ensure appropriate stockpile and contaminated material management (if present).

A Remedial Action Plan (RAP) has been prepared for the site (JBS&G 2023), which documents the procedures and standards to be followed in order to remove the potential contamination risks for the proposed development such that the site can be made suitable for the intended public open space land use, consistent with the requirements of 'Chapter 4 Remediation of land' in *State Environmental Planning Policy (Resilience and Hazards) 2021*.

Procedure

The RAP details the following with regards to stockpile management:

- No stockpiles or other materials shall be placed on footpaths or roadways and will be away from all stormwater infrastructure (including drainage lines, stormwater pits, gutters, etc) where possible. Where this is not possible, sediment controls will be placed over stormwater grates to prevent ingress of sediment to stormwater drainage lines.
- Stockpiles shall be formed with sediment control structures placed immediately down slope to protect other lands and waters from sediment pollution.
- All asbestos impacted soils will be covered with plastic or geotechnical fabric.
- A registered surveyor will be required to conduct surveying of excavations, stockpiles and remedial extent as required by the Client's representative such that the remedial/validation objectives can be achieved.
- . If the concentration of contaminants in stockpiled materials are above the adopted site criteria, the materials will be disposed of off-site. Alternatively, if the materials are found to be suitable for on-site retention (either below site criteria or the statistical criteria are satisfied) – they can be reinstated on-site.

In addition to the measures identified in the RAP, the following would also be implemented:

- All materials requiring excavation and stockpiling on site will be managed by the PC.
- Unique numbers will be provided for each stockpile, the source of the stockpile, its estimated volume, material characterisation and its location onsite (via GPS) will also be recorded in a Material Tracking Plan.
- All stockpiles of soil or other materials shall be placed away from drainage lines gutters or stormwater pits or inlets;
- All stockpiles of soil or other materials likely to generate dust or odours shall be covered;
- All stockpiles of chemically contaminated soil shall be stored in a secure area and be covered if remaining more than 24 hours; and
- If present, all stockpiles of asbestos contaminated soils shall be kept damp and covered to minimise potential fibre release, and if left for more than 24 hours, be stored in a secure area.
- Appropriate sediment controls surrounding the stockpiles will be implemented in accordance with **EMP06 Sediment and Erosion Control**.
- Stockpiled materials will require testing prior to offsite disposal in accordance with the requirements of *NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014)* and in accordance with **EMP07 Waste Management**.

Soil and Contamination	EXAMPLE EMP09
Responsibility:	PC
Frequency:	On identification of unanticipated site conditions
Objective:	To ensure potential contamination in managed appropriately

A Remedial Action Plan (RAP) has been prepared for the site (JBS&G 2023) which summarises identified contamination at the site, and outlines an action plan to remediate contamination.

Sources of contamination exist at the and include:

- Placed fill and reclaimed land areas across the site reported to variously contain asbestos containing material (ACM)/ asbestos fines (AF)/ friable asbestos (FA), elevated levels of copper, lead, zinc, polycyclic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH) and inclusions of coal, ash and slag.
- Current and former industrial areas including petroleum product storage, marine repairs/equipment storage, creative industries (art studio/workshop), abattoir, waste storage/transporting, shipping, etc;
- Suspected current and former petroleum based storage and dispensing facilities;
- Known impacted material contained onsite; and
- Natural and fill soils comprising potential acid sulfate soils (PASS)/ acid sulfate soils (ASS).

The extent of remediation to be undertaken within the development site and methodology is outlined in the RAP.

There remains the possibility that additional hazards including contaminated soil may be identified during soil movement works. Sources of these could include:

- Contaminated imported soil.
- Contaminated soil from fly tipping, previous use of low-quality fill or poor demolition practices.
- Redundant services that have not previously been located or identified on “dial before you dig” searches.
- Demolition of existing structures (including buildings and utilities)

Statutory Requirements

- *Protection of the Environment Operations Act 1997* (POEO Act) and associated regulations
- *Contaminated Land Management Act* (CLM Act)
- State Environmental Planning Policy (Resilience and Hazards) 2021
- PFAS National Environmental Management Plan Version 2.0, January 2020. National Chemicals Working Group of the Heads of EPAs Australia and New Zealand (HEPA, NEMP 2.0, 2020); and
- Guidelines for the Assessment of On-Site Containment of Contaminated Soil, September 1999, ANZECC (ANZECC 1999)
- Waste Classification Guidelines Part 1: Classifying Waste (EPA 2014a);
- Waste Classification Guidelines Part 4: Acid Sulfate Soils (EPA 2014b);
- Contaminated Sites: Guidelines for NSW Site Auditor Scheme, 3rd Edition, October 2017 (EPA 2017);

Procedure

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any contamination be identified during earthworks, the unexpected finds protocol (UFP) shall be implemented. This process is provided in **Figure 8-5**.

The following is to be undertaken during construction:

- A hazardous materials survey is to be completed prior to demolition of buildings
- The site RAP is to be made available on site at all times

- The RAP is to be followed for remedial works
- Air monitoring for asbestos removal work is the be undertaken, including movement and/or removal of friable and non-friable asbestos.
- All workers who may come into direct contact with contaminated soil will wear the following minimum personal protective equipment (PPE):
  - Overalls or long sleeved collared shirt;
  - Heavy duty outer gloves (e.g. leather) where there is a risk of cuts or abrasions, otherwise PVC outer gloves if in direct contact with contaminated soil;
  - Steel capped boots;
  - Safety glasses;
  - High visibility vest or jacket; and
  - Hard hat.
- The following steps should be taken to ensure personnel do not leave the site with potentially contaminated clothing:

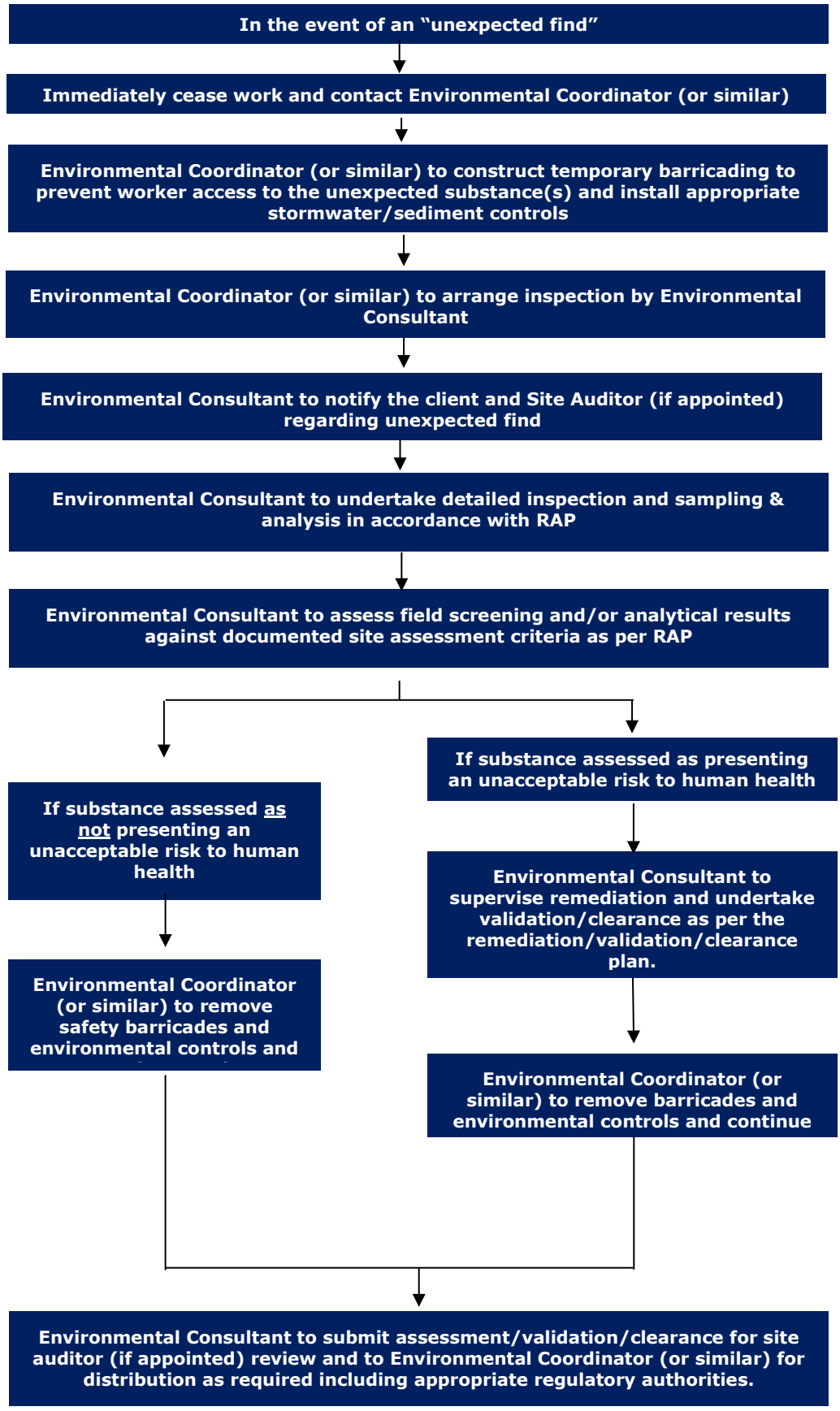
  1. Disposal of coveralls and respirator;
  2. Wash boots in clean water;
  3. Remove outer gloves and store for reuse;
  4. Remove overalls (if used) and store for reuse;
  5. Remove respirator and goggles (if used) and store clean for reuse or decontamination, as appropriate; and
  6. Thoroughly wash hands and face.

  - If any part of a worker's body comes into direct contact with any potentially contaminated material, the affected part(s) should be immediately washed with clean water.
- All equipment, including personal protective equipment, will be washed or otherwise cleaned to ensure that contaminated soil, water or dust is removed before it leaves the Site. All plant and equipment will have their outer bodies thoroughly cleaned of soil and sediment before moving off the site.
- The remediation contractor will be responsible for preparing an emergency response plan, which will provide details on appropriate action and evacuation procedures in the event of an emergency as outlined in the RAP.
- All works on the remedial site must be undertaken in accordance with a Construction Asbestos Management Plan.

The following procedures should be followed to ensure no contaminated material is imported to the site:

- ensure that only Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), or other material approved in writing by EPA is brought onto the site;
- keep accurate records of the volume and type of fill to be used; and
- make these records available to the Planning Secretary upon request.

EMP11 – Contamination Unexpected Finds Protocol Figure 8-5	EMP09



Acid Sulfate Soils	EXAMPLE EMP10
Responsibility:	PC
Frequency:	During excavation within identified or suspected ASS areas
Objective:	To ensure adequate management of ASS during construction

An Acid Sulfate Soils Management Plan (ASSMP) has been prepared for the site (JBS&G 2023), which documents Acid Sulfate Soils (ASS) as being identified at the site, including in the following soil types at the site:

- black sand and brown clayey gravelly sand;
- dark brown/black clayey sand; and
- brown gravelly sand.

The material identified as ASS generally ranged in depth from approximately 5.0 to 6.0 m bgs.

Statutory Requirements and Guidelines

- Waste Classification Guidelines Part 1: Classifying Waste (EPA 2014a);
- Waste Classification Guidelines Part 4: Acid Sulfate Soils (EPA 2014b);
- Contaminated Sites: Guidelines for NSW Site Auditor Scheme, 3rd Edition, October 2017 (EPA 2017);
- *Protection of the Environment Operations Act 1997* (POEO Act) and associated regulations
- Acid Sulfate Soils Assessment Guidelines, Acid Sulfate Soils Management Advisory Committee. (ASSMAC 1998);
- National Acid Sulfate Soil Guidance: A Synthesis (DAWR 2018a);
- National Strategy for the Management of Coastal Acid Sulfate Soils (DAWR 2018b);
- National Acid Sulfate Soils Sampling and Identification Methods Manual (DAWR 2018c); and
- National Acid Sulfate Soils Sampling and Laboratory Methods Manual (DAWR 2018d).

Procedure

The site specific ASSMP must be implemented during construction.

The following is summarised from the ASSMP, and will be undertaken during works within areas of suspected ASS:

- The use of neutralisation techniques where disturbance cannot be avoided is considered the most appropriate management technique of ASS for this site.
- All soils sourced from areas/during activities which have been identified in the ASSMP as having the potential for disturbance of PASS/ASS must be treated as ASS material until such time as the material is demonstrated to be non-ASS material or treatment effectively reduces the risk associated with the material and validation results meet the relevant specifications.
- ASS/PASS materials that have been excavated (or otherwise brought to the ground surface) should be separated from the non-ASS/PASS material and immediately transferred to the treatment area as soon as practicable to minimise the quantity of soil and/or groundwater requiring treatment and the risk of environmental harm to the site and/or down-gradient receptors.
- Bunding, diversion drains, contaminated water treatment/containment etc may be used to contain surface water run-off from ASS/PASS disturbance zones and subsequent storage and treatment areas. However, ASS/PASS materials must not be used in the construction of bunds and other diversion devices.
- Equipment used in the treatment of ASS shall be washed with an alkaline solution at the completion of each work period to minimize corrosion of equipment.
- Excavation works will be staged to minimise cross-contamination with suspected/ confirmed ASS.

Acid Sulfate Soils	EXAMPLE EMP10
Responsibility:	PC
Frequency:	During excavation within identified or suspected ASS areas
Objective:	To ensure adequate management of ASS during construction

Statutory Requirements and Guidelines

- Waste Classification Guidelines Part 1: Classifying Waste (EPA 2014a);
- Waste Classification Guidelines Part 4: Acid Sulfate Soils (EPA 2014b);
- Contaminated Sites: Guidelines for NSW Site Auditor Scheme, 3rd Edition, October 2017 (EPA 2017);
- *Protection of the Environment Operations Act 1997* (POEO Act) and associated regulations
- Acid Sulfate Soils Assessment Guidelines, Acid Sulfate Soils Management Advisory Committee. (ASSMAC 1998);
- National Acid Sulfate Soil Guidance: A Synthesis (DAWR 2018a);
- National Strategy for the Management of Coastal Acid Sulfate Soils (DAWR 2018b);
- National Acid Sulfate Soils Sampling and Identification Methods Manual (DAWR 2018c); and
- National Acid Sulfate Soils Sampling and Laboratory Methods Manual (DAWR 2018d).

Procedure

Works within the harbour are required to construct two wharves as part of the project. This may require the use of a coffer dam to facilitate piling.

Should a coffer dam/s be identified during development of construction methodology, a Dewatering Management Plan will be prepared by a suitably qualified hydrologist and appended to the CEMP. The dewatering management plan will include identifications of potential impacts and mitigation measures, approvals and licences, environmental compliance and monitoring procedures.

Implementation of adequate sediment controls will be undertaken, which may include use of a silt curtain/s.

Reference will be made to the RAP and ASSMP during works where the harbour bed will be disturbed.

Environmental Emergency Response	EXAMPLE EMP11
Responsibility:	PC
Frequency:	Where uncontrolled releases of potential environmental pollutants occur
Objective:	To minimise environmental impacts of all incidents on site

Procedure

Environmental incidents on the site which would require potential emergency response would relate to a spill of hazardous liquid or material on soils on the site, or in proximity of stormwater discharge point, or relating to a release of potential asbestos affected materials.

For spills on **land**, the following shall be undertaken:

- Identify source of spill and stop when / if safe to do so;
- Identify area of spill and clear area of all personnel;
- Notify DPE (within 24hrs) and Environmental Coordinator of spill;
- Construct earthen bunding using earthmoving equipment available on site to contain spill;
- Environmental Coordinator to coordinate the pumping of liquid waste out of the containment structure and disposal to a licensed waste facility;
- If solid waste:
  - Environmental specialist coordinates the excavation and removal of the hazardous material to a secure area; and
  - Assess soils in vicinity of environmental incident for contamination and conduct remediation works where contamination has occurred.

For spills **in proximity of the stormwater outlets or bay** from the site, the following shall be undertaken:

- Identify source of spill and stop when / if safe to do so;
- Identify circumference of spill and clear area of all personnel (where onshore area present);
- Notify DPE and Environmental Coordinator of spill with 24 hours;
- Environmental specialist instructs containment of area of spill in water by placement of temporary absorbent beams (available on site) to create 'coffer dam' around stormwater outlet to prevent discharge of spilt material;
- Environmental Coordinator coordinates a liquid waste tanker to be bought onto site and pump directly from water contained within the impacted area until visual evidence of spill removed;
- Conduct chemical testing of water in the stormwater system as potentially affected by the spill to validate removal of contamination; and
- Subject to validation results, remove coffer dam.
- All emergency responses will be followed up with **EMP14** Incident Reporting and **EMP16** CEMP Review.

Training	EXAMPLE EMP12
Responsibility:	PC
Frequency:	As required
Objective:	Suitably trained personnel will be available to implement the requirements of the Preliminary CEMP

Procedure

The PC shall ensure that any personnel engaged in the implementation of nominated tasks within the Preliminary CEMP have been provided with adequate training to manage environmental aspects during site ground disturbance activities. This will include inductions and other task specific training as required.

The PC shall maintain records of personnel engaged in the nominated tasks and their relevant training/qualifications for the period of three years in accordance with **EMP15** Record Keeping.

Non-compliance	EXAMPLE EMP13
Responsibility:	PC
Frequency:	As required
Objective:	Suitably trained personnel will be available to implement the requirements of the Preliminary CEMP

Procedure

The PC shall ensure that any personnel engaged in the implementation of nominated tasks within the Preliminary CEMP have been provided with adequate training to manage environmental aspects during site ground disturbance activities. This will include inductions and other task specific training as required.

The PC shall maintain records of personnel engaged in the nominated tasks and their relevant training/qualifications for the period of three years in accordance with **EMP15** Record Keeping.

Non-Compliance Notification

Once determined, this procedure will be updated with compliance notification requirements to DEP as per Consent Conditions.

Incident Reporting	EXAMPLE EMP14
Responsibility:	PC
Frequency:	As required in response to environmental incidents and/or non-compliance with EMP
Objective:	To ensure the Preliminary CEMP is implemented as intended.

Procedure

The PC shall facilitate the completion of environmental incident forms for any environmental incident that occurs on the site. The Environmental Coordinator shall review all incident forms.

Incident Notification, Reporting and Response

Once determined, this procedure will be updated with incident notification and reporting requirements to DPE as per Consent Conditions.

Record Keeping	EXAMPLE EMP15
Responsibility:	PC
Frequency:	As required
Objective:	Records of the implementation of the Preliminary CEMP require to be retained.

Procedure

The Environmental Coordinator (or person nominated by the Environmental Coordinator) shall be responsible for the maintenance of all documents relating to the implementation of the Preliminary CEMP. This shall include any additional assessment undertaken, registers for the maintenance of the Preliminary CEMP (site inspection forms, works approval checklists, revised plans, *etc.*).

All records shall be retained by the PC throughout the time of implementation of the Preliminary CEMP.

In the event that the role of the PC is transferred from one organisation to another, control of all relevant (historical and current) documents will be transferred for safe keeping to the current Responsible Person.

CEMP Review	EXAMPLE EMP16
Responsibility:	PC
Frequency:	As required in response to revisions to supporting documents or in response to non-compliances with Preliminary CEMP
Objective:	The Preliminary CEMP requires review to ensure its continued appropriateness to be used on the site

Procedure

This Preliminary CEMP provides a framework from which the key themes would be adopted by the Principal Contractor (PC) in the development of the project CEMP.

Prior to commencement of construction, this CEMP will be reviewed and revised to reflect project changes and conditions of approval once the project is determined.

The project CEMP will include a procedure for the review of the CEMP, which shall be undertaken in response to a non-compliance with the CEMP, or at a minimum of once per year by an appropriately qualified contractor/consultant in conjunction with the Environmental Coordinator. This review shall consider:

- Any non-compliances with the CEMP that have been unable to be resolved;
- Where an incident is reported as occurring under the control of Preliminary CEMP as per **EMP14** Incident Reporting;
- Practicalities and efficiencies of management measures and whether there are more effective ways to improve environmental compliance;
- Any changes in state or national environmental protection legislation or guidelines that impact any part of the Preliminary CEMP; or
- Any proposed changes in land-use of the site or adjoining sites which may impact upon exposure pathways.

Should the PC be replaced, a complete review of the CEMP document and compliance measures will be necessary to identify suitable replacement CEMP compliance mechanisms.

In addition, where a review identifies items which are required to be modified, or added to the Preliminary CEMP, then a revision of the CEMP shall be prepared by a suitably qualified person.

9. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

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B	1 x electronic copy	Belinda Lewis, Infrastructure NSW	26 October 2023
0	1 x electronic copy	Belinda Lewis, Infrastructure NSW	24 November 2023

Document Status

Rev No.	Author	Reviewer	Approved for Issue		
		Name	Name	Signature	Date
A	Rachel Gray	Sam Pathammavong	Draft for client review		
B	Rachel Gray	Sam Pathammavong	Final draft for client review		
0	Rachel Gray	Sam Pathammavong	Sam Pathammavong		24 November 2023

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