



## Sydney Port Botany Terminal 3 Project

### SICTL Framework Construction Environmental Management Plan

<b>Project Title</b>	Sydney Port Botany Terminal 3 Project
<b>Project Address</b>	Gate B150-160 Foreshore Road, Port Botany NSW 2036

#### Revision History

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	Approved	NB	KM

## Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SICTL	Sydney International Container Terminals Ltd
SPBT3	Sydney Port Botany Terminal 3
FCEMP	Framework Construction Environmental Management Plan
EPA	Environment Protection Authority
OEH	Office of Environment and Heritage
MSDS	Material Safety Data Sheet
OOH	Out of Hours
EMS	Environmental Management System
ESC	Erosion and Sediment Controls
DNR	Department of Natural Resources
EM	Environmental Manager
SACL	Sydney Airport Corporation Limited
DOP	NSW Department of Planning and Infrastructure
PEHEP	Penrhyn Estuary Habitat Enhancement Plan

## Distribution

The master 'controlled' FCEMP document will be held on the site computer network server where it can be accessed by personnel as necessary.

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## 1. Introduction

For the Sydney Port Botany Terminal 3 (SPBT3) Project, this Framework Construction Environmental Management plan (FCEMP) has been specifically developed to:

- Ensure that the Project meets contractual, legal and other environmental requirements including industry codes of practice.
- Incorporate requirements of the Project Environmental Impact Statement (EIS) into the Construction Environmental Management Plan for relevant scope of works.
- Comply with the relevant requirements of the Project Planning Determination.
- Provide relevant contractors undertaking works on the Terminal 3 portion of the Port Botany Expansion with a framework that outlines systems, procedures and documentation necessary to undertake the construction of this Project and to minimise the impact on the natural environment.

The FCEMP provides the high level governance framework for environmental management on the Project and is supported by a number of issue specific Sub-Plans.

Note; multiple contractors will be working under this CEMP as part of the Terminal 3 construction project. There will be a coordinated approach to manage common project issues such as traffic, noise, dust, complaints, incidents, and community consultation. SICTL and its project representatives will coordinate this approach.

## 2. Scope

This FCEMP applies to the following construction stages of the Sydney Port Botany Terminal 3 (SPBT3) Project;

- Supply and installation & Commissioning of Automated Stacking Cranes (ASC) Cranes which includes but is not limited to;
  - Delivering Cranes components by land and sea
  - Unloading crane components
  - Erection of Crane Components
  - Commissioning of crane.
- Supply and installation of Quay Cranes (QC) Cranes which includes but is not limited to;
  - Delivering Cranes components by land and sea
  - Unloading crane components
  - Erection of Crane Components
  - Commissioning of cranes.
- Supply and installation and commissioning of Information, communication and Technology infrastructure which includes but is not limited to;
  - Pulling cables
  - Jointing cables
  - Installation of cable tray
  - Installation of Racks
  - Installation of Video messaging sign

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- Installation of CCTV cameras
- Installation of security access systems.
- Delivery and fabrication of shuttle carriers which includes but is not limited to;
  - Delivering shuttle carrier components by land and sea
  - Unloading shuttle carrier components
  - Erection of shuttle carrier Components
  - Commissioning of shuttle carrier.

It is noted that the scope above does not include bulk earthworks, excavations, stockpiling loose material or works within Penrhyn Estuary.

Expected durations of construction activities per section are outlined below.

Description / Activities	Start Date	Completion Date	Associated Monitoring
Automated Stacking Crane installation	16/05/2013	16/11/2013	Dust Noise
Shuttle carrier Erection	22/04/2013	25/08/2013	Dust Noise
Installation of Information, Communication & Technology Infrastructure	10/05/2013	19/10/2013	Dust Noise
Quay Cranes Installation	30/06/2013	19/09/2013	Dust Noise

Expected durations of construction activities at time of FCEMP submission

### 3. Objectives and Targets

Objectives and targets for this Project are as follows:

Objective	Target	Reporting / Monitoring
Effective site environmental controls	Environmental controls are developed and implemented prior to starting work on site. Complete an effective inspection and maintenance regime.	Regular Environmental Inspection Checklists Quantitative environmental monitoring and monthly reporting.
Environmental performance	Zero major environmental incidents and no breaches.	Monthly Environmental Monitoring Report.
Effective implementation environmental systems	Full compliance with Planning Approval requirements.	Annual Environmental Management Report (AEMR) as per MCoA B4.2
Community issues carefully managed	Zero valid complaints.	Complaints handling to be handled in conjunction with Sydney Ports Corporation

### 4. Site Location and Plan

The Project is located within the City of Botany Bay, 12 kilometres south of the Sydney CBD. The Project site is adjacent to the existing Patricks Terminal at Port Botany.

Lot and Plan Number	Street address
Lot 6 DP 1053768	Penrhyn Road
Lot 2 DP1009870	Port Botany
Lots 301 & 302 DP 712992, Part of Crown Reserve R91288	New South Wales 2036 Australia
Lots 203 & 205 DP 712991	
Lot 401 DP 816961	

*A site plan can be seen in Appendix 4.*

### 5. Legal and Other Requirements

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

- All relevant laws and legislative criteria
- All relevant licences and permits
- Relevant industry standards/codes
- NSW Minister for Planning Conditions of Approval for the Port Botany Expansion Project
  - MOD 1 – MOD-107-9-2006-i approved 11 September 2007
  - MOD 2 – MOD-134-11-2006-i approved 11 September 2007
  - MOD 3 – MOD-149-12-2006-i approved 11 September 2007
  - MOD 4 – MOD-78-9-2007-i approved 17 September 2007
  - MOD 5 – MOD-60-9-2008 approved 21 September 2008
  - MOD 6 – MOD-68-12-2008 approved 12 December 2008
  - MOD 7 – MOD-08-03-2009 approved 20 March 2009
  - MOD 8 – 494-11-2003-i MOD 8 approved 30 May 2009

- MOD 9 – DA-494-11-2003-i MOD 9 approved 18 June 2009
- MOD 10 – DA-494-11-2003-i MOD 10 approved 13 July 2009
- MOD 11 – DA-494-11-2003-i MOD 11 approved 21 November 2011
- MOD 12 – DA-494-11-2003-i MOD 12 approved 6 June 2012
- MOD 13 – DA494-11-2003-i Changes to Stormwater Management System for the Knuckle
- Environment Protection Biodiversity and Conservation Act approval - reference 2001/543. The environmental assessment undertaken as part of the project planning modification 12, allowing a change in design to the first flush stormwater system, includes an assessment of significance of the proposed works. It has been assessed that no referral will be required and that modification to the EPBC conditions of approval for the project.

It is documented within this same environmental assessment that Department of Sustainability, Environment, Water, Population and Communities advised that the modification to the stormwater first flush system does not necessitate any variations to the conditions of approval for the Port Botany Expansion under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC 2002/543).

- Port Botany Expansion Environmental Impact Statement
- Penrhyn Estuary Habitat Enhancement Plan
- Future modifications to Sydney Container Terminal 3 under Section 75W of the Environmental Planning and Assessment Act 1979
- Requirements listed in the Aurecon Framework Construction Environmental Management Plan.

An assessment of these requirements has been conducted and recorded in Appendix 1.

A list of relevant Permits, Licences and Development Consents will be kept on site (Refer Appendix 5).

Standard construction hours that will relate to the entire project:

- 7:00 am to 6:00 pm, Mondays to Fridays, inclusive
- 8:00 am to 1:00 pm on Saturdays
- At no time on Sundays or public holidays.

The Project will seek the Director-General's approval to conduct construction activities audible at residential premises outside the hours specified above on a case by case basis. In seeking the Director-General's approval, the Project will demonstrate a need for activities to be conducted during varied hours and how local acoustic amenity will be protected, as well as detail how the EPA's requirements with respect to the variation of hours have been addressed.

## **6. References, Standards, Codes and Regulations**

The Project will be constructed in accordance with relevant standards, codes, acts and regulations (Refer Appendix 1).

## **7. Responsibilities and Authorities**

Key responsibilities and authorities include:

SICTL Project Manager

- Ensure that Project responsibilities and authorities are defined and communicated
- Provide adequate resources to meet environmental objectives
- Ensure that the FCEMP is effectively implemented and maintained
- Approve the FCEMP
- Ensure contractors comply with requirements
- Take action to resolve environmental non-conformances and incidents
- Report environmental incidents to local authorities as required.

#### Project Environment Representative

- Environmental Representative shall be nominated and approved by the Director- General.
- The Environmental Representative shall be employed for the duration of the construction and the on-going management, mitigation and monitoring associated with the civil construction works
- As per MCoA B4.3, the Environmental Representative shall be;
  - the primary contact point in relation to the environmental performance of the construction phases;
  - responsible for all Management Plans and Monitoring Programs required under this consent, in relation to the construction phases;
  - responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals relating to the environmental performance and impacts of the construction phases;
  - responsible for the management of procedures and practices for receiving and responding to complaints and inquiries in relation to the environmental performance of the construction phases;
  - required to facilitate an induction and training program for relevant persons involved with the construction phases; and
  - given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

#### Contractors

- Comply with all legal and contractual requirements
- Comply with site environmental requirements
- Comply with management/supervisory directions
- Comply with FCEMP requirements
- Participate in induction and training as directed
- Report all incidents
- Ensure adequate resources are implemented to meet environmental objectives
- Ensure that the FCEMP requirements are effectively communicated to all personnel
- Ensure that the FCEMP requirements are incorporated into construction planning

- Take action within limits of authority to resolve environmental non-conformances and incidents
- Ensure environmental requirements are incorporated into the construction planning and process documentation.
- Ensure suppliers and subcontractors comply with environmental requirements
- Report environmental incidents as required

#### Engineering Personnel

- Take action to resolve environmental non-conformances and incidents
- Ensure contractors comply with requirements
- Report all environmental incidents.

#### All Personnel

- Comply with the relevant Acts, Regulations and Standards
- Comply with the requirements of this FCEMP
- Promptly report to management any non-conformances, environmental incidents and/or breaches of the system
- Undergo induction and training in environmental awareness as directed by SICTL
- Report all incidents
- Act in an environmentally responsible manner
- Use authority to stop work on activities that are (or have the potential to) causing an environmental non-conformance.

## **8. Environmental Risk Assessment and Control**

An environmental risk assessment has been completed for the relevant scope of works. Environmental aspects and impacts have been identified, assessed and documented in Appendix 2 of this FCEMP.

Significant risks from an environmental protection, regulatory and a community perspective is summarised below:

- Capturing and understanding the statutory requirements from planning instruments and other regulatory authorities
- Verification of compliance with all instruments
- Engaging contractors and ensuring compliance with the requirements
- Protection of water quality in the surrounding bay and estuaries
- Traffic impacts
- Waste management
- Management of chemicals and fuels.

Issue specific sub-plans have been prepared for the following;

- Soil and Water Quality Management Plan

- Air Quality and Dust Management Plan
- Construction Noise and Vibration Management Plan
- Waste Management Plan
- Emergency Response and Incident Management Plan
- Traffic Management Plan
- Acid Sulphate Soils Management plan

Other specific environmental aspects for the works include heritage, energy usage, bird hazard and are outlined in chapter 37 of the EIS. Relevant aspects and associated mitigation measures will be managed as per the project EIS.

## 9. Training, Awareness and Competence

In line with Minister's Condition B4.4, all employees will receive suitable environmental induction/training to ensure that they are aware of their responsibilities and are competent to carry out the work.

Environmental requirements will be explained to all personnel during site induction and on-going training via site based meetings, briefings, notifications and other forums as required.

All personnel (including subcontractors) will receive induction/training in the following:

- Understanding individual authorities and responsibilities
- Site environmental rules
- Emergency procedure and response (e.g. spill clean-up)
- Basic understanding of their legal obligations.

An outline of environmental training is provided below and may be amended to reflect project requirements during the relevant construction phase. The list below does not include the list of toolbox topics to be discussed during the project which can be made available on request.

Aspect	Training Inclusion	Personnel Required	Means
Emergency Land/Marine Spill Response	<ul style="list-style-type: none"> <li>• Use and location of spill kits</li> <li>• Emergency response procedures</li> </ul>	Site based personnel	Project Induction Site briefings
Erosion and Sediment Control	<ul style="list-style-type: none"> <li>• Implementation of controls on site</li> </ul>	Site based personnel	Project Induction Site briefings
Environmental Legal Obligations	<ul style="list-style-type: none"> <li>• POEO Act and other project requirements</li> <li>• Applicable fines and prosecutions</li> </ul>	Site based personnel	Project Induction
Deliveries	<ul style="list-style-type: none"> <li>• Handbooks distributed including haulage routes, approved delivery hours, site access and behaviours.</li> </ul>	Delivery drivers Site based personnel	Project Induction Site briefings
Community / Stakeholder Awareness	<ul style="list-style-type: none"> <li>• Adjacent community and Project involvement</li> <li>• Relevant Project stakeholders</li> <li>• Accepted behaviours</li> </ul>	Site based personnel	Project Induction Site briefings

Aspect	Training Inclusion	Personnel Required	Means
	<ul style="list-style-type: none"> <li>Approved hours of work</li> </ul>		
Biodiversity	<ul style="list-style-type: none"> <li>Wildlife status of project and surrounds (Penrhyn Estuary, Botany Bay)</li> <li>Stop work and reporting protocols for injured wildlife</li> <li>Bird hazards and requirements to stop ponding water on site</li> <li>Measures to stop feral animals coming to site</li> </ul>	Site based personnel	Project Induction Site briefings
Airport Exclusion Zones	<ul style="list-style-type: none"> <li>Project site boundaries and exclusion zones</li> </ul>	Site based personnel	Project Induction Site briefings

## 9.1 Reporting

An Annual Environmental Management Report will be developed for the project as per MCoA B4.2. The Annual Environmental Management Report will:

- detail compliance with the conditions of the project planning approval;
- contain a copy of the project complaints register (for the preceding twelve-month period, exclusive of personal details) and details of how these complaints were addressed and resolved;
- include a comparison of the environmental impacts and performance predicted in the EIS and additional information documents provided to the DOP and Commission of Inquiry;
- detail results of all environmental monitoring required under the development consent and other approvals, including interpretations and discussion by a suitably qualified person;
- contain a list of all occasions in the preceding twelve-month period when environmental performance goals have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;
- be prepared within twelve months of the commencement of construction, and every twelve months thereafter;
- be approved by the Director-General DOP; and
- be made available for public inspection.

Within one year of the commencement of construction and every year thereafter for the duration of construction a full independent environmental audit shall be undertaken by a suitably qualified person/team approved by the Director-General DOP in accordance with Ministers Condition B4.5.

## 9.2 Environmental Control Map

An Environmental Control Map(s) is to be prepared by each contractor to assist in the planning and delivery of the project. This map is to be submitted in each contractor construction methodology. It is specific to the site or work area and outlines the location of protection measures, monitoring requirements and environmentally sensitive areas. It is the practical application of the proposed control measures.

The project Environmental Control Map shall include but not limited to:

- The worksite layout and boundary, including entry/exit points and internal roads

- Location of site offices
- Location of spill containment and clean-up equipment
- Location of worksite waste management facilities
- Location of environmentally sensitive areas (e.g. threatened species, critical habitat, contaminated areas, heritage zones, etc)
- Vegetation and trees to be protected
- Location of stormwater drainage and watercourses leading to / from the worksite
- Key environmental risk issues and the specific mitigation measures

### **9.3 Plant and Equipment**

Plant and equipment will be maintained in a safe and serviceable manner.

The following rules apply:

- Plant will be serviced, re-fuelled and washed-down only in approved areas where hydrocarbons can be captured and then properly disposed of. Preference is given for all servicing to be undertaken off site with only large plant items to be serviced on site
- Major servicing is not to be undertaken on site
- Plant and equipment will be maintained to prevent/fix oil leaks
- Plant will be driven and operated only in approved areas
- Plant will have effective pollution control and sound attenuation devices fitted.

## **10. Emergency Preparedness and Response**

The types of environmental emergencies which could occur on this site are shown in Appendix 4.

The relevant statutory and regulatory authorities will be informed as outlined in Section 12 of this FCEMP.

An Emergency Response and Incident Management Plan has been developed for the project and details procedures and protocols for emergency situations. Environmental incidents and complaints will be handled as follows:

- Immediately report all incidents to the project supervisor who will assess the situation and manage the subsequent steps
- Immediately take all reasonable steps to contain further damage or danger to personnel and the environment
- Contact emergency service personnel as necessary (e.g. fire dept., spill clean-up services).
- Inform SICTL's representative and other relevant authorities as necessary
- Contractors are to liaise with the SICTL's representative regarding corrective and preventive actions required and the timeframes within which these actions must occur
- Designated personnel will undertake the corrective and preventive actions.
- Review and revise existing procedures and control measures where required
- Ensure information on the handling of hazardous materials is contained in the MSDS file
- Ensure emergency services contact numbers are displayed in the main site office.

## 11. Monitoring and Measurement

Key characteristics of the Project operations and activities which have a significant impact on the environment will be regularly monitored and measured. Ongoing environmental management and reporting will be required for the full duration of the works. Environmental monitoring will be generally completed through the Project. A combined environmental monitoring program will be undertaken among the relevant contractors working on the Port Botany Expansion project to satisfy the commitments in the EIS including noise and air quality monitoring. Results will be distributed among the relevant contractors. Any exceedances to project specific targets will result in investigation by all relevant contractors on site and their respective client to determine the likely source of the exceedance and develop a plan to rectify any issues. Any such rectification will be made available to other contractors to avoid repeat issues.

This will include:

- Quantitative environmental monitoring
- Monitoring environmental controls

Quantitative environmental monitoring will be undertaken as outlined below:

Aspect	Target	Means	Location	Construction Stage	Time-frame	Responsibility
Water Discharge	No pollution of waters <25ntu, (or as described in the EIS for various weather conditions), pH 6.5-8.5, no visible oil and grease.	Water quality meter  Laboratory testing and assessment if required	As required during works.	Whole Project	Prior to any discharge from site.	SICTL
Construction Noise	Compliance with OEH Construction Noise Requirements and the project Planning Conditions  Targets are outlined in the Noise and Vibration sub-plan	Attended sensitive receptor monitoring	As per the project EIS; Location 1 - Chelmsford Avenue Location 2 - Dent Street Location 3 - Jennings Street Location 4- North of Golf Course Location 5- Australia Avenue Location 6- Military Road	Whole Project	Monthly	SICTL
Construction Vibration	Compliance with OEH Construction Vibration Requirements  Targets are	Attended monitoring	Determined by works	As required	During vibration intensive activities within safe structural working zones.  In response to	SICTL

Aspect	Target	Means	Location	Construction Stage	Time-frame	Responsibility
	outlined in the Noise and Vibration sub-plan				complaints.	
Air Quality	Dust Deposition <4g/m2/month PM10 < 50µg/m3 averaged over 24 hours (equivalent) - Trigger level for stop work/investigation set at 45µg/m3	Dust deposition gauges Real time dust monitoring using 'Dust Track' monitor for targeted real time monitoring	Dust deposition locations outlined in the Air Quality Management sub-plan. Real-time PM10 monitoring (Botany Golf Club)	Whole Project	Dust deposition gauges monthly Real-time monitoring ongoing	SICTL

- All monitoring, management and reporting documents required under the project development consent shall be made publicly available
- Specific details on the potential treatment measures to be implemented where monitoring results indicate an exceedance to the requirements are addressed in the relevant sub-plans.

### 11.1 Community Notifications Procedure

Community members identified as being impacted by Project works will be issued with a written notification two weeks prior to the commencement of works. The notification will be distributed via letterbox drop and include residents/businesses identified as being impacted. The CCC will be given construction notifications and updates monthly.

Where appropriate (for example, if the construction programme necessitates significant changes to established mitigation strategies), the notification will include 'door knocking' residents to advise them of the Project impacts and provide face-to-face information regarding the works. This may take place at the time of the letterbox drop or one week prior to the commencement of works. Where residents cannot be contacted in this way, a calling card will be left with the Project's 1800 contact information.

Notifications will include information regarding:

- Time of works
- Date of works (duration)
- Specific information regarding likely impacts - for example, traffic, visual amenity, noise and dust
- Mitigation strategies (where relevant)
- Project 1800 number and enquiries email address

All notifications will be recorded in the Project communications database.

This Framework Construction Environmental Management Plan will be made publicly available via the project website once approved by the Director General.

## 11.2 Enquiries and Complaint Response

Community members and other stakeholders will be able to contact the Project team using a number of methods including email, 1800 project number, letter and verbal / face-to-face inquiries. The project contacts are given below.

Contact	Details
General Enquiries	Noel Storan
Complaints Line	1800 177 722
E-mail	noel.storen@epm.com.au
Media Enquiries	Please contact Manager Public Affairs Hutchison Ports Australia on (02) 8268 8000
Website	<a href="http://www.hutchisonports.com.au/port-botany-expansion">http://www.hutchisonports.com.au/port-botany-expansion</a>

Project personnel will respond immediately at all times to such inquires and log all relevant information on the Project communications database. Where an immediate response is not possible, (due to the need to source relevant information from personnel within the Project team for example), project personnel will record the inquirer's details and advise them that a response will be provided within 24 hours (or earlier if possible).

Where a written response is required, the relevant contractor will provide SITCL with a draft response. It is anticipated that SICTL would provide approval for the response within 24 hours or as agreed with the resident/community member. Written responses to community complaints will be provided within 7 days.

Project personnel will ensure that the inquirer is satisfied with the response provided and close the action on the Project communications database. If the inquirer is not satisfied with the response, project personnel should further attempt to resolve the inquiry. If a satisfactory resolution is not reached, project personnel should refer the inquiry to the Site Supervisor and advise the SICTL representative.

Information to be recorded on the Project communications should include:

- Date and time of contact / inquiry
- Name of inquirer (if agreed by the inquirer)
- Inquirer's contact details (if agreed by the inquirer)
- Nature of inquiry (for example, information request)
- The means by which the comment, inquiry or complaint was made (telephone, fax, mail, email or in person)
- Proposed follow up action/s (for example immediate verbal response, letter, other). This may require one or more actions
- If no action is taken by the project team in relation to the inquiry, the reason(s) for this are to be documented
- Content of response
- Status of the inquiry (open / closed).

The project will provide quarterly reports to the DOP and EPA in conjunction with Sydney Ports Corporation, where relevant, outlining details of complaints received.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Environmental Rules in Non-conformances, Incident Investigation and Complaints Management.

Corrective and preventive actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increase environmental awareness (re-training)
- Review and improve existing environmental controls and job safety analyses/ work method statements.

## **12. Incidents, Complaints, Corrective and Preventative Action**

All incidents and complaints, (including potential incidents), must be reported so that they can be investigated and prevented from recurring.

The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

Pollution complaints and incidents must be maintained for a minimum of four years.

SICTL shall be notified of any environmental incidents and complaints relating to the Project. Preliminary notification will be provided within one hour of the incident.

All project complaints and inquires will be logged in the PBE Consultation Manager database.

### **Incident and Complaints Reporting**

Environmental incidents and complaints are to be investigated, documented, actioned and closed out as per the relevant contractor's investigation process.

Where an environmental non-conformance or incident is identified, corrective and preventive actions shall be developed and may include:

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

### **External Incident Notification**

The EPA must be notified immediately of all pollution incidents that cause or threaten material harm to the environment.

Harm to the environment is “material” if the effect (or potential effect) from an incident on the health or safety of humans or ecosystems is not trivial and or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000.

Incidents requiring notification to the EPA must also be immediately notified to the Southern Region HSEQ Manager and the Head of Legal.

If an incident presents an immediate threat to human health or property, emergency services are to be contacted via 000 phone number.

The EPA Environment Line is to be contacted on 131555.

The notification will need to include information on:

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

In addition to notifying the EPA of pollution incidents other authorities as outlined below must also be notified immediately:

- The Ministry of Health (via the local Public Health Unit - 02 9391 9000)
- The Work Cover Authority (13 10 50)
- Botany City Council - (02) 9366 3666
- Fire and Rescue NSW on 000.

Regardless of the actual or potential impact, these authorities must be notified under the amended legislation for all notifiable pollution incidents.

Further information in relation to the incident must be provided immediately if it becomes available after the initial notification.

### **Corrective and Preventative Action**

Post incident corrective and preventive actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increase environmental awareness (re-training)
- Review and improve existing environmental controls and job safety analyses / work method statements.

## **13. Environmental Management System Audit**

An audit will be conducted to determine compliance with this FCEMP. The audit will evaluate compliance with this FCEMP and associated documentation including legal, contractual and other requirements.



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It is expected that an internal Project audit will be undertaken within three months of commencing on site and approximately every three months thereafter. An audit report from the relevant contractor will be issued to SICTL.

Within one year of the commencement of construction and every year thereafter for the duration of construction a full independent environmental audit shall be undertaken by a suitably qualified person/team approved by the Director-General of Department of Planning and Infrastructure in accordance with Ministers Condition B4.5.

## Appendix 1 Legal and Other Requirements

The relevant legal and other requirements are shown in the table below.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
Protection of the Environment Operations Act 1997	This Act is of most relevance to work being carried out under this contract. It integrates into one Act all the controls necessary to regulate pollution and reduce degradation of the environment, provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act. Of particular note are Section 120 of the act which relates to water pollution.	High Relevance The Act provides for the issuing of environmental protection notices to control work and activities not covered by licences. Section 148 of the Act requires a pollution incident causing or threatening material harm to the environment to be notified to the EPA. The relevant protocols are outlined within this FCEMP.
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals for NSW.	High Relevance Port Botany Expansion to be "State significant development" under section 76A(7) of the EP&A Act due to their environmental planning significance for NSW. As such, the Minister for Infrastructure and Planning will be the "consent authority". Port Botany Expansion is also an "integrated development" under section 91 of the EP&A Act. Integrated development is development that, in order for it to be carried out, requires development consent and one or more of certain approvals or permits from other government authorities
Local Government Act 1993 Local Government (General) Regulation 2005	The Local Government Act and Local Government (General) Regulation provide a legal framework for an environmentally responsible system of Local Government including the responsibility to administer various regulatory systems (e.g. Environmental Planning, Development Consents and Conditions of Approval).	Low Relevance The project is wholly outside of their jurisdiction from a planning framework. Notwithstanding, Botany Bay City Council and Randwick City Council are significant stakeholders of the project and ongoing consultation will be undertaken.
Roads Act 1993 Roads (General) Regulation 2000	This Act and Regulation primarily provide for such things as the opening and closing of public roads, identification of road boundaries and road widening, road levels, classification of public roads, road work, protection of public road and regulation of traffic, regulation of work, structures and activities.	High Relevance This Act is mostly an administrative Act for the NSW RMS. Relevance relates to activities undertaken on the project that may impact on traffic on RMS designated roads. RMS are to be consulted on project plans as per the project determination.



Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
Soil Conservation Act 1938	This Act makes provision for the conservation of soil resources, farm water resources and the mitigation of erosion. The Act is binding on the Crown, however the Crown is not liable for prosecution. The Act provides for notification in the government gazette catchments where erosion is liable to cause degradation of rivers, lakes etc (i.e. protected land).	Medium Relevance This Act has medium relevance as the site is located within Botany Bay.
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. The Act binds the Crown. Do not take, use, keep or interfere with "nationally significant" cultural and natural resources, protected wildlife and protected plants without Approval.	High Relevance The Commonwealth Minister for the Environment and Heritage pursuant to section 75 of the EPBC Act has declared that the proposal is a Controlled Action. The controlling provisions were set out by Environment Australia (EA) as follows: <ul style="list-style-type: none"> <li>under Part 3 Division 1: <ul style="list-style-type: none"> <li>sections 16 and 17B (Wetlands of international importance);</li> <li>sections 20 and 20A (Listed migratory species); and</li> </ul> </li> <li>under Part 3, Division 2: <ul style="list-style-type: none"> <li>sections 26 and 27A (Protection of the environment from actions involving Commonwealth land).</li> </ul> </li> </ul>
Native Vegetation Act 2003 Native Vegetation Regulation 2005	This Act and Regulation provide for the conservation and management of Native Vegetation by requiring Development Consent to be obtained for the clearing of Native vegetation. Section 12 of the Native Vegetation Act 2003 excludes the clearing of land carried out in accordance with consent under Division 3 of Part 9 of the Roads Act 1993. Any clearing of native vegetation required for construction of the work under the contract would be covered by such consent.	Low Relevance Clearing of native vegetation is not required for the relevant works covered by this FCEMP.
Land and Environment Court Act 1979	The Land and Environment Court is constituted under this Act. The jurisdiction of the Court is divided into numerous classes. The relevant classes for the project covers matters such as the prosecution for offences under the various environmental legislation and to appeal against conditions of approvals, permits or orders.	Medium Relevance The relevance of this Act would only apply to work under the contract if SICTL and/or contractors were prosecuted for an Environmental Offence.
Greenhouse Gas (GHG) Emissions National Greenhouse and Energy Reporting Act 2007	Corporations emitting more than 50kT of carbon dioxide equivalent units in the financial year of 2010-11 must register by 31 August 2010 and report Scope 1 and Scope 2 emissions by 31st October 2010.	Low relevance SICTL Contractors will not trigger the requirements of this Act.
Contaminated Land Management Act 1997	This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a "Duty to Report Contamination". This duty applies to owners of land and persons who become aware their activities have	Medium Relevance The relevance of this Act to the project will be if suspected or contaminated ground is found during construction activities.

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Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
	contaminated the land. The site contains contaminated land and the provisions of this act must be complied with during the works.	
Environmentally Hazardous Chemicals Act 1985	This Act prohibits the manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of an environmentally hazardous chemical or waste (prescribed activity) except under the provisions of a chemical control or a licence. The OEH is required to prepare inventories of environmentally hazardous chemicals and declared chemical wastes.  The OEH designates chemicals that are subject to a Chemical Control Order. There are currently 5 chemical control orders and it is not expected that any site activities will require these chemicals.	Low Relevance It is not anticipated any environmentally hazardous chemicals or declared chemical waste will be used or stored on the site.
Road and Rail Transport (Dangerous Goods) Act 1997	The purpose of this Act is to regulate the transport of Dangerous Goods by road and rail in order to promote public safety and protect property and the environment. The transport of Dangerous Goods is required to be appropriately licensed (both vehicle and driver).	Medium Relevance The proposed construction of the Port Botany Expansion design incorporates features and management systems for the on-site storage and transport of dangerous goods, including the transfer of dangerous goods between water, road and rail vessels.
Water Management Act 2000 Water Management (General) Regulation 2004	This Act and Regulation provide for the protection, conservation and ecologically sustainable development of water sources of the State and in particular to protect, enhance and restore water sources and their associated ecosystems.	High Relevance Among other matters, the WM Act has provisions for environmental protection that would require approvals for activities that impact upon water.
Management of Waters and Waterside Lands Regulations – NSW	This regulation includes provision for Vessel Occupation Licences within navigable waters in NSW. The regulation requires that a licence be held for commercial vessels occupying navigable waters in NSW.	High Relevance A vessel occupation licence under section 34 of the regulation would be required if a barge was proposed to be used for transporting materials to the site 3 deliveries to arrive by sea.
Coastal Protection Act 1979	This Act requires public authorities to notify the Coastal Council of NSW of any information, proposed activity or work that in the opinion of the public authority is relevant to the exercise of the function of the Coastal Council.  It further empowers the Minister for the Department of Commerce to require public authorities to obtain consent prior to carrying out development in the coastal zone or giving consent to a person to occupy or carry out development in the coastal zone.	Low Relevance Project activities do not trigger the requirements of this Act.
National Parks and Wildlife Act 1974	The relevance of this Act is firstly in respect to the protection and preservation of aboriginal artefacts. Discovery of material on site suspected as being of aboriginal origin must be reported and protected pending assessment of a specialist.  Secondly it is an offence under Part 8A of this Act to pick or harm threatened species. (Refer to the notes under the Threatened Species Conservation Act for	Low Relevance No aboriginal artefacts have been identified within the construction area. No threatened species are to be picked or harmed for the scope of works covered by this FCEMP.

Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
	more information)	
Threatened Species Conservation Act 1995 Threatened Species Conservation Regulation 2002 Threatened Species Conservation (Savings and Transitional) Regulation 1996	This Act and Regulations provide for obtaining licenses to harm or pick threatened species populations or ecological communities whether plant or animal or to damage any critical habitat. The offence of picking or harming any threatened species is covered under the National Parks & Wildlife Act Part 8A. It is a defence under Part 8A of that Act if the offence was essential to carrying out development that is in accordance with a Development Consent within the meaning of the EP&A Act or an approval within the meaning of Part 5 of the EP&A Act.	Medium Relevance Planning aspects of the TSC Act are implemented through the EP&A Act. Section 79B(3) of the EP&A Act provides that in a development where a Minister is the consent authority (as in the case of the proposed Port Botany Expansion), the concurrence of the Director-General of the NPWS in respect of the SIS is not required. Instead the Minister is required to formally consult with the Minister for the Environment (the Minister who administers the TSC Act), prior to granting consent. No threatened species are to be picked or harmed for the scope of works covered by this FCEMP.
Fisheries Management Act 1994	This Act is applicable to all waters within the state including private and public waters and all permanent and intermittent waters. The Act is most relevant in respect to maintaining water quality and ensuring no polluted water from site works enters streams, creeks and waterways. This Act also has relevance in relation to the reclamation activities associated with the works.	Medium Relevance Along with the POEO Act, water discharging from the site or as part of project activities must not pollute the watercourses.
Noxious Weeds Act 1993	This Act provides for the classification and control of noxious weeds. Declared noxious weeds are classified as Class 1, State Prohibited Weeds; Class 2, Regionally prohibited Weeds, Class 3 Regionally Controlled Weeds, Locally Controlled Weeds and Class 5 Restricted Plants. The characteristic of each class is given in Section 8 (2) of the Noxious Weeds Amendment Act 2005. Class 1, 2 & 5 weeds are referred to in the Act as "Notifiable Weeds".	Low Relevance No noxious weeds identified within the work site.
Water Act 1912	This Act provides for licences to extract water for construction purposes either from surface or artesian sources. Should construction water be extracted from surface (other than sedimentation ponds) or artesian sources a licence may be required.	Low Relevance As the lands on which the Port Botany Terminal 3 Expansion Project lie are not currently included within the boundaries of the Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources, the licensing requirements revert to the Water Act 1912 rather than the Water Management Act 2000. It has been determined in consultation with NSW Office of Water that a licence is not required under Part 5 of the Water Act 1912, and therefore the expansion project may proceed without the need for a groundwater licence from the NSW Office of Water.
Heritage Act 1977	This Act provides for the preservation and conservation of heritage items such as building, works, relic, places of historic interest, scientific, cultural, social, archaeological, architectural, natural or aesthetic	Medium Relevance Section 139 prohibits disturbance of a relic unless an excavation permit is obtained from the Heritage Council.

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Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
	<p>significance.</p> <p>Under this Act a relic means any deposit, object or material evidence which is 50 or more years old and relates to the settlement of the area (not being an aboriginal settlement). It is an offence under this Act to wilfully and knowingly damage or destroy items of heritage value.</p>	<p>Section 148 requires that the discovery of a previously unknown relic be reported to the Heritage Council within a reasonable time of its discovery.</p> <p>The remains of the former Government Jetty are the only known heritage item existing in the project area.</p>
<p>Australian Heritage Council (Consequential &amp; Transitional Provisions) Act 2003</p> <p>Australian Heritage Council Act 2003 (Cwth)</p>	<p>The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003 repealed the Australian Heritage Commission Act 1975.</p> <p>The Australian Heritage Council Act 2003 establishes the Australian Heritage Council. The Council is required to identify places to be included in the National Estate and to maintain a Register of the National Estate of places.</p>	<p>No Relevance</p> <p>The site is not on Register of the National Estate of places.</p>
<p>Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)</p>	<p>This Act provides for the preservation and protection from injury or desecration to areas and objects of particular significance to Aboriginals. Areas and objects can be protected by Ministerial Declaration and it is then an offence to contravene such a declaration.</p>	<p>Low Relevance</p> <p>No areas or objects within the works site have been identified as being subject to such a declaration and this Act is of little relevance to the project.</p>
<p>Ozone Protection Act 1989</p>	<p>This Act provides for a system of controls and to regulate and prohibit the manufacture, sale, distribution, use, emission, re-cycling &amp; disposal of stratospheric ozone depleting substances and articles that contain these substances.</p> <p>The impact is that appropriately qualified people in accordance with this Act must undertake all servicing and maintenance of this type of equipment.</p>	<p>Low Relevance</p> <p>The relevance of this Act will relate to the use of refrigerators and air conditioning units in site buildings and vehicles which still contain CFCs. Such items are unlikely to be found on site.</p>
<p>Pesticides Act 1999</p> <p>Pesticides Regulation 1995</p>	<p>This Act and Regulation establish a legislative framework to regulate the use of pesticides. They have the objective to promote the protection of human health, the environment, property and trade in relation to pesticides. It is an offence under this Act and Regulation to wilfully or negligently misuse pesticides.</p>	<p>Low Relevance</p> <p>It is not envisaged that pesticides will be used on the project.</p>
<p>Waste Avoidance and Resource Recovery Act 2001</p>	<p>This Act repeals the Waste Minimisation and Management Act, 1995. The purpose of the Act is to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecological sustainable development. The Act provides for the making of policies and strategies to achieve these ends. It is an offence under the Protection of the Environment Operations Act to wilfully or negligently dispose of waste in a manner that harms or is likely to harm the environment.</p>	<p>Medium Relevance</p> <p>The relevance of the Act to this project is to implement the strategies by adopting the hierarchy of avoidance; avoidance of unnecessary resource consumption; resource recovery (including reuse, reprocessing, recycling and energy recovery), disposal (as a last resort).</p>
<p>Rivers and Foreshores Improvement Act 1948</p>	<p>The Rivers and Foreshores Improvement Act 1948 (RFI Act) provides for the protection of riverside land in NSW. Anyone who excavates or removes material from "protected land" or does anything likely to interfere with the flow of "protected waters" must first obtain a permit under Part 3A of the RFI Act.</p>	<p>Low Relevance</p> <p>A Part 3A permit would not be required under the RFI Act for this stage of the Port Botany Expansion as the reclamation phase has been completed previously by others.</p>
<p>Airports Act 1996</p>	<p>The Airports Act defines any activity resulting in an</p>	<p>High Relevance</p>



Legal and Other Requirements	Summary of Obligations	Relevance to the Project/ Notes and System
	intrusion into an airport's protected airspace to be a "controlled activity" (section 182), and requires that controlled activities cannot be carried out without approval. The APA Regulations provide for the Department of Transport and Regional Services (DoTARS) or the airport operator to approve applications to carry out controlled activities, and to impose conditions on an approval.	The OLS will be entered during delivery of the quay cranes and final position of Quay cranes. SACL approval procedure will be followed to gain relevant approval  Approval from SACL is required to undertake works to specified heights.
Quarantine Act 1908	The Quarantine Act 1908 aims to prevent the introduction or spread of diseases or pests affecting human beings, animals and plants. It outlines measures such as the inspection, exclusion, treatment and disinfection of vessels, installations, persons, goods, animals and plants, which will prevent the introduction or spread of diseases.	Medium Relevance  AQIS will be informed of all deliveries by sea.
Dangerous Goods Act 1975	The Dangerous Goods Act 1975 (DG Act) provides a licensing scheme covering both the premises where substances classified as Dangerous Goods are kept, and also those who transport them. The DG Act and the Dangerous Goods (General) Regulation 1999 is administered by NSW WorkCover.  The DG Act does not apply to the transport of dangerous goods by road or rail as these are dealt with in the Road and Rail Transport (Dangerous Goods) Act 1997	Medium Relevance  A license is not anticipated for construction but may be required for Operations.
Sydney Water Act 1994	The Sydney Water Act 1994 (SW Act) established Sydney Water Corporation, a State owned corporation, to provide the supply of water and the disposal of wastewater in Sydney and other regions.	Low Relevance.  Required for operational port trade waste agreement.

## Appendix 2 Risk Assessment

All environmental issues have been assessed in accordance with the table below:

**Risk Assessment Rankings: E = Extreme H = High M = Medium L = Low**

**The risks must be reassessed following the consideration of control measures.**

**Issues or activities that represent an Extreme risk after the application of control measures are not to be undertaken.**

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
<b>Approvals and Licensing</b>								
Not identifying appropriate approvals / licenses required or proceeding without them.	Works delayed, infringements, and reputational loss.	U	5	H	Check Environmental Assessment / REF / EIS and statutory documentation. Check contract documentation. Document requirement approvals in FCEMP. Establish a register of approvals, licenses, permits.	R	5	M
<b>Noise</b>								
Noise from general construction activities resulting in impact to residents.	Disturbance to residents or neighbouring businesses. The project is located within approximately 400m of sensitive noise receptors and the proposed duration of works and activities have the potential to cause impact. In particular there are residential receivers adjacent to the works in Banksmeadow and Matraville. Potential for complaints.	L	3	H	Develop and implement a Construction Noise and Vibration Management Plan. Consult with the community in relation to upcoming activities that may result in concern (Consultative Community Committee). Provide clear and precise community notifications where required. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities.	P	3	M



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
					Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site. Utilise non-tonal reverse alarms for site based equipment where practical.			
Noise during works required to be undertaken out of standard construction hours.	Disturbance to residents or neighbouring businesses with potential for complaints.	L	3	H	Gain approvals required to work outside standard approved hours from regulatory authority. Implement noise mitigation strategies for out of standard hours work. Monitor noise for compliance to project goals.	P	3	M
<b>Vibration</b>								
Vibration intensive activities undertaken on the site	Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance.	U	3	M	Develop and implement a Noise and Vibration Management Plan. Determine vibration limits Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration. Ongoing vibration monitoring during vibration intensive works.	R	3	L
<b>Water Quality, Erosion &amp; Sedimentation</b>								
Sediment laden runoff from construction works leaving site.	The project will involves work in close proximity to Botany Bay and construction works in close proximity to the foreshore itself. Degradation of local watercourses (Botany Bay and Penrhyn Estuary). Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site.	L	3	H	Develop Soil and Water Quality Management Plan. Develop and implement sediment and erosion control measures. Ensure controls are inspected and maintained as the works progress and also prior to and post rainfall events. Provide training and awareness on the need to prevent pollution. Test water prior to discharge (TSS, pH/Oil and	U	3	M



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
					Grease).			
Stockpiling spoil.	Wind and water erosion causing impacts offsite.	L	3	H	Appropriate locations for stockpiling (away from waterways, watercourses, drains). Stabilise stockpiles if left for extended periods.	U	3	M
Water discharge	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria). Spills or discharge from hydraulic equipment operating over waterways Deleterious or contaminated material washed or blown offsite.	P	3	M	Develop Soil and Water Quality Management Plan. Induction and toolbox talks. Educate site staff on licence conditions and consequences of prosecution. Provide and implement water treatment and testing to ensure any discharge complies with the requirements. Test water prior to discharge (TSS, pH/Oil and Grease).	U	3	M
<b>Waste</b>								
Waste disposal during construction.	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued. Pollution of the land and waterways by waste that has been washed, blown, deposited or otherwise from the site. Illegal waste disposal. Waste of natural resources.	P	2	H	Develop a Waste Management Plan. Provide facilities on site for source separation and recycling. Ensure accurate waste records are retained. Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc. All material to be recovered off-site to be appropriately classified in accordance with the Resource Recovery Exemptions. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (DECC, 2008).	U	2	M



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Earthworks spoil disposal.	Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/re-use.	P	2	H	Inductions, toolbox talks and training on recycling facilities and waste segregation practices. Separation of waste on site. Tracking of disposal processes. All contamination hotspots would be clearly marked in the field. Undertake pre-classification of soils on site.	U	2	M
Washout of concrete in undesignated areas.	Sediment laden/alkaline water polluting surrounding stormwater system / watercourses.	P	2	H	Concrete washout areas clearly delineated. Contractor agreements to include project compliant waste management principles.	U	2	M
<b>Contamination</b>								
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding waterways. Decrease in health of nearby ecosystems (Botany Bay, Penrhyn Estuary). The historical surrounding land use at the site has involved significant and varied industrial activities although no contaminated materials have been indicated in the reclaimed area of the project.	P	2	H	Develop contamination management procedures and protocols. These will be incorporated into the Waste Management Plan. Identify any contamination hotspots and incorporate procedures for these locations into construction documentation. Develop unexpected finds procedures.	U	2	M
Potential for discovery of unexpected contaminated spoil during construction.	Health effects resulting from airborne contamination, e.g. asbestos. Complaints received from odours released during excavations. Classification of spoil is changed and disposal options altered, costs	P	3	M	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Induct personnel on location, type, nature, concentration of contaminants on site if found. Develop unexpected finds procedures.	U	3	M



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
	incurred associated with disposal of higher classification of waste.							
Encountering asbestos / contaminated material on site.	Transfer of material into previously uncontaminated area (outside work site) causing new contamination.	U	2	M	Contaminated soils would not be stockpiled on the structural fill layer or formation layers to avoid cross contamination.	R	2	M
Hazardous Materials								
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	<p>Localised ground contamination / pollution of stormwater and requiring cleanup and/or receiving fines. Risk of igniting volatile substances.</p> <p>Unauthorised access to site / potential vandalism/damage leading to pollution.</p>	U	3	M	<p>Induction and training on appropriate handling and storage of liquids.</p> <p>All storm water drains should be identified prior to works.</p> <p>Storage areas to be away from sensitive areas and appropriately bunded.</p> <p>MSDS approved prior to bringing hazardous substances on site including risk assessment.</p> <p>Plans showing storage locations and associated controls e.g. spill kits, etc.</p> <p>Contingency plans would be developed to deal with any spills which might occur during construction.</p> <p>Clearly label containers.</p> <p>Regular auditing and inspection of storage areas and materials.</p> <p>Make storage areas restricted access areas.</p> <p>Reduce/eliminate need for hazardous substances.</p> <p>Ensure all work sites are secure before leaving the site.</p> <p>All liquids i.e. fuels, paint etc are to be securely locked away at the end of each day.</p>	R	3	L

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Spills of hazardous materials	<p>Soil contamination/water pollution as a result of spills of hazardous substances, hydrocarbons during works.</p> <p>Spills to ground resulting in contamination.</p> <p>Spills in marine environment.</p> <p>The project will involve the use of various types of plant and equipment. As a result there is the potential for spills of hydraulic oils, diesel, curing compound and other hydrocarbons. Spills may occur to the hardstand, ground or adjacent waterways.</p>	P	2	H	<p>Measures must be implemented throughout the project to prevent the occurrence of spills on site and to prevent mitigation of escaped materials into the surround bay and waterways.</p> <p>Appropriate, bunded storage.</p> <p>Spill kits located at strategic locations on the site in close proximity to activities.</p> <p>Emergency response procedures in place.</p>	U	2	M
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting - not compliant with discharge criteria).	U	3	M	<p>All storm water drains should be identified prior to works and controls implemented.</p> <p>Refuelling of vehicles away from culverts, water courses.</p> <p>Appropriate bunding/storage of substances.</p> <p>Toolbox on site procedures for sediment controls and chemical storage.</p> <p>Educate site staff on project conditions and consequences of prosecution.</p>	R	3	L
<b>Biodiversity</b>								
Vegetation trimming / clearing required outside approved work area.	Unauthorised works / removal of vegetation outside defined work area, possibility of removing threatened species, fines incurred.	U	3	M	<p>Induction and tool box training on work zones and required protection measures.</p> <p>No clearing required for work scope in the FCEMP</p>	R	3	L



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Pest / rodent disturbance from site establishment	Potential for birds to roost on site, causing airport risk Health associated risks with increased rodents.	U	4	L	Ensure all waste is well secured to minimise available food sources for birds/ rodents. If issue is problematic during construction activities, pest control services to be implemented as soon as possible	R	4	L
Construction activities impacting surrounding environment ; traffic, noise, activities out of bounds, etc	Breach of procedures and legislation. Fines for non-compliance. Injury and or damage to foreshore birdlife, aquatic and marine species.	U	3	M	Due to the nature of the site and the scope of works, it is unlikely that any native flora or fauna will be impacted during the works. Notwithstanding there is the potential for interaction with marine and aquatic species and foreshore flora and fauna. Provide information during site induction process on flora and fauna issues.	R	3	L
Ponding of water on site	Attracting birds to roost on site leading to bird strikes at the airport runway	U	2	M	Ensure drainage is adequate to minimise pooling of stormwater on site. Install effective covering over any sediment ponds, such as chicken wire, to stop birds roosting on site. Monitor excavations, dust suppression applications and other works with the potential to hold water to minimise pooling of water.	R	2	M
<b>Air Quality</b>								
General construction works	The project is located near sensitive receptors. Complaints from workers / public / community. Negative project perception by community. Repairs and clean up needed.	L	3	H	Develop Air Quality Management Plan. Inductions and toolbox training on Dust and Air Quality Management. Include provision for air quality monitoring during the works. Provide and install all required dust controls immediately and continually through the project.	U	3	M

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Exhaust from plant and equipment.	Emissions resulting in air pollution.	U	4	L	Well maintained plant used on site Non-complaint vehicles removed from site / repaired.	R	4	L
<b>Archaeology &amp; Heritage</b>								
Unexpected heritage items encountered. Construction impacts to Government Pier.	Exposure, loss or damage of artefacts or items of heritage value previously unidentified  Work delays, additional studies, approvals required, damage to heritage item.	U	3	M	Should any items be discovered, works will cease in the area immediately and SICTL representative advised.  Set exclusion zones for any known heritage items (Government Pier).  If suspected heritage item encountered. Works to stop immediately and SICTL representative to be contacted.	R	3	L
<b>Traffic</b>								
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	P	4	M	Approved Traffic Management Plan in consultation with relevant authorities.  Clear notifications / signage.	U	4	L
Management of heavy vehicles / haulage routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	P	4	M	Designated haulage routes. Approved Traffic Management Plan. Community Notifications where required. Pedestrian management with traffic controller in place where required.	U	4	L
Truck deliveries out of normal working hours	Non-conformance with project requirements.  Noise impact to community / potential complaints.	P	4	M	Induction on Construction Hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring	U	4	L



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
					locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required (Planning Approval/ Council) Approved traffic/haulage routes. Planning and staging of works in approved hours as much as practical.			
<b>Resources and Energy Use</b>								
Energy consumption by construction plant & operation of site compound facilities.	Inappropriate energy use, waste of energy resources, energy wastage costs, increased greenhouse gas emissions.	L	4	M	Inductions and toolbox training on waste management and energy saving practices in construction plant and equipment and during office work. Minimise idling of plant equipment where possible.	U	4	L
Water usage during construction activities.	Excess usage of potable water for construction activities	L	4	M	Use of potable water for construction activities to be minimised. Reuse concrete wash water where possible. Utilise water from dewatering activities as dust suppression to ease use of potable water resources.	U	4	L
Resource usage (e.g. building materials, water, fuels, packaging), waste generation and disposal .	Depletion of resources due to wastage (e.g. wastage of water / no recycling, poor management of procurement, ineffective removal of off-cuts, waste, i.e. no recycling).	L	4	M	Inductions and toolbox talks on recycling facilities and waste segregation, training/education on how to recycle. Procurement of materials (selection of materials) to be considered. Waste management undertaken in accordance with the Waste Avoidance and Resource Recovery Act 2001.	U	4	L
<b>Airport</b>								



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Airport exclusion zones	Breach airport approval Interfere with airport operations	P	3	M	Ensure design specifications of any construction lighting conform to the requirements of Regulation 94 of the Civil Aviation Regulations 1988.  Ensure all construction lighting is minimal and facing downwards.	R	3	L



## Environmental Risk Assessment Rankings

This table may be used as a guide in determining the level of risk for each environmental issue.

For each identified issue, consider the 'maximum credible' (not absolute worst case) risk that could result with minimal or no controls other than existing and using normal construction practices.

**Note:** Any one of the listed consequences must result in the use of the applicable consequence grading.

Select a letter and a number from each column. Plot letter and number selections on the Risk Ranking Matrix to determine applicable ranking:

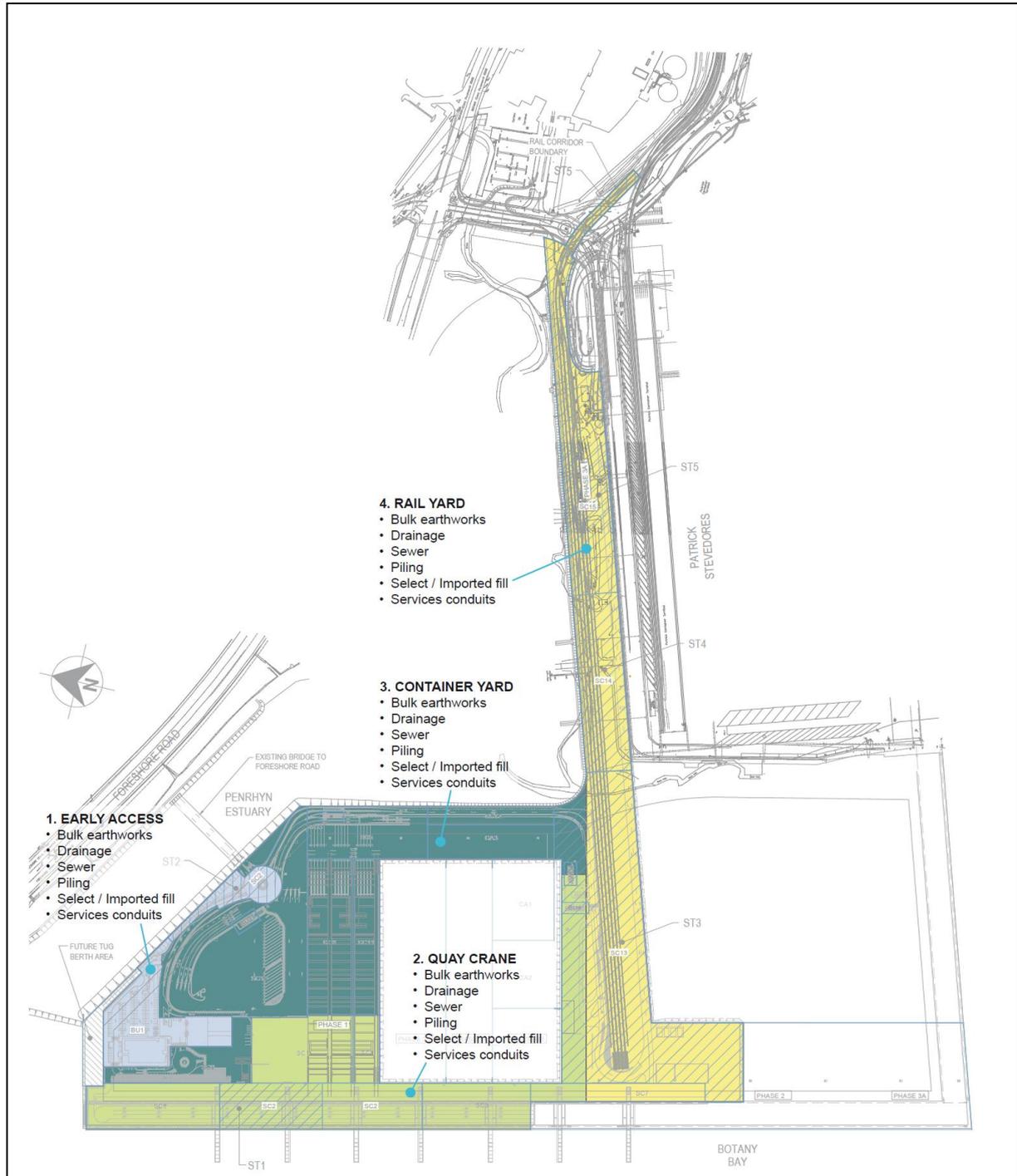
Likelihood (Probability & Frequency of Occurrence)		Consequence (Outcome or Severity of Occurrence)			
C	Certain	Common or repeating occurrence	1	Major	Major pollution incident causing significant damage or potential to health or the environment
L	Likely	Known to have occurred / "has happened"	2	Significant	Significant pollution incident causing damage or potential damage to health or the environment external to the site. Potential for prosecution. Numerous substantial complaints
P	Possible	Could occur / "heard of it happening"	3	Moderate	Reportable incident to EPA or other authority. Substantial breach of legislative, licence or guideline requirements. Possible fine. Will cause complaints.
U	Unlikely	Not likely to occur	4	Minor	Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. Fine unlikely. Potential for complaints.
R	Rare	Practically impossible	5	Insignificant	Insignificant pollution incident. Fully contained on site and can be fully remediated. Little potential for fine or complaints.



Probability ►					
▼ Consequence	Certain	Likely	Possible	Unlikely	Rare
1 - Major	H	H	H	H	M
2 - Significant	H	H	H	M	M
3 - Moderate	H	H	M	M	L
4 - Minor	M	M	M	L	L
5 - Insignificant	M	L	L	L	L

*Risk Assessment Rankings: H = High    M = Medium    L = Low*

### Appendix 3 Site Location and Map



Site layout may be subject to change throughout the project.

## Appendix 4 Emergency Preparedness and Response

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

Type of Emergency	Preparation for Emergency	Response to the Emergency	Responsibility
Minor spill of hazardous or toxic substance (< 20L)	<p>Awareness training of appropriate response and procedures to be incorporated into site induction</p> <p>MSDS on site for all materials and kept up to date</p> <p>Adequate supply of absorbent materials available in the site compound and on vehicles at work location</p>	<p>Report spills immediately to Site Manager and/or the Project Environment Representative</p> <p>Attempts to be made to limit or contain the spill using sand bags to construct a bund wall, use of absorbent material from spill kits, temporary sealing of cracks or leaks in containers, use of geotextile or silt fencing to contain the spill.</p> <p>Contractors to coordinate the response, clean up and disposal of the material</p> <p>Material to be disposed of in accordance with the manufacturers' recommendations and applicable legislation.</p>	Contractor
Major spill of hazardous or toxic substance (> 20L)	<p>Awareness training of appropriate response and procedures to be incorporated into site induction</p> <p>MSDS on site for all materials and kept up to date</p> <p>Adequate supply of absorbent materials available in the site compound and on vehicles in work location</p> <p>Emergency telephone numbers prominently displayed around office and issued to supervisors</p>	<p>Report spill immediately to Site Manager. Notify SICTL representatives immediately.</p> <p>Attempts to be made to limit or contain the spill using sand bags to construct a bund wall, use of absorbent material, temporary sealing of cracks or leaks in containers, use of geotextile or silt fencing to contain the spill, righting overturned containers, transferring remaining material.</p> <p>Implement procedures to notify the relevant authorities (see section 12 of this FCEMP).</p> <p>Contractor to coordinate the response, clean up and disposal of the material</p> <p>If spill is regarded to be outside the onsite resources, then the fire brigade should be called (see section 12 of this FCEMP).</p> <p>Where appropriate, evacuation procedures are to be implemented to remove non-essential personnel from the affected area</p> <p>Access and egress to the area is established to ensure the appropriate vehicles have effective access and congestion is minimised.</p> <p>If the fire brigade attends, their senior officer assumes control of the operation with contractor personnel assisting as required.</p> <p>A full investigation report of the event is to be completed by the contractor as soon as practicable after the area has been secured.</p>	Contractor

Type of Emergency	Preparation for Emergency	Response to the Emergency	Responsibility
Severe Storm / High Wind	<p>Monitor storm warnings for the area.</p> <p>Awareness training of appropriate response and procedures to be incorporated into Environmental and Safety Induction.</p> <p>Ensure First Aid supplies are well stocked and adequate.</p>	<p>Remove all nonessential personnel</p> <p>Secure all plant, equipment and materials</p> <p>Remove plant and equipment from flood prone areas</p> <p>If plant cannot be removed ensure it is secured and in a position where it is unlikely to cause damage</p> <p>Stow all minor and small equipment into containers, which are to be sealed.</p> <p>Ensure all other materials are either removed from flood prone areas or stowed and secured.</p> <p>All chemicals will be in secured containers and stored within a sealable shipping container or similar.</p>	Contractor
Fire (other than bushfire)	<p>Fire extinguishers maintained, clearly labelled and distributed around site compound and vehicles</p> <p>Training in the use of fire extinguishers and which one to use for each type of fire</p> <p>First Aid supplies are stocked and adequate</p>	<p>For small fires, attempts to be made to extinguish the fire or limit its spread with available fire extinguishers or water hoses if appropriate.</p> <p>Contractor to contact SICTL representatives and external services where necessary (fire, ambulance) as a precautionary measure.</p> <p>All personnel in the vicinity to be assembled in the Evacuation Assembly Area and a head count performed</p> <p>Any resulting fuel or chemical spill to be handled as detailed above</p> <p>Contractor to coordinate with emergency services and provide assistance as required.</p>	Contractor
Significant adverse dust event due to weather conditions: High winds	<p>Monitor meteorological conditions for the area - develop contingency for wind speeds in excess of 16m/s (55km/hr)</p> <p>High wind 'stop works' protocols in place</p> <p>Establish contingency strategy for additional dust control measures, additional water carts, dust suppressants, stockpile covers etc</p>	<p>Dust generating activities will cease under direction of the Contractor's Supervisor until adverse conditions subside.</p>	Contractor
Temporary erosion and sediment controls are damaged during rainfall.	<p>Plan controls to be suitable for expected conditions</p> <p>Ensure sufficient materials, labour and plant are available for additional controls.</p>	<p>Controls to be repaired or replaced within 24 hours of detection, immediately if inclement weather current.</p>	Contractor
Vibration causing structural damage	<p>Choose correct plant when working near structures; minimise size and impact</p> <p>Use safe working distances during planning phase</p> <p>Implement vibration monitoring at commencement of vibration generating works to ensure compliance with standards</p>	<p>Activities causing vibration would cease. Any occupants of buildings may be evacuated with due consideration to safety, and the area secured to prevent unauthorised access.</p> <p>A structural assessment to be undertaken; and if any damage is associated with construction, rectification work would be agreed.</p>	Contractor



Type of Emergency	Preparation for Emergency	Response to the Emergency	Responsibility
Unapproved clearing / damage to protected vegetation – threatened/ endangered species	<p>Clearly demarcate site boundaries</p> <p>Clearly demarcate clearing areas and brief site personnel</p> <p>Identify/mark vegetation to be retained or that is protected.</p> <p>Identify species that may be impacted, include material within the project induction</p>	<p>Immediately cease activities</p> <p>Engage consultant to assess damage to vegetation and presence of any endangered or threatened communities.</p>	Contractor
Injury/death to protected/ endangered/threatened fauna	<p>Identify potentially impacted species prior to commencement on site.</p> <p>Identify species that may be impacted, include material within the project induction</p> <p>Review/inspect vegetation to be cleared prior to clearing – utilise ecologist/spotter where there is the potential for endangered/threatened species</p> <p>Engage with local vet/WIRES representative on the appropriate contact/procedure</p> <p>Site procedure for the short term management of injured fauna</p>	<p>Immediately cease activities upon discovery of injured fauna</p> <p>Implement procedure for short-term stabilisation and transport to Vet or WIRES</p> <p>Undertake additional vegetation inspection to identify any remaining fauna prior to recommencement.</p>	Contractor
Unauthorised discharge of water that does not meet criteria	<p>Awareness training of appropriate response and procedures to be incorporated into site induction.</p>	<p>Discharge to immediately cease. Water to be treated to meet acceptable criteria prior to release.</p> <p>Water monitoring to be undertaken if not in place during incident.</p> <p>Incident report to be completed by the environmental manager and corrective and preventative action implemented prior to discharge recommencing.</p>	Contractor

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## Appendix 5 Permits and Licences

The list of licenses and consents is provided below. These will be tracked on the Project Permits and Licences Register;

- NSW Minister for Planning Conditions of Approval for the Port Botany Expansion Project
  - MOD 1 – MOD-107-9-2006-i approved 11 September 2007
  - MOD 2 – MOD-134-11-2006-i approved 11 September 2007
  - MOD 3 – MOD-149-12-2006-i approved 11 September 2007
  - MOD 4 – MOD-78-9-2007-i approved 17 September 2007
  - MOD 5 – MOD-60-9-2008 approved 21 September 2008
  - MOD 6 – MOD-68-12-2008 approved 12 December 2008
  - MOD 7 – MOD-08-03-2009 approved 20 March 2009
  - MOD 8 – 494-11-2003-i MOD 8 approved 30 May 2009
  - MOD 9 – DA-494-11-2003-i MOD 9 approved 18 June 2009
  - MOD 10 – DA-494-11-2003-i MOD 10 approved 13 July 2009
  - MOD 11 – DA-494-11-2003-i MOD 11 approved 21 November 2011
  - MOD 12 – DA-494-11-2003-i MOD 12 approved 6 June 2012
  - MOD 13 – DA494-11-2003-i Changes to Stormwater Management System for the Knuckle
- Commonwealth of Australia Environment, Protection and Biodiversity Conservation Act 1999 approval - reference 2001/543
- Port Botany Expansion Environmental Impact Statement.
- Sydney Port Corporation Green Port Guideline – May 2006.
- Future modifications to Sydney Container Terminal 3 under Section 75W of the Environmental Planning and Assessment Act 1979.
- SICTL Framework Construction Environmental Management Plan (FCEMP) and associated plans approval from relevant authorities
- Approval for works undertaken outside the hours approved by the Director General.
- Penrhyn Estuary Habitat Enhancement Plan

## Appendix 6 Statement of Commitments Tracking

The table below outlines the status of the relevant Minister's Conditions of Approval (MCoA) for the project at the time of submission of this FCEMP to Department of Planning and Infrastructure. MCoA's shall be tracked during works separately to the FCEMP.

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
A3.1	Commencement of the construction of terminal operations infrastructure on the area of the Stage 1 port footprint shown hatched in Schedule 3, shall not occur until such time as the Sydney Ports Corporation has submitted documentation, to the satisfaction of the Minister, by way of a copy of a contract(s) or agreement(s), by way of lease(s) or similar arrangement, between the Sydney Ports Corporation and any other party or parties, in respect of the construction and operation of new terminal facilities on that area that demonstrate that the area shall operate as a standalone terminal. The Minister may exempt areas of the approved footprint from the requirements of this condition where it can be demonstrated that option agreements relating to such areas were in force prior to consent being granted	Sydney Ports has leased the Project site to Sydney International Container Terminals Limited (SICTL) for the duration of the civil construction phase.	Nil	Closed	SPC SICTL
B1.1	The conditions in this Schedule of the consent relate the following aspects of the development: <ul style="list-style-type: none"> <li>development activities and works associated with the construction phase(s) of terminal footprint infrastructure including transportation and delivery of materials and construction personnel to and from the site;</li> <li>development activities associated with the construction of terminal operations infrastructure;</li> <li>on-going management, mitigation and monitoring associated with the development, excluding direct terminal operation matters subject to the conditions in Schedule C.</li> </ul>	Noted. Compliance against conditions in this Schedule of the consent will be tracked			
B1.2	The conditions in this Schedule of the consent must be complied with by the Applicant, or any party undertaking the activities and works referred to under condition B1.1 on behalf of the Applicant.	Noted. Compliance against conditions in this Schedule of the consent will be tracked			
B1.3	The Applicant shall prepare a Construction Environmental Management Plan (CEMP) which, must be approved by the Director-General prior to the commencement of any site preparation or construction works. The CEMP must: <ul style="list-style-type: none"> <li>Describe all activities to be undertaken on the site during site establishment and construction of the development;</li> <li>Describe the relevant stages/phases of construction, including a work program outlining relevant timeframes for each stage/phase.</li> </ul>	Development of a FCEMP has been undertaken to submit to Department of Planning to allow the main construction works to proceed.	SICTL FCEMP	Open	SICTL

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	<ul style="list-style-type: none"> <li>- clearly outline stages/phases of construction that require on-going environmental management monitoring and reporting up to and beyond the commencement of operations of the terminal;</li> <li>- detail statutory and other obligations that the Applicant is required to fulfil during site establishment and construction, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;</li> <li>- include specific consideration of measures to address any requirements of the Department, DEC, DNR and the Council during site establishment and construction;</li> <li>- describe the roles and responsibilities for all relevant employees involved in the site establishment or construction of the development;</li> <li>- detail how the environmental performance of the site preparation and construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;</li> <li>- include all Management Plans/Studies and Monitoring Programs required in this schedule;</li> <li>- include arrangements for community consultation and complaints handling procedures during construction; and</li> <li>- be made available for public inspection after approval of the Director General.</li> </ul> <p>Separate CEMPs may be prepared and submitted for works associated with the construction of the terminal footprint.</p>				
B.1.4	<p>Prior to each of the events listed from a) to c) below, or within such period otherwise agreed by the Director-General, documentation certifying that all conditions of this consent applicable prior to that event have been complied with shall be submitted to the satisfaction of the Director-General. Where an event is to be undertaken in stages, submission of compliance certification may be staged consistent with the staging of activities relating to that event, subject to the prior agreement of the Director-General.</p> <p>(a) commencement of construction works associated with the development;</p> <p>(b) commencement of each phase of construction works established under the program required under condition B1.3; and</p> <p>(c) completion of each phase of construction works established under the program required by condition B1.3.</p> <p>The certifying documentation shall clearly outline</p>	<p>A Compliance Certificate Report has been developed for the works to fulfil requirements of this condition.</p>	<p>DP&amp;I submission</p>	<p>Open</p>	<p>SICTL</p>



Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	any on-going environmental management, monitoring or reporting requirements associated with the concluded construction works phase.				
B1.5	Notwithstanding condition B1.4 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.	Noted			
B2.1	Unless otherwise permitted by an Environment Protection Licence applicable to the development, the Applicant shall ensure that construction works are undertaken in compliance with section 129 of the Protection of the Environment Operations Act 1997.	Review all project activities and ensure they are in line with the POEO Act.  Provide awareness training to site personnel in environmental requirements via inductions, toolbox talks, targeted training and other forms.	Appendix 1	Ongoing	Contractor
B2.4	The Applicant shall prepare a Dust Management Plan in consultation with DEC, RTA, DOP, Botany and Randwick Councils. The Applicant shall address the requirements of these organisations in the Plan. The Applicant shall also consult with the Community Consultative Committee in preparation of the Plan.	Develop appropriate documentation and implement on the project site	Dust and Air Quality Management Plan.  Submit the Air Quality Management Plan to appropriate stakeholders for review and comment	Open	SICTL
B2.5	The Applicant shall prepare a Soil and Water Management Plan in consultation with DEC, RTA, DOP, DNR, Botany and Randwick Councils. The Applicant shall address the requirements of these organisations in the Plan. The Applicant shall also consult with the Community Consultative Committee in preparation of the Plan. The Plan must detail erosion and sediment controls, prepared in accordance with Managing Urban Stormwater: Soils and Construction (available from the Department of Housing)	Develop appropriate documentation and implement on the project site	Soil and Water Quality Management Plan	Open	SICTL
B2.6	Prior to the commencement of construction activities, the Applicant must prepare an Acid Sulphate Soils Management Plan to assess and manage any Acid Sulphate Soils (ASS) or potential ASS (PASS). The Plan shall be prepared in accordance with the Acid Sulphate Soils Manual 1998 published by the NSW Acid Sulphate Soil Management Advisory Committee. In the event that	Develop appropriate documentation and implement on the project site	Acid Sulphate Soils Management plan	Closed	SICTL

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	ASS are encountered during the works, the Applicant shall notify the NSW Maritime Authority immediately.				
B2.7	Unless permitted through an environment protection licence applicable to the development, the Applicant must comply with section 120 of the Protection of the Environment Operations Act 1997, which prohibits the pollution of waters.	No pollution of waters permitted All environmental controls required prior to construction	Appendix 1 FCEMP Sub-plans	Ongoing	Contractor
B2.13	Prior to commencement of construction, the Applicant is required to consult with Sydney Water regarding the likely requirements from Sydney Water to obtain a section 73 Compliance Certificate.	Consultation undertaken with Sydney Water has deemed a section 73 certificate is not required	N/A	Closed	Closed
B2.14	Prior to the commencement of any construction works, the applicant must prepare a Construction Traffic Management Plan in consultation with RTA, DOP, Botany and Randwick Councils and SSROC. The Applicant shall address the requirements of these organisations in the Plan. The Applicant shall also consult with the Community Consultative Committee in preparation of the Plan.	Develop Traffic Management Plan	TMP sub-plan	Open	SICTL
B2.15	The Applicant must undertake a safety audit in accordance with RTA guidelines upon completion of works but prior to operation to ensure the safety of any road works, traffic management facilities, cycling and pedestrian provisions undertaken as part of the proposed works.	To be undertaken at completion of construction	Future Requirement	Open	SICTL
B2.16	Prior to construction the Applicant must prepare a handbook and distribute it to drivers of construction related vehicles providing information on accepted routes, constraints to traffic and preferred hours of use and amenities on such routes to ensure that the impact of traffic growth on local traffic is minimised.	Develop Traffic Management Handbook and distribute to haulage/delivery drivers.	TMP and related procedures will be stand alone document and send to relevant stakeholders for review and comment	Open	SICTL / Contractor
B2.19	The Applicant shall only undertake construction activities associated with the project (with the exception of dredging construction activities) that would generate an audible noise at any residential premises during the following hours: a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; b) 8:00 am to 1:00 pm on Saturdays; and c) at no time on Sundays or public holidays.  Audible noise is defined as "noise that can be heard at the receiver". This condition does not apply in the	Adhere to approved hours. Submit approval for out of hours works as per the project planning conditions.	Noise and Vibration Management Plan	Ongoing	SICTL / Contractor



Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	event of a direction from police or other relevant authority for safety or emergency reasons.				
B2.19A	The Applicant must seek the Director-General's approval to conduct construction activities audible at residential premises (with the exception of dredging construction activities) outside the hours specified under condition B2.19 on a case-by-case basis. In seeking the Director-General's approval, the Applicant shall demonstrate a need for activities to be conducted during varied hours and how local acoustic amenity will be protected, as well as details of how the EPA's requirements with respect to the variation of hours have been addressed.	Adhere to approved hours. Submit approval for out of hours works as per the project planning conditions.	Noise and Vibration Management Plan	Ongoing Open	SICTL / Contractor
B2.20	Prior to the commencement of construction, the Applicant must prepare a Construction Noise Management Plan in consultation with DEC, DOP, Botany and Randwick Councils. The Plan shall include noise mitigation for piling works for diesel powered machinery, provision of training to ensure that construction workers are aware of the noise created during construction and are appropriately trained to minimise noise where possible.	Develop a Construction Noise and Vibration Management Plan. Send to relevant stakeholders for review and comment.	Noise and Vibration Management Plan	Open	SICTL
B2.21	The goal for noise from construction activities as the LA10 (15 minute) should not exceed the Rating Background Level (RBL) plus 5dB(A) at sensitive receivers.	Undertake noise monitoring during construction as per the Noise and Vibration Management Plan. Develop protocols for any monitoring exceedances or complaints	Noise and Vibration Management Plan	Ongoing	SICTL
B2.23	To help minimise the impact of operational noise on the surrounding area, a noise barrier shall be constructed by the Applicant along northern and eastern boundaries of the site prior to the commencement of operations. The applicant must seek appropriate independent expert advice to ensure the design of the noise barrier has regard to the flight path requirements of bird species using the area.	Nil Undertaken outside scope of this FCEMP	N/A	These works fall under a separate scope of works from this FCEMP	SICTL
B2.23A	Subject to the alternative rail option being implemented as described within the report listed in condition A1.1), the Applicant shall construct a three metre high noise barrier along the northern edge of the Inter-terminal Access Road Corridor prior to the commencement of operations. The bottom two metres of the barrier shall be opaque and the top one metre shall be of transparent material sufficiently patterned to minimise impacts to bird species utilising the adjacent Penrhyn Estuary.	Final design authorised by SICTL	Design outside FCEMP scope Installation of this section of noise wall during main works	Open	SICTL
B2.24	The Applicant is required to identify measures to be implemented to ensure that where movement	Non-tonal reverse alarms on site based plant and	Noise and Vibration Management	Ongoing	SICTL / Contractor

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	alarms are fitted to vehicles, plant or equipment entering or operating on the site, such alarms are of a type that minimises noise at noise sensitive receivers.	equipment	t Plan		
B2.25	The Applicant must install all physical noise management measures as early as is practicable during construction of the Port Botany Expansion project.	Controls as per Noise and Vibration Management Plan	Noise and Vibration Management Plan	Ongoing	Contractor
B2.26	The Applicant must not undertake any blasting on the premises	No blasting required	Nil	Ongoing	SICTL
B2.27	Within two years of commencement of terminal operations at the development, a Port Traffic and Rail Noise Management Plan shall be prepared by the Applicant in consultation with relevant stakeholders, including the Community Consultative Committee, DEC, DOP, Botany Council, SSROC and RailCorp. The Plan shall include consideration for traffic re-routing, traffic clustering and traffic rescheduling.	Future requirement for operations			
B2.33	Prior to the commencement of construction, the Applicant is required to prepare a Construction Waste Management Plan in consultation with Botany Council and DEC. The Plan must provide details of proposed waste management measures to minimise production and impact of wastes generated at the site	Develop Waste Management Plan and send to relevant stakeholders for review and comment.	Waste Management Plan	Open	SICTL
B2.34	Management of waste must be in accordance with the environment protection licence issued by EPA under the Protection of the Environment Operations Act 1997	No EPL issued	Waste Management Plan	Closed	SICTL
B2.35	All wastes and material generated on the site during construction and operation shall be classified in accordance with the DEC's Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes prior to transporting the waste off site and be disposed of to a facility that may lawfully accept the waste.	Develop Waste Management Plan and send to relevant stakeholders for review and comment.	Waste Management Plan	Open	SICTL
B2.36	Except as expressly permitted by a licence issued by the EPA under the Protection of the Environment Operations Act 1997, only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored at the premises:  - waste oil/water, hydrocarbons/water mixtures or emulsions; and  - grease trap waste.	Develop Waste Management Plan and send to relevant stakeholders for review and comment.	Waste Management Plan	Open	SICTL / Contractor
B2.37	Prior to the commencement of construction, the Applicant is to prepare a Visual Amenity Management Plan in consultation with Botany and Randwick Councils, SSROC and the Community	Port Botany Expansion Public Realm Concept Design Report and			

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	<p>Consultative Committee. The Plan shall include a Public Recreation and Ecological Plan as described in the EIS, and details of other measures to reduce the visual impact of the development. The Plan shall include details of:</p> <ul style="list-style-type: none"> <li>- landscaping plans;</li> <li>- design of pedestrian bridge linking Foreshore Beach with Sir Joseph Banks Park;</li> <li>- quay crane specification;</li> <li>- container stacking heights;</li> <li>- terminal lighting;</li> <li>- materials and colours; and</li> <li>- noise wall design.</li> </ul>	Visual Amenity Management Plan – dated March 2007, previously approved.			
B2.38	The Applicant shall develop measures to protect remains of Government Pier in consultation with the NSW heritage Office and incorporate those measures into Construction Environmental Management Plan.	No impact on the Government Pier area Exclusion zone will be set	Risk Assessment Site Protocol to be delivered to contractors	Ongoing	SICTL / Contractor
B2.39	If an Aboriginal object is discovered during the construction of the development, works should cease in the subject area and the Applicant shall notify DEC immediately.	Stop works protocols in place	Risk Assessment Site Protocol to be delivered to contractors	Ongoing	SICTL / Contractor
B2.41	The Applicant shall prepare a Construction Safety Study prior to the commencement of construction of the terminal operations infrastructure, in accordance with Hazardous Industry Planning Advisory Paper No. 7 – Construction Safety Study Guidelines (DoP, 1992). The commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning. The Study shall be submitted for the approval of the Director-General prior to the commencement of construction of the terminal operations infrastructure.	Construction aspect to be completed by SICTL	Outside FCEMP scope. This will be submitted to the Director General	Open	SICTL
B2.42	The Applicant shall prepare a Fire Safety Study prior to the commencement of construction of the terminal operations infrastructure, in accordance with Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines (DoP, 1993). The Study shall be submitted for the approval of the Director-General and the Commissioner of the NSW Fire Brigades prior to the commencement of construction of the terminal operations infrastructure.	Design aspect study to be completed by project designers Aurecon	Outside FCEMP scope	Open	SICTL
B2.43	The Applicant shall develop an Emergency Response and Incident Management Plan in consultation with DEC, DOP, Council and the Community Consultative Committee. The Plan must be approved by the Director-General prior to the	Develop emergency preparedness and responses plan	Emergency Response and Incident Management Plan	Open	SICTL

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	commencement of construction				
B2.44	The Applicant shall ensure that all aspects associated with the construction of the development considers the required lateral separation distances to minimise the interference to Sydney Airport radar and navigational systems.	Ensure construction equipment is under the OLS SACL have been consulted on the civil works package and provided approval for the Terminal 3 site	Compliance Certificate Report	Ongoing	SICTL / Contractor
B2.46	The Applicant shall ensure that all construction equipment is below the obstacle limitation surface, unless otherwise permitted by an approval under the Airports (Protection of Airspace) Regulation 1996 and following consultation with the Department of Infrastructure, Transport, Regional Development and Local Government, Civil Aviation Safety Authority and Sydney Airport Corporation Limited.	Ensure construction equipment is under the OLS See above condition	Compliance Certificate Report	Ongoing	SICTL / Contractor
B2.47	The Applicant shall ensure design specifications of any construction lighting conform to the requirements of Regulation 94 of the Civil Aviation Regulations 1988.	Ensure all construction lighting is minimal and facing downwards.	Risk Assessment	Ongoing	Contractor
B2.48	Construction may not commence until details regarding the steps and timeframes for resolution of aviation issues, including certification, has been endorsed by Air Services Australia and to the Minister for and Planning.	Completed previously by others. Letter from SPC to DoP regarding this condition dated 25 June 2007, documents that an agreement establishes that Sydney Port Authority will provide funding to Airservices Australia regarding resolution of radar and air navigation issues.  Response from DoP had confirmed that the agreement satisfied the requirements of the Condition of Consent B2.48 dated 14 August 2007	Outside FCEMP scope	Closed	Closed
B3.1	The Applicant must meet the following requirements in relation to community consultation and complaints management:  - all monitoring, management and reporting documents required under the development consent	Implement community management measures in conjunction with SPC	Section 11 and 12 of this FCEMP	Ongoing	SICTL / Contractor

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	<p>shall be made publicly available;</p> <ul style="list-style-type: none"> <li>- provide means by which public comments, inquiries and complaints can be received, and ensure that those means are adequately publicised; and</li> <li>- includes details of a register to be kept of all comments, inquiries and complaints received by the above means</li> </ul>				
B3.2	<p>Within 6 months of this consent or prior to commencement of construction, whichever is earlier, the Applicant shall establish a Committee to oversee the environmental performance of the development.</p>	<p>Nil - Committee already established SICTL/Contractors to assist where required</p>	Nil	Ongoing	SICTL / Contractor
B3.3	<p>The Applicant shall, at its own expense:</p> <ul style="list-style-type: none"> <li>(a) ensure that 2 of its representatives attend the Committee's meetings;</li> <li>(b) provide the Committee with regular information on the environmental performance and management of the development;</li> <li>(c) provide meeting facilities for the Committee;</li> <li>(d) arrange site inspections for the Committee, if necessary;</li> <li>(e) take minutes of the Committee's meetings;</li> <li>(f) make these minutes available on the Applicant's website within 14 days of the Committee meeting, or as agreed to by the Committee;</li> <li>(g) respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the development; and</li> <li>(h) forward a copy of the minutes of each Committee meeting, and any responses to the Committee's recommendations to the Director-General within a month of the Committee meeting.</li> </ul>	<p>Ensure correct personnel involved in committee proceedings in conjunction with SPC</p>	Section 11	Ongoing	SICTL / Contractor
B4.1	<p>The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.</p>	<p>Establish incident response procedures</p>	Section 12 Emergency Response and Incident Management Plan	Ongoing	SICTL / Contractor
B4.2	<p>The Applicant must prepare an Annual Environmental Management Report for the development. The Annual Environmental</p>	<p>Relevant information to be provided by due date</p>	Section 9.1	Ongoing	SICTL

Condition No.	Condition	Action	FCEMP Ref	Status	Responsibility
	<p>Management Report must:</p> <ul style="list-style-type: none"> <li>- detail compliance with the conditions of this consent;</li> <li>- contain a copy of the Complaints Register (for the preceding twelve-month period, exclusive of personal details) and details of how these complaints were addressed and resolved;</li> <li>- include a comparison of the environmental impacts and performance predicted in the EIS and additional information documents provided to the Department and Commission of Inquiry;</li> <li>- detail results of all environmental monitoring required under the development consent and other approvals, including interpretations and discussion by a suitably qualified person;</li> <li>- contain a list of all occasions in the preceding twelve-month period when environmental performance goals have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident;</li> <li>- be prepared within twelve months of the commencement of construction, and every twelve months thereafter;</li> <li>- be approved by the Director-General; and</li> <li>- be made available for public inspection.</li> </ul>	Liaise with SPC			
B4.3	<p>Prior to the commencement of construction, a suitably qualified and experienced Environmental Representative(s) shall be nominated and approved by the Director-General. The Environmental Representative(s) shall be employed for the duration of the construction and the on-going management, mitigation and monitoring associated with the development, excluding direct terminal operation matters subject to the conditions in Schedule C, or as otherwise agreed by the Director-General</p>	ER has been nominated for the project	Nil	Closed	Closed
B4.4	<p>Prior to the commencement of any dredging, reclamation and construction an Environmental Training Program shall be developed and implemented to establish a framework in which relevant employees will be trained in environmental NSW Government Department of Planning 24 management and the operation of plant and equipment, including pollution control equipment, where relevant.</p>	Implement appropriate environmental training	Section 9	Open	Contractor
B4.5	<p>Within one year of the commencement of construction and every year thereafter for the duration of construction a full independent environmental audit shall be undertaken by a suitably qualified person/team approved by the Director-General.</p>	Auditor nominated at required time	Outside FCEMP scope	Open	SICTL



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SICTL - Sydney International Container Terminals Ltd  
Contractor - Relevant contractor on site undertaking works  
Aurecon - Project Designer



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## **Appendix 8 Sub-plans**

- Soil and Water Quality Management Plan
- Air Quality and Dust Management Plan
- Construction Noise and Vibration Management Plan
- Waste Management Plan
- Emergency Response and Incident Management Plan
- Traffic Management Plan
- Acid Sulphate Soils Management Plan



# Sydney Port Botany Terminal 3 Project

## SICTL Soil and Water Quality Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
ANZECC	Australia New Zealand Environment and Conservation Council
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
FCEMP	Framework Construction Environmental Management Plan
EPA	Environmental Protection Agency
NATA	National Association of Testing Authorities
OEH	Department of Climate Change and Water
PAH	Polycyclic aromatic hydrocarbons
SWQMP	Soil and Water Quality Management Plan
TSS	Total Suspended Solids
EIS	Environmental Impact Statement
MCoA	Ministers Conditions of Approval

### Distribution

This Soil and Water Quality Management Plan (SWQMP) forms part of the project's CEMP as an Appendix.

### Issue, Revision and Re-issue

Revisions of this SWQMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

### Revision History

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	Stakeholder Review Incorporation	NB	KM



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## 1. Introduction

This Soil and Water Quality Management Plan (SWQMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for a Stormwater and Water Management Plan as outlined in the conditions of approval.

The key components covered by this plan include:

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers.

Note; multiple contractors will be working under this SWQMP as part of the Terminal 3 construction project. There will be a coordinated approach to manage soil and water quality. SICTL, its project representatives and other relevant parties will coordinate this approach. Combined dust monitoring will occur for the Port Botany Expansion project as part of this approach.

### 1.1 Objective

The objective of this SWQMP is to ensure that all risks associated with erosion and sediment control, water quality, site wastewater, potential water contamination and licensing and monitoring issues are considered and managed effectively during construction to avoid any environmental incident.

This SWQMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project
- Summarise potential impacts on the environment from the proposed works
- Document environmental procedures to control potential environmental impacts.

### 1.2 Targets

The following targets have been identified in terms of soil and water management for the project:

- No significant decrease in water quality of the outflow environment during construction
- Water quality shall conform to any approval conditions stipulated by the EIS and the MCoA
- Implementation of best practice erosion, drainage and sediment controls
- Ensure construction activities are managed to meet water quality objectives.
- Maximise the trapping of sediment on site
- Prevent contamination of offsite areas and waterways
- Water discharged from site to meet the all relevant requirements
- Prevent mud and litter from being deposited on roadways
- Monitor the effects of activities and the effectiveness of mitigation measures



- Ensure all works with potential risk to surrounding waters are well contained and controlled to minimise impacts to the surrounding waters

### 1.3 Statutory provisions and guidelines

The following statutory provisions and guidelines are applicable to the Project, with regards to water quality:

- Project Planning Approval
- Australian Standards, NSW Dangerous Goods (General) Regulations 1999 and NSW EPA guidelines
- Managing Urban Stormwater: Soils and Construction Vol 4 (Landcom)
- POEO Act 1997
- Water Management Act 2000.

### 1.4 Ministers Conditions of Approval

MCoA's relevant to soil and water quality management are outlined below.

MCoA Reference	MCoA Detail
B2.5	<p>The Applicant shall prepare a Soil and Water Management Plan in consultation with DEC, RTA, DOP, DNR, Botany and Randwick Councils. The Applicant shall address the requirements of these organisations in the Plan. The Applicant shall also consult with the Community Consultative Committee in preparation of the Plan. The Plan must detail erosion and sediment controls, prepared in accordance with Managing Urban Stormwater: Soils and Construction (available from the Department of Housing) and must:</p> <ul style="list-style-type: none"> <li>• Identify the management responses to activities that could cause soil erosion or result in the discharge of sediments and/or other pollutants from the site;</li> <li>• Specify standards/performance criteria for erosion, sediment, and pollution control including water sediment basin locations and discharge points, for example parameters, frequency, duration location and method; and</li> <li>• Describe what actions and measures will be implemented, the effectiveness these actions and measures and how they will be monitored during the works, clearly indicating who will conduct the monitoring, how the results of this monitoring would be recorded; and, if any non-compliance is detected.</li> </ul> <p>The Plan shall be approved by the Director-General prior to commencement of construction.</p>

## 2. References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- NSW Landcom publication Managing Urban Stormwater - Soils and Construction Edition 4 March 2004 (Blue Book).
- NSW EPA (1997), Managing Urban Stormwater – Treatment Techniques
- Penrhyn Estuary Habitat Enhancement Plan
- Botany Bay & Catchment Water Quality Improvement Plan - April 2011
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates into one Act all of the controls necessary to regulate pollution and reduce degradation of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act

This Act has specific relevance to this plan with regards to the potential for pollution of waters resulting from erosion and sedimentation. In particular, Section 120 of the Act provides for the prohibition of pollution of waters and outlines the associated offence of pollution of waters.

### 3. Strategic Approach

#### 3.1 Potential Impacts

##### 3.1.1 Activity Specific Risks

Activity	Risks
<ul style="list-style-type: none"> <li>Supply and installation of Automated Stacking Cranes (ASC) Cranes</li> </ul>	<ul style="list-style-type: none"> <li>Fuel / Chemical spills</li> <li>Dirty water runoff from the site</li> <li>Erosion from diverted water runs</li> </ul>
<ul style="list-style-type: none"> <li>Supply and installation of Quay Cranes (QC) Cranes</li> </ul>	<ul style="list-style-type: none"> <li>Fuel / Chemical spills</li> <li>Dirty water runoff from the site</li> <li>Erosion from diverted water runs</li> </ul>
<ul style="list-style-type: none"> <li>Supply and installation of communication infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Fuel / Chemical spills</li> <li>Dirty water runoff from the site</li> <li>Erosion from diverted water runs</li> </ul>
<ul style="list-style-type: none"> <li>Delivery and fabrication of shuttle carriers</li> </ul>	<ul style="list-style-type: none"> <li>Fuel / Chemical spills</li> <li>Dirty water runoff from the site</li> <li>Erosion from diverted water runs</li> </ul>

##### 3.1.2 Permanent Controls Erosion and Sediment Transport

The stage of construction covered by this plan will involve limited activities with the potential to impact water quality, sedimentation and erosion. The majority of these works will be undertaken on hardstand areas.

Considering the sensitivity of the surrounding environment, potential risks resulting from erosion, sedimentation and loss of construction material during the construction phase include the following:

- Construction areas may be subject to erosion/sedimentation during storm and heavy rainfall events causing siltation, constriction or blockages to the existing drains in this area
- Surface erosion can occur as a result of the removal of stable surfaces and shaping for construction
- Sediment removed during this erosion may block drains or deposit in the adjacent waterway
- Construction activities may divert water into new areas and subject them to erosion
- Contamination of surface water runoff from the site
- There is a potential for spills and leaks from plant and equipment and onsite fuel storage during construction

#### 3.2 Water Quality Control Measures

Contractors are to ensure that control measures which minimise the impact on water quality are implemented on the project to prevent construction activities from impacting upon the



surrounding environment. They shall be installed prior to, or in conjunction with, disturbance of any area of work and as per the erosion and sediment control plans developed on site.

Spill kits shall be kept at various locations on site and will cater for both marine and land environments. Emergency response procedures will be developed for any spill into the waterways.

Stormwater Quality Improvement Devices (SQIDS) will be implemented as per the specifications and drawings for the Terminal 3 expansion project. Permanent drainage will be installed prior to the scope of this plan to ensure a controlled stormwater system is utilised.

Inlets and outlets of all drainage structures shall be protected as required throughout the project.

### **3.3 Temporary Controls**

#### **3.3.1 Sediment Fences**

Sediment fences or suitable equivalent operate by slowing the flow of runoff and enabling the coarse suspended solids to settle out and be trapped behind the control structure.

Design limitations are:

- Drainage area  $\leq 0.6$  ha
- Maximum grade 1V:2H
- Maximum slope length 60m.

Particular attention must be made to the potential outlet of the sediment fence during high rainfall events and the likely point at which the fence will discharge. To ensure that the fence remains in tack during high flow events and runoff discharges to the appropriate areas, a small reinforced weir may need to be constructed in the fence. This will be reviewed daily during construction. Weirs in sediment fences must outlet to stable areas.

#### **3.3.2 Sandbags and Sediment Socks**

Sandbags and sediment socks are utilised to create a weir or check dam in table drains to slow the runoff water velocity and enable coarse sediment to settle. They can also be used to create diversion drains or bunds walls to contain liquids, or to supplement existing sediment controls and will be placed around any existing live stormwater pits or drop inlets prior to decommissioning of the structure. Locations will be confirmed on site and included in working sediment and erosion control plans.

Initially, sandbags and sediment socks will be provided to protect the existing operational stormwater drainage system until it is decommissioned.

Sediment socks will also be provided at the tow of the jersey barriers to prevent runoff escaping beneath and off the site.

Check dams will be carefully constructed so that they allow runoff to exit the structure via the intended flow path. A specifically constructed low point must be incorporated into the dam to direct runoff and ensure that flow is retained within its intended path.

#### **3.3.3 Stockpiles**

Temporary stockpiles shall be located more than 15m from the Botany Bay edge and as directed on-site.

Sediment barriers shall be erected on the down slope side so that any sediment laden runoff from the stockpile is captured and controlled. On the upslope, berms or catch drains shall be installed, if practicable, to divert clean water away from the stockpile.

Stockpiles will be covered when not in use to minimise erosion and dust.

### 3.4 Operation and Maintenance

Construction water quality structures and sediment controls will be implemented and maintained until such times as disturbed areas have been stabilised.

Permanent and temporary sediment control structures which become blocked or overloaded with sediments will be cleaned.

## 4. SITE WASTEWATER CONTROLS

### 4.1 Waste Water

All site waste water will be directed to existing site sewerage facilities in compliance with the requirements of the Sydney Water Act 1994.

### 4.2 Mitigation Measures

Mitigation measures for soil and water quality management for the construction phase of the project are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
Install and maintain temporary erosion and sedimentation controls, such as sediment fences, diversion drains, etc, where identified by Progressive ESCPs prior to commencing works in each area.	Contractor	EIS ch18; 18.5.1	Throughout construction
Minimise traffic volumes on unsealed areas within the construction site. Provide parking and hardstand areas where possible.	Contractor	EIS ch37; 37.2	Throughout construction
A member of the environmental management team to undertake environmental inspections on a weekly basis or before predicted and after significant rainfall events.	Contractor	EIS ch16; 16.8.1	Throughout construction
Provide rumble grids for spoil trucks to pass through prior to leaving the site and accessing public roads.	Contractor	EIS ch18; 18.5.1	Throughout construction
Store all fuels, oils and chemicals in secure bunded areas. Cover all permanent bunded areas. Use temporary bunds for short-term (<7-10 days) storage where required.	Contractor	EIS ch16; 16.8.1	Throughout construction
Train field staff in the contents and use of spill kits.	Contractor	EIS ch16; 16.8.1	Throughout construction
Implement the spill management procedure in the event of a land based oil or chemical spill. Procedure contained in Emergency Response Plan.	Contractor	EIS ch37; 37.2	Throughout construction
Test rainwater collected in bunds prior to dewatering. Criteria include pH between 6.5 and 8.5, and no visible oil on the water surface. Keep records of testing in the onsite environmental filing system.	Contractor	POEO Act	Throughout construction
Report spills reaching water to SPC. Report all spills that cause or are likely to cause environmental harm to OEH's Environment Line (131 555). Report immediately.	Contractor	Contract	Throughout construction
Implement spill management procedures in the event of an oil or chemical spill.	Contractor	EIS ch37; 37.2;	Throughout construction
Diverting stormwater runoff around disturbed areas of the site where possible to prevent contamination with runoff from the disturbed areas. Where this is not possible, control measures such as diversion drains will be constructed to ensure stormwater runoff	Contractor	Best Practice	Throughout construction



Mitigation Measures	Responsibility	Source of Requirement	Timing
does not cause additional erosive impacts			
Removal of soil from vehicle wheels and undercarriages before departing the site to reduce soil carried off site	Contractor	Best Practice	Throughout construction
Ensure construction activities are conducted in a manner that minimises the potential for spills or leaks, including the regular inspection and maintenance of plant and equipment, providing bunding or similar spill containment structures for onsite fuel and oil storage. Contain and clean up any spills or leaks as quickly as possible.	Contractor	EIS	Throughout construction

## 5. Training

All site personnel shall undergo site specific induction training that will cover specific environmental issues and shall include erosion and sediment control measures.

### 5.1 Water Monitoring

All water quality control and sediment control structures will be regularly inspected and maintained.

Water monitoring will be undertaken as outlined below.

Aspect	Criteria	Means	Location	Construction Stage	Time-frame	Action by:
Discharge water quality	No pollution of waters. Turbidity <25ntu, (or as described in the EIS for various weather conditions), pH 6.5-8.5, no visible oil and grease.	In-situ measurement using site water quality meter Laboratory testing and assessment where required	Whole site	Whole Project	Prior to any discharge from site.	Contractor

Methods of sampling and analysis of water quality shall be in accordance with applicable method listed in the NSW EPA published Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales.

Where results indicate non-compliance with the specified water quality parameters, the water will be retreated and further testing undertaken. Retreated water will not be discharged from site until compliance with the requirements is achieved.

### 5.2 Monitoring of Controls

Contractors will be responsible for providing appropriate resources in terms of labour, plant and equipment to enable the items to be rectified in the nominated timeframes.

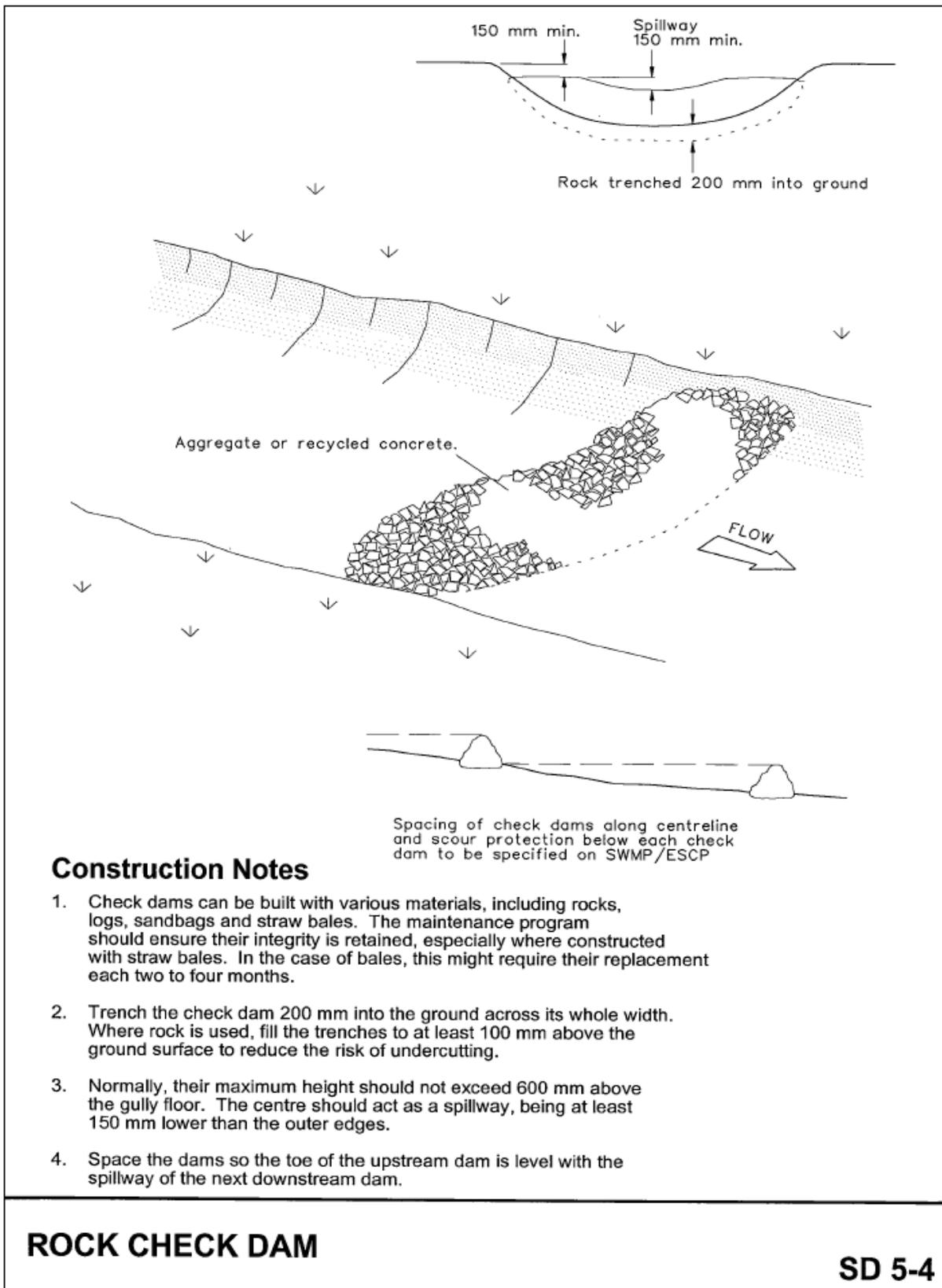
### 5.3 Emergency Response

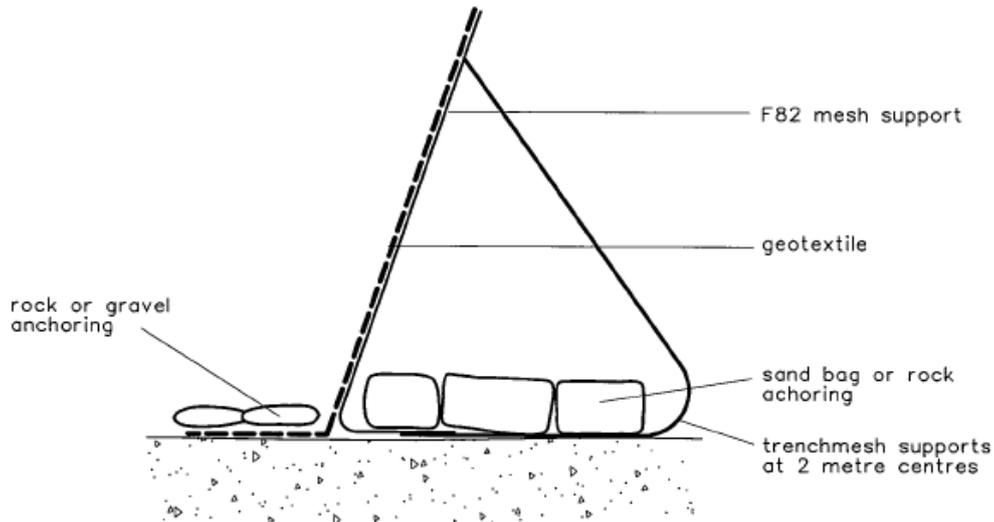
For emergency response to oil or chemical spills adjacent waterways suitably trained personnel will deploy an emergency response craft that will contain an oil boom and marine specific absorbent materials. If any spill is able to make its way beyond the permanent silt curtain/floating boom, then the emergency response crew will be present to contain and clean up the affected area. All used materials will be collected, stored on site and disposed at an appropriately licensed waste facility. Incident investigation process is outlined further in the FCEMP.



## **Appendix 1 Standard Drawings**

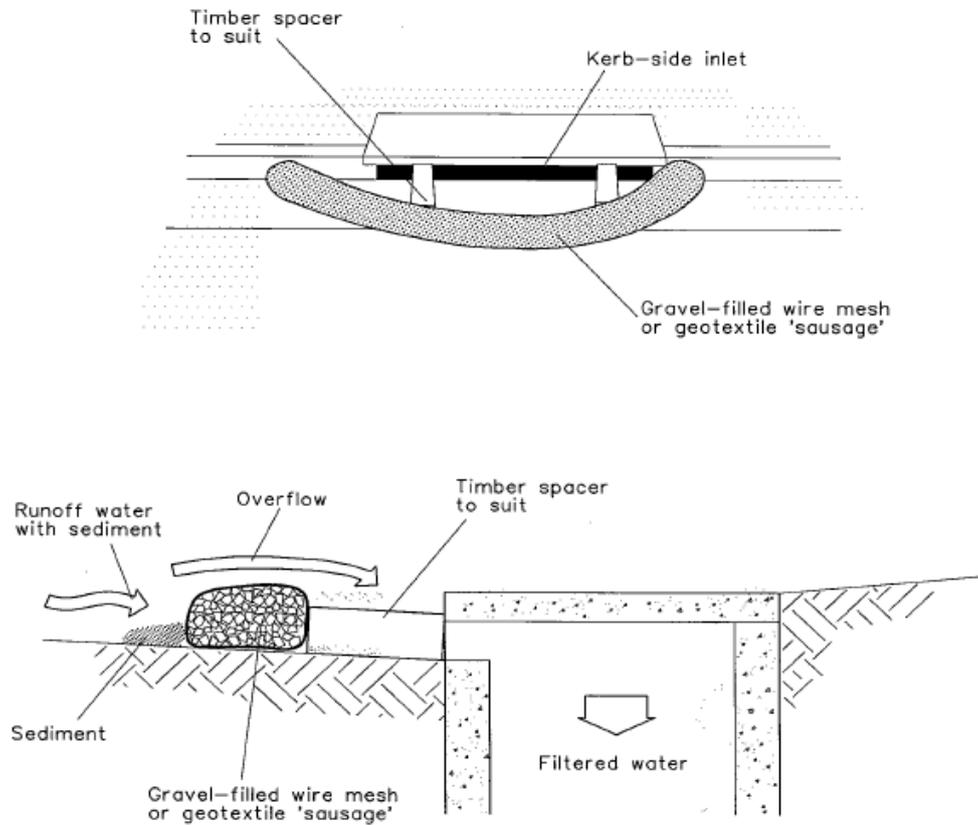
- NSW Landcom Standard Drawing SD 5-4 Rock Check Dam
- NSW Landcom Standard Drawing SD 6-9 Alternative Sediment Fence
- NSW Landcom Standard Drawing SD 6-11 Mesh and Gravel Inlet Filter
- NSW Landcom Standard Drawing SD 6-12 Geotextile Inlet Filter





## Construction Notes

1. Install this type of sediment fence when use of support posts is not desirable or not possible. Such conditions might apply, for example, where approval is granted from the appropriate authorities to place these fences in highly sensitive estuarine areas.
2. Use bent trench mesh to support the F82 welded mesh facing as shown on the drawing above. Attach the geotextile to the welded mesh facing using UV resistant cable ties.
3. Stabilise the whole structure with sandbag or rock anchoring over the trench mesh and the leading edge of the geotextile. The anchoring should be sufficiently large to ensure stability of the structure in the design storm event, usually the 10 year event.



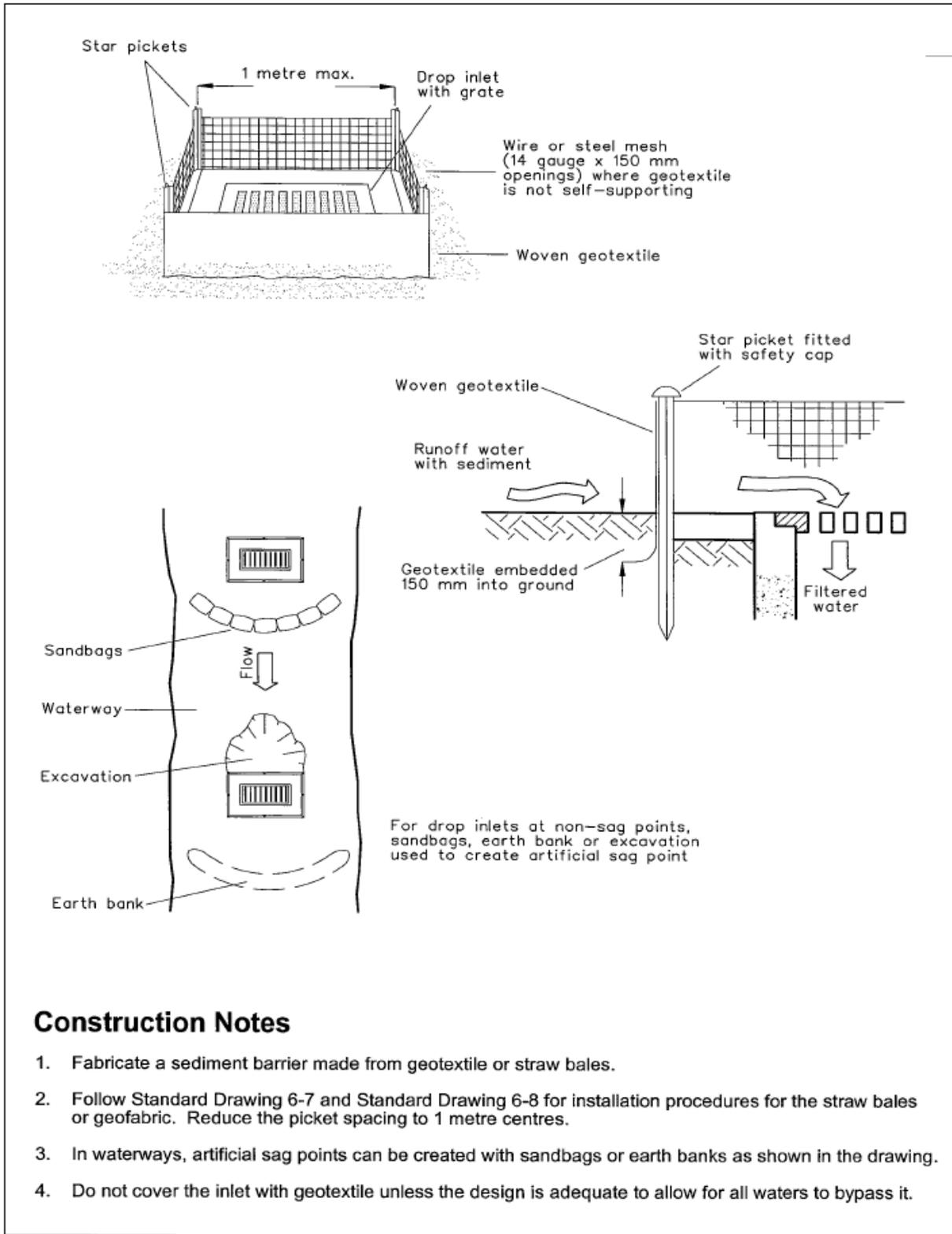
NOTE: This practice only to be used where specified in an approved SWMP/ESCP.

### Construction Notes

1. Install filters to kerb inlets only at sag points.
2. Fabricate a sleeve made from geotextile or wire mesh longer than the length of the inlet pit and fill it with 25 mm to 50 mm gravel.
3. Form an elliptical cross-section about 150 mm high x 400 mm wide.
4. Place the filter at the opening leaving at least a 100-mm space between it and the kerb inlet. Maintain the opening with spacer blocks.
5. Form a seal with the kerb to prevent sediment bypassing the filter.
6. Sandbags filled with gravel can substitute for the mesh or geotextile providing they are placed so that they firmly abut each other and sediment-laden waters cannot pass between.

**MESH AND GRAVEL INLET FILTER**

**SD 6-11**



### Construction Notes

1. Fabricate a sediment barrier made from geotextile or straw bales.
2. 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.
3. In waterways, artificial sag points can be created with sandbags or earth banks as shown in the drawing.
4. Do not cover the inlet with geotextile unless the design is adequate to allow for all waters to bypass it.

# Sydney Port Botany Terminal 3 Project

## SICTL Air Quality and Dust Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
FCEMP	Framework Construction Environmental Management Plan
EPA	Environmental Protection Agency
OEH	Office of Environment and Heritage
AQDMP	Air Quality and Dust Management Plan
EIS	Environmental Impact Statement
PM10	Particulate Matter - in the order of ~10 micrometers or less
MCoA	Ministers Conditions of Approval

### Distribution

This Air Quality and Dust Management Plan (AQDMP) document forms part of the SICTL FCEMP as an Appendix.

### Issue, Revision and Re-issue

Revisions of this AQDMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

#### Revision History

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/03/13	Addressing Stakeholder comments	NB	KM
2	27/5/13	Address Department of Planning and Infrastructure comments	NB	KM



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## 1. Introduction

This Air Quality and Dust Management Plan (AQDMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for a Dust Management Plan as outlined in the conditions of approval.

The key components covered by this plan include:

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers.

Note; multiple contractors will be working under this AQDMP as part of the Terminal 3 construction project. There will be a coordinated approach to manage air quality and dust. SICTL, its project representatives and other relevant parties will coordinate this approach.

### 1.1 Objectives

The objective of this AQDMP is to ensure that all risks associated with dust control, potential dust migration, licensing and monitoring issues are considered and managed effectively during construction to avoid any environmental or community incident.

This AQDMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project
- Summarise potential impacts on the environment from the proposed works
- Document environmental procedures to control potential environmental impacts.

### 1.2 Targets

The following targets have been identified in terms of dust management for the project:

- Release of dust/particle matter not to cause an environmental nuisance at any dust sensitive location
- No valid complaints received regarding excessive dust generation or air pollution caused by construction activities
- Prevent mud and litter from being deposited on roadway
- Ensure exhaust emissions of plant and equipment produced by construction activities are controlled to an acceptable level
- Achieve particulate concentrations and dust deposition rates from construction activities that meet guideline values
- Monitor and promptly maintain dust controls through the project
- Monitor the effects of activities and the effectiveness of mitigation measures



- Ensure all personnel are appropriately trained in environmental awareness
- No environmental fines or prosecutions relating to dust and air pollution

### 1.3 Statutory provisions and guidelines

The following statutory provisions and guidelines are applicable to the Project, with regards to air quality and dust management:

- Sydney Port Botany Terminal 3 Planning Determination
- POEO Act 1997
- POEO (Clean Air) Regulation 2010

### 1.4 Ministers Conditions of Approval

MCoA's relevant to air quality management are outlined below.

MCoA Reference	MCoA Detail
B2.4	<p>The Applicant shall prepare a Dust Management Plan in consultation with DEC, RTA, DOP, Botany and Randwick Councils. The Applicant shall address the requirements of these organisations in the Plan. The Applicant shall also consult with the Community Consultative Committee in preparation of the Plan. Plan must include, but not be limited to strategies in which the construction shall:</p> <ul style="list-style-type: none"> <li>• Minimise or prevent the emission of dust from the site;</li> <li>• Ensure that all trafficable areas and vehicle manoeuvring areas in or on the premises shall be maintained, at times, in a condition that will minimise the generation, or emission from the premises, of windblown or traffic generated dust;</li> <li>• Ensure that all vehicles entering and leaving the site and carrying a load that may generate dust are covered at all times, except during loading and unloading. Any such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicle at all times; and</li> <li>• Ensure that all dust source surfaces are sealed.</li> </ul> <p>The Plan shall be approved by the Director-General of DOP prior to commencement of construction.</p>

## 2. References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- NSW Landcom publication Managing Urban Stormwater - Soils and Construction Edition 4 March 2004 (Blue Book).
- POEO (Clean Air) Regulation 2010
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates into one Act all of the controls necessary to regulate pollution and reduce degradation of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act

### 3. Strategic Approach

#### 3.1 Existing Environment

Air quality within the area surrounding Port Botany is influenced by both local and regional pollutant sources, including road traffic, domestic sources, aircraft and a variety of industrial emissions. The proximity to local pollutant sources and the influence of sea breezes play significant roles in the dispersion of pollutants around Botany Bay.

#### 3.2 Potential Impacts

Construction activities covered by this plan will have low potential to affect air quality as this includes supply and installation of cranes and machinery and communication infrastructure. No earthworks are undertaken under this plan.

Air quality could be affected from the following sources:

- Accumulated dirt/dust on the terminal's concrete surface;
- Movement of vehicles across unsealed areas on the site; and
- Inefficient exhaust systems for machinery.

##### 3.2.1 Activity Specific Risks

Activity	Risks
<ul style="list-style-type: none"> <li>• Supply and installation of Automated Stacking Cranes (ASC) Cranes</li> </ul>	<ul style="list-style-type: none"> <li>• Accumulated dirt/dust on the terminal's concrete surface;</li> <li>• Movement of vehicles across unsealed areas on the site; and</li> <li>• Inefficient exhaust systems for machinery</li> </ul>
<ul style="list-style-type: none"> <li>• Supply and installation of Quay Cranes (QC) Cranes</li> </ul>	<ul style="list-style-type: none"> <li>• Accumulated dirt/dust on the terminal's concrete surface;</li> <li>• Movement of vehicles across unsealed areas on the site; and</li> <li>• Inefficient exhaust systems for machinery</li> </ul>
<ul style="list-style-type: none"> <li>• Supply and installation of communication infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Accumulated dirt/dust on the terminal's concrete surface;</li> <li>• Movement of vehicles across unsealed areas on the site; and</li> <li>• Inefficient exhaust systems for machinery</li> </ul>
<ul style="list-style-type: none"> <li>• Delivery and fabrication of shuttle carriers</li> </ul>	<ul style="list-style-type: none"> <li>• Accumulated dirt/dust on the terminal's concrete surface;</li> <li>• Movement of vehicles across unsealed areas on the site; and</li> <li>• Inefficient exhaust systems for machinery</li> </ul>

#### 3.3 Controls

A variety of control measures will be implemented throughout the course of the works to manage air quality during construction.



- Where dust generating activities cannot be controlled, the activities shall be stopped and the process reviewed and additional mitigation measures employed.
- Review forward forecasts and re-program works during periods of high winds, if required, to ensure that a dust nuisance is not caused external to the site.
- Contractors shall visually inspect plant and equipment exhaust periodically during the works for excessive emissions. Excessive emissions shall be defined as visual emissions continuing for a period of greater than 20 seconds.
- Non-conformances with these measures shall be documented and the offending plant item serviced/repaired or upgraded to manufacturer's specifications as soon as possible.
- Excessive mud to be removed from vehicles before entering public roads to prevent tracking of sediment on to public roads.
- All plant and equipment to be maintained in good working order in accordance with the relevant manufacturer's requirements to limit the emission of smoke from exhausts.
- All vehicles entering and leaving site and carrying a load that may generate dust are to be covered at all times, except during loading and unloading
- All dust source surfaces are to be sealed as soon as practicable
- Sweeper/vacuum truck to be used if required to clean public roads in and around the site.

### 3.4 Mitigation Measures

Mitigation measures for air quality and dust management for the construction phase of the project are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
Cease work if excess dust is observed, or phase down while the source is being actively investigated and suppression measures are implemented	Contractor	EIS 23.8.1	Throughout construction
Restrict construction traffic to defined roads and keep to 20km/hr site speed limit. Signpost the speed limit along all construction roads.	Contractor	EIS 23.8.1	Throughout construction
Remove soil adhering to the wheels and undercarriage of vehicles prior to departure from the site.	Contractor	EIS 23.8.1	Throughout construction
Visually monitor dust generation from work zones to ensure that excessive dust is not being produced.	Contractor	EIS 38.5	Throughout construction
Inspect sites to ensure that adequate dust controls are being used such as regularly watering unsealed areas.	Contractor	EIS 38.5	Throughout construction
Maintain exhaust systems of construction plant, vehicles and machinery in accordance with manufacturer specifications.	Contractor	Best Practice	Throughout construction
Monitoring through dust deposition gauges.	SITCL	EIS	Throughout construction
Active daily checking of weather forecasts and preparing for southerly and north westerly wind conditions.	Contractor	Best Practice	Throughout construction
All vehicles entering and leaving the site and carrying a load that may generate dust are covered at all times, except during loading	Contractor	Director General	Throughout construction

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Mitigation Measures	Responsibility	Source of Requirement	Timing
and unloading.		comments	
All dust source surfaces are sealed as soon as practicable.	Contractor	Director General comments	Throughout construction

### 3.5 Monitoring

Ambient background data and project specific air quality objectives have been set in the project EIS.

Aspect	Average Background for EIS Impact Assessment	Current Criteria	
		NSW EPA Criterion	Project Specific Criterion
Dust Deposition	1.5 –2 g/m2/ month	4 g/m2/ month	2 g/m2/ month

The air quality impacts for this stage of construction have not been assessed in the EIS for the terminal 3 works. Due to this, the criteria in the table above will be utilised.

A combined dust monitoring regime will be undertaken to include all Port Botany Expansion works. This monitoring will include dust deposition gauge monitoring and PM10 monitoring.

Three dust deposition gauges will be installed within residential areas – two in the residential area north of Foreshore Road, and one in the Matraville residential area immediately east of Amcor (Botany Road, Matraville). An additional dust deposition gauge will also be located in Penrhyn Estuary. To ensure minimal impact on sensitive habitats, and to minimise the potential for sedimentation in shallow waters, sampling would be undertaken in accordance with Australian Standard AS 3580.10.1-1991 – Particulates – deposited matter (gravimetric method) and laboratory analysis performed by a NATA accredited laboratory.

Proposed dust deposition monitoring locations given below:

No.	Monitoring Location
1	Upper Penryhn Estuary
2	14 The Esplanade
3	74 Australia Ave
4	Botany Golf Course



PM10 monitoring will be undertaken as part of the combined monitoring regime. This monitoring is proposed to be undertaken at the Botany Golf Course.

Visual monitoring will be undertaken continually throughout construction for air quality and dust. If excessive dust or air quality impacts are observed, works are to cease and the source to be actively investigated and suppression measures implemented before proceeding.

### 3.6 Training

Inductions and toolbox meetings will cover specific environmental issues and shall include air quality and dust control measures.

Training of site personnel will be ongoing through the project to ensure environmental awareness and competency is incorporated into all work during the project.

Personnel conducting sampling, measuring, monitoring and reporting activities are to be suitably trained or experienced in the activity. Records of all training are to be filed in accordance with the project filing system.

### 3.7 Emergency Response

All incidents will be recorded and an investigation will be undertaken into the causes of the incident, potential environmental and safety impacts, improvements that can be made to the construction methodology and actions given to personnel.

### 3.8 Monitoring of Controls

Items that require specific and detailed action will be recorded on the Project's Corrective Action Register.



The relevant contractor will be responsible for providing appropriate resources in terms of labour, plant and equipment to enable the items to be rectified in the nominated timeframes.

Improvement requests received from the project Environmental Representative or other appropriate agencies shall be assessed and responded to within 24 hours if the issue is not environmentally threatening.

Quantitative data from dust monitoring shall be collated and provided to the appropriate

### **3.9 Non-conformance and Corrective Action**

Where the daily site inspections or quantitative dust monitoring identifies non-compliance with the relevant targets and criteria, or where complaints are received in relation to the site activities, the relevant contractor will implement investigative and corrective action.

The management of incidents associated with air quality shall be handled in accordance with the FCEMP. Communication strategies for the project including the receipt and response to complaints are outlined in the FCEMP.

The corrective action may involve supplementary monitoring to identify the source of the non-compliance, and/or may involve modification of construction techniques or programme to avoid any recurrence or minimise its adverse effects. Corrective actions, revised limits or external negotiations will be undertaken in consultation with SICTL representatives.

Non-conformances and issues requiring corrective action will be documented on the Project's Corrective Action Register.

# Sydney Port Botany Terminal 3 Project

## SICTL Construction Noise and Vibration Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
FCEMP	Framework Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
DECC	Department of Environment and Climate Change
EMS	Environmental Management System
ERA	Environmental Risk Assessment
OEH	Office of Environment and Heritage
RTA	Roads and Traffic Authority
MCoA	Minister's Condition of Approval
LAm <sub>ax</sub>	The "Maximum Noise Level" for an event, used in the assessment of potential sleep disturbance during night-time periods. The subscript "A" indicates that the noise levels are filtered to match normal human hearing characteristics (i.e. A weighted).
LA <sub>eq</sub> (15 minute)	A-weighted equivalent continuous sound pressure level
RBL	Rating Background Level (ambient noise)
INP	Industrial Noise Policy
LA <sub>90</sub>	The "Background Noise Level" in the absence of construction activities. This parameter represents the average minimum noise level during the daytime, evening and night-time periods respectively. The LA <sub>eq</sub> (15 minute) construction noise objectives are based on an allowance margin above the LA <sub>90</sub> background noise levels.
PPV	"Peak Particle Velocity" evaluated at the building footings and used to assess the risk of damage to structures
Arms	"Root mean squared weighted acceleration", a vibration parameter used to assess human response to continuous or intermittent vibration
eVDV	"Estimated Vibration Dose Value", the overall vibration exposure assessed over the daytime or night-time period to assess human response to intermittent vibration

### Distribution

This Construction Noise and Vibration Management Plan (CNVMP) document forms part of the project's Construction Environmental Management Plan (CEMP) as an Appendix.

### Issue, Revision and Re-issue

Revisions of this CNVMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	Stakeholder comments addressed	NB	KM



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## 1. Introduction

This Construction Noise and Vibration Management Plan (CNVMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for a Construction Noise Management Plan as outlined in the conditions of approval.

The key components covered by this plan include:

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers.

Note; multiple contractors will be working under this CNVMP as part of the Terminal 3 construction project. There will be a coordinated approach to manage construction noise and vibration. SICTL, its project representatives and other relevant parties will coordinate this approach.

### 1.1 Objective

The objective of this Construction Noise and Vibration Management Plan (CNVMP) is to outline strategies and controls to be implemented during the relevant works.

This CNVMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project
- Summarise potential impacts on the surrounding receivers from the proposed works
- Document environmental procedures to control potential impacts

### 1.2 Targets

The following targets have been identified in terms of noise and vibration management for the project:

- Noise from construction activities must not cause an environmental nuisance at any 'noise sensitive place' without prior notification to the sensitive receptors if the noise limits are expected to be above the nuisance threshold
- No valid complaints received regarding excessive construction noise
- Minimise the effects of noise and vibration from construction activities on surrounding residents and businesses
- Implement reasonable and feasible controls to minimise construction noise and vibration
- Detail appropriate construction noise monitoring and documentation to adhere to project regulations
- Outline vibration regulations for the project and a monitoring regime to meet these requirements.



### 1.3 Statutory provisions and guidelines

The following statutory provisions are applicable to the Project, with regards to noise:

- Protection of the Environment Operations Act 1997 (NSW)
- Protection of the Environment Operations (Noise Control) Regulation 2008 (NSW)
- Assessing Vibration: A Technical Guideline (NSW)
- Interim Construction Noise Guideline (2009, DECCW)

### 1.4 Ministers Conditions of Approval

MCoA's relevant to construction and vibration management are outlined below.

MCoA Reference	MCoA Detail
B2.19	<p>The Applicant shall only undertake construction activities associated with the project (with the exception of dredging construction activities) that would generate an audible noise at any residential premises during the following hours:</p> <ul style="list-style-type: none"> <li>a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;</li> <li>b) 8:00 am to 1:00 pm on Saturdays; and</li> <li>c) at no time on Sundays or public holidays.</li> </ul> <p>Audible noise is defined as “noise that can be heard at the receiver”. This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons. Note: ‘safety or emergency reasons’ refers to emergency works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.</p>
B2.19A	<p>The Applicant must seek the Director-General’s approval to conduct construction activities audible at residential premises (with the exception of dredging construction activities) outside the hours specified under condition B2.19 on a case-by-case basis. In seeking the Director-General’s approval, the Applicant shall demonstrate a need for activities to be conducted during varied hours and how local acoustic amenity will be protected, as well as details of how the EPA’s requirements with respect to the variation of hours have been addressed.</p>
B2.19B	<p>For activities subject to an environmental protection licence issued by the EPA under the Protection of the Environment Operations Act 1997, conditions B2.19 and B2.19A do not apply if the EPA has approved activities to be conducted outside the hours permitted by condition B2.19.</p>
B2.20	<p>Prior to the commencement of construction, the Applicant must prepare a Construction Noise Management Plan in consultation with DEC, DOP, Botany and Randwick Councils. The Plan shall include noise mitigation for piling works for diesel powered machinery, provision of training to ensure that construction workers are aware of the noise created during construction and are appropriately trained to minimise noise where possible. In addition, the Construction Noise Management Plan must:</p> <ul style="list-style-type: none"> <li>• Identify general activities that will be carried out and associated noise sources;</li> <li>• Assess construction noise impacts at the relevant receivers;</li> <li>• Provide details of overall management methods and procedures that will be implemented to control noise during the construction stage;</li> <li>• Identification of all feasible and reasonable measures to minimise noise and vibration, including but not limited to: <ul style="list-style-type: none"> <li>• Using least noisy construction methods, vehicles, plant and equipment;</li> <li>• Positioning and orientating noisy plant and equipment so as to minimise noise impacts on noise sensitive receivers and wildlife in Penrhyn Estuary;</li> <li>• Positioning items of noisy plant and equipment as far apart as is practicable from each other;</li> <li>• Minimising noisy activities by adopting alternative construction measures;</li> <li>• Carrying out above ground loading and unloading activities as far away as is practicable from noise sensitive receivers and wildlife in Penrhyn Estuary;</li> <li>• Designing each work site to minimise the need for truck reversing movements;</li> <li>• Ensuring all vehicles and self-propelled plant and equipment enter and leave the premises in a</li> </ul> </li> </ul>

MCoA Reference	MCoA Detail
	<p>forward direction unless unforeseen accidents or other unforeseeable circumstances arise that may require reversing movements, in which case minimising any such reversing movements;</p> <ul style="list-style-type: none"> <li>• Taking all practicable steps to avoid reversing movements on the surface within the premises, and where it is impracticable to avoid reversing movements, taking all necessary steps to minimise reversing movements; and</li> <li>• Preventing vehicle, plant and equipment queuing and idling outside the hours of construction prescribed by this consent</li> <li>• Include a pro-active and reactive strategy for dealing with complaints including achieving the construction noise goals, particularly with regard to verbal and written responses;</li> <li>• Detail noise monitoring, reporting and response procedures consistent with DEC requirements;</li> <li>• Provide for internal audits of compliance of all plant and equipment;</li> <li>• Indicate site establishment timetabling to minimise noise impacts;</li> <li>• Include procedures for notifying residents of construction activities likely to affect their noise amenity;</li> <li>• Address the requirements of DEC; and</li> <li>• Be approved by the Director-General prior to the commencement of any works on the site.</li> </ul>
B2.21	The goal for noise from construction activities as the LA10 (15 minute) should not exceed the Rating Background Level (RBL) plus 5dB(A) at sensitive receivers.
B2.23	To help minimise the impact of operational noise on the surrounding area, a noise barrier shall be constructed by the Applicant along northern and eastern boundaries of the site prior to the commencement of operations. The applicant must seek appropriate independent expert advice to ensure the design of the noise barrier has regard to the flight path requirements of bird species using the area.
B2.23A	Subject to the alternative rail option being implemented as described within the report listed in condition A1.11), the Applicant shall construct a three metre high noise barrier along the northern edge of the Inter-terminal Access Road Corridor prior to the commencement of operations. The bottom two metres of the barrier shall be opaque and the top one metre shall be of transparent material sufficiently patterned to minimise impacts to bird species utilising the adjacent Penrhyn Estuary.
B2.24	The Applicant is required to identify measures to be implemented to ensure that where movement alarms are fitted to vehicles, plant or equipment entering or operating on the site, such alarms are of a type that minimises noise at noise sensitive receivers.
B2.25	The Applicant must install all physical noise management measures as early as is practicable during construction of the Port Botany Expansion project.
B2.26	The Applicant must not undertake any blasting on the premises

## 1.5 References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- DECCW Interim Construction Noise Guidelines
- AS2436 Guide to Noise Control on Construction, Maintenance and Demolition Sites
- Environmental Noise Management – Assessing Vibration: A Technical Guide
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates in to one Act all the controls necessary to regulate pollution and reduce degradation

of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.

## 2. Strategic Approach

### 2.1 Noise

#### 2.1.1 Existing Environment

The existing noise environment has been assessed and discussed in the project EIS. These results are outlined below.

The Port Botany area is currently subject to noise emissions from existing port operations, road traffic (particularly Foreshore Road), rail traffic from the Botany Freight Rail Line, Sydney Airport and other industrial activities. Noise from existing terminals at Port Botany are a result of activities such as transporting and loading containers onto trucks, trains and ships.

#### 2.1.2 Background Noise Levels

Ambient noise levels have been assessed and outlined in the project EIS. These are shown below and used to set the project construction noise goals.

The RBL has been determined within the project EIS. The RBL values for each of the time periods (Day/Evening/Night) as given by the EIS are provided below.

Location	Rating Background LA90 Levels (DBA)		
	Day (7:00 am – 6:00 pm)	Evening (6:00 pm – 10:00 pm)	Night (10:00 pm – 7:00 am)
Location 1 - Chelmsford Avenue	49	45	36
Location 2 - Dent Street	47	43	36
Location 3 - Jennings Street	40	39	40
Location 4- North of Golf Course	57	50	43
Location 5- Australia Avenue	42	40	42
Location 6- Military Road	46	46	45
Location 7- Beauchamp Road	50	43	42
Location 8- Botany Road	56	45	37
Location 9- Denison Street	52	50	47

RBL values

#### 2.1.3 Interim Construction Noise Guideline

The recommended standard construction hours taken from the Interim Construction Noise Guideline (2009, DECCW) are given below.

Work type	Recommended standard hours of work*
Normal construction	Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays

\* The relevant authority (consent, determining or regulatory) may impose more or less stringent construction hours.

#### 2.1.4 Approved Construction Hours



The approved construction hours, as per MCoA B2.19, for works that would generate an audible noise at any residential premises are given below;

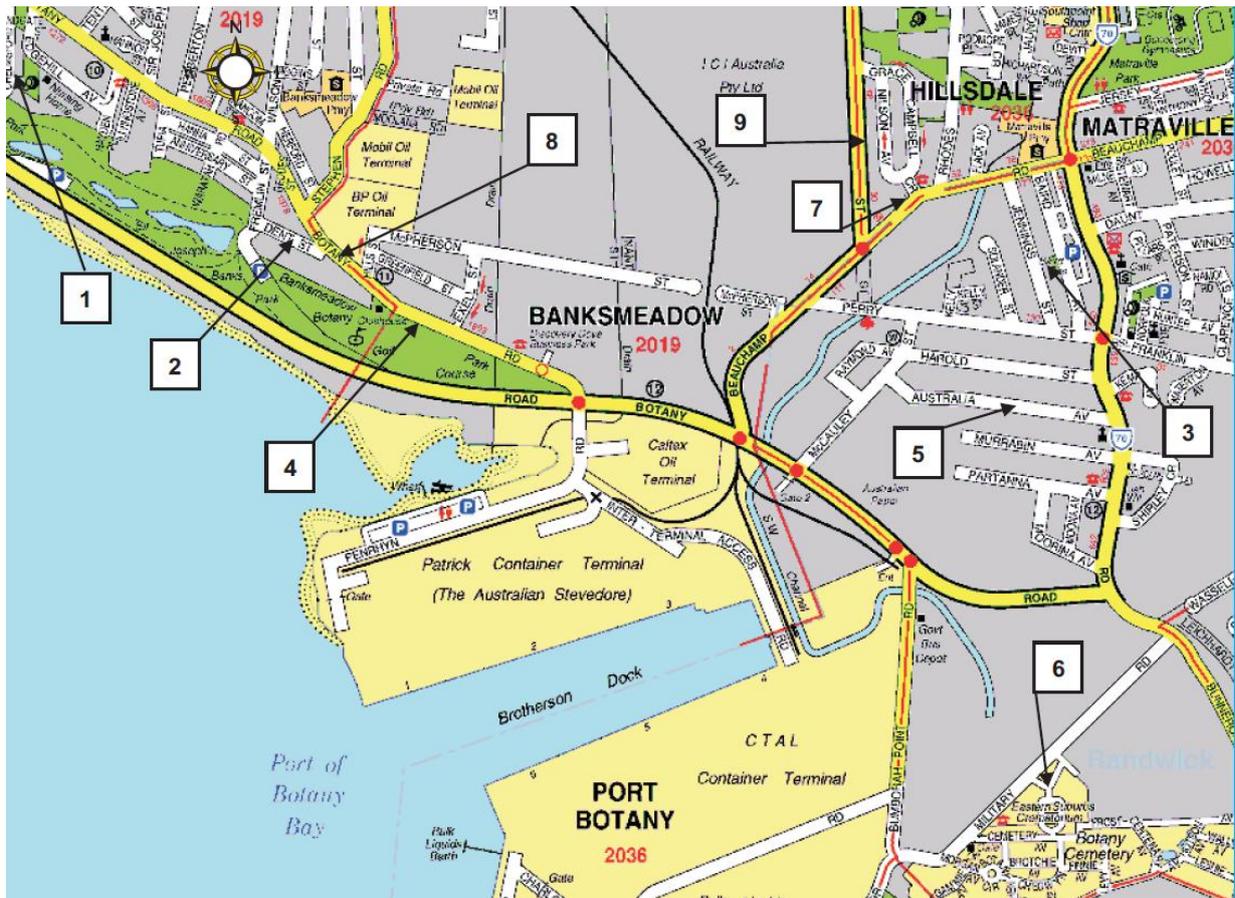
- (a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;
- (b) 8:00 am to 1:00 pm on Saturdays; and
- (c) at no time on Sundays or public holidays.

Audible noise is defined as “noise that can be heard at the receiver”. These conditions do not apply in the event of a direction from police or other relevant authority for safety or emergency reasons. Note: ‘safety or emergency reasons’ refers to emergency works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.

The measured ambient LAeq noise levels are provided below.

Location	Ambient LAeq Levels (DBA)		
	Daytime (7:00 am – 6:00 pm)	Evening (6:00 pm – 10:00 pm)	Night time (10:00 pm – 7:00 am)
Location 1 - Chelmsford Avenue	57	55	51
Location 2 - Dent Street	61	58	57
Location 3 - Jennings Street	53	48	51
Location 4- North of Golf Course	63	60	58
Location 5- Australia Avenue	59	53	49
Location 6- Military Road	65	57	58
Location 7- Beauchamp Road	65	62	59
Location 8- Botany Road	70	65	64
Location 9- Denison Street	69	65	62

Ambient LAeq noise levels



Ambient noise monitoring locations from the EIS

## 2.2 Noise Assessment Criteria

The Interim Construction Noise Guideline (2009, DECCW) sets out management levels for noise at residences and how they are to be applied. This approach is outlined below.

Time of day	Management level LAeq (15 min) *	How to apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. <ul style="list-style-type: none"> <li>Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level.</li> <li>The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.</li> </ul>
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. <ul style="list-style-type: none"> <li>Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account:               <ol style="list-style-type: none"> <li>times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences)</li> <li>if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.</li> </ol> </li> </ul>
Outside recommended standard hours	Noise affected RBL + 5 dB	<ul style="list-style-type: none"> <li>A strong justification would typically be required for works outside the recommended standard hours.</li> <li>The proponent should apply all feasible and reasonable work practices to meet the noise affected level.</li> <li>Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.</li> <li>For guidance on negotiating agreements see section 7.2.2.</li> </ul>

\* Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Criteria for the SPBT3 project are shown below.

Location	LAeq Construction Noise Criteria (DBA)		
	Daytime (7:00 am – 6:00 pm)	Evening (6:00 pm – 10:00 pm)	Night time (10:00 pm – 7:00 am)
Location 1 - Chelmsford Avenue	59	55	46
Location 2 - Dent Street	57	53	46
Location 3 - Jennings Street	50	49	50
Location 4- North of Golf Course	67	60	53



Location	LAeq Construction Noise Criteria (DBA)		
Location 5- Australia Avenue	52	50	52
Location 6- Military Road	56	56	55

The noise data collected as part of the EIS has been done so in accordance with the NSW Industrial Noise Policy (INP). The INP provides guidance with the collection of noise data and processing and is the most appropriate policy document currently used in NSW. As such the collected data has been processed in accordance with the INP to derive the Rating Background Level (RBL) which can be used to develop various criteria. Based on this, revised criteria can be developed such as those required by the Interim Construction Noise Guideline.

SICTL and the relevant contractors will seek the Director-General's approval to conduct construction activities audible at residential premises outside the hours specified above on a case by case basis. In seeking the Director-General's approval, the Project will demonstrate a need for activities to be conducted during varied hours and how local acoustic amenity will be protected, as well as detail how the EPA's requirements with respect to the variation of hours have been addressed.

During the evening and night-time periods, construction activities will be undertaken such that noise from those activities does not exceed the Rating Background Level by more than 5 dB(A) at the nearest sensitive receptor when expressed as LA10(15 minute). This condition applies under acoustically neutral meteorological conditions and for winds considered to be a feature of the area.

### 2.3 Vibration Assessment Criteria

Vibration standards are used to protect buildings against damage and to protect human comfort within buildings. The human comfort limits are the more stringent limits.

British Standard BS6472:1992 sets the following vibration limits for human comfort (above 8 Hz):

- 0.28 mm/s peak velocity within residences during day time; and
- 0.56 mm/s peak velocity within offices during day time.

In regard to potential building damage, the German Standard DIN4150 suggests a limit of 10 mm/s peak particle velocity (ppv) within any normal building and the British Standard BS7385: Part 2 - 1993 sets a limit within buildings which depends upon the vibration frequency and varies from 7.5 mm/s ppv at 4 Hz to 25 mm/s ppv at 40 Hz and above. Given that the bulk of the vibration energy from construction of the new terminal would fall in the range 10-100 Hz, the EIS adopts an overall vibration limit to protect against building damage of 10 mm/s ppv.

DIN4150 also sets a vibration limit of 3 mm/s (ppv) at the foundation of heritage buildings and sensitive structures.

### 2.4 Noise Impact

#### 2.4.1 Activity Specific Risks

Activity	Risks
• Supply and installation of Automated Stacking Cranes (ASC) Cranes	• Daytime noise from unloading and installing ASCs to the site
• Supply and installation of Quay Cranes (QC) Cranes	• Daytime noise from unloading and installing QCs to the site
• Supply and installation of communication infrastructure	• Daytime noise from associated works
• Delivery and fabrication of shuttle	• Daytime noise from fabrication

Activity	Risks
carriers	

### 2.4.2 Construction

Construction works will be monitored in accordance with the Interim Construction Noise Guideline, as discussed in section 2.2 above.

Noise impacts from general construction activities may have the potential to impact residents. Reasonable and feasible mitigation measures will be implemented to reach these targets. Mitigation measures are outlined in section 2.7 below.

Predicted noise levels for the construction of the terminal facilities have been undertaken in the project EIS. These details are reproduced below.

Location	Predicted Construction LAeq for construction of terminal facilities	LAeq Construction Noise Criteria		
		Daytime (7 am-6 pm)	Evening (6 pm-10 pm)	Night Time (10 pm-7 am)
Chelmsford Ave	48	59	55	46
Dent St	55	57	53	46
Livingston Ave	52	57	53	46
Tupa St	53	57	53	46
Waratah Rd	53	57	53	46
Jennings St	29	50	49	50
North of Golf Course	54	67	50	53
Australia Ave	28	52	50	55

Predicted noise levels for the construction of the terminal facilities

## 2.5 Vibration Impact

Ground-borne vibration levels generated by the typical construction activities covered by this plan are unlikely to be of concern to the nearest structures or residents.

In respect of potential damage, at the closest building the most stringent limit of 3 mm/s for heritage buildings and sensitive structures would be complied with. The vibration comfort criteria would also be expected to be complied with.

## 2.6 Out of Hours Works

For construction activities that require to be undertaken outside of the approved construction hours for the project, the following process applies;

- Identify work activity requiring work out of approved hours
- Assess alternate options that may allow construction within approved hours



- If no alternate options are available, an assessment on site is to be made whether the activity minor and is likely to be inaudible at residential premises. If not considered to be audible, works may continue out of the approved hours for audible works.
- If works are considered to be audible at residential premises, the activity is to be assessed for noise (and vibration where required) impacts on the nearest residential receivers via a Construction Noise and Vibration Impact Statement (CNVIS) prepared by a suitably qualified acoustic consultant, taking into account all proposed noise and vibration mitigation measures. General activities such as security operations, and general site maintenance that are not audible at residential premises will not require a CNVIS.
- If the CNVIS shows that the construction activity is audible at residential premises outside the approved construction hours, approval to undertake these works will be sought from the Department of Planning and Infrastructure.
- In seeking the Department of Planning and Infrastructure approval, SICTL and the appropriate contractor will demonstrate a need for activities to be conducted during the varied hours and how local acoustic amenity will be protected, as well as details of how the EPA's requirements with respect to the variation of hours have been addressed.
- Works will not commence during varied hours until approval is granted.
- Attended noise monitoring will be undertaken for commencement of all works undertaken out of standard hours to ensure they comply with the conditions granted by the Department of Planning and Infrastructure and on a monthly basis thereon or for any change in activity (within the approval). Noise monitoring will be undertaken by suitably qualified personnel, including professionally trained and experienced environmental staff and noise consultants where deemed necessary.
- All reasonable and feasible mitigation measures are to be implemented in both standard approved and varied hours of works for the duration of the project.
- Individual contractors/clients are to arrange for appropriate approvals and noise monitoring for works undertaken outside of the approved construction hours as per the project determination.

## 2.7 Mitigation Measures

Mitigation measure for the management of construction noise and vibration are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
<p>Construction activities associated with the project that would generate an audible noise at any residential premises are restricted to the following hours:</p> <p>a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;</p> <p>b) 8:00 am to 1:00 pm on Saturdays; and</p> <p>c) at no time on Sundays or public holidays.</p> <p>This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons.</p> <p>Note: 'safety or emergency reasons' refers to emergency works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.</p>	Contractor	MCoA B2.19	Throughout construction
<p>Director-General's approval is required to conduct construction activities audible at residential premises outside the hours specified under condition B2.19 on a case-by- case basis.</p>	Contractor SICTL	MCoA B2.19A	Throughout construction
<p>Arrange work sites to avoid or minimise truck reversing</p>	Contractor	MCoA B2.20	Throughout

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Mitigation Measures	Responsibility	Source of Requirement	Timing
movements, and ensure vehicles enter and exit work sites in a forward direction.		EIS ch 22.5.1	construction
Ensure that where options exist, use least noisy construction methods and equipment.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Use silenced generators and compressors.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Where possible, position and orientate noisy plant and equipment away from sensitive receivers and wildlife in Penrhyn Estuary. Work compounds, offices, parking areas and stockpile areas are all located away from noise sensitive receivers.	Contractor	MCoA B2.20	Throughout construction
Position noisy plant and equipment as far apart as is practical from each other.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Install all noise controls identified in this plan as early as is practical prior to the relevant stage of construction.	Contractor	MCoA B2.25	Throughout construction
Prevent vehicles and plant queuing and idling outside the site prior to the morning start time.	Contractor	MCoA B2.20	Throughout construction
Prevent vehicles and plant idling when not in use.	Contractor	MCoA B2.20	Throughout construction
Ensure that equipment is operated in the correct manner including repair of defective silencing equipment, tightening of rattling components, and repair of leakages in compressed air lines.	Contractor	Best Practice	Throughout construction
Blasting is not permitted on the SPBT3 Project.	Contractor	MCoA B2.26	Throughout construction
Notify residents of construction activities likely to affect amenity due to noise or vibration 5 days in advance and no greater than 14 days in advance.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Construction Methodologies will include the relevant control measures from this CNVMP, in particular issues relating to the need for early consultation with residents likely to be affected by the works, the incorporation of the quietest feasible equipment to complete the works, the opportunity to include additional noise attenuation measures.	Contractor	MCoA B2.20	Throughout construction
Where practical, noise levels from diesel powered machinery would be reduced by fitting noise control kits to machinery.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Where practical, excessively noisy processes will be substituted with alternative processes.	Contractor	MCoA B2.20	Throughout construction
Plant and equipment on site will be fitted with non-tonal reversing alarms.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
The operation of high noise generating plant simultaneously close together or adjacent to sensitive receptors will be avoided where possible.	Contractor	MCoA B2.20	Throughout construction
High efficiency mufflers will be fitted to plant and equipment where possible to minimise the generation of noise. All plant will be maintained in accordance with the manufacturer's requirements.	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction



Mitigation Measures	Responsibility	Source of Requirement	Timing
Undertaking loading and unloading activities away from sensitive and wildlife in Penrhyn Estuary areas and during designated construction hours.	Contractor	MCoA B2.20	Throughout construction
Provision of training to ensure that construction workers are aware of the noise created during construction and are appropriately trained to minimise noise where possible	Contractor	MCoA B2.20 EIS ch 22.5.1	Throughout construction
Site based vehicles to use non-tonal reverse alarms to reduce impact on surrounding residents	Contractor	MCoA B2.24	Throughout construction
Ground vibration from construction activities is not expected to exceed the levels outlined above when measured at building foundations. Where structural vibration criteria are exceeded, the offending process will be ceased and substitute equipment or methods shall be evaluated.	Contractor	EIS ch 22	Throughout construction

## 2.8 Monitoring

A noise monitoring program is to be carried out for the duration of the works to assess the construction noise impacts at the relevant receivers. As multiple contractors will be working on site as part of the Port Botany Expansion project there will be a coordinated approach to the monitoring of construction noise. SICTL, its project representatives and other relevant parties will coordinate this approach. Compliance monitoring will be combined on a monthly basis as outlined below. Results will be distributed among the relevant contractors. Any exceedances to project specific targets will result in investigation by all relevant contractors on site and their respective client to determine the likely source of the exceedance and develop a plan to rectify any issues. Any such rectification will be made available to other contractors to avoid repeat issues.

Attended noise monitoring is to be conducted by a suitability qualified person. The measurements shall be made over 15 minute periods at the locations outlined in section 2.2 of this plan, recording noise samples using the “fast” response of the sound level meter.

Ongoing attended noise monitoring will be conducted throughout the project on a monthly basis. It shall be conducted during normal work hours and at such a time to be representative of generating work activities. Works being undertaken outside of standard construction times will require attended monitoring as per conditions given by Department of Planning & Infrastructure.

Any vibration monitoring required for the works will be the responsibility of the Contractor. If monitoring is required, it may include a combination of attended and unattended vibration monitoring at the nearest potentially affected locations during vibration generating activities.

Individual contractors/clients are to arrange for appropriate approvals and noise monitoring for works undertaken outside of the approved construction hours as per the project determination.

Monitoring requirements are outlined below.

Monitoring Item	Frequency	Standards	Responsibility
Construction day & night attended noise monitoring at locations shown in section 2.2 of this plan	Monthly	LA10(15 min) from construction related works aim not to exceed RBL plus 5dB(A) at sensitive receivers AS 1055	SICTL or relevant port Leasee Contractor
If a noise or vibration-related complaint is received, investigate within one hour. If	If requested by a complainant, or at the request of OEH	Noise: LA10(15 min) from construction related works not to exceed RBL plus 5dB(A) at	SICTL or relevant port Leasee



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Monitoring Item	Frequency	Standards	Responsibility
requested, undertake attended monitoring at complainant's property		sensitive receivers. AS 1055 Vibration: DIN 4150	Contractor

## 2.9 Incident Planning and Response

Incident Type	Response	Responsibility
Noise levels from construction activities exceed noise goals and criteria	Noisy activities would cease or reduce. Remedial measures would be implemented prior to recommencing work, and monitoring undertaken to verify noise levels. All plant and machinery will be checked and verified for noise levels and appropriate exhaust/fittings/noise attenuators. Works methodologies will be reviewed and amended if required.	Contractor
Community complaint relating to noise or vibration	Any noise complaints received from the community would be recorded and investigated within one hour. Attended noise or vibration monitoring would be offered if the complaint is not immediately resolved. Noise or vibration intensive activities would cease or reduce. Remedial measures would be implemented prior to recommencing work, and monitoring undertaken to verify noise levels. All plant and machinery will be checked and verified for noise levels and appropriate exhaust/fittings/noise attenuators. Works methodologies will be reviewed and amended if required.	SICTL or relevant port Leasee Contractor
Vibration causing structural damage	Activities causing vibration would cease. Any occupants of buildings may be evacuated with due consideration to safety, and the area secured to prevent unauthorised access. A structural assessment would be undertaken and the results compared with any previous condition survey; and if any damage is associated with construction, rectification work would be implemented or compensation agreed.	Contractor

## 3. Community Notifications

The community notification process is outlined in the FCEMP. Regular notifications will be made available on the project website and distributed to the project Community Consultative Committee.

### 3.1 Community Notifications Procedure

Community members identified as being impacted by Project works will be issued with a written notification two weeks prior to the commencement of works. The notification will be distributed via letterbox drop and include residents/businesses identified as being impacted. The CCC will be given construction notifications and updates monthly.

Where appropriate (for example, if the construction programme necessitates significant changes to established mitigation strategies), the notification will include 'door knocking' residents to advise them of the Project impacts and provide face-to-face information regarding the works.

This may take place at the time of the letterbox drop or one week prior to the commencement of works. Where residents cannot be contacted in this way, a calling card will be left with the Project's 1800 contact information.

Notifications will include information regarding:

- Time of works
- Date of works (duration)
- Specific information regarding likely impacts - for example, traffic, visual amenity, noise and dust
- Mitigation strategies (where relevant)
- Project 1800 number and enquiries email address

All notifications will be recorded in the Project communications database.

This Framework Construction Environmental Management Plan will be made publicly available via the project website once approved by the Director General.

### 3.2 Enquiries and Complaint Response

Community members and other stakeholders will be able to contact the Project team using a number of methods including email, 1800 project number, letter and verbal / face-to-face inquiries. The project contacts are given below.

Contact	Details
General Enquiries	Noel Storan
Complaints Line	1800 177 722
E-mail	noel.storan@erpm.com.au
Media Enquiries	Please contact Manager Public Affairs Hutchison Ports Australia on (02) 8268 8000
Website	<a href="http://www.hutchisonports.com.au/port-botany-expansion">http://www.hutchisonports.com.au/port-botany-expansion</a>

Project personnel will respond immediately at all times to such inquiries and log all relevant information on the Project communications database (Consultation Manager). Where an immediate response is not possible, (due to the need to source relevant information from personnel within the Project team for example), project personnel will record the inquirer's details and advise them that a response will be provided within 24 hours (or earlier if possible).

Where a written response is required, the relevant contractor will provide SICTL with a draft response. It is anticipated that SICTL would provide approval for the response within 24 hours or as agreed with the resident/community member. Written responses to community complaints will be provided within 7 days.

Project personnel will ensure that the inquirer is satisfied with the response provided and close the action on the Project communications database. If the inquirer is not satisfied with the response, project personnel should further attempt to resolve the inquiry. If a satisfactory resolution is not reached, project personnel should refer the inquiry to the Site Supervisor and advise the SICTL representative.

Information to be recorded on the Project communications should include:

- Date and time of contact / inquiry

- Name of inquirer (if agreed by the inquirer)
- Inquirer's contact details (if agreed by the inquirer)
- Nature of inquiry (for example, information request)
- The means by which the comment, inquiry or complaint was made (telephone, fax, mail, email or in person)
- Proposed follow up action/s (for example immediate verbal response, letter, other). This may require one or more actions
- If no action is taken by the project team in relation to the inquiry, the reason(s) for this are to be documented
- Content of response
- Status of the inquiry (open / closed).

The project will provide quarterly reports to the DOP and EPA in conjunction with Sydney Ports Corporation, where relevant, outlining details of complaints received.

Management system non-conformances and recurring environmental incidents will be handled in accordance with the Environmental Rules in Non-conformances, Incident Investigation and Complaints Management.

Corrective and preventive actions may include:

- Site remediation and rehabilitation
- Increased site inspections and monitoring
- Increase environmental awareness (re-training)
- Review and improve existing environmental controls and job safety analyses/ work method statements.

#### **4. Non Compliance and Corrective Action**

Where the noise and/or vibration monitoring identifies non-compliance with the relevant criteria, the predictions, or where complaints are received in relation to the site activities, the relevant contractor will implement investigative and corrective action.

The corrective action will involve supplementary monitoring to identify the source of the non-compliance, and/or may involve modification of construction techniques or programme to avoid any recurrence or minimise its adverse effects. Corrective actions, revised limits or negotiations will be undertaken in consultation with SICTL's representative.

Where through monitoring, inspection, audit or other measure, a non-conformance is identified with the administrative or management measures outlined in this CNVMP, a Non-conformance Report shall be raised.

SICTL's representative is be advised of all non-conformances to this CNVMP.

#### **5. Results and Records**

Results from noise and vibration monitoring will be analysed for compliance with the targets outlined within this noise and vibration management plan. Where the targets are exceeded, SICTL's representative will be advised and consulted and will in turn advise Sydney Ports Corporation of any exceedence.





# Sydney Port Botany Terminal 3 Project

## SICTL Waste Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
FCEMP	Framework Construction Environmental Management Plan
EPA	Environmental Protection Agency
CWMP	Construction Waste Management Plan
EIS	Environmental Impact Statement
MCoA	Ministers Conditions of Approval

### Distribution

This Construction Waste Management Plan (CWMP) document forms part of the project's CEMP as an Appendix.

### Issue, Revision and Re-issue

Revisions of this CWMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

### Revision History

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	For Submission	NB	KM



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## 1. Introduction

This Construction Waste Management Plan (CWMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for a Waste Management Plan as outlined in the conditions of approval.

The key components of the Sydney Port Botany Terminal 3 include:

- Ground treatment and consolidation measures
- Drainage, utilities, services
- Container yard
- HV & LV electrical
- Buildings
- Rail yard.

### 1.1 Objective

The objective of this CWMP is to ensure that all risks associated with construction waste management are considered and managed effectively during construction to avoid any environmental incident.

This CWMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project
- Summarise potential impacts on the environment from the proposed works
- Document environmental procedures to control potential environmental impacts.

### 1.2 Targets

The following targets have been identified in terms of soil and water management for the project:

- Separation of recyclable materials such as steel, aluminium, paper and plastics
- All residual waste products are sent to appropriately licensed destinations for either recycling, reuse, treatment or disposal
- No contamination incident occurring as a result of waste storage, transport or disposal
- Regulated wastes stored, transported, tracked and disposed of as per regulated waste legislation
- No construction waste/litter to enter into stormwater system and or Botany Bay.
- Documentation of the intended management of wastes e.g. avoid, reduce, reuse, recycle or dispose to ensure waste is managed in accordance with accepted standards and appropriately implemented waste control measures

### 1.3 Statutory provisions and guidelines

The following statutory provisions and guidelines are applicable to the Project, with regards to water quality:

- Project Planning Approval and associated MCoA's



- Waste Avoidance and Resource Recovery Act 2001
- EPA Act Part 15
- Protection of the Environment Operations Act 1997
- EPA's Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes (1999)
- Botany Bay DCP 29 and the National Minimisation and Recycling Strategy
- DEC'S Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

#### 1.4 Ministers Conditions of Approval

MCoA's relevant to soil and water quality management are outlined below.

MCoA Reference	MCoA Detail
B2.33	<p>Prior to the commencement of construction, the Applicant is required to prepare a Construction Waste Management Plan in consultation with Botany Council and DECC. The Plan must provide details of proposed waste management measures to minimise production and impact of wastes generated at the site including but not limited to:</p> <ul style="list-style-type: none"> <li>• Identification of the type and quantities of waste that would be generated, a description of how the waste would be handled, stored, re-used, recycled, and if necessary, appropriately treated;</li> <li>• Identification of a designated area for the storage and collection of waste and recyclable materials to be provided on the site;</li> <li>• Description of how the effectiveness of these measures would be monitored and, if non-compliance detected, actions to be required; and</li> <li>• Measures to involve and encourage employees and contractors to minimise domestic waste production on site and to reuse/recycle where possible.</li> </ul>
B2.34	Management of waste must be in accordance with the environment protection licence issued by EPA under the Protection of the Environment Operations Act 1997.
B2.35	All wastes and material generated on the site during construction and operation shall be classified in accordance with the DEC's Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes prior to transporting the waste off site and be disposed of to a facility that may lawfully accept the waste.
B2.36	<p>Except as expressly permitted by a licence issued by the EPA under the Protection of the Environment Operations Act 1997, only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored at the premises:</p> <p>waste oil/water, hydrocarbons/water mixtures or emulsions; and grease trap waste</p>

## 2. References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- Waste Classification Guidelines DECC April 2008
- NSW Government's Waste Reduction and Purchasing Policy (WRAPP)
- Botany Bay Development Control Plan 29 – Waste Minimisation and Management Guidelines
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates into one Act all of the controls necessary to regulate pollution and reduce

degradation of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act.

### **3. Legislation**

Waste legislation and regulatory framework is outlined below.

#### **3.1 Waste Avoidance and Resource Recovery Act 2001**

The Waste Avoidance and Resource Recovery (WARR) Act 2001 establishes the waste hierarchy to ensure that resource management options are considered against the following priorities:

- Avoidance – actions to reduce the amount of waste generated and undertaking activities
- Resource Recovery – which includes reuse, reprocessing, recycling and energy recovery, consistent with the most efficient use of the recovered resources and
- Disposal – an “end-of-pipe” option that must be carefully undertaken to minimise any negative environmental outcomes.

The NSW Government’s priority areas and actions for waste avoidance and resource recovery is outlined in the Waste Strategy 2007 (an update of the Waste Strategy 2003).

The four identified “key target areas” in the Strategy are:

- Preventing and avoiding waste
- Increasing recovery and use of secondary materials
- Reducing toxicity in products and materials
- Reducing litter and illegal dumping.

#### **3.2 Protection of the Environment Operations Act 1997**

All material that is imported to or exported from the SPBT3 project will be undertaken in strict accordance with the requirements of the POEO Act 1997 including:

- Ensuring waste is classified appropriately and in accordance with relevant guidelines
- Waste materials are disposed of to appropriately licensed facilities
- Other materials are removed to facilities lawfully able to accept such materials.

#### **3.3 Protection of the Environment Operations (Waste) Regulation 2005**

The proposed works shall be undertaken in accordance with this regulation, as modified in April 2008.

#### **3.4 Waste Classification Guidelines, Part 1: Classifying Waste (DECC 2008)**

All wastes generated and proposed to be disposed off-site shall be assessed, classified and managed in accordance with this guideline.

#### **3.5 NSW Waste Reduction and Purchasing Policy (WRAPP)**

The NSW Waste Reduction and Purchasing Policy (WRAPP) commenced in September 1997.

The policy requires all state government agencies to develop and implement a WRAPP Plan to reduce waste and increase the purchase of recycled content materials in four areas:

- paper products
- office consumables (eg. toner cartridges)

- vegetation and landscaping material
- construction and demolition material.

As a state owned agency Sydney Ports may require waste reporting in line with NSW Waste Reduction and Purchasing Policy (WRAPP). The project will input all required information to fulfil these requirements throughout construction.

## 4. Strategic Approach

### 4.1 Waste Classification

Waste is generally classified on the basis of its potential harm to the environment. A summary of the classification requirements for the SPBT3 project is provided below. Further details on the classification of waste can be found in the OEH's Waste Classification Guidelines.

Waste is defined in the Protection of the Environment Operations Act 1997 as:

- Any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or
- Any discarded, rejected, unwanted, surplus or abandoned substance, or
- Any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or
- Any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or
- Any substance prescribed by the regulations to be waste.

Note: A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered.

Waste Classification	Description
Special Waste	<p>Special waste includes clinical and related waste, asbestos waste and waste tyres.</p> <p>Clinical and Related Waste includes:</p> <ul style="list-style-type: none"> <li>• Clinical Waste</li> <li>• Cytotoxic Waste</li> <li>• Pharmaceutical, drug or medicine waste</li> <li>• Sharps wastes</li> <li>• Asbestos waste means any material or material that contains the fibrous form of mineral silicates.</li> <li>• Waste Tyres is any used, rejected or unwanted tyres including shredded or tyre pieces.</li> </ul>
Liquid Waste	<p>Liquid waste means any waste that:</p> <ul style="list-style-type: none"> <li>• Has an angle of repose of less than 5 degrees, or</li> <li>• Becomes free-flowing at or below 60 degrees Celsius or when it is transported, or</li> <li>• Is not generally capable of being picked up by a spade or shovel.</li> </ul>
General Solid Waste (putrescible)	<p>Household waste that contains putrescible organics waste from litter bins collected by local councils:</p> <ul style="list-style-type: none"> <li>• Disposable nappies, incontinence pads or sanitary napkins</li> <li>• Food waste from manufacture, sale, preparation or consumption</li> </ul>
General Solid Waste	<ul style="list-style-type: none"> <li>• Glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal</li> </ul>

Waste Classification	Description
(non-putrescible)	<ul style="list-style-type: none"> <li>Paper or cardboard</li> <li>Waste collected for or by local councils from street sweeping</li> <li>Grit, sediment, litter and gross pollutants from stormwater treatment devices, stormwater management systems that has no free liquids</li> <li>Garden &amp; wood waste</li> <li>Containers previously containing dangerous goods, as defined under the Australian Code for the Transport of Dangerous Goods by Road and Rail, where residues have been appropriately removed by washing or vacuuming drained</li> <li>Oil filters (mechanically crushed), rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and have no free liquids</li> <li>Drained motor oil containers that do not contain free liquids</li> <li>Synthetic fibre waste from fibreglass, polyesters and other plastics and is packaged securely to prevent dust emissions, that is confirmed as not being asbestos waste</li> <li>Virgin excavated natural material</li> <li>Building and demolition waste</li> <li>Asphalt waste, including asphalt from road construction and waterproofing works</li> <li>Cured concrete waste from batch plants</li> <li>Fully cured and set thermosetting polymers and fibre-reinforcing resins, glues, paints, coatings and inks</li> </ul>
Hazardous Waste	<ul style="list-style-type: none"> <li>Waste with pH <math>\leq</math> 2.0 or <math>\geq</math> pH 12.5</li> <li>Containers that have not been cleaned and that contained dangerous goods as described in the Australian Code for the Transport of Dangerous Goods by Road and Rail</li> <li>Coal tar or coal tar pitch waste, which is the tarry residue from the heating, processing or burning of coal or coke, being materials comprising of more than 1% (by weight) of coal tar or coal tar pitch</li> <li>Waste lead-acid or nickel-cadmium batteries, being waste generated or separately collected by activities carried out for business, other commercial or community services purposes</li> <li>Lead paint waste other than solely from residential premises or educational or child care institutions</li> </ul>

## 4.2 Waste Management

Waste management for the project must be undertaken in accordance with the requirements identified above such that waste must be assessed, classified and managed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (DECC, April 2008) (Waste Guidelines) prior to dispatching the waste off site.

The following section includes Best Management Practices associated with waste avoidance and management for the Project and is based on the Waste Hierarchy of Control:

- Waste avoidance and waste reduction
- Waste reuse
- Waste recycling and reclamation
- Waste disposal.

### 4.2.1 Waste Sources

The following information in this section outlines the wastes anticipated and proposed waste management options to address the waste generated. All waste will be removed progressively with the minimum amount feasible stored on site.



Waste not removed immediately will be stored in designated areas in proprietary storage facilities until it is reused or removed.

Waste will be classified according to the OEH Waste Classification Guidelines (2008).

Waste Category	Waste Generated	Classification
Waste from on-site maintenance and servicing of plant and equipment – note minor servicing only. Major servicing to be completed off site. (non-liquid)	<ul style="list-style-type: none"> <li>• Drained and crushed oil filters and grease tubes</li> <li>• Used and defective parts</li> <li>• Oil soaked rags</li> <li>• Used oil absorbent materials</li> <li>• Tyres</li> </ul>	General Solid
Waste from crib sheds and office areas	<ul style="list-style-type: none"> <li>• Food scraps, waste wrappers, waste paper towels</li> </ul>	General Solid Putrescible
Office and packaging waste (non-liquid)	<ul style="list-style-type: none"> <li>• Is not contaminated or mixed with other waste; eg Paper, cardboard, glass, plastic (no food scraps etc)</li> </ul>	General Solid
Waste from construction activities (non-liquid)	<ul style="list-style-type: none"> <li>• Waste is not contaminated or mixed with any other type of waste and does not contain asbestos</li> <li>• Concrete pour residues</li> <li>• Aggregates</li> <li>• Damaged and off cuts of PVC pipes</li> <li>• Rejected or defective precast concrete</li> <li>• Steel waste</li> <li>• Used Geotextile</li> <li>• Timber waste</li> </ul>	General Solid
Any waste that meets the criteria for assessment as dangerous goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail	<ul style="list-style-type: none"> <li>• Poisonous (toxic) substances and corrosive substances</li> <li>• Non sag epoxy mortar binder</li> <li>• Synthetic rubber based adhesive</li> <li>• Epoxy resins</li> <li>• Batteries</li> </ul>	Hazardous

#### 4.2.2 Separation

Various components of a waste stream shall be separated as indicated below:

- All general solid waste (putrescibles and non putrescible) generated shall be stored in a waste container to be located at the site compound and at other suitable locations within the site boundary
- Hazardous waste is to be kept separate at all times. If small amounts are mixed with other wastes, it renders the entire quantity of waste hazardous
- Recyclable material shall also be kept separate in a designated area for later disposal at the appropriate recycling facility

#### 4.2.3 Waste Minimisation and Recycling

The following strategies will be implemented on site to minimise the generation of waste:

- Using licensed disposal facilities
- Appropriate quantities of materials will be ordered to minimise wastage
- Waste steel shall be separated and disposed of into steel recycling bins provided on site
- Waste timber and formwork will be sent to a recycling facility

#### 4.2.4 Separation

Various components of a waste stream shall be kept separate as indicated below:

- All general solid waste (putrescibles and non putrescible) generated shall be stored in the waste container to be located at the site compound and at other suitable locations within the boundary
- Hazardous waste is to be kept separate at all times. Note that if small amounts are mixed with other wastes, it renders the entire quantity of waste hazardous
- Recyclable material such as ferrous and non-ferrous metals, timber, paper, cardboard, and comingled waste shall also be kept separate in a designated area for later disposal at the appropriate recycling facility.

#### 4.2.5 Storage/Handling

Hazardous waste shall be stored in the dedicated waste container in the site compound and removed as required by a licensed waste contractor to an approved waste facility.

Waste must not be stored or come in contact with any incompatible waste type.

Storage of waste oils and chemicals shall be in a purpose built secured bunded area. An emergency response spill kit shall be located adjacent to the bunded area.

All storage containers and locations for the various waste streams shall be clearly labelled to ensure that mixing of wastes is avoided.

It is also noted the only hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored on site:

- waste oil/water, hydrocarbons/water mixtures or emulsions; and
- grease trap waste.

### 4.3 Mitigation Measures

Measures for construction waste management for the construction phase of the project are outlined below.

Waste Management Measures	Responsibility	Source of Requirement	Timing
Implement measures and strategies in line with this plan	Contractor	MCoA B2.33	Throughout construction
Only the hazardous and/or industrial and/or Group A waste listed below may be generated and/or stored on site: <ul style="list-style-type: none"> <li>• waste oil/water, hydrocarbons/water mixtures or emulsions; and</li> <li>• grease trap waste.</li> </ul>	Contractor	MCoA B2.36	Throughout construction
Minimise construction waste that requires disposal by accurately calculating materials brought to the site and limiting materials packaging.	Contractor	EIS 34.4.1	Throughout construction
Excess construction materials which are suitable for reuse shall be returned to the supplier or stored for future use where possible. Construction wastes which are not suitable for reuse, but are able to be recycled would be temporarily stored onsite in dedicated and secure areas prior to recycling.	Contractor	EIS 34.4.1	Throughout construction
Recycling facilities would be provided to maximise recycling of waste materials such as plastic and glass bottles/containers, aluminium cans and paper/cardboard. Separate bins would be provided for food waste. All domestic waste would be collected on	Contractor	EIS 34.4.1	Throughout construction



Waste Management Measures	Responsibility	Source of Requirement	Timing
a regular basis and transported offsite for disposal to a licensed landfill or recycling facility as appropriate.			
Portable toilet facilities may be used during the construction period. These facilities would be emptied on a regular basis and the human wastes would be disposed of offsite in accordance with Council and NSW EPA requirements.	Contractor	EIS 34.4.1	Throughout construction
Waste oils and fluids from maintenance activities would be collected and stored and would either be reused on site or removed by a licensed waste contractor.	Contractor	EIS 37.2	Throughout construction
Adopt and promote the reduce, reuse, recycle dispose hierarchy	Contractor	NSW legislation	Throughout construction
Keep site free of litter and maintain good housekeeping at all times. Place any litter in the appropriate recycling or disposal receptacle.	Contractor	Best Practice	Throughout construction

## 5. Training

All employees and subcontractors will undergo a site specific induction that contains awareness training of the environmental controls to be implemented on this project.

It shall include the necessary awareness of waste management and the procedures to be followed for proper waste recycling and disposal on site.

Toolbox meetings will also be used to reinforce a positive attitude towards waste management.

## 6. Reporting

Contractors shall record the classification, volume and method of transport and disposal of all waste from site. Waste facility licence details shall be checked by the contractor.

On request, the following information in relation to the storage, treatment and disposal of waste is to be provided to the EPA.

- Amount and classification of waste transported
- Name and license number as required of transporter
- Date transported
- Name and location of the receiving waste facility
- Contractors must ensure that the waste is transported to an approved waste facility only
- The transporter must be informed of the type of waste that will be transported.

EPA must be informed of any suspected breach in the Act or Regulations in regards to transportation of waste.

### 6.1 Waste Tracking

The EPA has identified certain wastes that represent a significant risk to the human health and the environment. The transport and disposal of these wastes must be tracked and the records of movement provided to the EPA.

All waste streams will effectively tracked on the project through the waste register. The high risk wastes identified by the EPA must be tracked whether they are transported into, within or out of NSW.



The waste consignor, transporter and receiving facility all have obligations to ensure that the waste is properly tracked from its point of generation to its disposal location and to ensure that the required documentation is completed. There are specific offences in the POEO Act 1997 relating to waste.

Waste tracking as specified in the statutory requirements will include the following:

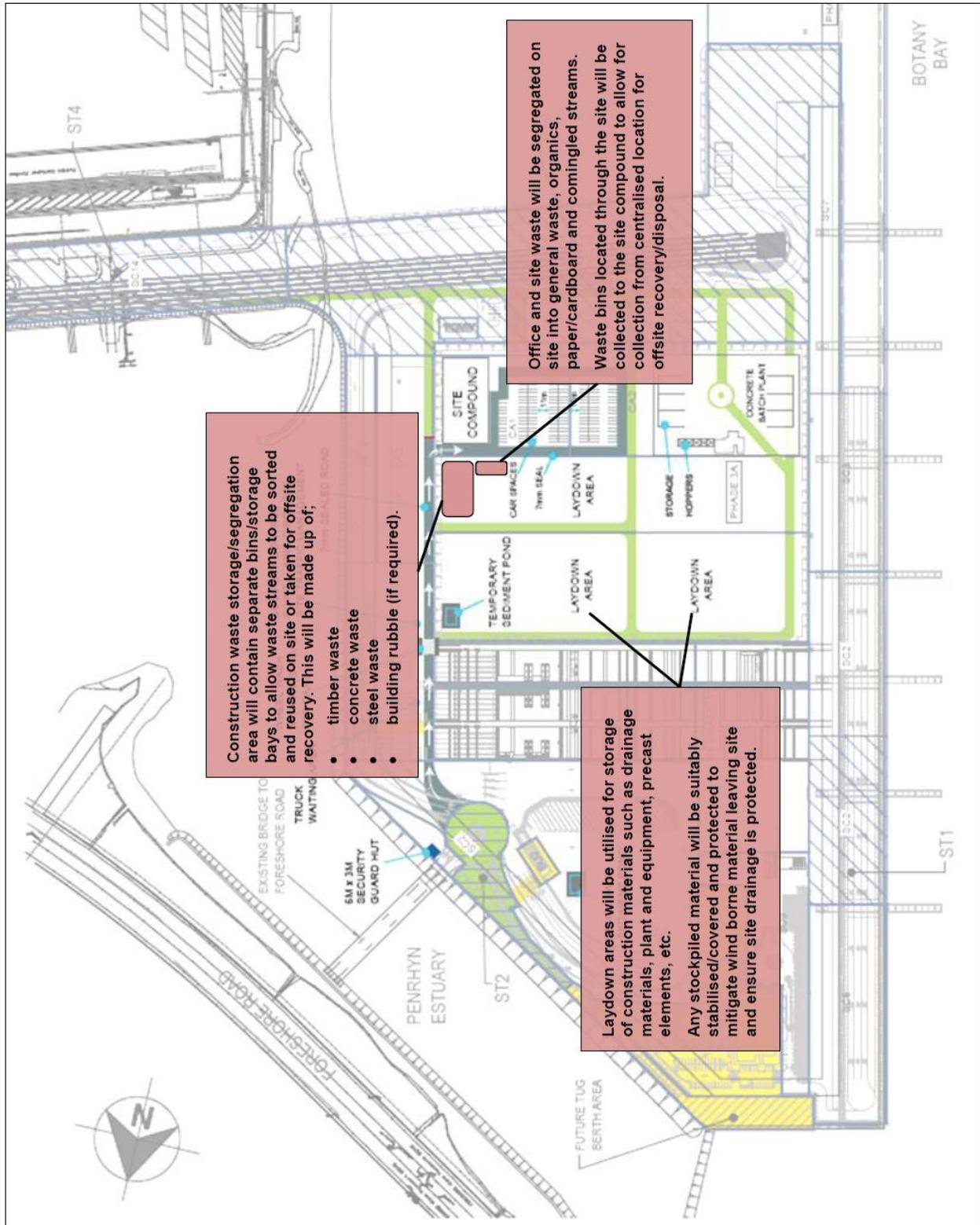
- Determine whether the waste to be transported requires tracking. A list of wastes that must be tracked can be found at <http://www.environment.nsw.gov.au/resources/owt/trackwaste07522.pdf>.
- For waste that requires tracking, prior approval to transport the waste in the form of a consignment authorisation must be obtained
- A Transport Certificate must accompany the waste while it is being transported
- The certificate must be completed when the waste has been received by the receiving facility
- Each organisation must retain the relevant records
- Any non-compliances must be reported to EPA
- The transport certificate and consignment details must be entered into the EPA's online system
- A single printed copy of the transport certificate must accompany the waste during transport
- Any waste transported to a place that is not a licensed waste facility must be accompanied by a completed section 143 Notice received from the landowner.

## **7. Records**

Records of waste disposal must be maintained. All material that leaves the site must be classified and its disposal location recorded.

## Appendix 1 Waste Storage

Waste will be segregated on site where practical and stored in bays on the project site. These areas are shown below.



# Sydney Port Botany Terminal 3 Project

## SICTL Emergency Response and Incident Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
CEMP	Construction Environmental Management Plan
ERIMP	Emergency Response and Incident Management Plan
EPA	Environmental Protection Agency
EIS	Environmental Impact Statement
MCoA	Ministers Conditions of Approval
NSWFB	New South Wales Fire Brigade
Assembly Area	A safe pre-designated open space where persons must assemble after evacuation
DEOCON	District Emergency Operations Controller
Emergency	Any unplanned and unwanted event generated internally or externally, which has caused or has potential to cause significant damage to personnel, the public, product, property, plant, equipment, the environment and / or the Business and requires an immediate response.
Emergency Response Team (ERT)	A structured organisation of staff that organises and supervises the response and safe movement of staff in an emergency.
Emergency Response Coordinator (ERC)	The person in charge of evacuating a site and heading the Emergency Response Team (ERT).
Communications Officer	The person responsible for all external & internal communications.
Area/ Floor Warden	Person nominated to head the Emergency Response Team for a specific work area in a multi-section site.
Roll Call Coordinator	The person responsible for collating the details of those on site.
Main Evacuation Point	A place of safety outside the building where persons evacuating the building or the part are expected to assemble under the building's Emergency Response Plan. This area is established to check that persons are accounted for, to brief persons evacuated on future action, and to prevent re-entry.
LEOCON	Local Emergency Operations Controller (Police Officer appointed by the Commissioner of Police as the Local Emergency Operations Controller for the local government area)
Evacuation	Evacuation is the movement of people from immediate danger to safety in a quick and safe manner.
Evacuation Route	The designated route to the final place of safety. To be maintained clear at all times.
First-Response Evacuation Instructions	Instructions and training in the method of operation and use of manually operated evacuation alarms and fire fighting equipment on the site.
PBEAR	Port Botany Emergency Alarm Radio



## Distribution

This Emergency Response and Incident Management Plan (ERIMP) document forms part of the project's CEMP as an Appendix.

## Issue, Revision and Re-issue

Revisions of this ERIMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	Stakeholder comments addressed	NB	KM

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## 1. Introduction

This Emergency Response and Incident Management Plan (ERIMP) has been developed to address the relevant construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project for the activities outlined below.

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers

Note; multiple contractors will be working under this ERIMP as part of the Terminal 3 construction project. There will be a coordinated approach to manage emergencies and incident response. SICTL, its project representatives and other relevant parties will coordinate this approach with the various contractors working on the site. Due to the close proximity, the adjacent Patricks construction site may also be consulted in emergency and incident management associated with the expansion project.

This Plan has been prepared to satisfy the requirements of Minister's Consent of Approval (MCoA) No. B2.43;

The Applicant shall develop an Emergency Response and Incident Management Plan in consultation with DEC, DOP, Council and the Community Consultative Committee. The Plan must be approved by the Director-General prior to the commencement of construction and shall detail:

- (a) terminal security and public safety issues;
- (b) effective spill containment and management;
- (c) effective fire fighting capabilities;
- (d) effective response to emergencies and critical incidents; and
- (e) a single set of emergency procedures, consistent with the existing Port Botany Emergency Plan, that can be scaled as appropriate for any incident or emergency.

Further to the above and in compliance with MCoA No. B4.1 the Director-General shall be notified of any incident with actual or potential significant off-site impacts on people of biophysical environment within 12 hours of the contractor or SICTL becoming aware of the incident. Full written detail of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

This Emergency Response and Incident Management Plan falls under the umbrella of the Port Botany Emergency Plan which is a sub-plan of the Sydney East District Disaster Plan (DISPLAN).

## 2. Incident Planning & Response

Minor incidents defined as non-critical, regarding both Safety and Environment are managed through the Project Safety Management System and Construction Environmental Management Plan and their related procedures.



This plan operates alongside other functional project plans such as the Port Botany Emergency Plan, Traffic Management Plan and Framework Construction Environmental Management Plan. A single set of emergency procedures for the project is included in Section 10 of this ERIMP.

Aviation related emergencies and incidents are to be managed by SACL in accordance with their emergency response plan.

Emergencies related to dangerous goods within the Patricks Terminal and other SPC controlled areas are to be managed through their respective emergency response and Incident Plans.

An emergency situation is an event that could present significant risk to the environment, personnel or the community.

Environmental incidents will be reported immediately to SICTL representative. All incidents will be investigated and the appropriate course of action will be taken to address the issues. Environmental incidents that harm or are likely to harm the environment will be reported to EPA immediately (131 555) in accordance with the Protection of the Environment Operations Act 1997 – Duty to Notify.

The Project Environmental Representative has the authority and independence to require reasonable actions to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such actions, to instruct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

Sydney Ports provides a 24-hour emergency response that can deal with incidents in Botany Bay. Any port related emergencies will be reported to Sydney Ports on (02) 9296 4000.

## 2.1 Objective

The objective of this ERIMP is to ensure incident planning and response procedures are managed effectively during construction and outlines the general procedures for initiating an emergency response that could occur as a result of project construction works or natural causes.

This plan will also provide guidance on the subsequent management and communications in response to, potential and actual emergencies which may occur on or impact the Sydney Port Botany Terminal 3 expansion.

During construction some specific areas may require alterations to the planned control measures due to changing circumstances. In these situations, the planned control measures will be reviewed, risk assessed and, where appropriate and practical, amended as necessary prior to commencing new or modified activities.

This ERIMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project

## 2.2 Legislation

The following legislation, regulation and standards were also considered in the development of this Plan:

- NSW State Emergency and Rescue Management Act, 1989, as amended
- NSW State Waters Marine Oil and Chemical Spill Contingency Plan
- Work Health & Safety Regulation 2011 NSW Part 3 Division 4

- AS 3745:2002 Emergency Control Organisation and procedures for buildings
- Protection of the Environment Operations Act NSW 1997
- Environmental Planning and Assessment Act NSW 1979
- Marine Pollution Act NSW 1987
- Fisheries Management Act 1994

### 2.3 Area covered by the plan

This Emergency Response and Incident Management Plan applies to the project area bounded by any area in which SICTL contractors are required to undertake works as outlined in Section 1 of this plan.

## 3. ROLES AND RESPONSIBILITIES

### SICTL Project Manager

The SICTL Project Manager shall:

- Be the issuing authority for this ERIMP

### Contractor Project Manager

- Ensure effective implementation of this Plan, including provision of adequate resources
- Maintain a working knowledge of the emergency processes
- Initiate corrective actions and ensure effective implementation of actions as required.
- Act as initial Emergency Response Controller during emergencies until relieved by authorised emergency services or control is handed over to another member of the Project Team
- Maintain a working knowledge of the emergency management system, plan and processes
- Maintain familiarity with this ERIMP
- Participate in reviews of the ERIMP
- Ensure that drills and exercises are conducted throughout the Project to test the plan
- Maintain the Project Emergency Response Plans and associated processes
- Ensure that adequate emergency response information and instructions are provided at inductions etc
- Conduct planned inspections to ensure emergency response equipment and facilities are complete.

### 3.1 Emergency response team (tbc)

Role	Name
Emergency Response Coordinator	Nominated by contractor prior to commencing works on site
Assistant Emergency Response Coordinator/ Communications Officer	Nominated by contractor prior to commencing works on site
Project safety advisor	Nominated by contractor prior to commencing works on site
Area Warden:	Nominated by contractor prior to commencing works on site



Role	Name
Traffic Controller	Nominated by contractor prior to commencing works on site
Roll Call Coordinator	Nominated by contractor prior to commencing works on site
First Aiders	Nominated by contractor prior to commencing works on site
Traffic Controller	Nominated by contractor prior to commencing works on site Security personnel at front gate

### 3.2 Emergency contacts

Type	Name	Contact
Emergency services	Fire Brigade, Ambulance and Police	000
Nearest Medical Centre	Botany Medical Centre	9700 1115
Nearest Hospital	Prince of Wales	9382 2222
Environmental	NSW EPA Pollution Line	131 555
Local Council	City of Botany Bay Council	9366 3666
SICTL Project Manager	Karl McCarthy	0488 263 641
Sydney Water	Emergency Line	132 090
Energy Australia	Emergency Line	131 388
Integral Energy	Emergency Line	131 003
AGL	Emergency Line	131 909
Notifiable Safety	Local Public Health Unit	02 9391 9000
Land Owner	Sydney Ports Emergency Response	02 9296 4000
Contractor Site Manager	TBC	TBC

## 4. Interface with Sydney Airport Corporation Limited (SACL)

The Project will interface with SACL in relation to communicating our works and ensuring that we meet our obligations with respect to the management of security of the respective site boundaries and exclusion zones to the east of the third runway. The interface with SACL will be limited to the following proposed works:

- Associated works which will have limited impact on the Obstacle Limitation Surface (OLS)
- Consultation upon lighting both temporary and permanent to ensure compliance with regulations relating to lighting in the vicinity of aerodromes.

## 5. Evacuation routes

Evacuation routes will be developed for each area as the project progresses. All personnel are required to follow the safest route to the Main Evacuation point.

All changes to evacuation routes are to be recorded on the site layout plan and communicated to the workforce via pre start meetings/ toolbox talks.



## 6. Emergency equipment

The site must have readily available, the correct equipment to effectively respond to emergency situations.

Emergency equipment must be maintained through preventive maintenance procedures (inspection and testing) in accordance with the manufacturer's recommendation to ensure that equipment is in ready condition for use.

Contractors providing their own requirement emergency equipment must maintain equivalent inventories and inspection protocols. These records are to be provided to SICTL if requested.

Construction methodologies shall identify emergency equipment required for that task.

Any port related emergencies will be reported 24 hours a day to Sydney Ports on (02) 9296 4000.

## 7. Fire prevention and control measures

In order to control the risk of a fire, several measures must be taken. These include:

Scheduled electrical inspections of all machinery and wiring throughout the site. This is conducted by approved, authorised electricians.



The provision of portable fire fighting equipment in line with the Building Code of Australia and the relevant state building code. All emergency equipment including portable fire extinguisher, hose reels, hydrants are maintained and inspected by a qualified contractor in accordance with the relevant legislation and Australian standards.

Current evacuation signs and diagrams for the building or site that are compliant to relevant state legislation and appropriately located, in a conspicuous position, on each evacuation route.

Sydney Ports provides a 24-hour emergency response that can deal with incidents in Botany Bay. Any port related emergencies will be reported 24 hours a day to Sydney Ports on (02) 9296 4000.

## **8. Training**

### **8.1 Workers**

All site workers must be trained on site-specific emergency procedures. This training should be done as part of site induction training and shall include the following:

- Alarms and other emergency communications used on the site.
- Evacuation procedures including routes and assembly areas to be used.
- Initial emergency response actions
- Location of first-aid kits and identification of first-aid providers.
- Location of spill contamination kits

### **8.2 Terminal Security**

Sydney Ports have a dedicated Emergency protocol; this will be relayed to site via a dedicated two way radio.

If an emergency arises from Sydney Ports the SPBT3 evacuation procedure will be utilised.

### **8.3 Public Security**

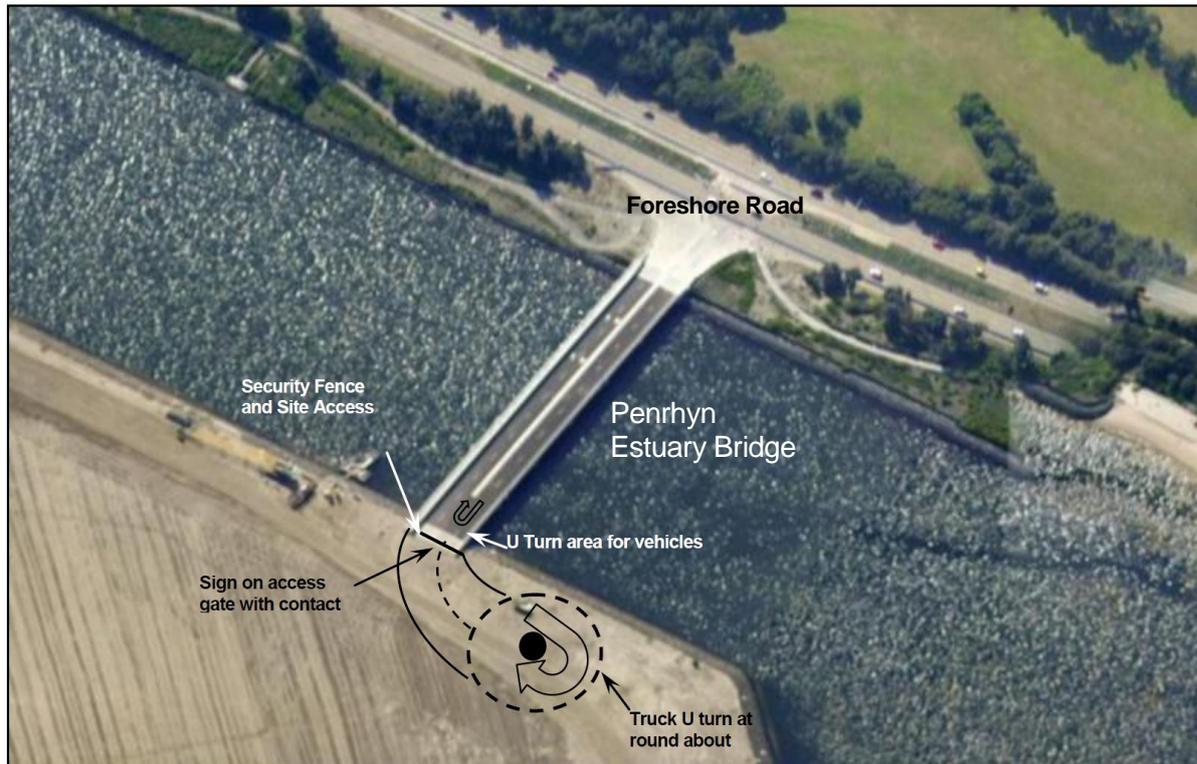
The only designated access point into the site (Via Penrhyn Bridge) will be manned by professional security guards at all times, whilst construction activities are present.

Pedestrian access onto the bridge will be limited to one side with the opposite side secured by fencing.

### **8.4 Re-direction of Unauthorised Vehicles**

The potential for unauthorised access from the traffic signals on Foreshore Road has been considered. A fence is in place at the entrance of the site at the end of the Penrhyn Estuary Bridge with gates and security personnel to monitor vehicles entering and exiting. A Security Personnel hut would be posted at the entrance. Security would check identification and log all vehicles entering the site. Security will be on site 24 hours a day for the duration of the project.

Security would direct any vehicles to turn around and leave the site. Direction would be given prior to entry to the site and a turning area has been provided. This is shown below.



Access Intersection

## 8.5 Evacuation Practice

An initial evacuation drill will be undertaken within 3 months of taking possession of the site and at intervals not exceeding 6 monthly.

## 9. Reporting

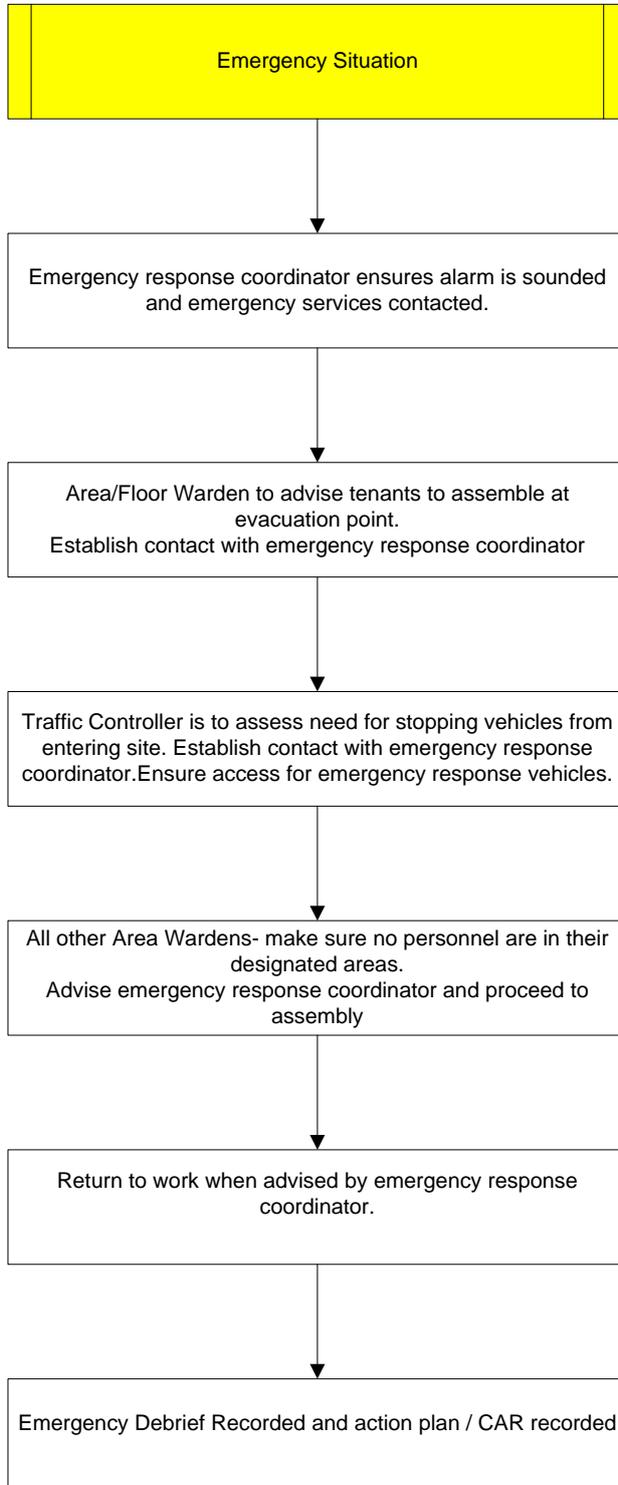
The SICTL representative must be informed of any incidents on site by the quickest possible means.

The Director-General shall be notified of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of the Applicant, or other relevant party undertaking the development, becoming aware of the incident. Full written details of the incident shall be provided to the Director-General within seven days of the date on which the incident occurred. The Director-General may require additional measures to be implemented to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this condition, within such period as the Director-General may require.

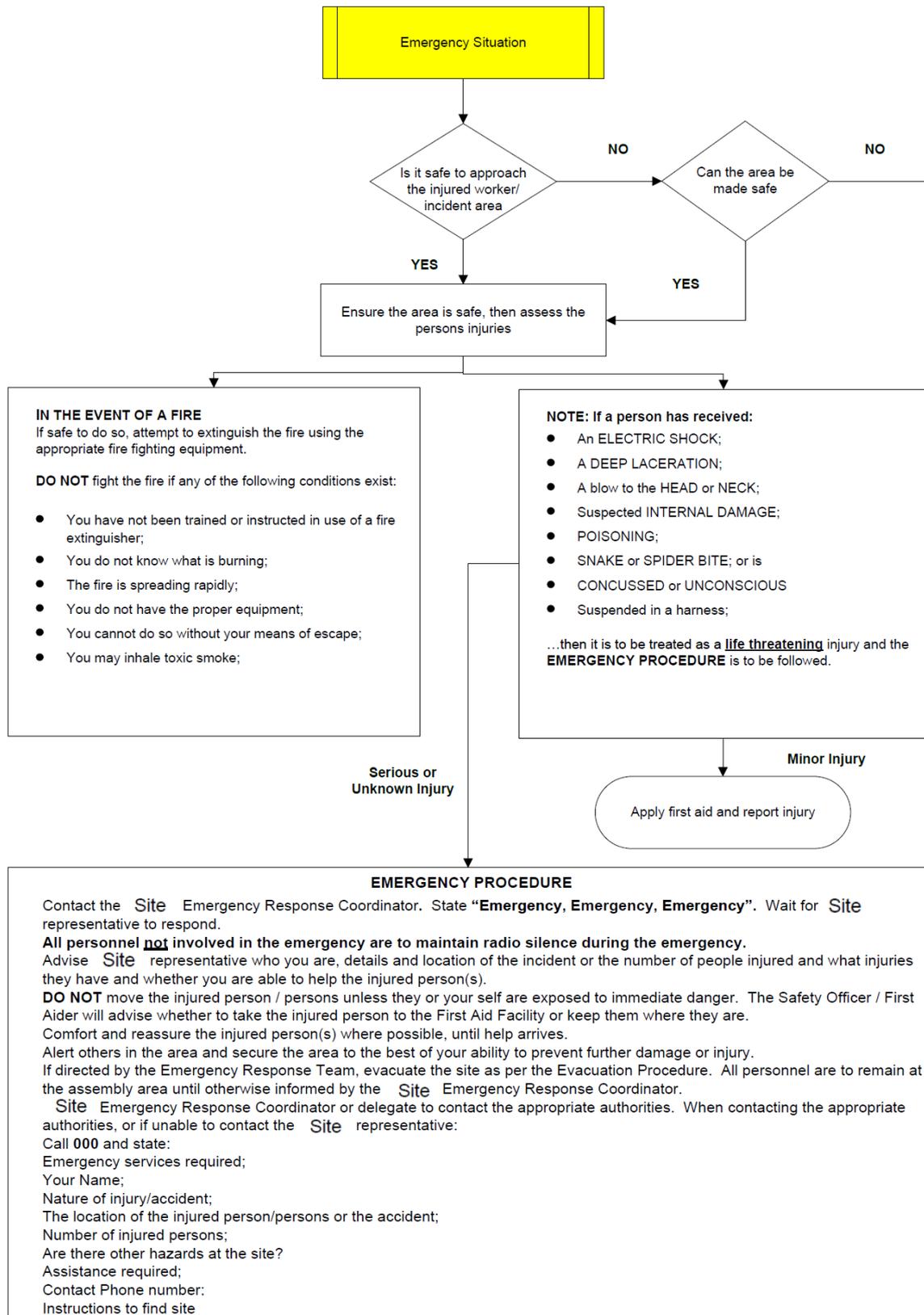


## 10. EMERGENCY RESPONSE PROCEDURES

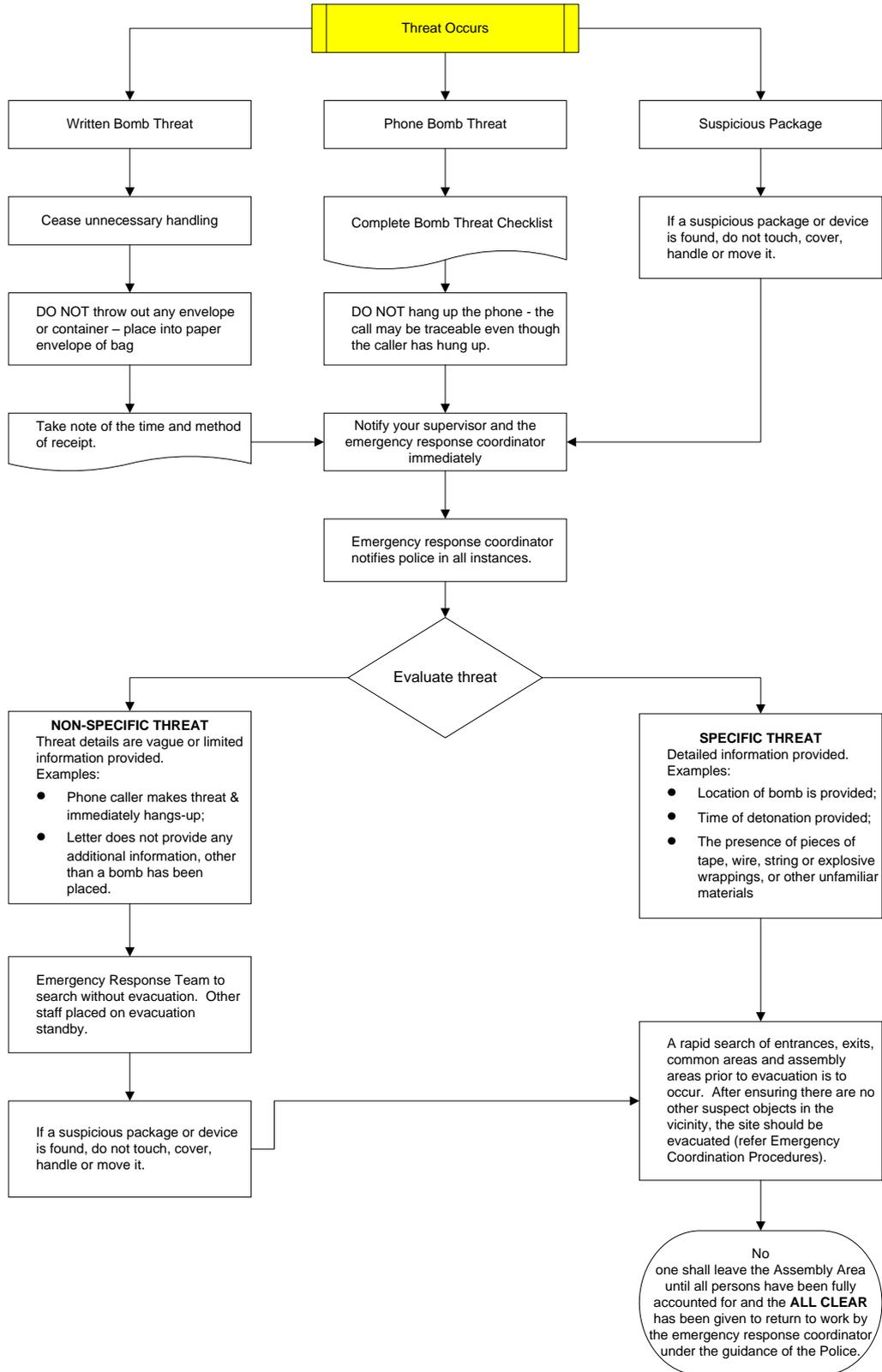
### 10.1 Emergency coordination procedure



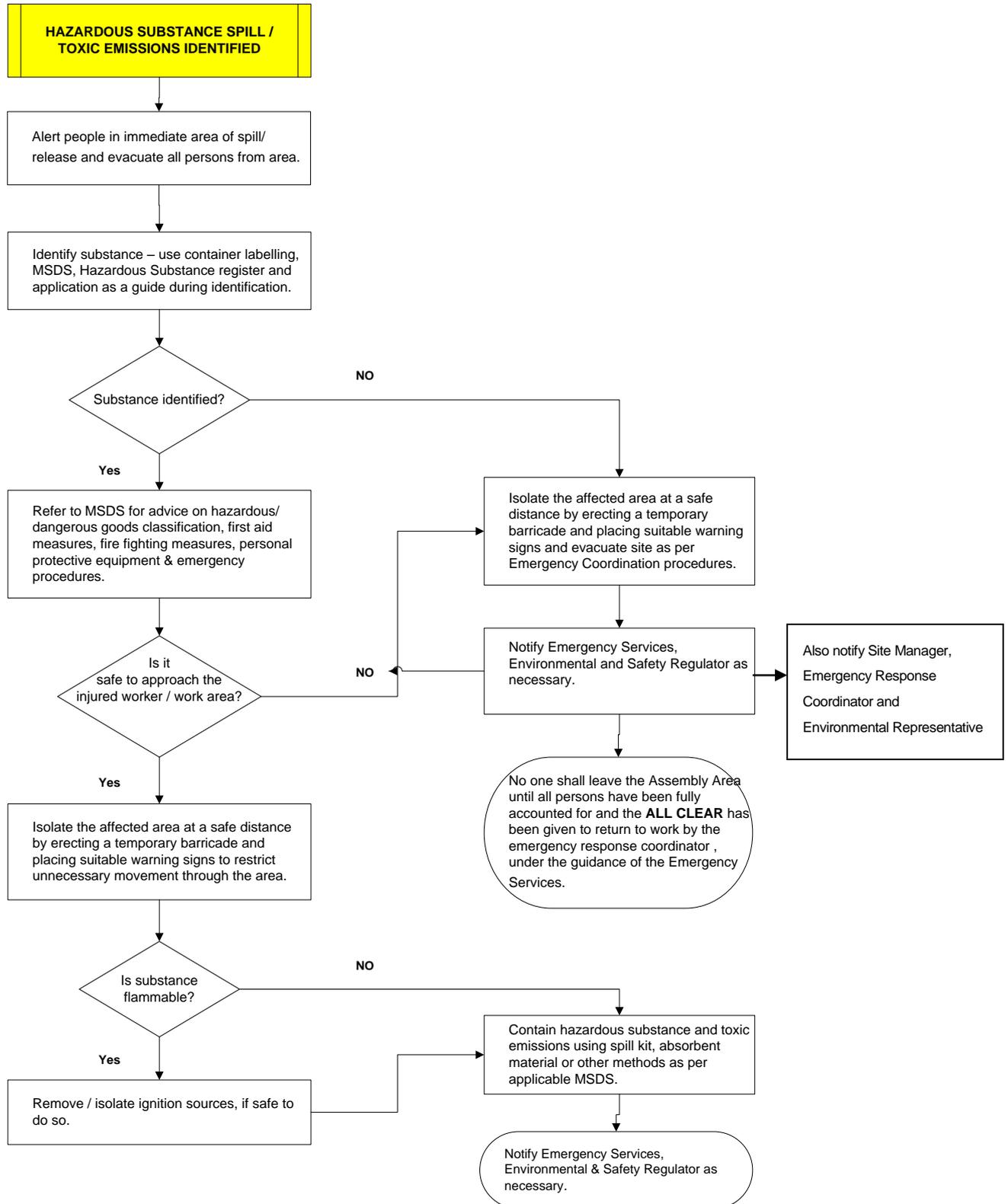
## 10.2 Response Procedure – Fire/ Medical



### 10.3 Response Procedure – Bomb Threat/ Suspicious Package

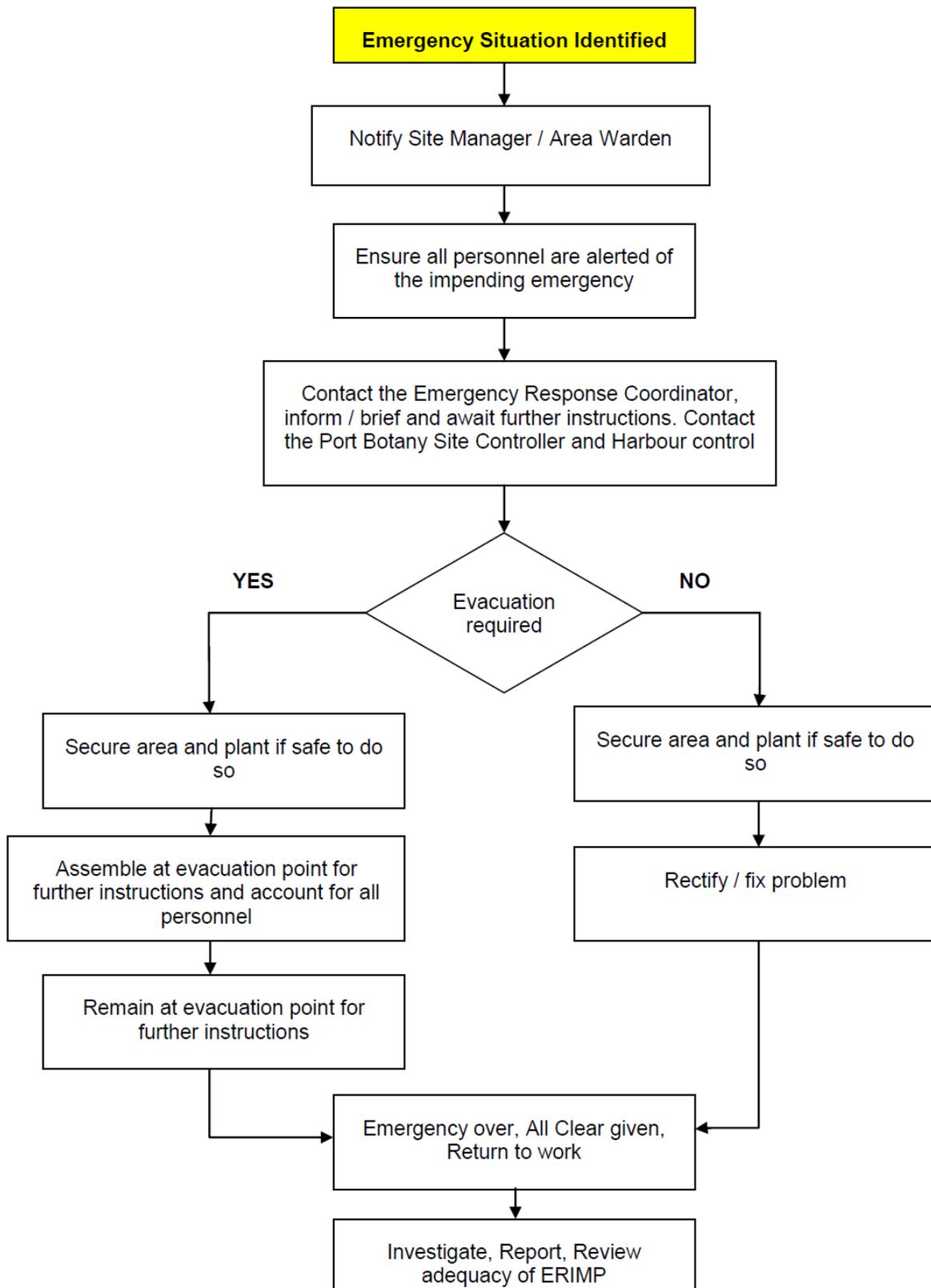


### 10.4 Response Procedure – Chemical Release or Explosion (Spill/ Gas Leak)





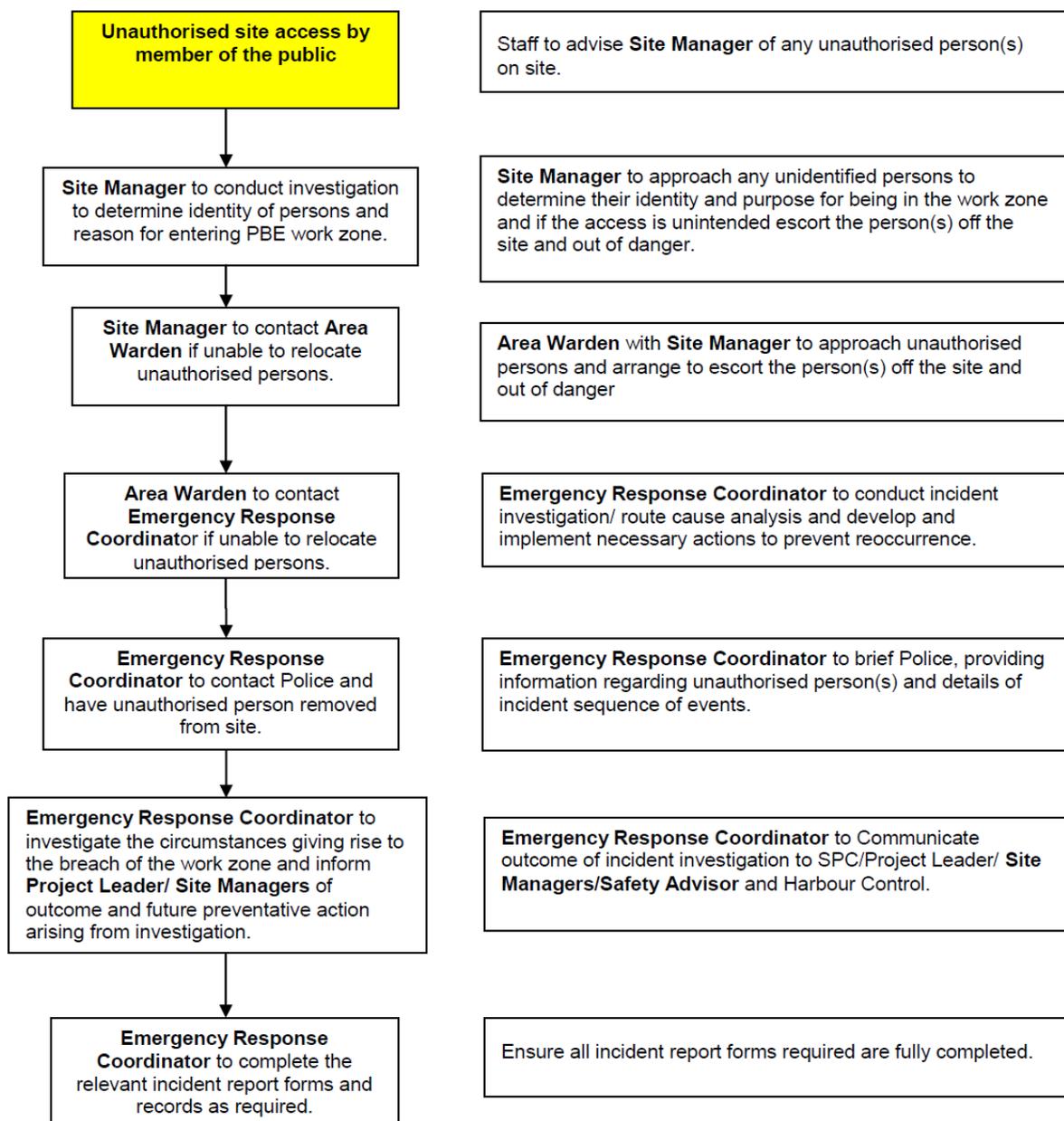
## 10.5 Response Procedure – General Evacuation



## 10.6 Response Procedure - Public Safety

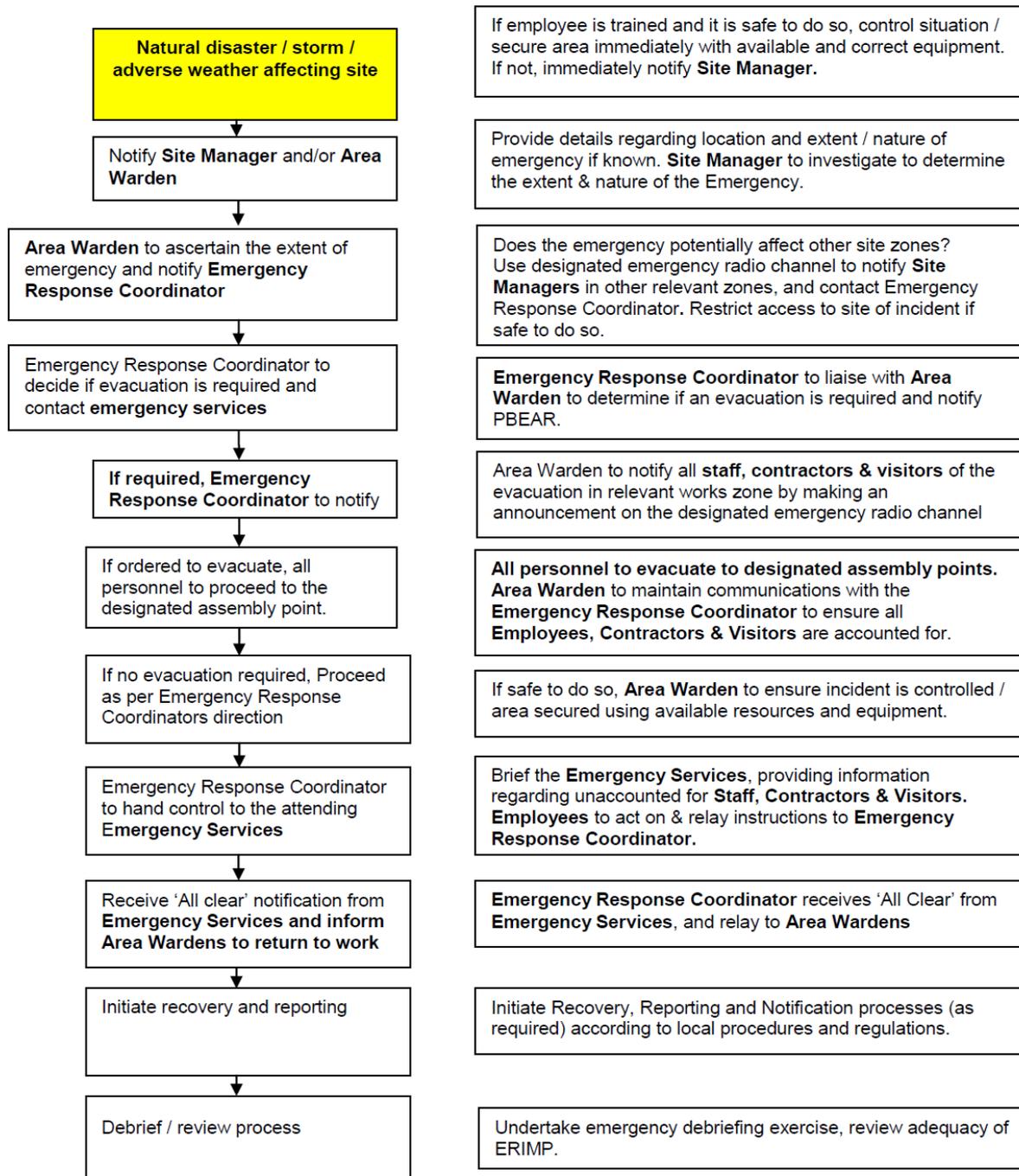
This procedure details the actions to be followed in the event that a member of the public gains unauthorised access or an incident occurs in a project work zone. Possible scenarios include:

- Unintended or unauthorised access to project work zones
- Interaction with mobile plant
- Incident involving public amenities
- Breach of perimeter fence or physical barriers
- Motor vehicle/recreational craft incident

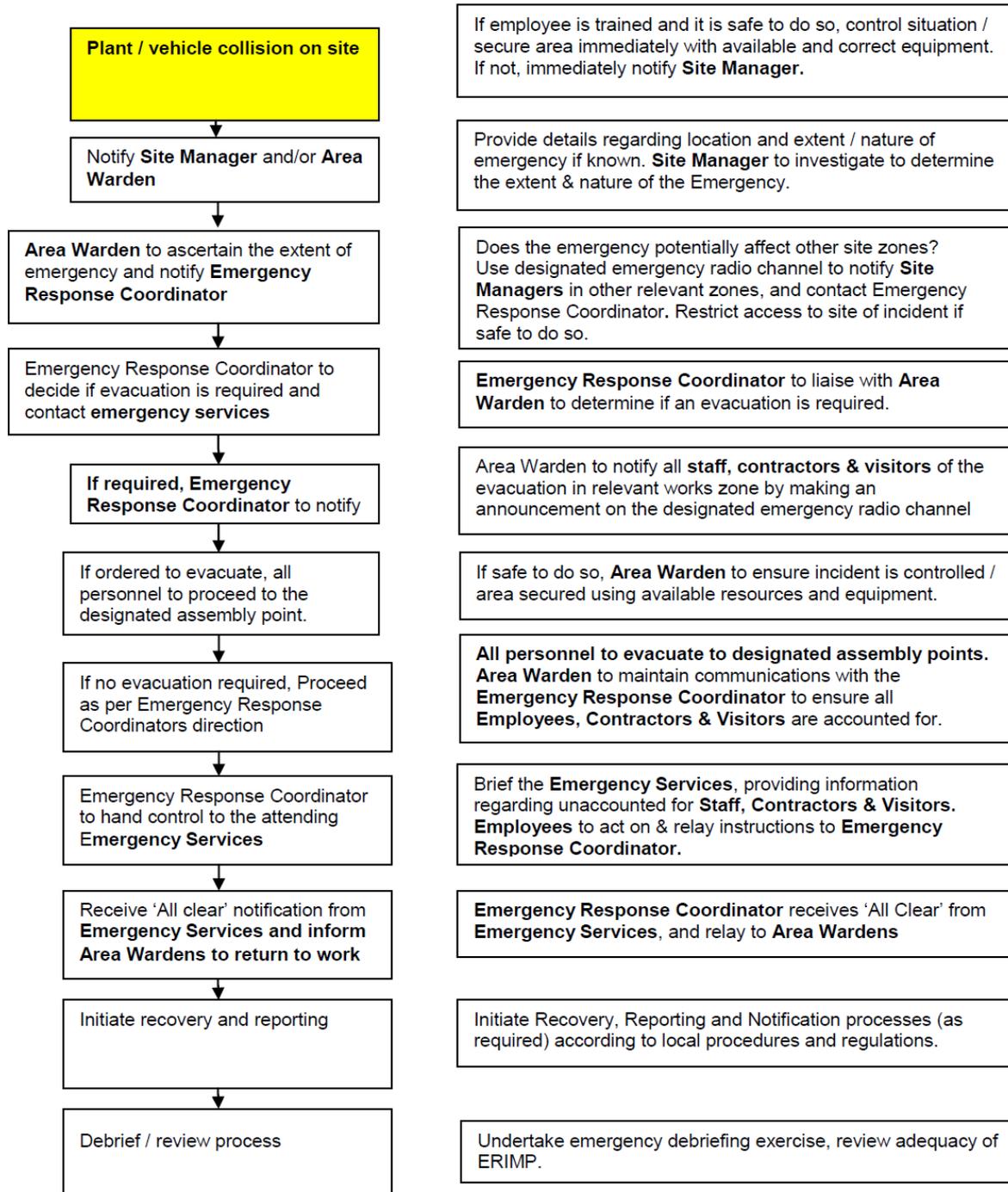




## 10.7 Response Procedure - Natural Disaster / Storm / Adverse Weather

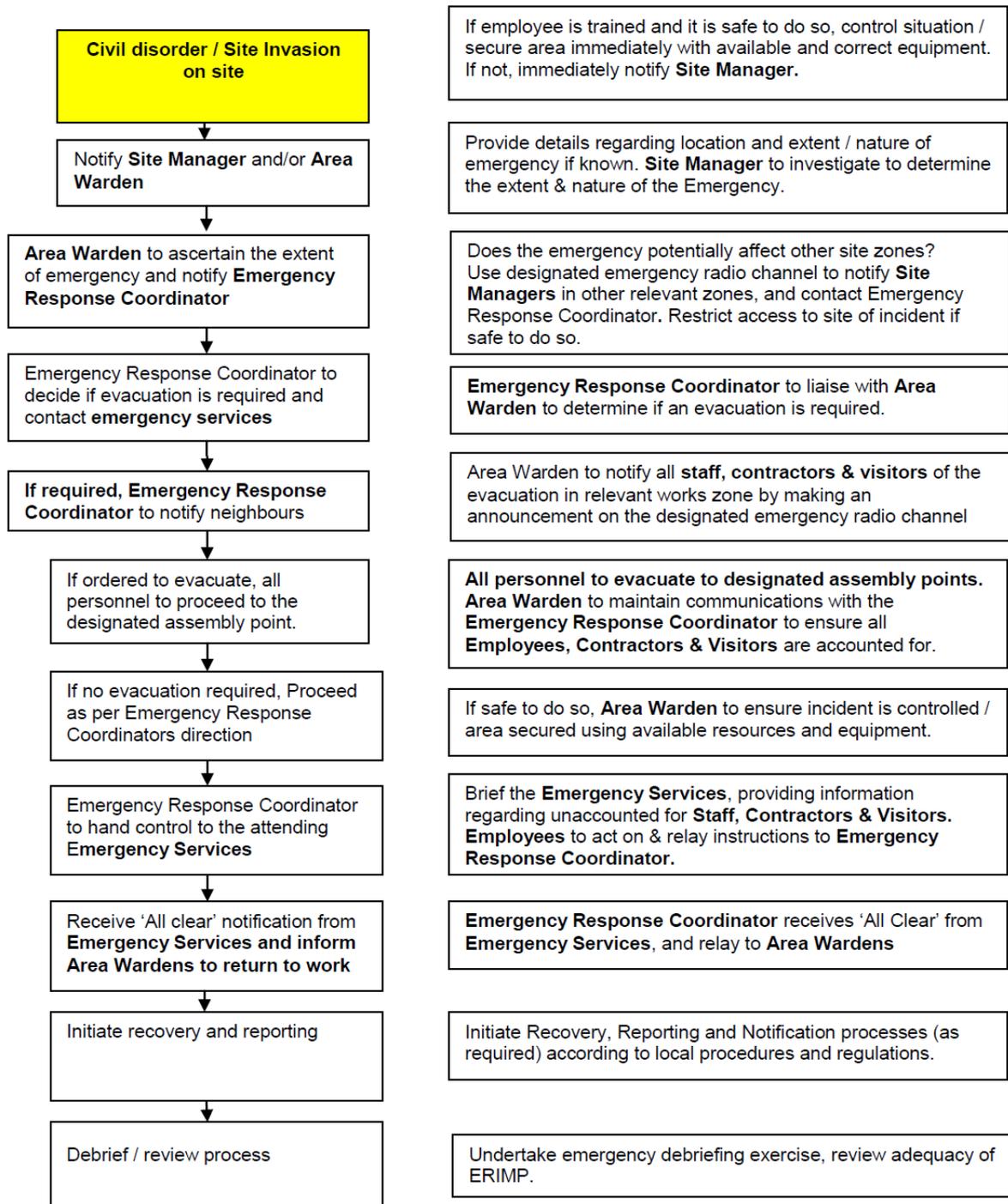


## 10.8 Response Procedure - Vehicle Collision

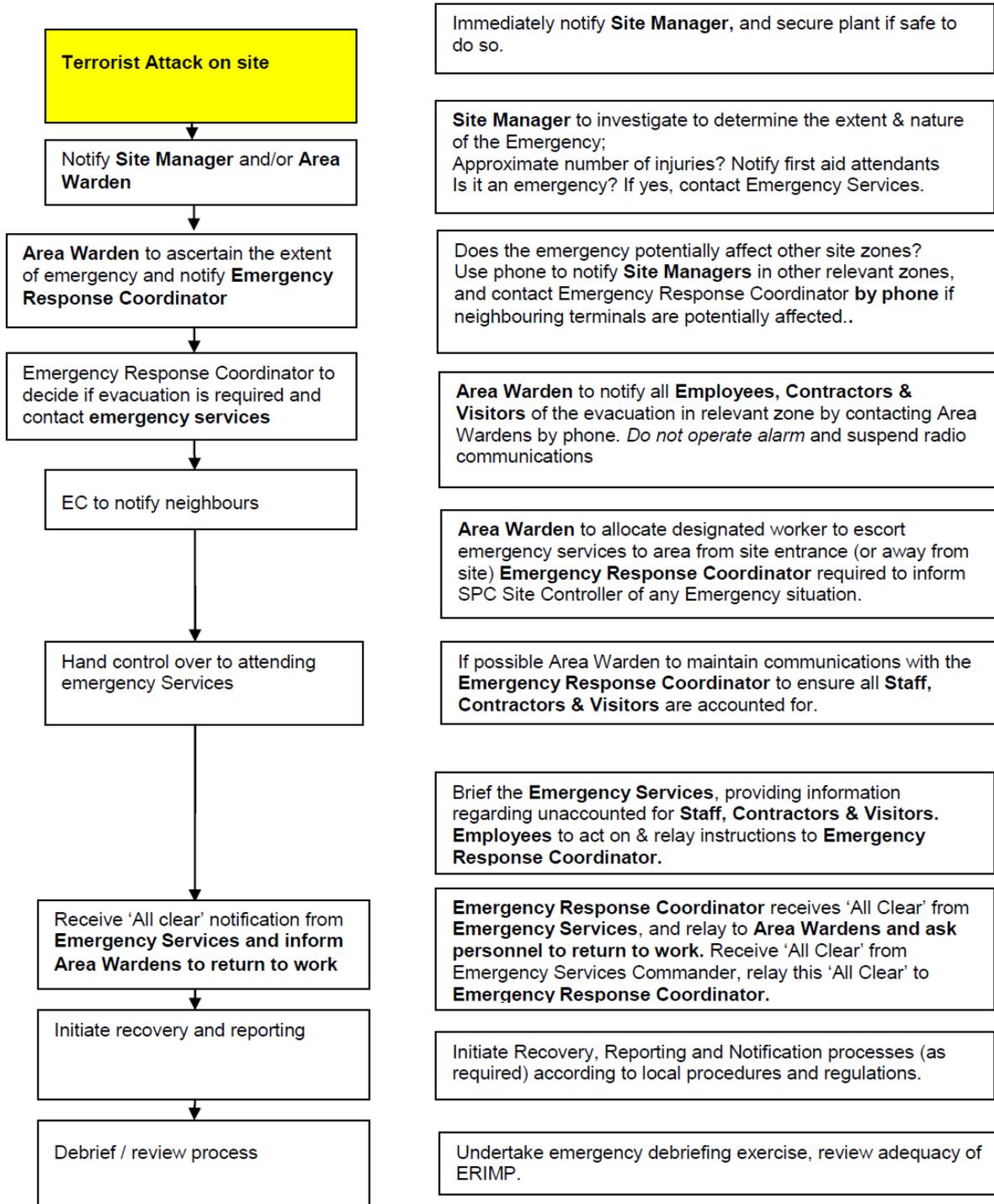




## 10.9 Response Procedure - Civil Disorder and Site Invasion

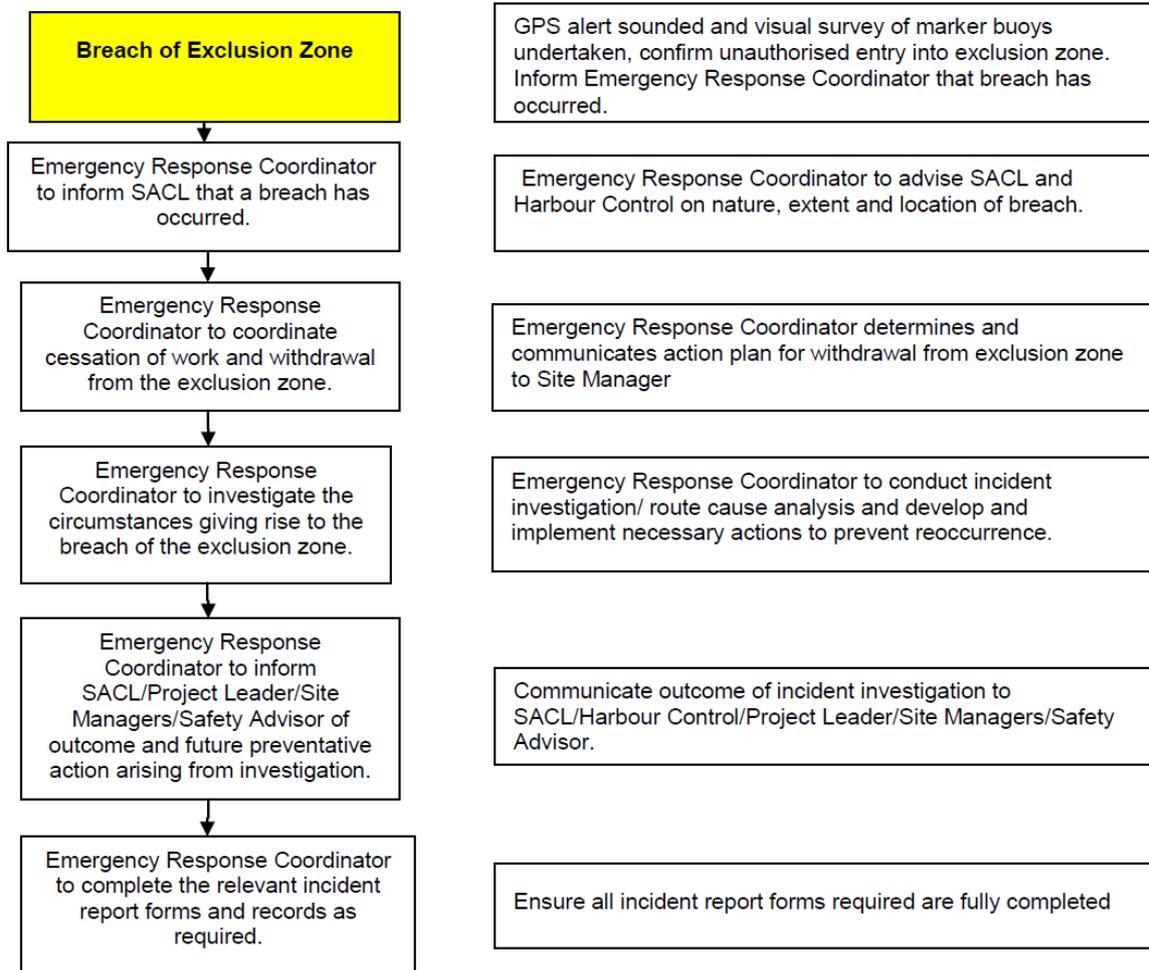


### 10.10 Response Procedure - Terrorism

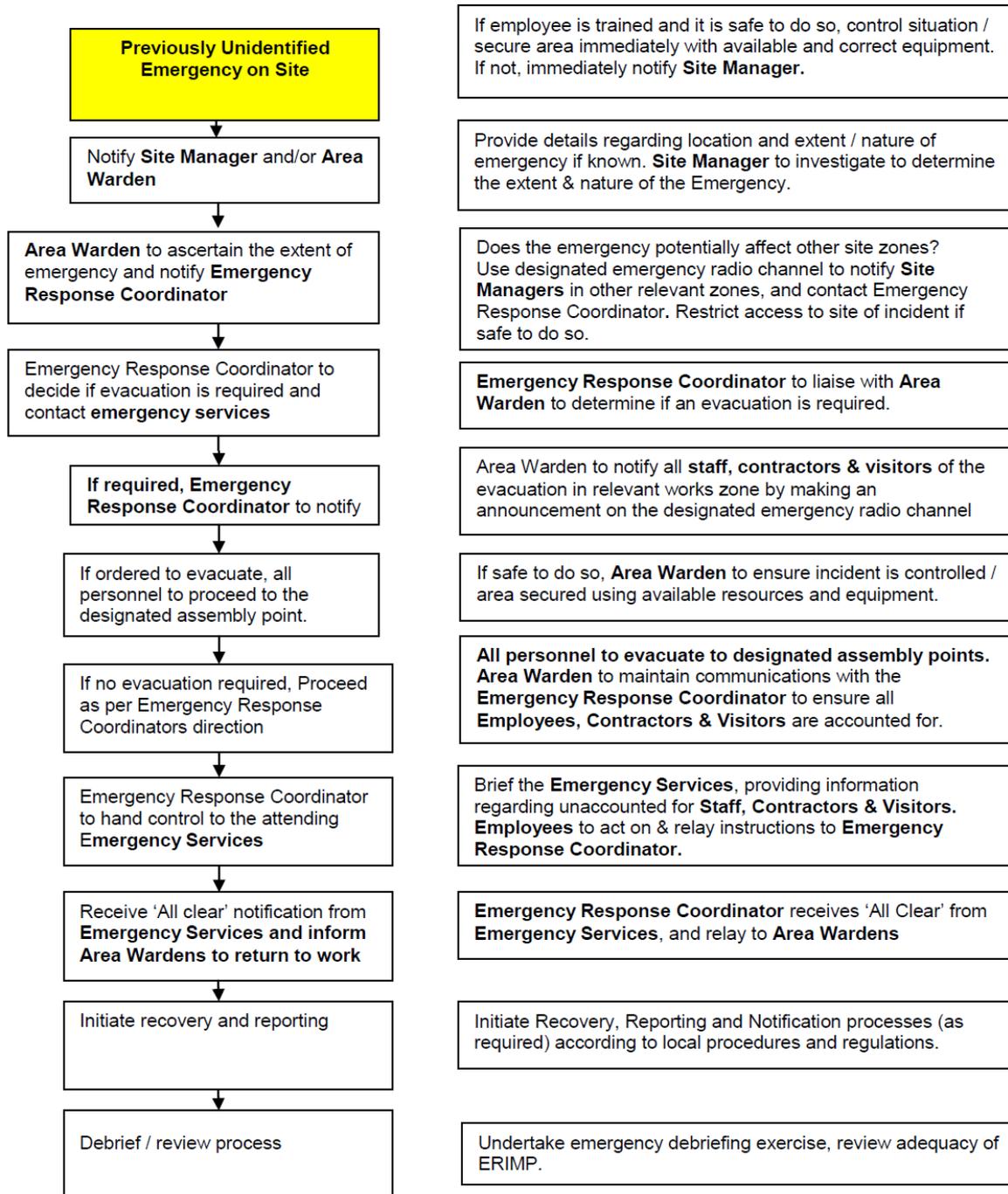




## 10.11 Response Procedure - SACL Exclusion Zone Breach

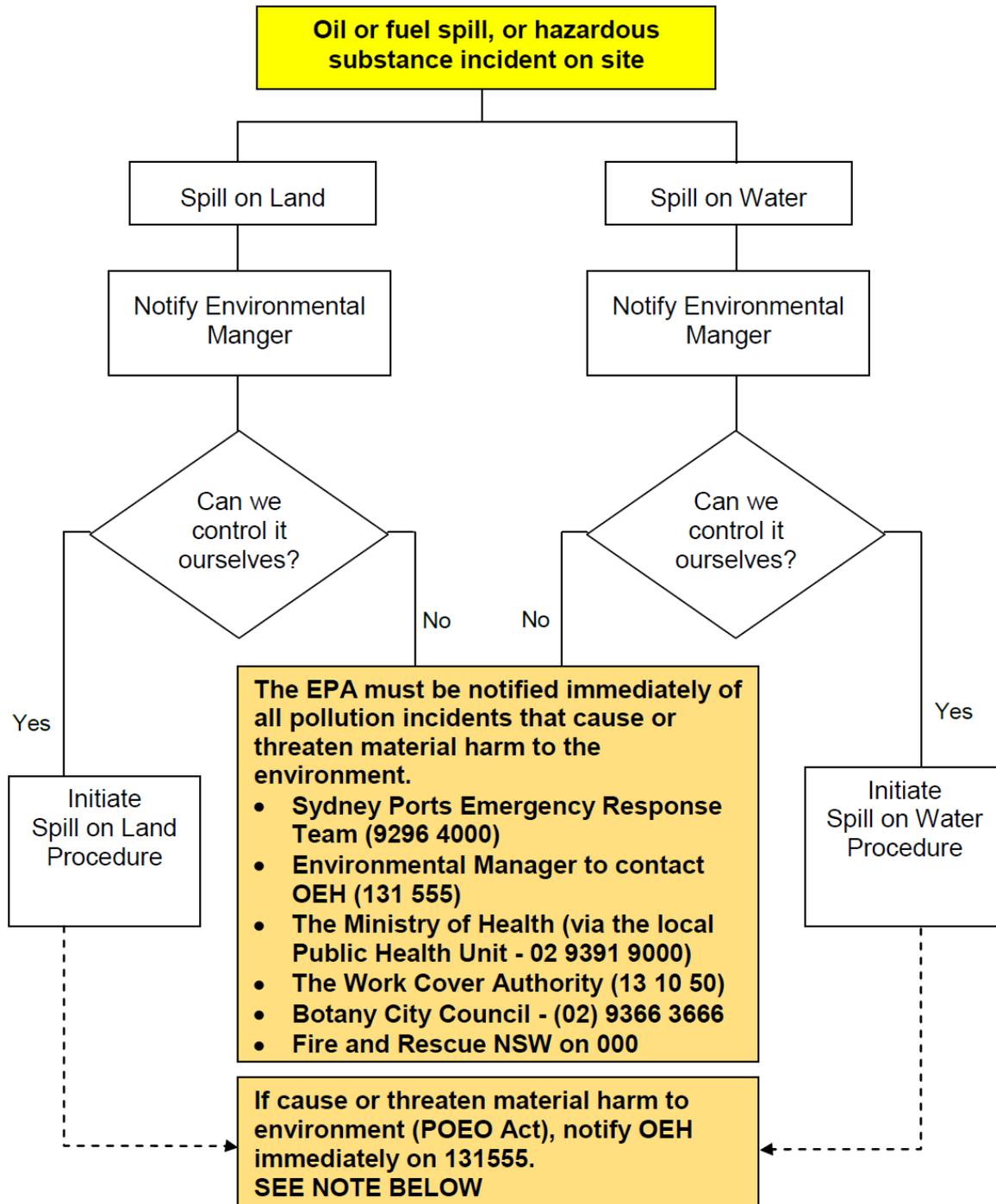


### 10.12 Response Procedure - 'Previously Unidentified' Emergency



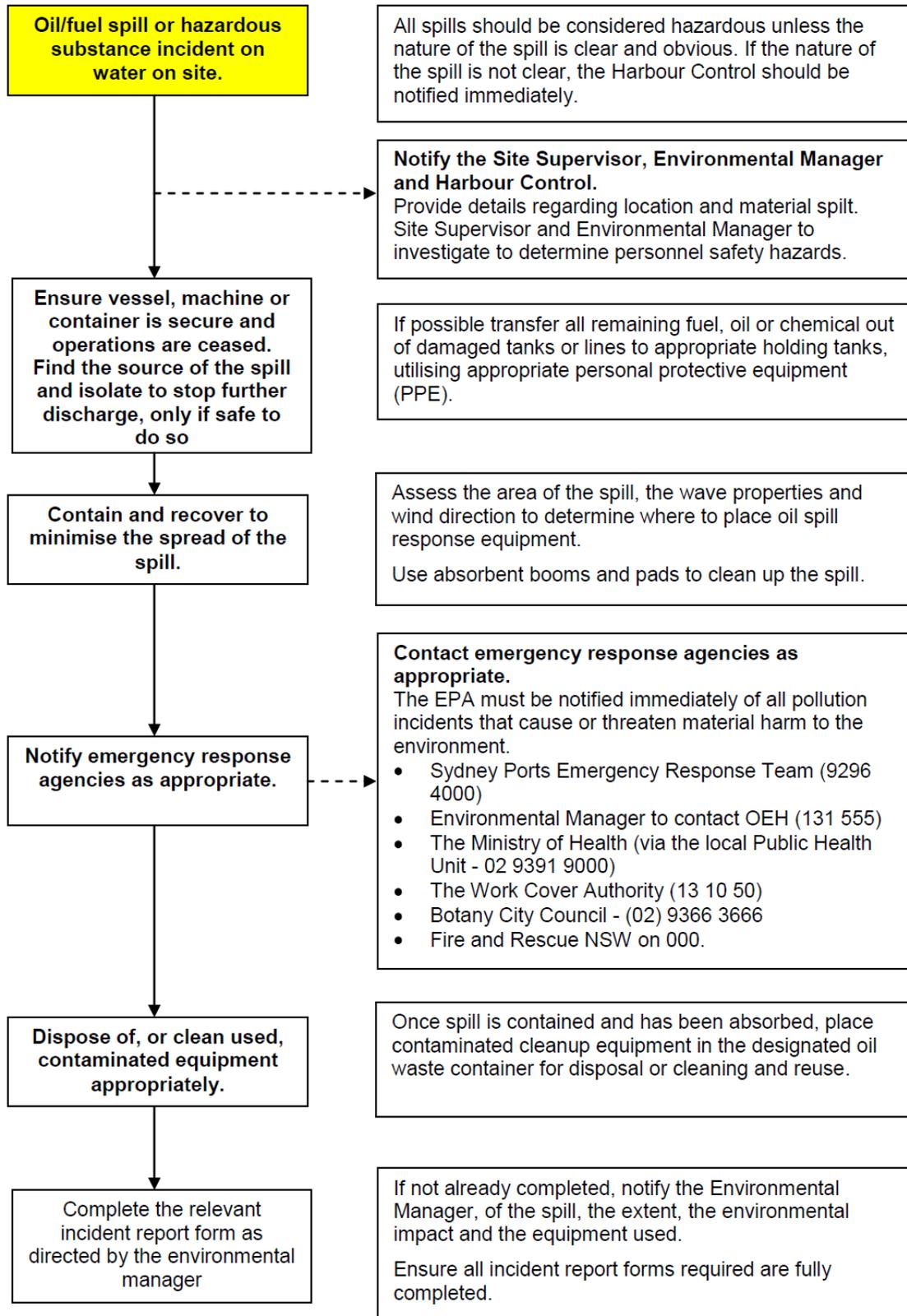
### 10.13 Environmental Spill Response – Decision Flow Chart

This decision making flow chart and associated procedures describes how to manage an oil spill of various sizes both on land and on water during construction activities. These procedures form part of the Emergency Response Plan and will be followed in the event of a spill. All personnel involved in refuelling and handling of oils and chemicals are to be familiar with this decision making flow chart and the procedures and are to respond accordingly in the event of a spill.



**NOTE:** There is a responsibility to notify incidents causing or threatening material harm to the environment immediately after a person becomes aware of the incident. The Project Environmental Representative is to be notified of any 'notifiable' incident.

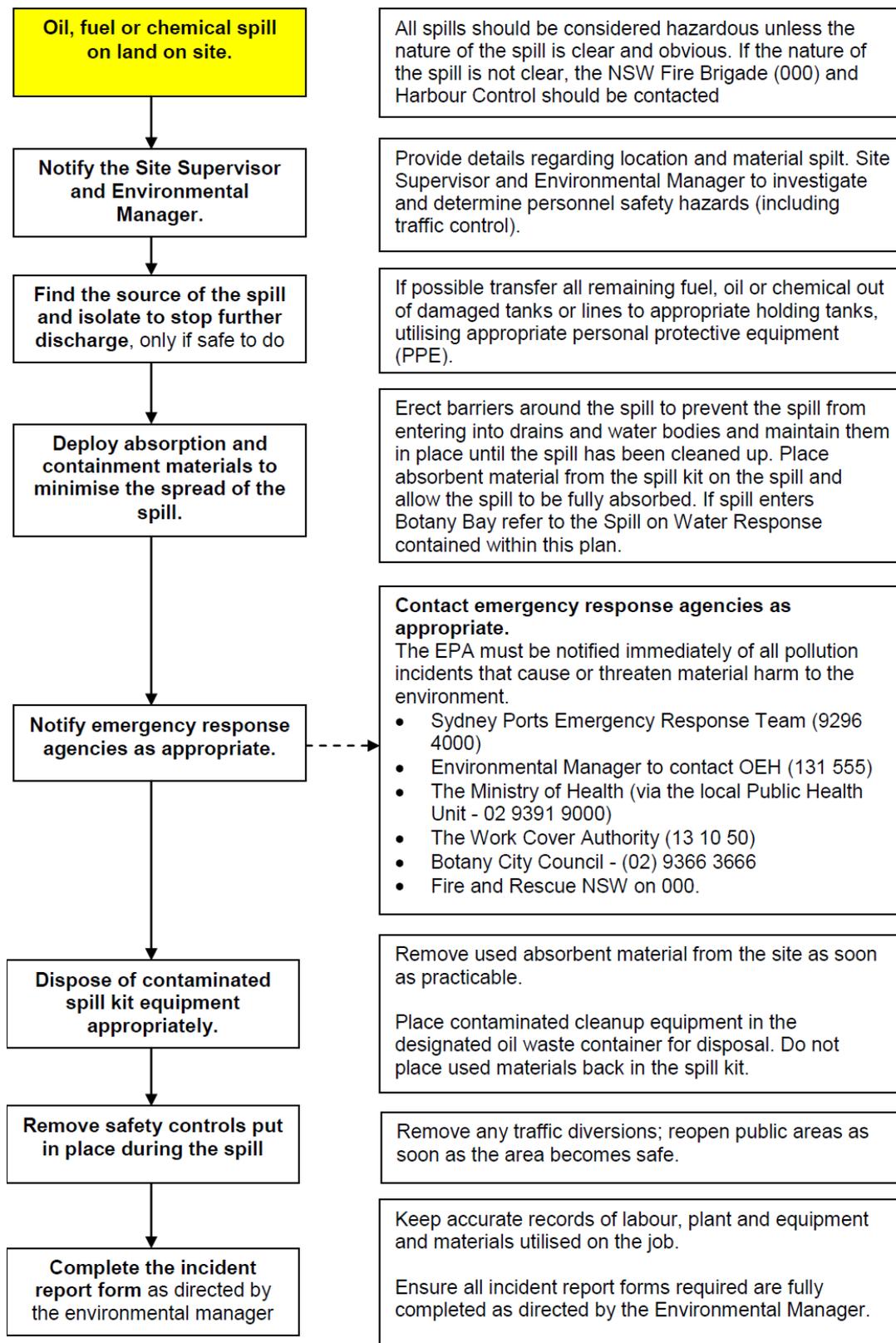
### 10.14 Environmental Spill Response – Spill on Water



Note: The Project Environmental Representative is to be notified of any 'notifiable' incident.



## 10.15 Environmental Spill Response – Spill on Land



Note: The Project Environmental Representative is to be notified of any 'notifiable' incident.



# Sydney Port Botany Terminal 3 Project

## SICTL Construction Traffic Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
FCEMP	Framework Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
RMS	NSW Roads and Maritime Service
EIS	Environmental Impact Statement
SPC	Sydney ports Corporation
MCoA	Ministers Conditions of Approval

### Distribution

This Construction Traffic Management Plan (CTMP) document forms part of the SICTL FCEMP as an Appendix.

### Issue, Revision and Re-issue

Revisions of this CTMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

### Revision History

Rev	Date	Description	Reviewed	Authorised
0	28/02/13	Initial Draft	NB	KM
1	02/04/13	Stakeholder comments addressed	NB	KM

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**Sydney Port Botany Terminal 3 Project**  
SICTL Construction Traffic Management Plan

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## **1. INTRODUCTION AND DESCRIPTION OF THE WORKS**

### **1.1 Introduction**

This CTMP applies to the works for the Sydney Port Botany Terminal 3 (SPBT3) for the scope of works outlined below;

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers.

Note; multiple contractors will be working under this CTMP as part of the Terminal 3 construction project. There will be a coordinated approach between the relevant contractors to manage traffic issues and impacts. SICTL, its project representatives and other relevant parties (including Patricks Stevedores and its contractors) will coordinate this approach.

Construction of the terminal operations infrastructure for the Patrick and SICTL areas is occurring to some extent concurrently. The first phase of the SICTL terminal operations infrastructure consists of about 20 hectares of paving, which commenced in September 2012 and is forecast to be complete by December 2013. The timing of subsequent phases of the SICTL site will depend on demand for additional stacking areas in line with demand and throughput on the terminal. The construction of the terminal operations infrastructure by Patrick will commence in March 2013 and are forecast to be completed in March 2014, but could extend up to May 2014.

Common issues among the various parties may include site access congestion and site vehicle queuing on Foreshore Rd.

In order to investigate combined traffic impacts of the Port Botany Expansion, SICTL and Patrick Stevedores commissioned Parking and Traffic Consultants to undertake a consistency review of the Port Botany Expansion construction works with the project EIS including a cumulative construction traffic impact assessment for construction of terminal operations infrastructure (March 2013 – March 2014). Conclusions from this report are outlined in Section 5.6 of this document.

### **1.2 The Project**

The Port Botany Expansion project consists of a new container terminal at Port Botany, located on the north-eastern edge of Botany Bay, approximately 12 km south of Sydney's Central Business District (CBD) in the suburb of Banksmeadow, NSW. The site location is shown in Figure 1 below.

The site for the new terminal is situated between the existing port and the Parallel Runway at Sydney Airport. The works examined in this report form part of the overall construction of the Port Botany Expansion works. The new terminal would cover an area of approximately 63 hectares (ha) while the overall site area for the works examined in this report is 46 hectares. The works are intended to last approximately eighteen months.

Sydney Port Botany Terminal 3 Project  
SICTL Construction Traffic Management Plan

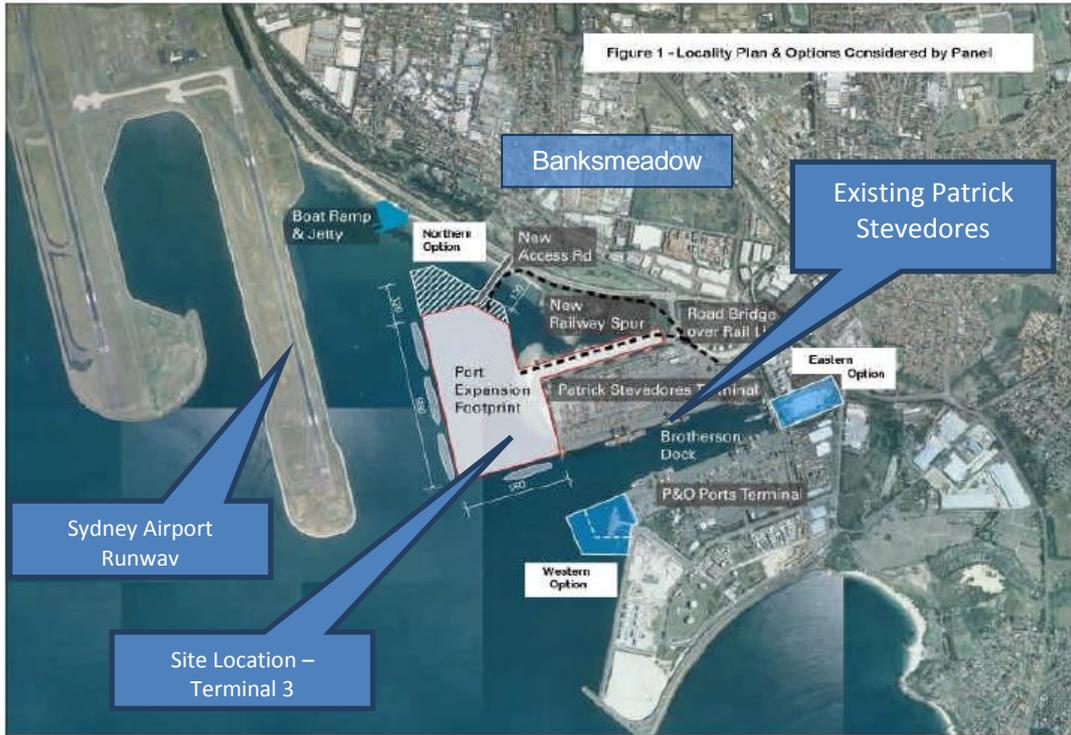


Figure 1 Site Location

### 1.3 Report Intent

This report has been written to respond to the Ministers Conditions of Approval (MCoA) for the Port Botany Expansion. Specifically this document will address the MCoA B2.14, below.

"MCoA B2.14 - The applicant must prepare a Construction Traffic Management Plan in consultation with the RMS, DOP, Botany and Randwick Councils and SSROC. The applicant shall address the requirements of these organisations in the Plan. The applicant shall also consult with the Community Consultative Committee in preparation of the Plan. The Plan must include, but not be confined to, mitigation measures identified in the EIS such as : identification of the preferred haulage routes; access routes and signage and access arrangement son site; measures to limit impact on Foreshore Road and Botany Road; need for restrictions on delivery hours and / or routes; and development of traffic management measures during construction works to ensure traffic disruptions are minimised.

The plan would consider:

- identification of preferred haulage routes;
- access routes and signage, and access arrangements at the site;
- measures to ensure that Foreshore Road would not be affected by loading/unloading from the carriageway, queuing and reversing manoeuvres;
- the need for restrictions on delivery hours and/or routes;
- the need for measures to protect pedestrians, cyclists and other motorists in the vicinity of the site.

The plan must be submitted and approved by the Director-General prior to the commencement of construction."

### 1.4 Surrounding Road Network

The surrounding road network connects to main, arterial roads being the M5, General Homes Drive and Southern Cross Drive. Local road networks of Botany, Banksmeadow and Matraville are immediately adjacent the Terminal 3 work site. Figure 2 below gives a map of the surrounding road network.

**Sydney Port Botany Terminal 3 Project**  
SICTL Construction Traffic Management Plan

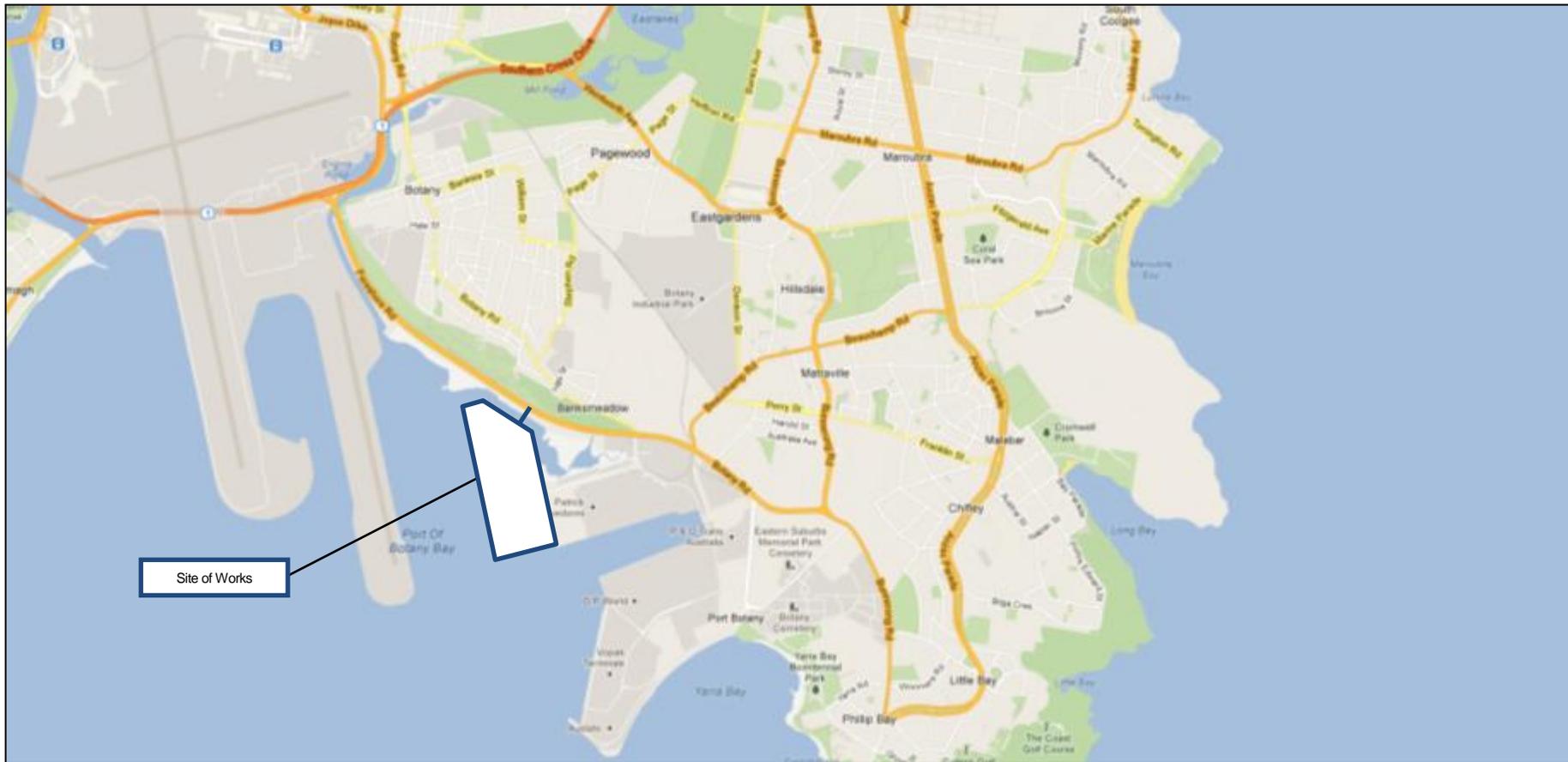


Figure 2 Surrounding Road Network

## **2. CONSTRUCTION TRAFFIC MANAGEMENT PLAN**

### **2.1 Introduction**

#### Intended Purpose

SICTL Contractors will be responsible for the control, direction and protection of all traffic affected by the Sydney Port Botany Terminal 3 works activities. SICTL contractors will implement this CTMP to keep traffic on all existing roads moving safely and efficiently during construction. It will ensure:

- a safe environment for all surrounding residents, visitors, road users and workers onsite;
- affected road networks maintain an acceptable level of traffic flow throughout the term of the work;
- delays and disruptions to traffic are kept to an absolute minimum, and
- that sound construction management practices are implemented to eliminate or mitigate risks of damage or degradation to the environment.

The CTMP has been prepared to assist site staff to implement traffic and pedestrian management control measures when carrying out construction and related works on the Project.

Traffic management will be undertaken in a way that will provide for the safety of all site staff, subcontractors and the public and ensure that road users are not exposed to foreseeable risks.

The CTMP is based on the following:

- Australian Standard AS 1742.3 Manual of Uniform Traffic Control Devices, 2009.
- RTA Traffic Control at Worksites, 2010.
- Sydney Ports Corporation (SPC) Traffic Management Plan Guidelines (Dec 2007).
- Port Botany Expansion Consistency Review and Cumulative Construction Traffic Impact Assessment, Terminal Operations Infrastructure (March 2013 – March 2014), 2013.

#### Review and Update

The CTMP will be amended to include significant changes to traffic management requirements throughout the project.

It will be further developed and updated to reflect changes in:

- the law;
- traffic management process resulting from the continuous improvement process; and
- any requests from Sydney International Container Terminals (SICTL), Roads and Maritime Services (RMS), Botany and Randwick Councils and other authorities.

#### Scope of Plan

This document addresses the systems and procedures that should be followed to warn, inform and guide traffic past, through or around all works related to the project site.

All workers, employees, subcontractors, employers and the management team involved in the construction of the project will adhere to the planning recommendations of this plan.

### **2.2 Roles and responsibilities**

#### Contractor Controlled Work Area

Contractors will be responsible for ensuring that:

- a traffic management risk assessment is completed and that procedures and control measures are implemented onsite;
- road users, pedestrians and site staff can continue with their respective undertakings in complete safety and with the minimum of inconvenience;
- all site-related works are correctly barricaded and sign-posted using the relevant approved signs; and
- all signs and devices used are in good condition and are removed at the completion of the work.

#### Contractor Project Management Team

The Contractor Project Management Team will be responsible for all required planning and permits relating to traffic control including:

- ensuring the applicable permits and licences have been obtained from the Council before carrying out any part of the design and construction activities that may impact on the community and users of roads, footpaths, bikeways, shared use paths or other transport infrastructure;
- working collaboratively with SICTL, Council and other authorised representatives.

The Contractor will be directly responsible for all the required planning and permits for traffic control including:

- ensuring all traffic control devices shown on the traffic control plans are available for use and fit for purpose;
- seeking approval from the relevant authority for all traffic control plans;
- ensuring all components of the implemented traffic control plans are relevant to the risks and hazards;
- ensuring traffic routes are driven to obtain a thorough understanding of the construction impacts on local businesses and service providers are fully understood;
- providing the necessary reports in accordance with the Contract;
- communicating and acting on all directions issued by SICTL and Council, relevant authorities and stakeholders; and
- auditing the worksite layout / control measures and implementing changes based on the audit findings.

### **3. CONSTRUCTION TRAFFIC MANAGEMENT**

#### **3.1 Objectives**

A key purpose of the CTMP is to ensure the safety of all working within the contractor controlled workspace and to minimise inconvenience to all parties.

The basic requirements of construction traffic management are:

- ensure that the road capacity is sufficient to accommodate construction vehicle traffic volumes and that disruptions are minimised;
- ensure that appropriate warning and information signs are installed;

- advance warning of a change in traffic conditions in time for users to adjust;
- information and guidance on how to safely negotiate the work site; that is, delineation of the travel path, its separation from the work site and any necessary barricades for road users, motorists, pedestrians, cyclists, public transport passengers and people with disabilities;
- details related to the movements and choice of construction vehicles; and
- plan for work activities to be undertaken sequentially to reduce the adverse impacts of the work.

## **4. CONSTRUCTION PROGRAM**

### **4.1 Work Hours**

The approved hours of works deemed audible at residential premises are:

- Monday – Friday (inclusive): 7:00am-6:00pm
- Saturday: 8:00am-1:00pm.

Some traffic related works may be required outside of the proposed hours of work. These occasions may include the following circumstances:

- loads or vehicles are required to be transported under a permit from the Roads and Maritime Services (RMS) or police;
- certain construction activities which may be planned and would have prior written approval from the Director-General;
- any works such as security operations which are permitted within the Minister's current Conditions of Consent (those deemed inaudible by closest receivers);
- deliveries to the site using lengthy vehicles which are restricted during certain hours as provided in the NSW Road Rules (a lengthy vehicle is a vehicle that is longer than 12.5m); and
- where a direction from the Police or any other relevant authority deems work must occur for safety and/ or emergency reasons.

All applicable approvals will be gained if working is required outside the approved project hours.

## **5. VEHICLE, PEDESTRIAN AND CYCLE MANAGEMENT**

### **5.1 Vehicle Types**

Construction vehicles likely to be generated by the proposed construction activities include:

- articulated vehicles for delivery of machinery;
- heavy and medium rigid trucks for construction material delivery;
- heavy rigid tankers for fuel delivery for compacting and excavation machinery;
- medium to heavy rigid trucks for removal of demolition and excavated material; and
- staff cars, vans, utilities and delivery vans.

Set down areas would be defined within the site for the unloading and loading by construction vehicles.



On site equipment is required for excavation, compacting and site compound and site maintenance equipment. The delivery of onsite equipment to the site would involve the use of semi-trailer, low loaders and flatbed trucks.

Should oversize or over dimension vehicles be required to move equipment, specific permits will be sought from the Roads and Maritime Services (RMS). However, it is expected that over length / dimension vehicles would be minimal.

## **5.2 Construction Vehicle Routes**

The proposed entry and exit routes aim to provide the shortest distances to arterial roads and avoid the use of local roads by trucks.

All heavy vehicles including medium rigid trucks up to articulated vehicles would travel to Foreshore Road using arterial roads namely M5, General Holmes Drive and Southern Cross Drive. The haulage routes are shown on Figure 4.

Use of Botany Road and Bunnerong Road by smaller vehicles would be limited as the alternate routes via Foreshore Road are higher order roadways which are more suitable for heavy vehicles. These routes would only be used if they provide access directly to a destination or origin along that route.

Sydney Port Botany Terminal 3 Project  
SICTL Construction Traffic Management Plan

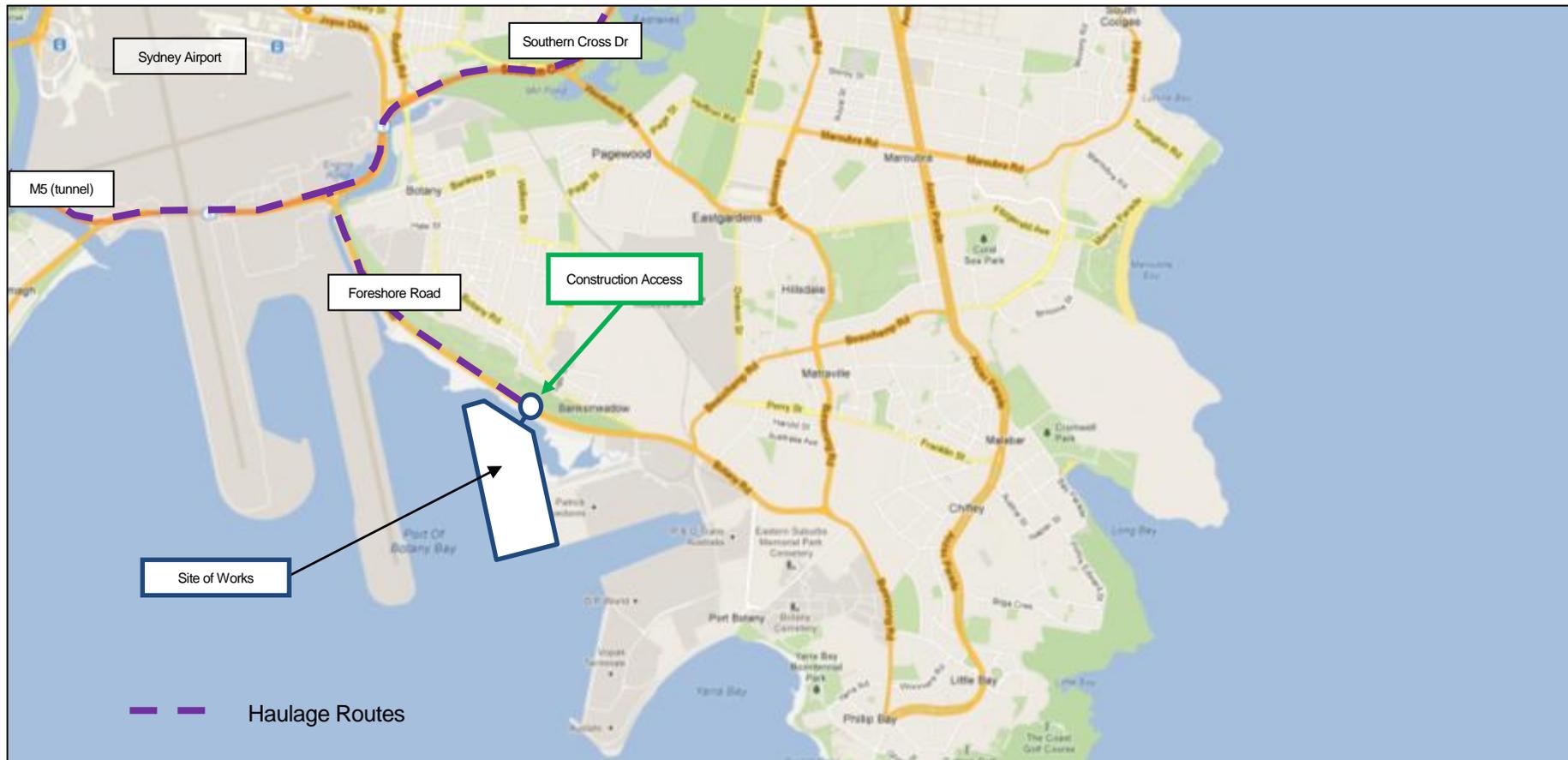


Figure 4 Surrounding Road Network and Haulage Routes

### **5.3 Delivery, Loading and Unloading of Plant, Equipment and Materials**

During all stages of the works, loading and unloading of plant, equipment and materials would only take place within the site area. Truck strategies to ensure loading and unloading on site include the establishment a controlled truck waiting facility on site.

No loading is currently planned outside of the site. It is noted that in the event that loading and unloading is required outside the site area, the following would be carried out:

- an application for a Works Zone and / or lane occupancy will be made to the relevant road authority;
- requirements of the Works Zone and / or lane occupancy would be incorporated into contract documentation, agreements, work instructions and induction requirements and adhered to at all times;
- this Traffic Management Plan would be updated and a separate Traffic Control Plan developed, approved and implemented; and
- provision would be made for loading and unloading to resume within the site boundary as soon as practically possible.

No materials or equipment are to be stored outside of the site area.

### **5.4 Site Access**

Site Access for the works will occur off Foreshore Road at the access road over the Penrhyn Estuary Bridge. The traffic signals include:

- pedestrian facilities across the access road,
- a 200m long right turn bay into the access road from Foreshore Road,
- a 150m long left turn bay from Foreshore Road into the access road,
- an exclusive left turn lane from the access road into Foreshore Road,
- a shared left and right turn lane from the access road into Foreshore Road.
- The entry and exit movements are therefore under traffic signal control and considered appropriate for construction access to / from Foreshore Road.

### **5.5 Access Signage**

To assist with entry and exit to the site, signs indicating trucks turning and 'access to construction site' shall be placed prior to the intersection. Access signage would also be installed indicating Construction Site Access is approaching and trucks will be turning into the project site. Signs at the construction access are shown on Figure 6.

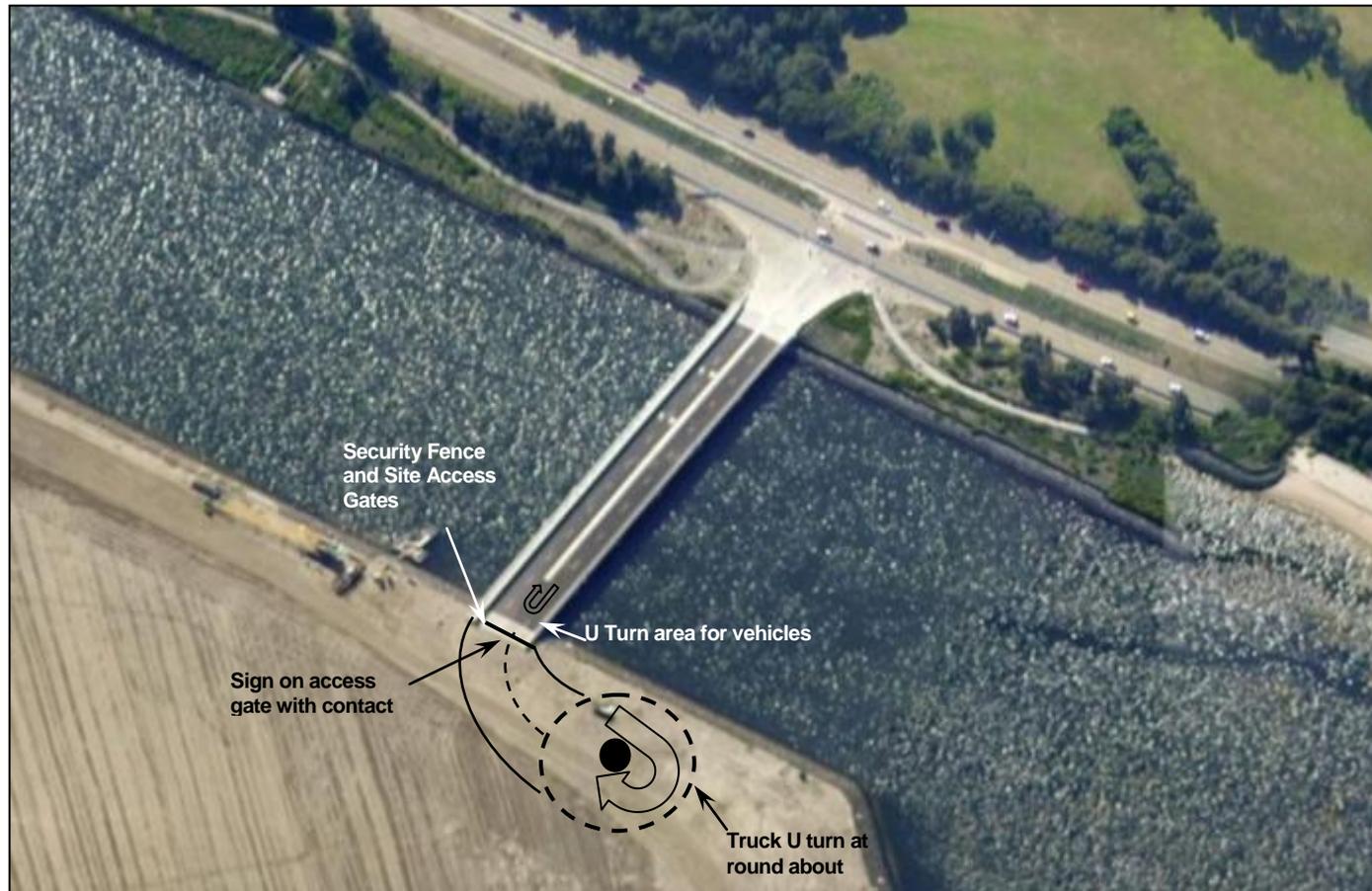


Figure 5 Access Intersection and Signs

Sydney Port Botany Terminal 3 Project  
SICTL Construction Traffic Management Plan



Figure 6 Access Intersection and Signs

## 5.6 Construction Traffic Impacts

An EIS was prepared for the Port Botany Expansion project. A detailed traffic study within that report examined the traffic impacts from the forecast increase in truck numbers generated by Port Botany (including the new terminal) during operation and construction of the new terminal.

In order to investigate combined traffic impacts of the Port Botany Expansion, SICTL and Patrick Stevedores commissioned Parking and Traffic Consultants to undertake a consistency review of the Port Botany Expansion construction works with the project EIS including a cumulative construction traffic impact assessment for construction of terminal operations infrastructure (March 2013 – March 2014).

This consistency review considered the cumulative construction traffic impact during the terminal operations infrastructure works by SICTL and Patrick in terms of consistency against the Minister's approval. The review has adopted detailed projected construction traffic volumes from all contractors undertaking the development works on behalf of Patrick and SICTL and has applied these figures to the road network, based on background traffic modelling undertaken by Parking and Traffic Consultants (PTC).

The consistency review concluded that:

- The project is consistent with the EIS in that there is no modification to the scope of the works.
- The total number of construction truck deliveries during the terminal operations infrastructure has not increased.
- The development of SICTL and Patrick sites concurrently results in a higher maximum number of construction trucks per day average over the quarter (increase from 103 to 145 trucks per day).
- According to the commuter modelling undertaken based on 145 trucks per day, the construction traffic volume associated with the two sites occurring concurrently will have no notable impact on the operation of the road network, which is consistent with the findings of the EIS that "the impact of construction vehicles on the performance of the road system would likely be very minor".
- New road infrastructure (new terminal bridge, grade separation works and truck marshalling area) has been completed and is operational, which is an improvement compared to the assumed road network in the EIS.
- The proposed cumulative construction traffic is considered to be consistent with the approved project development application.

## 5.7 Construction traffic for the terminal operations infrastructure

Construction truck numbers (provided by SICTL and Patrick) are based on the projected quantities of materials required for both sites. The SICTL works requires approximately 17,300 trucks, while the Patrick site will require approximately 16,400 truck deliveries. In order to provide consistency with Table 21.5 in the EIS, the daily truck numbers based on the quarterly averages are presented as follows:

	Average Number of Truck Deliveries Per Working Day (Actual)			
	Year			
<b>Patricks</b>	32	73	76	20
<b>Hutchison</b>	96	72	26	12
<b>Total</b>	129	145	103	31

The total number of truck deliveries for the SICTL (Phase 1) and Patrick works equals about 34,000 trucks and the activity would fluctuate throughout the project (the EIS figures are averages). The current combined works represent 38 hectares, which is 58% of the overall terminal operations works. This shows that, proportional to the developed area, the total volume of construction traffic is consistent with the EIS.

### 5.8 Potential Queuing

As noted previously, the traffic signals have been designed to cope with the final traffic loads of the site which are well in excess of the proposed traffic generated in the relevant works package. The intersection has also been designed to cater for trucks and oversized vehicles.

As an average an estimated 20 vehicles per day for this work are expected to enter and exit the site per day which indicates a very low risk of any queuing. It is also noted that the right turn bay extends 200m long while the internal lanes from the signals to the security gate are 175m long each for any minor delay at the security gate.

Nevertheless, the need for any queue protection would be monitored to ensure queue lengths do not extend beyond the limits of the advance warning signs.

### 5.9 Truck Delivery Strategy

To reduce off site congestion and the impact on the local area, deliveries will be made out of peak hours where possible.

Key truck strategies include the following.

- Provide 'No Stopping' on Penrhyn Estuary Bridge.
- Establishing an onsite parking/truck waiting facility on site and enforcing 'no waiting' of trucks in convoy on local roads.
- Delivery Trucks shall not 'lay by' in the Port Botany region, bound by Foreshore Rd, Southern Cross Drive and Anzac Parade and streets within the Botany Local Government Area in the immediate vicinity of Port Botany.
- The scheduling of deliveries to align with the construction programme.
- Attending regular interface meetings between other contractors, Port Operations and Patricks.
- Materials will primarily be delivered via Southern Cross Drive, onto Foreshore Road and accessing the site at the traffic signal controlled junction off Penrhyn Estuary Bridge.
- Port Traffic Handbook to distribute to suppliers (Appendix 1).

### **5.10 Emergency Vehicle Access**

Emergency vehicle access would be via the access road to Foreshore Road. Should an incident occur then RMS and emergency services shall be assisted by the relevant contractor.

### **5.11 Pedestrian and Bicycle Access**

There is a shared pedestrian and cycle path located adjacent Foreshore Road in the vicinity of the site. The pedestrian - cycle path crosses the access road at Foreshore Road. The crossing would be controlled by traffic signals throughout the works.

### **5.12 Public Transport**

There are bus services travelling along Foreshore Road. There would be no impacts on bus services due to the construction work as the work occurs off road.

### **5.13 Staff Car Parking and Traffic**

Dedicated parking will be available for staff and personnel vehicles. Work hours are 7am to 6pm and most staff would arrive and depart outside of these hours. As noted previously, traffic volumes in this range is unlikely to impact the traffic to any great extent.

### **5.14 Traffic Signs and Devices**

There are no planned activities such as works on road / footpath or unloading / loading on public roads. Further entry and exit to the site is via a set of traffic signals. The truck volumes are also considered minimal. As such no additional traffic control work signs (other than those shown in Figure 6) would be installed as part of the works.

Should traffic control plans or devices be required then appropriate Traffic Control Plans based on the RTA's Traffic Control at Work Sites Guidelines (2010) and Australian Standard 1742.3 Manual of Uniform Traffic Control Devices, Part 3: Traffic Control Devices for Works on Roads 2009 would be developed prior to commencement of works. Changes to any warning and directional signage would be undertaken in accordance with manual.

Additional Traffic Control Plans would be developed in addition to this CTMP as necessary to suit the project requirements.

### **5.15 Unplanned Road Closures**

If there are any unplanned road closures of a lane or restriction to traffic flow then the contractor would notify SPC and RMS and Council detailing the reason for closure and the schedule of re-opening of road to traffic.

A relevant authority, SPC representative or NSW Police Service may at any time instruct the relevant contractor to re-open any traffic lane or shoulder to traffic without delay whether or not closed from prior arrangement.

## **6. PUBLIC CONSULTATION PROCESS**

The public consultation for this project would proceed in accordance with the requirements of the Ministers Conditions of Approval (MCOA).



Community and stakeholder management is also outlined in the SICTL Construction Environmental Management Plan CEMP. The CEMP indicates that community members impacted by project works will be issued with a written notification two weeks prior to the commencement of works. The notification would be distributed via letterbox drop and include residents and businesses identified by the Community Consultative Committee.

## **7. MONITORING AND MEASUREMENT**

### **7.1 Site Induction**

All drivers and staff employed on the site would be required to undergo a site induction. The induction would include permitted access routes to and from the construction site for site staff and delivery vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedures.

### **7.2 Site Correspondence**

Regular site correspondence will be undertaken between SICTL, Patrick Stevedores and their contractors, including traffic forecasts and types of deliveries anticipated during construction. The Port Botany Expansion Project Monthly Communications & Environment Coordination Meeting will be a forum to discuss traffic requirements and raise any concerns regarding construction traffic for the project.

### **7.3 Site Inspections**

Site inspections will be undertaken and include monitoring of Port Botany Expansion construction traffic. Any issues identified are to be notified immediately to the relevant contractor's site supervisor and SICTL representative.



## Appendix 1 – Port Traffic Handbook

1/3

Sydney Port Botany Terminal 3 Project  
Traffic Handbook

### Sydney Port Botany Terminal 3 Project Traffic Handbook

#### Delivery and Construction Drivers for SPBT3 must follow the procedures below

- Drivers are to follow the route map listed below and are NOT to utilise secondary roads. Drivers must use the M5, General Holmes Drive or Southern Cross Drive to access Foreshore Road.
- Deliveries will only be accepted if booked through the relevant contractor's management system.
- Drivers are to deliver strictly in accordance with times approved by the contractor.
- Drivers are requested to limit compression breaking whilst using Foreshore Road
- Delivery drivers may be subject to Random Breath testing whilst onsite.
- Delivery Trucks shall not 'lay by' in the Port Botany region, bound by Foreshore Rd, Southern Cross Drive and Anzac Parade.
- Drivers to switch to any site specific haulage radio channels, as indicated by the relevant contractor, at security gate and remain using this while on site.

#### Approved Delivery Times

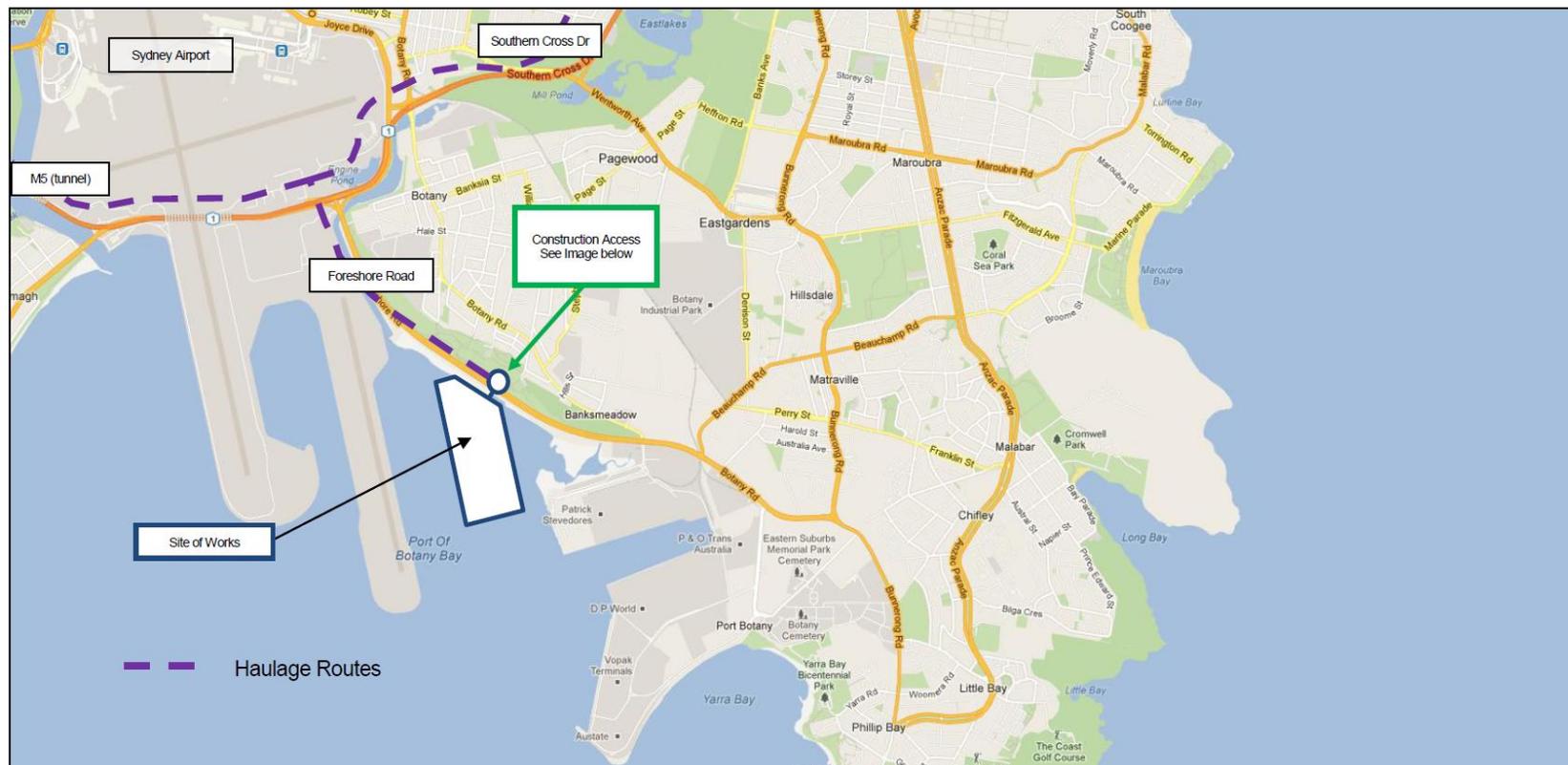
- Monday – Friday (inclusive): 7:00am-6:00pm
- Saturday: 8:00am-1:00pm.
- Drivers are to deliver strictly in accordance with times approved by the Delivery Management system.

No works or deliveries will take place outside these hours, on Sundays or on public holidays unless approved by the relevant contractor or in the event of a direction from police or other relevant authority for safety or emergency reasons.

Civil Works Construction

2/3

**Sydney Port Botany Terminal 3 Project**  
Port Traffic Handbook

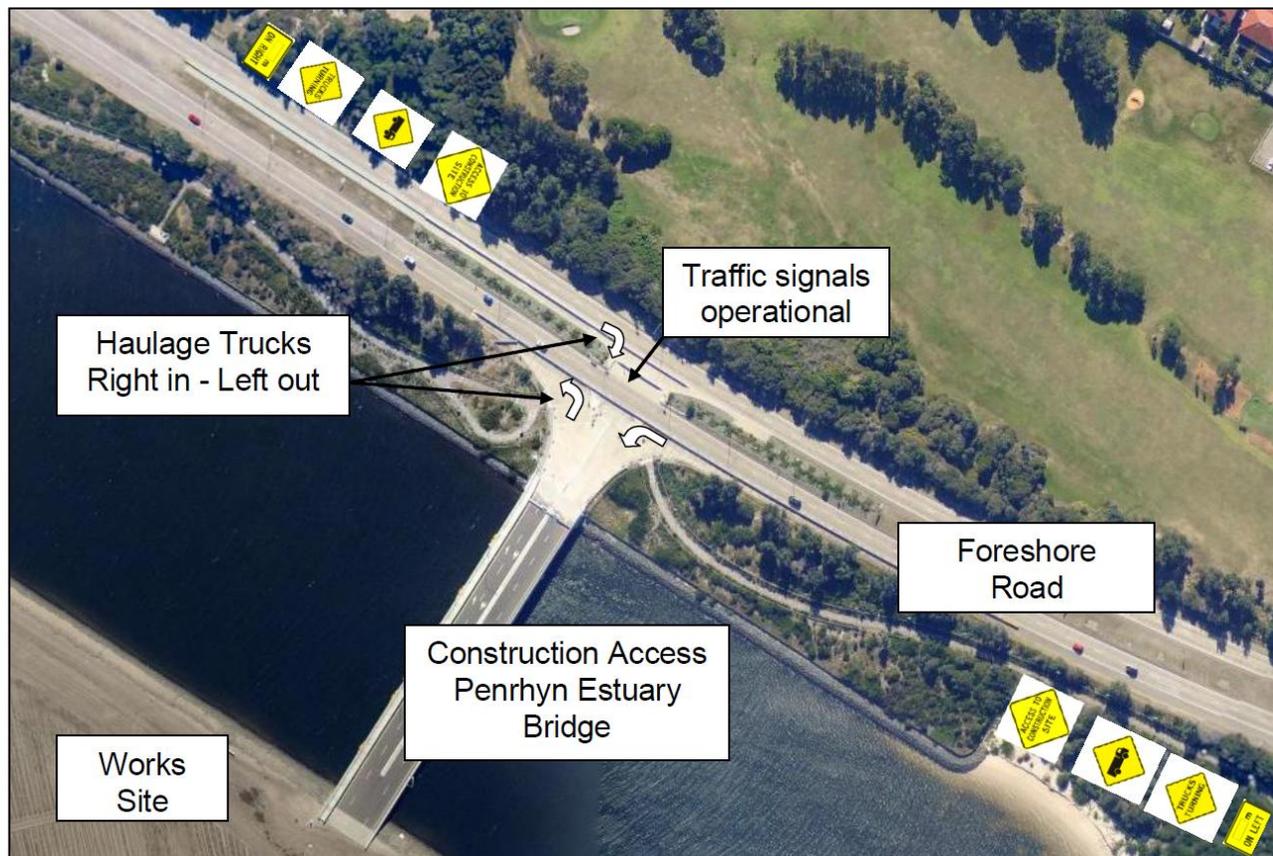


**Surrounding Road Network and Approved Haulage Routes**

Civil Works Construction

3/3

Sydney Port Botany Terminal 3 Project  
Port Traffic Handbook



Access Intersection and Signs

# Sydney Port Botany Terminal 3 Project

## Acid Sulphate Soils Management Plan

### Terms and Definitions

The following terms, abbreviations and definitions are used in this plan:

Terms	Explanation
SPBT3	Sydney Port Botany Terminal 3
CEMP	Construction Environmental Management Plan
EPA	Environmental Protection Agency
NATA	National Association of Testing Authorities
OEH	Department of Climate Change and Water
ASSMP	Acid Sulphate Soils Management Plan
EIS	Environmental Impact Statement
AASS	Actual Acid Sulphate Soil
ASS	Acid Sulphate Soil - Is the common name given to soil and sediment containing iron sulphides (principally iron pyrite), or products of the oxidation of sulphides. These soils have the potential to cause adverse environmental effects resulting from the release of acidic discharge to streams and rivers
Contamination	Contamination means the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment
PASS	Potential Acid Sulphate Soil
SWQMP	Soil and Water Quality Management Plan
MCoA	Ministers Conditions of Approval

### Distribution

The master 'controlled' ASSMP document forms part of the project's CEMP as an Appendix.

### Issue, Revision and Re-issue

Revisions of this ASSMP may be required throughout the duration of the project to reflect changing circumstances or identified opportunities for improvement.

Rev	Date	Description	Reviewed	Authorised
0	05/03/13	Initial Draft	NB	KM
1	02/04/13	For issue	NB	KM



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## 1. Introduction

This Acid Sulphate Soils Management Plan (ASSMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project. In particular, the plan has been developed to address the requirement for an Acid Sulphate Soils Management Plan as outlined in the conditions of approval.

The key components covered by this plan include:

- Supply and installation of Automated Stacking Cranes (ASC) Cranes
- Supply and installation of Quay Cranes (QC) Cranes
- Supply and installation of communication infrastructure
- Delivery and fabrication of shuttle carriers.

### 1.1 Objective

The objectives of this ASSMP is to ensure that water quality, soil runoff, site wastewater, and potential water contamination associated with ASS are considered and effectively managed as

This ASSMP aims to satisfy the following objectives:

- Address the requirements of the planning approval for the SPBT3 Project
- Address the requirements of the Environmental Impact Statement (EIS) for the Port Botany expansion
- Address the requirements of the relevant environmental legislation as it applies to this project
- Summarise potential impacts on the environment from the proposed works
- Document environmental procedures to control potential environmental impacts.

### 1.2 Targets

The following targets have been identified in terms of soil and water management for the project:

- There is no discharge from the Project site or designated treatment site of acid sulphate material
- There is no acidic drainage from the Project site or designated treatment site caused by the construction activities of the Project
- There are no justified complaints regarding effects from ASS
- The requirements of published guidelines on ASS management are addressed
- Management control measures to minimise potential environmental impacts are documented

### 1.3 Statutory provisions and guidelines

The following statutory provisions and guidelines are applicable to the Project, with regards to water quality:

- Sydney Port Botany Terminal 3 Planning Approval
- POEO Act 1997
- Acid Sulphate Soils Manual (ASSMAC, 1998)

### 1.4 Ministers Conditions of Approval

MCoA's relevant to soil and water quality management are outlined below.

MCoA Reference	MCoA Detail
B2.6	Prior to the commencement of construction activities, the Applicant must prepare an Acid Sulphate



MCoA Reference	MCoA Detail
	Soils Management Plan to assess and manage any Acid Sulphate Soils (ASS) or potential ASS (PASS). The Plan shall be prepared in accordance with the Acid Sulphate Soils Manual 1998 published by the NSW Acid Sulphate Soil Management Advisory Committee. In the event that ASS is encountered during the works, the Applicant shall notify the NSW Maritime Authority immediately.

## 2. References

- Port Botany Expansion Environmental Impact Statement
- Aurecon Framework Construction Environmental Management Plan Sydney Terminal 3 Sydney International Container Terminals Pty Limited, Revision 3
- Acid Sulphate Soils Manual (ASSMAC, 1998)
- Reference is also made to the NSW Protection of the Environment Operations Act which integrates into one Act all of the controls necessary to regulate pollution and reduce degradation of the environment. The Act also provides for licensing of scheduled development work, scheduled activities and for offences and prosecution under this Act

## 3. Background Information

Acid Sulphate Soil (ASS) is the common name given to soil and sediment containing iron sulphides (principally iron pyrite), or products of the oxidation of sulphides. These soils have the potential to cause adverse environmental effects resulting from the release of acidic discharge to streams and rivers. Such effects include infrastructure being 'eaten away' by the acid (such as bridge pilings and other structures in contact with the acidic ground/water), death to aquatic life (such as fish kills and vegetation destruction) and a decrease in the quality of the water for humans and animal life.

Sulphides which are not exposed to the atmosphere and remain below the water table are quite harmless. However, should sulphides be exposed to air this can result in oxidation and the production of sulphuric acid if the soil's capacity for neutralisation is insufficient.

Acid generation from sulphidic soils is largely confined to present and former wave-protected mangrove and salt marshes and tidal lakes and swamps where fine, very wet sediments can accumulate with organic debris. This is typically below 5m above sea level, or below 5m AHD (Australian Height Datum).

ASS can be classified as:

- Actual Acid Sulphate Soils (AASS) which are soils that have already reacted with oxygen to produce acid, or
- Potential Acid Sulphate Soil (PASS) which is soil that contain iron sulphide, but has not been exposed to oxygen (e.g. soil below the watertable) and therefore has not produced sulphuric acid (although it has the potential to do so).

## 4. Indicators of ASS

Visual or odorous indicators of the presence of acid sulphate soils in excavated materials and surrounding waterways include the following:

- Any jarosite (pale yellow mineral) or substantial iron oxide (red) mottling in material excavated or left exposed
- Iron staining on drain or pond, iron stained water

- Presence of corroded shell
- Sulphurous smell. e.g. hydrogen sulphate or rotten egg gas
- Unusually clear or milky blue-green drainage water flowing from the area (presence of aluminium)
- Corrosion of concrete or steel structures
- Fishkills
- Dead, dying, or “stunned” vegetation.

## 5. Strategic Approach

### 5.1 ASS Investigation

Upon suspected acid sulphate soils material, an excavation-specific ASS investigation will be conducted at the site during excavation works in accordance with the contract requirements.

Field pH tests on suspected ASS will be undertaken by a person qualified and experienced in ASS testing. Laboratory tests will be completed by a NATA accredited laboratory.

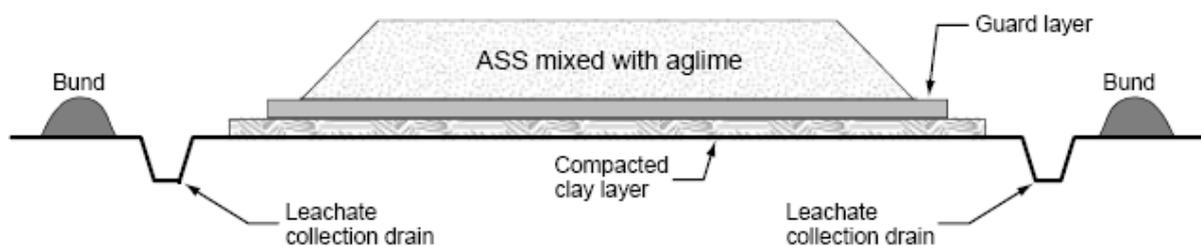
The NSW Maritime Authority is to be notified immediately if ASS are encountered during the works

Where remediation is required, geotechnical advice will be sought to establish the level of investigation and action to be taken. This has usually involved treatment with agricultural lime and replacement of the affected areas. Liming rates will be determined based on the results of the site investigations. Where required, this ASSMP will be reviewed and updated to address the outcomes of further investigations.

### 5.2 ASS Treatment

The treatment measures outlined below are considered indicative of those to be implemented should ASS be discovered during the works.

A suitably sized dedicated treatment area will be created at a location agreed with the Client's Representative. The location of the area would be dependent upon the quantities involved. All treated spoil will be tested to verify neutralisation prior to use elsewhere or disposal. ASS should be treated after excavation and dried to ensure oxidation is complete. This treatment will involve uniformly mixing lime with the ASS material by physical and/or mechanical means. ASS to be treated will be placed on the treatment area in layers not thicker than 300mm, as shown in Figure 1.



Cross section of a treatment area (Source: Qld ASS Technical Manual v 3.8)

Where excavated ASS is to be treated onsite, the following actions will be carried out:

- Ensure that if large areas of PASS are identified they are retained below water level under stable anoxic conditions.



- Testing for pH<sub>F</sub> and pH<sub>FOX</sub> to classify the PASS content. Stockpiling of the spoil will be categorised by the difference in pH. Laboratory testing as required will be undertaken by a NATA accredited laboratory
- Bunding will be constructed around the perimeter of the designated ASS treatment area to intercept and contain run-off from the area during soil treatment operations. The bund will be constructed from non-ASS material or lime treated ASS material
- All excavated spoil will be stored and treated within this bunded area as soon as possible after being excavated
- The base of the ASS treatment area will be limed prior to placement of each layer of ASS. Respreading of agricultural lime prior to placement of each new layer of soil, and at the conclusion of all treatment. The base of the treatment pad will have a minimum agricultural lime application rate of 5 kg/m<sup>2</sup>
- The treatment area will retain enough storage capacity to hold any potentially acidic waters/ run-off from the PASS. This will collect drainage water from the treatment area in the event seepage or rainfall occurs during and between treatment
- The treatment area bund will be built to a height of 400mm
- Soil treatment shall be undertaken as soon as possible after the material has been excavated to limit the opportunity for the accumulation or release of acidic pollutants
- Soil to be treated shall be placed in layers not exceeding 300mm and be thoroughly mixed with the fine agricultural lime at a minimum rate of 11 kg/t or other applicable rate as determined by subsequent testing
- The amount of excavated material will be minimised, wherever possible, to allow for treatment of manageable quantities of AASS/ PASS material
- A covered stockpile(s) of agricultural lime and hydrated lime will be kept inside the site boundary in volumes sufficient for predicted treatment works. This will allow all treatment to occur in a timely manner. The stockpile(s) will be replenished on an as required basis throughout excavation activities
- The effectiveness of the treatment process shall be confirmed by verification samples at rate of 1 per 100m<sup>3</sup>. Sampling and analysis shall be completed by a NATA accredited laboratory
- Where treatment has not been successful, the material shall be retreated
- Surface water with the potential to become acidic as a result of interaction with the treatment area or excavations will be treated and monitored as follows:
  - Surface water accumulated in excavations or treatment area will be tested for pH. If the pH is outside the range of 6.5 – 8.5 then the water will be neutralised with the addition of agricultural lime or hydrated lime
- Records of water discharged from site shall be maintained
- Backfilling excavations, completion of footings as soon as possible to minimise the oxidation of insitu soils exposed within the excavations
- Minimise the drainage of soils by limiting any groundwater drawdown within excavations to the absolute minimum required to complete the excavation safely. Seepage entering the excavation should be minimised through the use of physical barriers
- Where material is to be transported to the treatment facility via public roads, wheel cleaning facilities will be established at site exits to prevent offsite contamination during transport

- Material will be transported within trucks with secure tailgates
- Records of transport including individual truck details and quantity transport will be retained at the Project Office
- At the end of each transport shift an inspection of the transport route will be undertaken by the Supervisor to determine if material has been spilt. Where material has been spilt on public roads it will be removed immediately
- When run-off accumulates, water quality will be monitored regularly during the construction period, particularly following substantial rainfall events. Retained water will be sampled, tested and treated to the parameters above and as nominated in the Soil and Water Quality Management Plan (SWQMP) for discharge.

## 6. Mitigation Measures

Mitigation measures for soil and water quality management for the construction phase of the project are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
Implement the procedures and protocols outlined in this ASSMP	Environment Manger Project Engineer	MCoA B2.6	Throughout construction
Notify the NSW Maritime Authority immediately if ASS are encountered during the works	Project Manager	MCoA B2.6	Throughout construction

## 7. Records and Communication

All records of soil testing will be kept on file in the project records. These records need to include the pH prior to and after testing, the volume of material treated and the volume of lime added. The volume of material treated will be summarised.

Accurate and up to date records are to be maintained for all monitoring.

## 8. Environmental Incidents and Complaints

Should an environmental incident occur during the course of the works, it shall be handled in accordance with the requirements of the CEMP.

## Appendix 1 Acid Sulphate Soil Treatment Flowchart

### STEP ONE

Geotech report for all soils excavated on site to ascertain Potential ASS (**below 5m AHD**)

### STEP TWO

Look at the geo-tech report (see section 5.6). If the **TAA+TPA is greater than 18 mol H+/t** or the **Spos% is greater than 0.03%** treatment is required before work can commence

### STEP THREE

Liming rates will be given in the geo-tech report

### STEP FOUR

Treatment should be with high-grade aglime. Soil is laid out on treatment **pads of no thicker than 300mm**. This process should take about 2 or 3 days. Alternatively remove from site or re-use as fill

### STEP FIVE

**Verification sampling** must be completed at a rate of one sample per 100m<sup>3</sup> of treated soil. Once treatment is successful the soil may be treated as normal fill