

Sydney Port Botany Terminal 3 Project

Shorebird 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
EM	Environmental Manager
EPA	Environmental Protection Agency
ERAP	Environmental Risk Action Plan
OEH	Department of Climate Change and Water
SMP	Shorebird Management Plan
EIS	Environmental Impact Statement
PEHEP	Penrhyn Estuary Habitat Enhancement Plan
MCoA	Ministers Conditions of Approval

Distribution

The master 'controlled' SMP document forms part of the project's CEMP as an Appendix. The controlled copy will be retained in TeamBinder, the Laing O'Rourke document management system, where it can be accessed by personnel as necessary.

All paper copies of this SMP will be considered as 'uncontrolled' unless they have been allocated a 'copy number' in a colour other than black.

The client representative will be provided with a copy in conjunction with the submission of the CEMP.

Issue, Revision and Re-issue

The initial issue of this SMP has been reviewed by Laing O'Rourke's Regional Environmental Manager to ensure it meets the requirements of the current EMS and policy, contract, specifications and standards. The plan is approved for use on the project by the Project Director. Evidence of initial review and approval is by signatures on the cover sheet.

In conjunction with the submission of the SMP, Laing O'Rourke will coordinate and facilitate an initial SMP Workshop with representatives from the client and Laing O'Rourke to discuss the contents and application of the SMP to facilitate the approval of the SMP and agree the proposed management measures and controls.

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

Revisions may result from:

- Management Review
- Changes to the Company's standard system
- Audit (either internal or by external parties)

- Client complaints or non-conformance reports.

Revisions shall be reviewed and approved by the Project Manager prior to issue. Updates to this SMP are numbered consecutively and transmitted to holders of controlled copies.

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1. Introduction

This Shorebird Management Plan (SMP) has been developed to address the construction activities associated with the Sydney Port Botany Terminal 3 (SPBT3) Project.

Development of Sydney Port Botany Terminal 3 will involve the construction of onshore civil infrastructure including container stacking areas. The proposed Terminals have four berths with a total length of 1,180 m. The approximate Terminal area, excluding the Wharf area is 46 ha.

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.

It is noted that the Penrhyn Estuary Habitat Enhancement works are not carried out as part of the Port Botany Terminal 3 expansion civil works. These works will be undertaken by others, as coordinated by Sydney Ports Corporation.

As the land reclamation works have been completed, the major estuary works have been finalised. Many shorebird habitat requirements in the project EIS refer to this completed stage of land reclamation and estuary habitat creation.

The majority of the civil works will take place on the reclaimed land and the existing Sydney Ports rail area. The civil works items that will take place on the border of the estuary tidal zone include headwall installation for drainage outlets and creation of a drainage depression required to dissipate and direct stormwater. Avian and Saltmarsh ecologists have been engaged and consulted to develop specific work method statements for these works.

1.1 Objective

The objective of this SMP is to ensure shorebirds are managed effectively during construction to avoid any environmental incident.

Appropriately trained personnel and experience gained from previous projects will be used to achieve high environmental performance on the SPBT3 Project.

It is recognised that during construction some specific areas will 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. These alterations are expected to primarily involve erosion and sediment control issues and will be documented as updated erosion and sediment control plans for different stages of the construction works.

This SMP 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 outlined in the Aurecon Framework Construction Environmental Management Plan
- Address the requirements of the relevant environmental legislation as it applies to this project

- Address the requirements of the Environment Protection Licence issued for the works undertaken for the SPBT3 Project
- Summarise potential impacts on the environment from the proposed works
- Document environmental procedures to control potential environmental impacts.

Responsibilities for the implementation and management of this SMP are in accordance with the Project's Construction Environmental Management Plan.

1.2 Targets

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

- Monitor the effects of activities and the effectiveness of mitigation measures
- Ensure all works with potential risk to shorebird management are controlled in accordance with this plan
- Ensure all personnel are appropriately trained in environmental awareness and the significance of the ongoing health of the surrounding Bay.
- Minimise impacts to the shorebirds roosting on the northern shoreline of Botany Bay between the Parallel Runway and the existing port
- Minimise noise and use of lighting in the immediate area of the Estuary
- Limit public access to the Estuary to ensure protection for the shorebirds in conjunction with Sydney Ports
- Ensure that buildings and associated structures do not create a closed in feel to the estuary whereby bird movements are limited
- Observe OEH management strategies, plans and recovery actions for shorebirds and the threatened seabird, Little Tern (*Sterna albifrons*).

1.3 Statutory provisions and guidelines

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

- Planning Approval
- Native Vegetation Act 2003
- Noxious Weeds Act 1993
- Threatened Species Conversation Act 1995
- Environment Protection and Biodiversity Conservation Act

1.4 Ministers Conditions of Approval

MCoA's relevant to shorebird management are outlined below.

MCoA Reference	MCoA Detail
B2.9A	In the existing bird feeding habitat to be retained as part of the Penrhyn Estuary Habitat Enhancement Plan required under condition B2.31, sediment deposition over the area shall not exceed an average of 2 centimetres per year.
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

MCoA Reference	MCoA Detail
	the area.
B2.31	<p>Prior to the commencement of enhancement works, the Applicant shall prepare a Penrhyn Estuary Habitat Enhancement Plan in consultation with Botany and Randwick Councils and the Community Consultative Committee, to be agreed between SPC, DEC, DPI (Fisheries), DNR and DOP. The Plan is to include:</p> <ul style="list-style-type: none"> - details of the proposed enhancement works, including design, staging and timing for completion of key tasks and timeframe for completion of works; - staging to include definition of completion of Stage 1 for purposes of evaluation of success; - details of success criteria for enhancement works, including measurement of impacts on bird numbers in accordance with a monitoring plan, levels and concentrations of food organisms required for birds, acceptable saltmarsh cover; use of existing environmental status as the benchmark for 'no negative impact' together with comparison of relevant reference sites; agreement on time periods for determination of success; - details of contingency plans for specific components for example, erosion of sand/mudflats; - inclusion of a Vegetation Management Plan, providing details of method for mangrove removal and control - inclusion of Marine Mammal Management Plan, prepared in consultation with DEC and DPI (Fisheries); - details of management and monitoring requirements including management and monitoring of surface water quality and groundwater (in liaison with DEC); - details of monitoring of extent, expansion and condition of estuary seagrass, including impact of turbidity, and required management responses; - details of responsibilities for ongoing maintenance of estuary, including maintenance of Stormwater Quality Improvement Devices (SQIDS); and - any other requirements identified and agreed on between the Applicant and relevant agencies. <p>The plan must be submitted and approved by the Director-General prior to the commencement of construction and all works undertaken to the satisfaction of the Director-General.</p>

Note that condition B2.9A refers to dredging works associated with the Port Botany Expansion Project and not part of Laing O'Rourke works. Condition B2.31 is not part of Laing O'Rourke works, this issue is covered by the PEHEP already prepared by SPC and approved.

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
- Penrhyn Estuary Habitat Enhancement Plan (PEHEP)
- Little Tern Recovery Plan (DECC, October 2003)

3. Strategic Approach

3.1 Existing Environment

Shorebird numbers in Penrhyn Estuary exhibit a declining trend. The habitat enhancement works are designed to manage and mitigate potential negative impacts that may result from expanding Port Botany.

Double-banded Plovers *Charadrius bicinctus*, and other shorebirds, are present at Penrhyn Estuary between April and August.

A colony of Little Tern (a Seabird listed on Schedule 1 Endangered Threatened Species Conservation Act 1995) breeds in Botany Bay and are present between September and March. The preferred breeding and roosting site for these birds is Towra Spit Island.

The Penrhyn Estuary Habitat Enhancement Plan (PEHEP) has been prepared by SPC to meet NSW and Commonwealth conditions of approval for the project. The PEHEP specifies a design for all estuary works, and in particular the new shorebird feeding and roosting habitat. These works are being undertaken by others, separate to the SPBT3 civil works project.

3.2 Potential Impacts

Due to the migratory habits of shorebirds at Penrhyn Estuary, construction activities can only be undertaken between April 1 and July 31 each year in the Seasonal Exclusion Zone, when the least numbers of shorebirds are present. No construction activities are allowed within the Permanent Exclusion Zone at any time.

Little Tern may breed in Penrhyn Estuary if suitable conditions are created through the estuary enhancement process. The arrival of Little Tern at the Estuary will be reported to OEH during shorebird monitoring by others who are engaged to undertake the enhancement works. OEH is best positioned to undertake any intervention strategies with regard to Little Tern.

3.3 Mitigation Measures

Mitigation measures for shorebird management for the civil construction works are outlined below.

Mitigation Measures	Responsibility	Source of Requirement	Timing
In conjunction with SPC, schedule works in Penrhyn Estuary according to shorebird breeding and migratory seasonal habits. Specific construction method statements for works in Penrhyn Estuary (drainage works) have been developed in consultation with an avian ecologist. A site inspection will be undertaken by the avian ecologist prior to these works commencing to check for roosting birds.	Environment Manger Superintendent	Aurecon FCEMP SPC Land Owners Consent letter to SICTL	Throughout construction
Prevent persistent ponding on reclamation areas, and fill hollows on other parts of the sites after rain to minimise attraction of birds. Netting will be used to cover any water detention ponds, no pooling of water will be allowed on site without sufficient coverage.	Environment Manger Superintendent	EIS Ch 37.2	Throughout construction
The following two measures would assist in the control of feral animals at Penrhyn Estuary: <ul style="list-style-type: none"> ensure rubbish is placed in appropriately covered bins at all times. Ensure rubbish is regularly disposed. should shorebird monitoring during construction and operation of the Port Botany Expansion reveal feral cat and fox predation (on shorebirds) to be an ongoing issue, a 1080 fox baiting program should be initiated in consultation with NPWS and an expert shorebird ecologist. 	Environment Manger	EIS Ch 20.8.4	Throughout construction
To reduce disturbance to migratory shorebirds in Penrhyn Estuary during construction, works within the Estuary would be carried out between late March and early August to correspond with the period when most	Environment Manger	EIS Ch 10.1	Throughout construction

Mitigation Measures	Responsibility	Source of Requirement	Timing
migratory shorebirds are on migration or at their northern hemisphere breeding grounds.			
If shorebirds are attracted to construction sites, trial and operate bird deterrents as per Bird Hazard Management Plan, suitable for protected shorebirds to reduce attraction of shorebirds to construction sites, including the new terminal and public recreation areas.	Environment Manger	EIS Ch 29.4.2	Throughout construction
Impacts of construction activities on shorebirds using Penrhyn Estuary are to be monitored routinely and measures taken to address any potential adverse impacts. Correspondence with the contractors and consultants undertaking the Penrhyn Estuary Habitat Enhancement works will be ongoing to ensure a successful project is achieved in regards to the enhancement works.	Environment Manger	Aurecon FCEMP 5.3.4	Throughout construction
Erect a 4 m high noise barrier along the northern and eastern boundaries of the new terminal. The upper 2 m of the barrier would be constructed from a translucent material with a printed design to minimise "enclosure" of the Estuary but prevent birds from flying into it. This noise barrier has been designed and requires the drainage works on the northern and eastern side of the project site to be completed prior to the noise barrier installation. In turn, the drainage works are subject to seasonal exclusion periods stipulated by Sydney Ports and the Penrhyn Estuary Habitat Enhancement Plan. It is aimed to install this barrier as early as practical during construction, in line with the seasonal requirements.	Project Engineer	Aurecon FCEMP 5.3.4	At the commencement of construction
To avoid birds roosting on site, ensure rubbish is placed in appropriately covered bins at all times. Ensure rubbish is regularly disposed.	Environment Manger Superintendent	Aurecon FCEMP 5.3.4	Throughout construction
Loading and unloading activities will be undertaken as far away from sensitive areas of the Penrhyn Estuary to minimise impact on the shorebird populations. Noisy plant and equipment will be positioned as far away as practical during construction to minimise impact on the shorebird habitat.	Environment Manger Superintendent	MCoA B2.20	Throughout construction
Should shorebird monitoring during construction and operation of the Port Botany Expansion reveal feral cat and fox predation (on shorebirds) to be an ongoing issue, a 1080 fox baiting program should be initiated in consultation with NPWS and an expert shorebird ecologist.	Environment Manger	Aurecon FCEMP 5.3.4	Throughout construction

4. Training

All site personnel shall undergo site specific induction training which will include environmental awareness. It will also include training in effective shorebird management on site. The need for these measures will be emphasised.

Toolbox meetings will also be undertaken as and when required. They will cover specific environmental issues and shall include shorebird management measures.

Personnel directly involved in implementing shorebird management measures on site will be given specific training in the function, operation and maintenance of the various measures to be implemented. 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.

4.1 Emergency Response

All incidents will be recorded on the Laing O'Rourke F 1222 Environmental Incident Complaint Report form. 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. The incident investigation is outlined further in the CEMP.

4.2 Monitoring of Controls

All shorebird management measures will be regularly inspected and maintained throughout the project.

Items that require repair or action will be documented on the weekly checklist or on form F 1228 as seen in the CEMP. Items that require specific and detailed action will be recorded on the Project's Corrective Action Register.

A detailed inspection will also be conducted three to four days prior to long weekends, RDO weekends or other periods when the site will be shut down for a lengthy time period. This will enable items requiring attention to be identified, raised on an Environmental Improvement Request (EIR) (Form F 1228) and implemented. An example of an EIR is seen in the CEMP.

The Superintendent 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.

Inspections to be recorded on Form 1227 Weekly Environmental Inspection Checklist. If deemed necessary, additional sedimentation control measures will be implemented to ensure that water quality is maintained throughout the works.

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

The following forms and check sheets shall be utilised to inspect, monitor and record erosion and sediment controls and water quality on this project and filed in accordance with the project filing system.

- Form F 1227 Weekly Environmental Checklist
- Form F 1228 Environmental Improvement Request