



CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

Guidance Material

May 2009

FOREWORD

All proponents of developments on Sydney Metro Airports are asked to assess their proposals in order to identify the potential environmental impacts associated with the works. Where potential environmental impacts are identified proponents are required to prepare a Construction Environment Management Plans (CEMP). The CEMP identifies the management measures the proponent will implement in order to prevent or minimise the environmental impacts associated with their works.

The CEMP is assessed by Sydney Metro Airports and the Department of Infrastructure, Transport, Regional Development and Local Government and, when approved, becomes the final CEMP. The final CEMP is implemented by the proponent in the course of the construction works.

This Construction Environmental Management Plan guidance material (this Guide) has been developed by Sydney Metro Airports to assist you, the Proponent, identify and manage the environmental risks (potential impacts) associated with the construction of your proposed development at Sydney Metro Airport - [Bankstown](#), NSW.

This Guide specifies the issues the proponent is required to address in preparing their CEMP. As every proposed development is different the common construction activities and impacts used as examples in this Guide may not address all the potential environmental issues associated with your development proposal.

You, the Proponent, are responsible for ensuring;

- a. that the information provided in your CEMP is comprehensive and correct,
- b. the requirements of your final CEMP are communicated to all site staff and sub-contractors, and
- c. all management measures identified in your final CEMP are implemented during the construction works.

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DEFINITIONS

Term	Definition
AEM	Sydney Metro Airport Environmental Manager responsible for oversight of the management of environmental matters at the Airport
AEO	Airport Environment Officer responsible for regulation of the Airports Act 1996 and the Airports (Environment Protection) Regulations 1997
CEMP	Construction Environmental Management Plan
final CEMP	The CEMP prepared by the Proponent and approved by the AEM and the AEO
the Proponent	The Proponent includes the applicant and any person / entity engaged by them to deliver the proposed project.
SMA - Bankstown	Sydney Metro Airport - Bankstown

CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

1.0 INTRODUCTION

In this section identify;

- 1. The purpose of the CEMP*
- 2. The party that prepared the CEMP*
- 3. The party that will be responsible for implementing and maintain the CEMP*

2.0 PROJECT DETAILS

2.1 Project Description

In this section provide;

- 1. A detailed description of the proposed works;*
- 2. A summary works schedule, including anticipated start and finish dates; and*
- 3. A site map (The required content of the site map is described at Appendix A).*

2.2 Legislative Requirements

In this section identify the legislation applicable to construction works (The key legislation is listed below, but other legislation may be applicable and should be listed).

The key environmental legislation applicable at the airport that the proposed works must comply with includes but is not limited to the;

- *Airports Act 1996*
- *Airports (Environment Protection) Regulations 1997*
- *Bankstown Airport Statutory Master Plan 2005 – 2035*
- *Bankstown Airport Environment Strategy 2005 – 2010*
- *Environment Protection and Biodiversity Conservation Act 1999 and*
- *All other relevant environmental legislation, regulations, measures, guidelines and codes of practice*

Where the construction works have impacts extending off the airport site NSW State environmental legislation and other requirements apply, including the;

- *Protection of the Environment Operations Act 1997 and associated regulations and policies.*

2.3 Responsibility

In this section identify;

- 1. All the parties associated with the proposed works; and*
- 2. Their responsibility for development and implementation of the CEMP.*
- 3. Provide contact details for relevant parties.*

Relevant parties include, but may not be limited to, the following;

- The Project Proponent
- The Principle Contractor
- Site Supervisor
- Site Personnel and sub-Contractors
- Sydney Metro Airports Airport Environment Manager (AEM)
- Airport Environment Officer (AEO)

Note:

Sydney Metro Airport Environment Manager (AEM)

The AEM is Desiree Lammerts (0408 267 816).

The AEM will maintain an active monitoring role in order to ensure that requirements of the CEMP are satisfactorily implemented. The AEM will liaise with the Proponent as required in relation to aspects of compliance with the CEMP.

Airport Environment Officer (AEO)

The AEO is Joanne Stuckey (0434 074 216).

The AEO is responsible for regulatory oversight of the works and will maintain an active monitoring role in order to ensure that the requirements of the CEMP are satisfactorily implemented.

The Proponent may designate responsibility for development and implementation of the CEMP to the Principle Contractor and their sub-contractors however, the Proponent remains responsible for ensuring compliance with the agreed final CEMP.

3.0 GENERAL MANAGEMENT REQUIREMENTS

Management of the following matters must be addressed in the CEMP.

3.1 Environmental Awareness and Training

All personnel working on the proposed development must be aware of their environmental obligations responsibilities and have received the necessary training to meet the environmental obligations associated with their duties, as specified in this CEMP.

In this section specify;

- 1. The training that personnel working on the proposed development will receive; and*
- 2. The party responsible for ensuring all personnel receive environmental training.*

(Training can take various forms including site induction, toolbox talks and meetings).

3.2 Environmental Management Records

Appropriate records that demonstrate the environmental obligations identified in this CEMP are being addressed and verify the status of those matters must be maintained.

These records must include induction and training records, monitoring data, complaint and incident reports, licences and permits as required, waste transfer receipts, fill validation reports and any other relevant documents / reports as required.

In this section specify;

- 1. What records will be maintained; and*
- 2. The party or parties that will be responsible for maintaining environmental records.*

Note: The records must be legible and readily interpretable by a third party.

A copy of all records must be provided to the AEM at the completion of the project or on request at any time during construction.

3.3 Monitoring / Auditing

In this section specify;

- 1. What environmental aspects will be inspected and / or monitored;*
- 2. The frequency of the environmental monitoring; and*
- 3. The party responsible for the monitoring.*

Note: The AEM will monitor the overall environmental performance for the period up to the point of practical completion. Monitoring shall occur as often as necessary to ensure conformance with this CEMP.

3.4 Reporting

A brief written report to the AEM incorporating the following details is required;

- Results of all inspections and monitoring events and any actions arising from inspections
- Non-conformances with the approved CEMP and a description of the corrective action taken to address these matters.
- Summary of complaints received and the action taken to manage them
- Summary of environmental incidents and emergencies, response measures and corrective actions.

In this section specify;

- 1. The matters that will be addressed in written reports;*
- 2. The format the written reports will take (hard copy or electronic); and*
- 3. The proposed frequency of the reports*

Note: Reports will also be promptly made available to the AEM on request (e.g. Incident reports).

3.5 Complaint Handling

All complaints received during the construction period must be actioned and logged. The AEM must be notified as soon as practical of the nature of the complaint and the action required / taken to resolve it.

In this section specify;

- 1. The manner in which complaints will be managed;*
- 2. The details that will be documented; and*
- 3. The party responsible for notifying the AEM of the complaint.*

Note: The AEM will investigate to confirm that any complaints received have been satisfactorily resolved.

3.6 Non Conformance with Targets

Non-conformances with the targets specified in the final CEMP and the action taken to rectify them must be documented and reported to the AEM

In this section specify;

- 1. The manner in which non-conformance with targets will be managed;*

2. *The details that will be documented; and*
3. *The party responsible for notifying the AEM of the non-conformance and the action taken to rectify it.*

Note: The AEM will investigate to confirm that non-conformances have been satisfactorily resolved.

3.7 Environmental Incidents and Emergencies

In this section specify

1. *The most likely and most significant environmental risk associated with the proposed work;*
2. *The manner in which significant environmental incidents will be managed; and*
3. *The party or parties responsible for managing significant environmental incidents.*

Note: All environmental incidents and emergencies must be reported to the Sydney Metro Airports Duty Operations Officer (0419 294 432) and the AEM as soon as practicable.

Sydney Metro Airports will direct the emergency response and / or provide assistance as required (i.e. If the matter impacts, or threatens to impact, aviation areas and / or off-airport areas).

Sydney Metro Airports will investigate all environmental incidents and emergencies to confirm they have been appropriately resolved.

3.8 Licenses and Permits

In this section specify;

1. *The licences permits and consents required for conducting the proposed works; and*
2. *The party responsible for ensuring that all relevant licences, permits and consents are in place.*

Note: All relevant licences and permits must be available for inspection during normal working hours throughout the construction phase.

4.0 IDENTIFICATION AND MANAGEMENT OF ENVIRONMENTAL ISSUES

4.1 Introduction

The environmental impacts associated with the proposed works must be identified and assessed and management strategies must be developed that prevent or, where prevention isn't possible, minimise those impacts.

This section is designed to help you to identify and assess the environmental risks associated with your project, so that you can identify the activities that require management strategies in order to protect the environment.

Environmental risks may be directly related to the construction works such as noise, dust, erosion and sedimentation, wastes and chemicals or may be site specific due to the occurrence of, or proximity to, sensitive areas (e.g. waterways, residential housing, native vegetation, fauna, heritage items and / or contaminated sites).

4.2 Identification of potential environmental impact

In order to identify the potential environmental impacts associated with the proposed work;

- 1. List all the activities involved in carrying out the proposed works;*
- 2. Identify what aspect of the environment the activities could interact with; and*
- 3. Identify the potential impact if the activity isn't managed appropriately.*

To assist in this task an example of the potential aspects and impacts associated with a number of common construction activities is provided in the Table 4.1 below.

Because all works involve different activities that may interact with different aspects of the environment not all the environmental impacts associated with your project will be identified in the attached table. You should therefore prepare a table that lists all the activities associated with the works you propose and identify how these could interact with the environment. You can then identify what the *impact* on the environment could be, if these activities are not properly managed.

Table 4.1 Aspects and Impacts associated with common construction activities

Activity	Aspect	Impact	Likelihood	Conseque	Risk
Site Management	Poor practice	Non-conformance with approved CEMP targets			
Excavation	Exposed soil	Erosion of exposed surfaces causing sediment to enter drains and natural water ways			
	Vehicle movement over exposed soil	Tracking of soil onto local roadways			
	Wind over exposed soil	Erosion of exposed surfaces causing dust			
	Unexpected find	Excavation uncovers contaminated materials			
	Unexpected find	Excavation uncovers article of aboriginal or European cultural heritage significance			
Stockpiling Material	Water movement over loose soil	Erosion of exposed surfaces of stockpiled materials causing sediment to enter drains and exposed surfaces			
	Wind over loose soil	Erosion of exposed surfaces causing dust			
	Angle of repose	Stockpiled material collapses and enters stormwater drains and natural water ways			
Equipment operation	Emission of pollutants	Pollutants exceed specified air quality standards			
	Emission of noise	Noise exceeds specified standards, disrupts neighbours			

Table 4.1 Aspects and Impacts associated with common construction activities

Activity	Aspect	Impact	Likelihood	Conseque	Risk
	Hours operated	Noise outside regular work hours disrupts neighbours			
Washing of plant equipment on site	Poor practice	Wash water (containing detergent, sediment or other pollutants) enters and pollutes stormwater drains and natural water ways			
Refuelling of equipment on site	Poor practice	Spillage enters soil, causing soil contamination and / or groundwater contamination			
Storage of hazardous or dangerous goods	Poor practice	Spill enters soil causing soil contamination			
	Poor Practice	Spill enters and pollutes stormwater drains and natural water ways			
Pruning or removal of vegetation	Significant vegetation	Significant vegetation not identified on site or adjacent to site and destroyed or adversely impacted			
Disruption of fauna	Significant fauna	Significant fauna not identified on site or adjacent to site and adversely impacted or destroyed			
Importation of fill material	Control of fill quality	Contaminated fill imported to site causing soil contamination			
Removal of excavated material	Control of materials	Removed materials contaminated and cause contamination at fill site			
	Control of materials	Removed materials illegally dumped			
Storage of solid waste material	Poor practice – containment	Stored materials escape and litter blown onto surrounding land and water waters			

Table 4.1 Aspects and Impacts associated with common construction activities

Activity	Aspect	Impact	Likelihood	Consqe	Risk
	Poor practice - containment	Stored materials attract scavengers (birds) and create hazard to aviation			
Storage of liquid waste material	Poor practice - containment	Stored materials spill and cause contamination of soil and / or water			
Disposal of waste materials	Control of materials	Waste materials illegally disposed and contaminate land or waterways			
Unapproved works to buildings	Cultural heritage	Unapproved works destroy or damage a heritage building			

4.3 Establishment of environmental risk

In order to establish the level of risk to the environment associated with potential impacts determine;

- 1. The likelihood that a potential environmental impact will occur, if the activity isn't managed;*
- 2. The consequence to the environment if the impact were to occur; and*
- 3. Use a risk matrix table to assess the level of risk associated with each construction activity if it isn't properly managed.*

Risk Matrix Table

	Likelihood					
Consequence	Practically impossible	Highly Unlikely	Unlikely	Possible	Quite Likely	Common occurrence
Catastrophic	High	Severe	Severe	Severe	Severe	Severe
Massive	Moderate	High	Severe	Severe	Severe	Severe
Major	Low	Moderate	High	High	Severe	Severe
Moderate	Low	Low	Moderate	Moderate	High	High
Minor	Negligible	Low	Low	Low	Moderate	Moderate
Slight	Negligible	Negligible	low	Low	low	Low

Risk Rating

Rating	
Severe	Significant damage, medium to long term or permanent effect, off site and off airport impacts, significant cost to repair
High	Extensive damage, medium to long term effect, off site and potential off airport impact, moderate to high cost to repair
Moderate	Moderate damage, short to medium term effect, off-site impacts repairable at low to moderate cost
Low	Discernable impact, short term effect, site impact only, repairable at little cost
Negligible	No discernable impact, no action required

4.4 Identification of environmental management measures

When you have established the level of risk associated with each construction activity, you must develop environmental management measures (e.g. procedures and mitigating measures) for all activities that have potential impacts with a risk rating of Low, Moderate, High or Severe. The environmental management measures you develop must be implemented during the construction works.

In this section specify;

- *Environment management measures that prevent or minimise the potential impacts you have identified;*
- *The monitoring required that will confirm the environment management measures are effective;*
- *The Corrective action to be taken in the event the environment management measures fail to address the environmental impact; and*
- *The party or parties responsible for implementing, monitoring and maintaining the environment management measures that have been developed.*

The environmental management measures that you propose can be specified in the form of a procedure or outlined in a table.

An example is provided in the table below.

1. The environmental impacts identified in Table 4.1 *Aspects and Impacts associated with common construction activities*, as having a low, moderate, high or severe risk are transcribed into the table;
2. The environment management measures or actions proposed to prevent or minimise the potential environmental impacts; as well as
3. The monitoring proposed to ensure that the management measures are effective and achieve their aims are documented; and
4. Responsibility is assigned to ensure that each management measure / action is implemented.

4.5 Site Management

SITE MANAGEMENT		
Objective: To ensure the smooth implementation and integration of the CEMP into the work plan.		
Target: CEMP implemented as documented during construction		
Environment Impact	Environment Management Measures	Responsibility
<p><i>Enter impacts associated with site management from Aspects and Impacts Table</i></p> <p>Example Non- conformance with approved CEMP targets</p>	<p><i>Enter management measures and actions that will be taken to prevent or minimise potential environmental impact.</i></p> <p><i>Enter the monitoring that will be conducted to ensure the environment management measures are effective and achieve specified targets</i></p> <p>Example</p> <ul style="list-style-type: none"> • All personnel working at the site will be trained in the requirements of the CEMP. • Carry out inspections of environment measures on daily / weekly basis, as specified 	<p><i>Assign responsibility for each environment management measure or action.</i></p> <p>Example e.g. Site Manager</p>

4.5 Erosion and Sediment control

EROSION & SEDIMENT CONTROL		
Objective: To minimise the quantity of soil lost during construction due to land-clearing and minimise the generation of contaminated stormwater and the impact of contaminated stormwater on receiving waters.		
Target: No erosion and/or sedimentation impacts during the construction phase.		
Environment Impact	Environment Management Measure / Action	Responsibility
Erosion of exposed surfaces causing sediment to enter drains and natural water ways		
Erosion of exposed stockpiled material causing sediment to enter drains and exposed surfaces		
Tracking of soil onto local roadways		
Collapse of stockpiled material causes sediment to enter drains and natural water ways.		
Failure of erosion controls allows sediment to enter drains and natural water ways.		

4.4 Air quality management

AIR QUALITY MANAGEMENT		
Objective: To ensure there are no health or safety risks or loss of amenity due to the generation of dust		
Target: Zero dust complaints for the duration of the construction phase		
Environment Impact	Environment Management Measure / Action	Responsibility

4.5 Water Quality Management

WATER QUALITY MANAGEMENT		
Objective: To ensure that the quality of surface water leaving the site is acceptable during the construction phase.		
Target: Maintain or improve pre-construction surface water quality.		
Environment Impacts	Environment Management Measure / Action	Responsibility

4.6 Flora

FLORA		
Objective: To avoid or minimise negative impacts on significant, protected or natural areas of vegetation on or adjacent to the site		
Target: Significant and / or protected areas are identified and not adversely impacted by construction		
Environment Impact	Environment Management Measure / Action	Responsibility

4.7 Fauna

FAUNA		
Objective: To avoid or minimise negative impacts on fauna on or adjacent to the site.		
Targets: No disruption to wildlife corridors or destruction of native species. Zero fauna injuries or deaths.		
Environment Impact	Environment Management Measure / Action	Responsibility

4.8 Noise

NOISE		
Objective: To ensure nuisance noise from noise and vibration does not occur.		
Target: Zero noise complaints for the duration of the construction phase.		
Environment Impact	Environment Management Measure / Action	Responsibility

4.8 Land Contamination

LAND CONTAMINATION		
Objective: To prevent contamination of the site.		
Targets: Nil contamination of the site during the works – All solid, liquid and chemical wastes will be contained, collected and appropriately disposed.		
Environment Impact	Environment Management Measure / Action	Responsibility

4.9 Waste Management

WASTE MANAGEMENT		
Objective: To prevent / minimise environmental impact of wastes generated on site.		
Targets: Nil contamination or environmental impact at the site by waste. Minimal waste discharged from works to the environment		
Environment Impact	Environment Management Measure / Action	Responsibility

4.10 Cultural Heritage

CULTURAL HERITAGE		
Objective: To avoid damage to items or areas of cultural heritage significance.		
Targets: No damage to items of cultural heritage significance that may be identified during the course of the project.		
Environment Impact	Environment Management Measure / Action	Responsibility

Appendix A – Site Map

The Site Map must show the location of the following;

Site Features;

- Drains (natural and stormwater) including outfall point
- Slope (show contour lines)
- Sensitive flora / fauna
- Cultural Heritage features

Site Facilities;

- Buildings (existing and proposed)
- Drains
- Services (Electrical, telecom, gas)

Environmental Control Measures;

- Sediment and Erosion Controls
- Vehicle wash down area
- Bunded area for refuelling vehicles / equipment maintenance
- Chemical store
- Waste storage area
- Stockpile area