North Penrith

Construction Environmental Management Plan

Stages 2B – 3B

October 2012

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1 INTRODUCTION

1.1 Background

Landcom has prepared this Construction Environmental Management Plan (CEMP) for implementation during the construction of the works under the development applications for the following stages of the North Penrith development (the Project):

- Stages 2B & 2C
- Stage 2D
- Stage 3A
- Stage 3B

This CEMP is preliminary and will be refined by the Principal Civil Contractor prior to commencement of the construction works., subject to detailed design, approval conditions and the operational preferences of the Principal Civil Contractor.

This CEMP should be read in conjunction with the relevant Environmental Impact Statement under Part 4 of the Environmental Planning and Assessment Act 1979.

Figure 1 shows:

- the 40 ha North Penrith site;
- the intended sequencing of construction for the infrastructure works; and
- the areas of Stage 2B & 2C, 2D, 3A and 3B to which this CEMP applies.

The number refers to the Project Application and the letter to the sequential staging.

Figure 1 – Site Plan

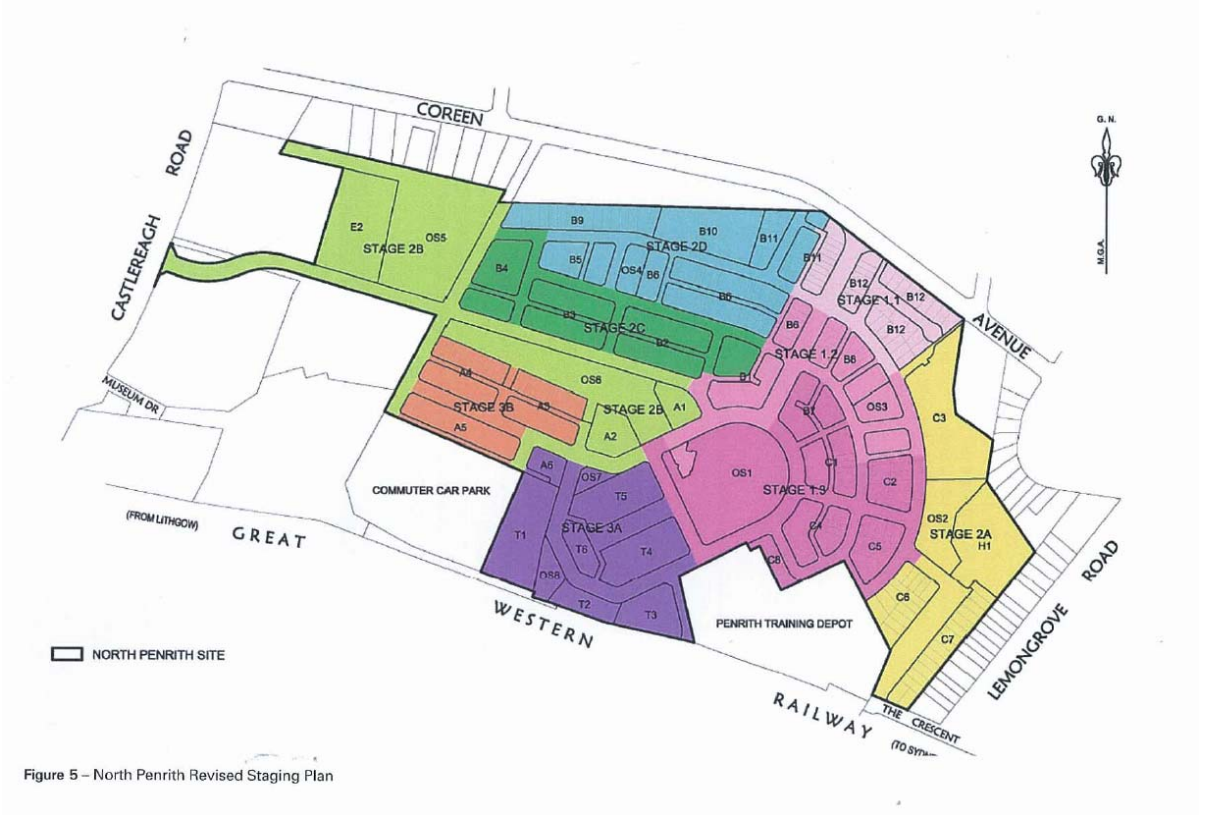


Figure 5 – North Penrith Revised Staging Plan

1.2 Purpose and Scope

This CEMP outlines environmental controls and measures to be implemented during the Project.

The primary objectives of this CEMP are:

- to act as an overarching system to address and provide a framework to manage environmental issues such as: construction noise, air quality, soil and erosion, UXO, contamination, construction traffic, flora and fauna protection, waste management, heritage protection as well as guidelines regarding safe working near RailCorp, Council (new Commuter Car Park) and Defence land;
- to provide continuous and safe access for pedestrians and cyclists during construction as appropriate, particularly at the interface of the site with existing public roads;
- to identify (*at a high level*) where mitigation measures are required;
- to document project requirements for monitoring the implementation of the Contractor's Environmental Management System in accordance with the requirements of the contract (*through the audit and surveillance process*);
- to ensure compliance with relevant legislation, approvals and licenses; and
- to specify the monitoring, reporting and auditing requirements, with nominated responsibilities and timing to ensure the necessary performance criteria are met.

This CEMP describes how the range of environmental issues associated with the project's works will be managed and controlled by way of mitigation measures, monitoring, applying compliance standards, corrective actions, reporting & auditing proceedings.

A series of Preliminary Sub Plans to this CEMP (***Appendix A***) have been prepared to outline the related management protocols of the various environmental matters. These sub plans will be applicable to all contractor staff and their subcontractors and suppliers, during the relevant project phases.

1.3 Planning and Environmental Assessment Context

This CEMP relates to applications made under Part 4 of the Environmental Planning and Assessment Act 1979 and Schedule 2 of the Environmental Planning and Assessment Regulation 2000 to allow construction of Stages 2B & 2C, 2D, 3A and 3B at the North Penrith site, being bulk earthworks, services infrastructure works, road infrastructure works, storm water management works and landscaping works.

An Environmental Impact Statement for each application has been prepared by JBA in parallel with the preparation of this CEMP. It contains a Statement of Commitment relating to the construction phase identifying the environmental safeguards and mitigation measures in order to minimise impact on the environment.

The relevant Conditions of Approval will be inserted in the CEMP upon determination of the applications.

1.4 Project Scope and Timeframe

The Project will include these construction works:

- site establishment and perimeter security measures;
- establishment of environmental and safety controls and traffic control measures
- preparatory works, including small building demolition, trees/shrub removal, topsoil stripping and stockpiling for later reuse in other stages of the construction works;
- bulk earthworks – cut and fill, including the importation of material to raise levels;
- roads and road intersections;
- drainage and storm water management infrastructure;
- utilities servicing infrastructure - electrical, sewerage, telecommunications, potable water and gas;
- lots formation;
- minor works external to the Site, such as footpaths;
- landscaping;
- erecting informative signage at different road entries to the wider site; and
- site de-establishment and handover.

Construction activities will be undertaken within the approved work hours which are anticipated will be:

- Weekdays 7am – 6pm
- Saturday 8am – 1pm
- Sunday and Public Holidays No construction

1.5 Project Management and Policies

This CEMP describes measures for minimizing and managing environmental risks associated with the Project's activities as required under the *Environmental Planning and Assessment Act,* 1979.

As such it is the duty of the Proponent and its contractors to ensure these risks are minimised through the application of industry best-practice and adherence to recognised standards and legislative requirements.

Landcom and each of its contractors must also ensure their own company and policy standards and development standards are met. These would include the likes of:

- Environmental Policy;
- Occupational Health and Safety Policy; and,
- Quality Management Policy.

1.6 CEMP for the construction works under the Stage 2 Project Application

It is the intention this CEMP prepared for the construction of the works under Stages 2B, 2C, 2D, 3A and 3B will be adopted as the base document for the CEMP for the construction works, and augmented and customised to reflect:

- Any unique construction aspects relevant to the various stages – such as construction of the wetland and water feature in Stages 2B & 2C;
- The location of the works within the wider site, with reference to site boundaries and neighbours, such as working adjacent to Penrith Railway Station in Stage 3A;
- Conditions of Approval, and
- The preferences and operational methodologies of the Principal Civil Contractor.

1.7 Environmental Management Systems

The CEMP is the key management tool and lead environmental management document in relation to environmental performance during the construction phase of the Project. However, it is important to acknowledge that this CEMP forms only part of the overall environmental management framework for the project and that the CEMP is supported by a range of supplementary documents and measures.

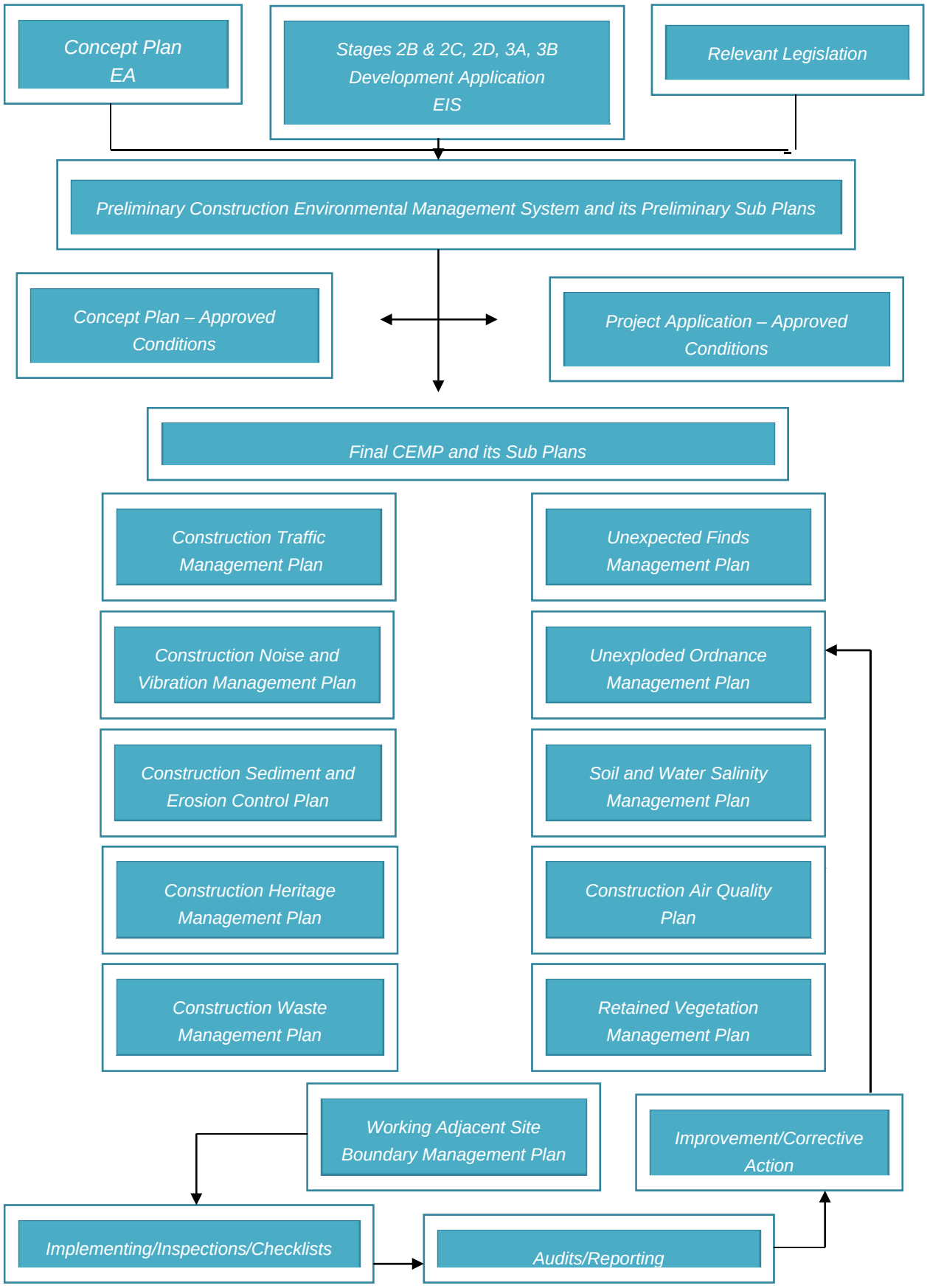
Figure 2 provides an outline of the environmental management frameworks and documents to be considered in the overall management of the Project.

In addition, conditions imposed on the project and all relevant legislation must be adhered to for carrying out various activities in relation to the Project. Key approval and legislative requirements relating to this project are further outlined in **Section 2.**

It should be noted that this CEMP will require review following the issue of the Conditions of Approval and will form a guide as to the Contractor's requirements.

Adherence to the protocols contained within, or referred by, this document is the responsibility of the Contactor.

Figure 2 – Environmental Management Framework



2 LEGISLATIVE AND APPROVAL REQUIREMENTS

2.1 General

The primary legislative requirements considered by this CEMP are those determined under the Part 4 of the Environmental Planning and Assessment Act 1979 and Schedule 2 of the Environmental Planning and Assessment Regulation 2000.

Reference should be made to the relevant Environmental Impact Statement, which this CEMP is a part, for the full range of environmental matters and their consideration.

In addition to the approvals issued under the Environmental Planning and Assessment Act, 1979, supplementary licenses or approvals under relevant environmental legislation may be required for the Project.

2.2 Conditions of Approval

Once the development application is approved, this CEMP will need to be updated to incorporate all relevant Conditions of Approval.

2.3 Licences and Permits

The Principal Civil Contractor will obtain and keep current all licences and approvals (other than the development consent and the Construction Certificate to enable commencement of the Works). The Principal Civil Contractor will comply with the terms of the licences and approvals, and maintain a register of all permits and licences, including information on:

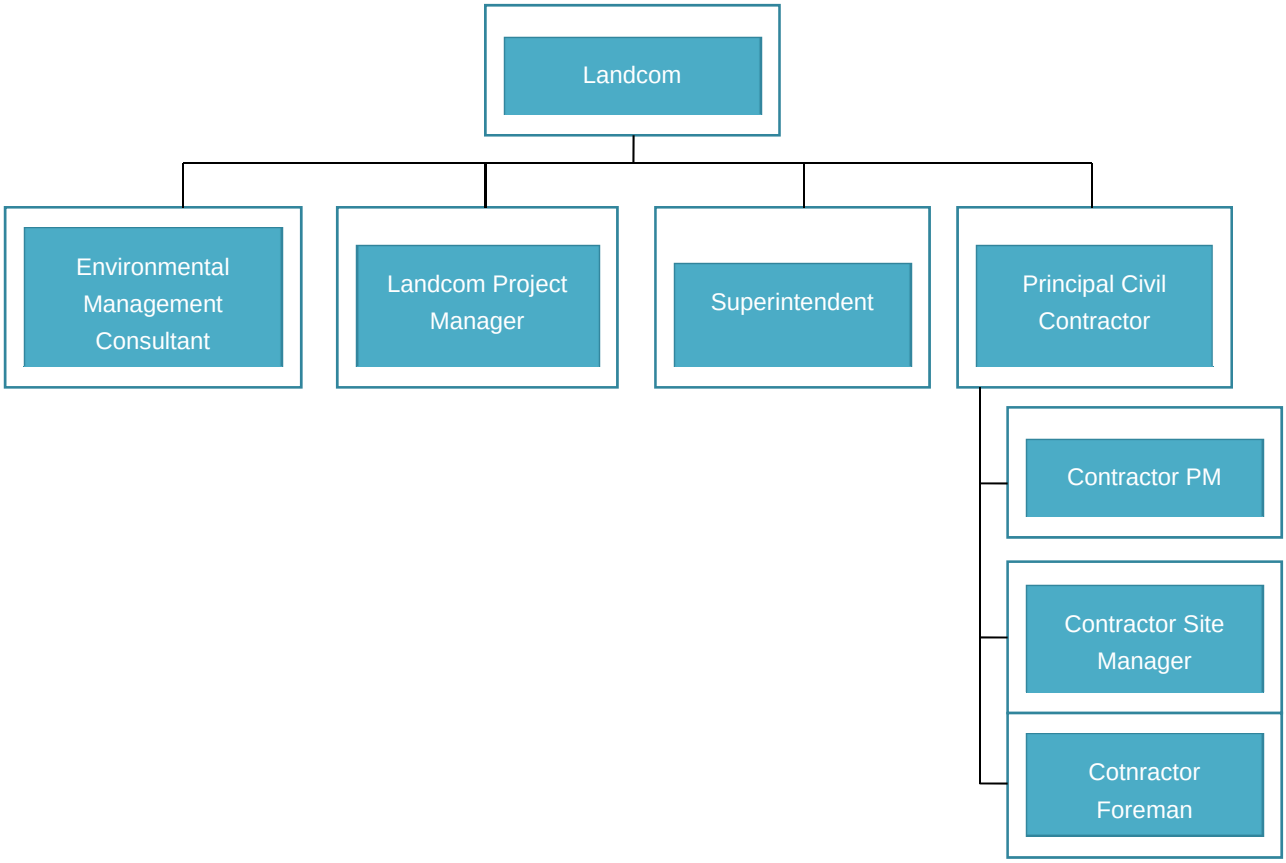
- Regulatory authority;
- Licence/permit reference;
- Purpose;
- Licence holder, and;
- Expiry/ renewal date.

3 ENVIRONMENTAL MANAGEMENT PROCESS

3.1 Organisational structure

The organisational structure for the environmental management process during construction is shown in **Figure 3.**

Figure 3 – Management Structure for the environmental management process



3.2 Landcom

Landcom defines and drives the Project. Landcom is responsible for obtaining planning approvals, and ensuring all relevant conditions are met.

3.3 Superintendent

The Superintendent will be named in the construction contract between Landcom and the Principal Civil Contractor and will have responsibility for ensuring the conditions of the contract, including those conditions pertaining to the protection of the environment, are met in full.

The Superintendent will work closely with the Principal Civil Contractor and Landcom's Project Manager.

The Superintendent will have significant responsibility and accountability for environmental performance on the Project and must ensure consistency with the relevant legislative requirements, Corporate Standards and contractual obligations.

3.4 Landcom's Project Manager

Landcom's Project Manager has responsibility and accountability for the delivery of the Project. Landcom's Project Manager must ensure that adequate resources are provided to the Superintendent and the Environmental Management Representative to enable them to effectively fulfill their roles. Landcom's Project Manager will work closely with the Superintendent and report to the Principal.

When on site, Landcom's Project Manager will demonstrate commitment to the CEMP by participating in compliance audits and reviewing overall environmental performance against stated objectives.

3.5 Principal Civil Contractor

The Principal Civil Contractor will be responsible for the delivery of the Project under the terms of its contract with Landcom, and in accordance with all relevant legislation and planning conditions.

The Principal Civil Contractor will be required to develop and implement a CEMP which address the aspects and impacts identified in the CEMP which adequately prevents, minimizes, or mitigates the environmental impact of the Project. The Principal Civil Contractor will be required to ensure all subcontractors and suppliers also meet in full the requirements of the CEMP.

3.6 Principal Civil Contractor's Project Manager

The Principal Civil Contractor's Project Manager will have responsibility for ensuring the commitments of the Principal Civil Contractor are met in full, and the CEMP is fully implemented. The Principal Civil Contractor's Project Manager will ensure the necessary resources are provided to enable the Principal Civil Contractor and its sub-contractors to meet their responsibilities in full. The Principal Civil Contractor's Project Manager will liaise closely with the Environmental Management Consultant.

Responsibilities of the Principal Civil Contractor's Project Manager will include:

- Implementing, monitoring and reviewing the CEMP;

- Ensuring the CEMP addresses aspects raised in the CEMP
- Monthly evaluation of how effectively environmental controls are performing;
- Liaising with Authorities and implementing any remedial measures should an environmental incident occur;
- Active participation in auditing of site contractors in relation to environmental performance and adherence to this preliminary CEMP; and
- Updating the CEMP as required.

3.7 Principal Civil Contractor's Site Manager

The Principal Civil Contractor's Site Manager will be site based and will report to the Principal Civil Contractor's Project Manager, and will ensure that the requirements of the CEMP are implemented at all times during the works.

Responsibilities of the Principal Civil Contractor's Site Manager include:

- Ensuring all personnel receive site specific induction training that incorporates the environmental relevance of the CEMP and – as far as is reasonably practical, ongoing environmental awareness training;
- Keeping records of environmental performance;
- Liaising with Authorities and implementing any remedial measures when an environmental incident occurs;
- Ensuring any complaints received are managed in accordance with the latest version of the CEMP.

3.8 Principal Civil Contractor's Foreman

The Principal Civil Contractor's Foreman will report to, and work closely with the Principal Civil Contractor's Site Manager.

3.9 Environmental Management Consultant

The Environmental Management Consultant will work closely with the Superintendent, Landcom's Project Manager and the Principal Civil Contractor's Project Manager.

The Environmental Management Consultant performs a key role in the implementation, maintenance, and monitoring of compliance to the latest version of the CEMP.

The Environmental Management Consultant responsibilities will include:

- Conducting an environmental aspects and impact analysis to support the CEMP;
- Providing specialist environmental advice and guidance to the Project;
- To review any revisions of the CEMP; to ensure compliance with the CEMP
- Review and approve the environmental monitoring schedule required during the works;

- To liaise with the Contractor and sub-contractors, authorities and local community as necessary;
- To ensure that all licenses, clearances, permits and approvals required are in place at the appropriate time;
- To co-ordinate and attend the CEMP team meetings;
- Review the CEMP;
- Undertake regular auditing of the works against the requirements of the CEMP;
- Ensuring others in the project team are informed in a timely manner of all non-compliances and environmental incidents; and
- Participating in environmental incident investigations and assisting in the development and implementation of corrective/preventative actions.

3.10 Checklist, Forms and Registers

Appendix B contains proforma checklists, forms and registers to be utilized as part of the environmental management process. These documents will be developed and customized for inclusion in the final CEMP.

3.11 Environmental Control

3.11.1 Environmental Monitoring, Inspections and Auditing

A number of safeguards were developed during the preparation of the Environment Impact Statements supporting development applications for Stages 2B & 2C, 2D, 3A and 3B to prevent or minimise the environmental impacts that may be generated by the Project.

Appendix B provides a checklist to record the monitoring and inspection of each measure to mitigate potential environmental impacts.

Environmental audits will be carried out to verify the safeguards listed in this CEMP are being carried out. Audits will be attended by the Principal Civil Contractor's Project Manager, the Principal Civil Contractor's Site Manager and the Environmental Management Consultant as well as a representative for sub-contractors where relevant.

Completed checklists, registers and reports will be made available and a site inspection undertaken at each audit.

If a non-conformance is identified during an audit, the Principal Civil Contractor's Project Manager will be responsible for investigating the non-conformance and instigating corrective action. A corrective action report will be prepared, submitted to the Superintendent and the Environmental Management Consultant and filed with the audit report.

3.11.2 Training and Awareness

All personnel will be suitably qualified and experienced to undertake their work in an environmentally responsible manner.

All personnel who have formal responsibilities under the CEMP will be trained in the requirements of the CEMP.

All personnel will receive both initial and ongoing environmental awareness training sufficient to ensure they are familiar with their responsibilities under the CEMP.

Project induction will provide all new site employees with an overview of the Project Environmental Management System and key aspects of the CEMP prior to allowing access to the worksite. Induction training will include the following environmental information as a minimum:

- Knowledge of relevant legislation;
- Roles and responsibilities of staff and management in regards to the environment;
- Key environmental issues and controls (particularly in regards to sediment control);
- Hazards, risks and emergency response plans;
- Incident reporting procedure;
- Complaint handling procedure; and
- Consequence of departure from the CEMP

In addition, the Principal Civil Contractor's and each sub-contractor will be required to provide all new employees with environmental induction training which addresses the CEMP and which at a minimum details:

- Individual responsibilities under the CEMP; and
- Risk management strategies for accessing potential environmental impacts and for developing appropriate control strategies for any activity perceived to pose an environmental risk.

A register of environmental training provided will be maintained. The register will include nature of the training, dates, the names of persons trained, and training details as well as any refresher training that may be required. An example training record form is contained in **Appendix B.**

3.11.3 Complaints Procedure

Prior to the commencement of construction, the following will be established for dealing with complaints:

- A telephone number on which complaints about all activities at the site may be registered;
- A postal address to which written complaints can be sent; and
- An email address to which electronic complaints may be transmitted .

The telephone number, address and email address will be clearly displayed on a sign near to the construction entrance to the site. The purpose of the sign will be clearly indicated on the sign.

A complaint will be entered as an incident by the person who received the initial complaint. The following information will be recorded:

- Date and time of complaint;
- Means of which complaint was received (phone, mail, email);
- Personal details of the complaint (if available)
- Brief description of the complaint; and,
- Action taken

The information will be given to the Principal Civil Contractor's Project Manager who will liaise with the relevant personnel to close out the complaint. A complaints summary register is provided in **Appendix B.**

3.11.4 Amendments, Variations or Updating

The requirements of the CEMP may need to be amended, varied or updated as the project progresses.

Following each revision of the CEMP, distribution is the responsibility of the Contractor's Project Manager. A register of distribution should be maintained and relevant updates should be communicated to site personnel at weekly toolbox meetings. A copy of the most recent CEMP will be kept on site and will be easily obtainable at all times.

For all proposed amendments, or variations to the final CEMP, the amendments and the subsequent responsibility will be documented in an amendment register, an example of which can be found in **Appendix B**.

Site environmental training will also be updated where relevant and the current version of the CEMP noted on the training register.

3.11.5 Performance Reporting and Recording

The Contractor's Site Manager is responsible for ensuring all relevant documentation is submitted and maintained within the Project filing and document control system.

Applicable documentation will include:

- All accidents and incidents reports and investigation outcomes;
- Weekly and monthly environmental checklists and reports by contractors;
- Internal and external audit reports;
- Environmental monitoring reports;
- Training records;
- Complaint register;
- Amendment register; and
- Minutes of meetings.

The Environmental Management Representative will report weekly to the Superintendent and Landcom's Project Manager on the status of all site environmental matters.

In addition to submitting a copy of the weekly checklists, the Principal Civil Contractor will report monthly to the Environmental Management Representative about environmental and compliance issues and the overall status of the Preliminary CEMP and regulatory compliance.

The Principal Civil Contractor's Site Manager will report monthly to the Principal Civil Contractor's Project Manager on the status of site environmental matters.

When a contractor or employee becomes aware of an environmental incident or hazard that is causing, or has the potential to cause environmental harm, the person must advise his/her immediate supervisor who will notify Landcom and the Environmental Management Consultant and ensure that an incident report is completed.

3.12 Emergency Contacts

Appendix C contains a schedule of emergency contacts in the event of an environmental incident.

4 CONSTRUCTION ENVIRONMENTAL MANAGEMENT SUB PLANS

The following appendices identify environmental aspects and impacts for the project and are to be addressed in the CEMP and implemented during the construction works.

- Construction Air Quality Plan;
- Construction Sediment and Erosion Control Plan;
- Unexpected Finds Management Plan;
- Construction Waste Management Plan;
- Working Adjacent Site Boundary Management Plan;
- Construction Heritage Management Plan;
- Construction Noise and Vibration Management Plan;
- Construction Traffic Management Plan;
- Unexploded Ordnance Management Plan; and;
- Soil and Water Salinity Management Plan

They are contained in **Appendix A** and will be further developed and duly implemented by the Principal Civil Contractor.

APPENDIX A SUB PLANS

This Appendix contains a number of Construction Environmental Management Sub Plans that have been prepared to manage specific environmental risks associated with the Project (all preliminary):

i) Construction Air Quality Plan;

ii) Construction Sediment and Erosion Control Plan;

iii) Unexpected Finds Management Plan;

iv) Construction Waste Management Plan;

v) Working Adjacent Site Boundary Management Plan;

vi) Construction Heritage Management Plan;

vii) Construction Noise and Vibration Management Plan;

viii) Construction Traffic Management Plan;

ix) Unexploded Ordnance Management Plan; and,

x) Soil and Water Salinity Management Plan.

(i) Construction Air Quality Plan

Objectives:

To minimise the impact of airborne pollutants, including odour, dust, windblown soil and exhaust emissions arising from construction activities.

Airborne pollutants have the potential to affect the health and amenity of site personnel and neighbours , and the vigour of vegetation.

See also the Construction Sediment and Erosion Control Plan.

Legislation/Policy/Guidelines/References:

Protection of Environment Operations Act, 1997

Regional Air Quality Index (RAQI)

National Environmental Protection Measure (NEPM) for Ambient Air Quality.

Performance Criteria:

No fugitive emissions (odour, dust, smoke and fumes) to air causing, or likely to cause, an environmental nuisance at or beyond the boundaries of the site.

Implementation Strategy

Requirements	Project Stage		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Undertake the Works in accordance with the Construction Sediment and Erosion Control Plan.	**X**	**X**	**X**
A temporary stabilised roadway is to be placed on areas where large numbers of vehicle movements will occur, e.g. internal to the Site in the vicinity of site access points.	**X**	**X**	**X**
Site access and 'no-go zones' are to be established and maintained so as to minimise the footprint of the Works.	**X**	**X**	**X**
Material being transported to or from the Site by trucks is to be covered.		**X**	**X**

Implementation Strategy			
Requirements	**Project Stage**		
Plant and equipment is to be regularly serviced to ensure they are in working order to minimise exhaust emissions.		**X**	**X**
Where possible, ground cover is to be established on soil stockpiles and exposed surfaces.		**X**	**X**
Remove from Site any organic waste material that has the potential to emit an odour.		**X**	**X**
Cease relevant works during high wind conditions and/or implement additional dust suppression.		**X**	**X**
Undertake dust suppression by water cart with water (non-potable, if/ when can be reasonably sourced at the Site) by routinely dampening down surfaces.		**X**	**X**
Monitoring:			
Corrective Action: If a complaint is received from a neighbour or the relevant Authorities, the Principal Civil Contractor's Site Manager will immediately: - take steps to resolve the complaint; and, - take steps to implement further mitigation measures to prevent further disturbance from the same cause. All complaints will be recorded in the Complaints Register.			
Responsibility: Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager. Principal Civil Contractor's Site Foreman.			

(ii) Construction Sediment and Erosion Control Plan

Objectives:

To provide guidelines for the management of stormwater during construction.

To minimise the risk of soil erosion and loss during construction.

To provide procedures to ensure water quality objectives are met during construction.

Ground cover vegetation will be retained on those parts of the wider site designated for later stages of construction.

Legislation/Policy/Guidelines/References:

Protection of Environment Operations Act, 1997

Soil Conservation Act, 1938.

NSW Managing Urban Stormwater – Soils and Construction Manual (2004) 'Blue Book'.

Performance Criteria:

No ponding water to be discharged off site following a storm event or construction process without the appropriate level of treatment and compliance with the release criteria.

Implementation Strategy

Requirements		**Project Stage**		
		Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Preparation of a site-specific Sediment and Erosion Control Plan (SECP) (including drawings and accompanying notes detailing required sediment and erosion control measures). Implement the requirements of the SECP. (NOTE: Refer to civil drawings)		**X**	**X**	**X**
Erosion Controls	Define access limitations	**X**		
	Define staging of works	**X**		
	Define No Go Zones	**X**		
	Define stockpile locations	**X**		

Implementation Strategy				
Requirements		**Project Stage**		
		Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Erosion Controls	Develop contingency plan for major storm events on lines of: If impending heavy rainfall (say, >20mm in any 24 hr period) is eminent, protective measures to minimize runoff from stockpiles, sediment treatment areas and temporary sumps is to be initiated. This may include: - increasing the height of bunding around each stockpile, treatment area and sump using sandbags or the like; and, - anchoring geotextile cover or similar over each stockpile and treatment pad using sandbags for the duration of each event. Excavations not being carried out in the event of impending adverse weather conditions.	**X**		
	Define water diversions (clean and dirty) – divert up-slope water around the Works Site and appropriately stabilize any drainage channels.	**X**	**X**	**X**
	Define site office and parking – install roof downpipes that flow to collection tanks at the construction offices as soon as practicable.	**X**	**X**	**X**

Implementation Strategy				
Requirements		**Project Stage**		
		Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure and subdivision Works**
Sediment Controls	Measures for gutters and roadways to be regularly swept to maintain them from sediment.		**X**	**X**
	Measures for drains, gutters, roadways and access ways be maintained free of sediment and to the satisfaction of Penrith City Council.		**X**	**X**
	Sediment basins.		**X**	**X**
	Sediment fences at low points at the extent of the Works.		**X**	**X**
	Stabilised access points including shaker grids.		**X**	**X**
	Waste receptacles.		**X**	**X**
Maintenance	Flocculation of sediment basins (if dispersive soils).		**X**	**X**
	Identify inspection regimes.	**X**	**X**	**X**
	Identify cleaning and replacement requirements for erosion and sediment control measures.	**X**	**X**	**X**
Stabilisation	Establishment of stabilized site entry.		**X**	**X**
	Establishment of a wash down area (wheel bath) at site entrance to prevent tracking of soil on to public roads from trucks leaving the Site.		**X**	**X**
	Establishment of ground cover (‘c-factor’) requirements.		**X**	**X**

Implementation Strategy				
Requirements		**Project Stage**		
		Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure and subdivision Works**
Stabilisation	Stabilisation of concentrated flows through the site.		**X**	**X**
	Topsoil handling and replacement.		**X**	**X**

Monitoring:

The Principal Civil Contractor's Site Manager will conduct a daily check and a weekly compliance check, with additional compliance checks undertaken following each rain event greater than 10mm for:

- water at discharge points and receiving waters;

- sediment basins stability and water levels;

- disturbance of exposed soil surfaces and stockpiles; and,

- progress of stabilised and rehabilitated surfaces.

Corrective Action:

In the event that non-conformance measures are identified, the Principal Civil Contractor's Site Manager will take steps to remediate the impacted environment and to prevent further disturbances.

Responsibility:

Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager. Principal Civil Contractor's Site Foreman.

(iii) Unexpected Finds Management Plan

Objectives:

To manage the process immediately following discovery of unexpected in-ground find in the course of construction.

Given the history of the site, there is the possibility of encountering an unexpected in-ground find on any part of the Site. By way of examples, a find could be:

- an underground storage tank;

- a filled pit or gully;

- a rubbish pit or buried building rubble;

- some unusual soil staining or discolouration;

- an odour emanating from the ground during earthworks;

- fragments of potentially asbestos-based products on the surface or unearthed during excavation (there is the possibility of buried asbestos – cement conduits and pits throughout the site); and,

- ash, coal, coal dust and similar materials.

Note: Elsewhere in this CEMP are other Plans relating to finds on the Site:

- Unexploded Ordnance (UXO) Management Plan, with its own UXO Protocol; and,

- Construction Heritage Management Plan

Legislation/Policy/Guidelines/References:

Occupational Health and Safety Act, 2000.

Occupational Health and Safety Regulation, 2001.

National Code of Practice for the Safe Removal of Asbestos [NOHSC:2002(1988)].

State Environmental Planning Policy No 55 – Remediation of Land.

Penrith City Council Policy for the Management of Contaminated Land 2005.

Your guide to Working with Asbestos, WorkCover NSW, 2002.

Contaminated Lands Management Act, 1997.

Soil Conservation Act, 1938.

Protection of Environment Operations Act, 1997

Guidelines on the Duty to Report Contamination under the Contaminated Land Management

Act,1997.
Performance Criteria:

Implementation Strategy			
Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure and subdivision Works**
A straightforward Unexpected Finds Protocol (UFP) is to be prepared. The Protocol is to be on the lines of: Should any site person discover something unexpected on or within the ground then: - work is to immediately cease in the area of the discovery; - the site person is to immediately report the discovery to the Principal Civil Contractor's Site Foreman; - the area of the discovery is to be cordoned off; - the Principal Civil Contractor's Site Foreman or Principal Civil Contractor's Site Manager is to immediately call the Landcom Project Manager; - Landcom's Project Manager is to arrange for an environmental engineer to visit the Site and assess the discovery. The environmental engineer is to advise on the required course of action – in the immediate term and in the longer term – to appropriately with the discovery. This may involve sampling and testing, undertaking a detailed assessment and preparing a Remediation Action Plan (RAP) or Work Method Statement (WMS) to direct any required remediation works; - the report of the assessment and the RAP/WMS is to be reviewed and endorsed by the Site Auditor; and, - the remediation works are to be undertaken and the environmental engineer is to validate the remediation works on completion to the satisfaction of the Site Auditor.	**X**		

Implementation Strategy			
Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure and subdivision Works**
The Protocol is to be displayed at the site for the benefit of all site personnel.		**X**	**X**
Introducing the Protocol is to be part of the site induction program and its existence is to be refreshed at likes of routine toolbox talks.		**x**	**x**
Monitoring:			
Corrective Action:			
Responsibility: Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager. Principal Civil Contractor's Site Foreman.			

(iv) Construction Waste Management Plan

Objectives:

To classify waste, minimise waste creation and disposal, and maximise the potential for material reuse/ recycling on the Site or external to the Site.

Landcom's Triple Bottom Line program (TBL Program) is an integrated framework for achieving social, environmental and economic/financial sustainability. In relation to indicators for construction waste, Landcom has clear targets for the quantum of construction and demolition materials reused in site or elsewhere:

- achieve 95% recovery (reuse and recycle) of total construction and demolition waste materials generated from the sum of civil contracts completed in that year; and,

- achieve 95% recovery (reuse and recycle) of total construction and demolition waste materials generated from the sum of building projects delivered in that year.

(Future: This Plan to be developed in relation to the beneficial reuse in later stages of the existing concrete and asphalt materials on the site).

Legislation/Policy/Guidelines/References:

Waste Avoidance and Resource Recovery Act 2001 (WARR Act).

Protection of the Environment Operations Act, 1997.

Protection of the Environment Operations (Waste) Regulations, 2008.

Waste Avoidance and Resource Recovery Act, 2001.

Austroads Environmental Strategy, AP-S27" 2002.

Austroads Guide to Road Design Part 7 – Geotechnical Investigation and Design.

Performance Criteria:

Implementation Strategy

Requirements	Project Stage		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Where practical, use suppliers with a working waste minimisation policy.	**X**	**X**	**X**

Quantities of construction materials to be carefully managed to minimise surpluses and scrap.	**X**		**X**
Empty drums and containers stored within a bounded area to be periodically removed by a licensed recycling or waste contractor.		**X**	**X**
Excess chemicals or liquid wastes to be disposed of using a contractor and/ or facility licensed to accept them for processing or disposal.		**X**	**X**
Where practical, green waste arising from landscape maintenance, such as mowing, brush cutting, trimming, tree pruning and weeding to remain in-situ. Vegetation from tree lopping activities to be mulched and reused in landscaped areas.		**X**	**X**
Green waste and trimmings to be kept away from drainage lines and waterways.		**X**	**X**
Where vegetative waste is to be disposed of, it is to be taken to an approved facility.		**X**	**X**
On-site waste receptacles such as mini-skips, bins and reo cages will be installed throughout the project in designated areas. These should be covered to prevent waste being moved by wind.			
Recyclable waste is to be collected, by type, separate from general refuse. Each recyclable waste is to be disposed of to a licensed recycling facility. General refuse is to be collected and transported to an approved disposal site.		**X**	**X**
All work areas to be maintained in a neat and tidy condition. Litter bins to be used at all times, with regular emptying to prevent any accumulation of litter on the Site.		**X**	**X**
Introducing the correct waste management procedures (based on the principles of reduce, reuse and recycle and appropriate disposal)are to be part of the site induction program and its existence is to be refreshed at likes of routine toolbox talks.		**X**	**X**

Monitoring:

The following waste streams will be monitored and reported on in order to maintain waste reduction and removal protocols:

- waste generation;

- waste reuse;

- waste recycling; and,

- waste treatment and disposal.

Corrective Action:

Incidences of deviation from this Plan will be promptly investigated by the Principal Civil Contractor's Site Manager to identify the primary cause and corrective actions will be established to ensure the non-compliance is not repeated.

Responsibility:

Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager. Principal Civil Contractor's Site Foreman.

(v) Working Adjacent Site Boundary Management Plan

Objectives:

To establish appropriate practices with respect to construction activities near and on the boundary with the different neighbours around the Site.

There will be occasions when works are carried out on neighbouring land. Specific Work Method Statements or similar will be prepared for those activities. Any work within or immediately adjacent the railway corridor will require considerable planning, liaison and adherence to established protocols with RailCorp.

- Stages 2B & 2C: Private properties to the north (including Combewood), Castlereagh Road, completed Stage 1 area
- Stage 2D: Mobile site boundary to the North
- Stage 3A: Penrith Railway Station, Commuter Car park, Penrith Training Depot (Defence)
- Stage 3B: Commuter Car Park

Legislation/Policy/Guidelines/References:

Performance Criteria:

No issues with any neighbours due to poor communication by the Principal Civil Contractor or due to construction activity being contrary to previous advice to the neighbour.

Implementation Strategy

Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
This plan to be developed by the Principal Civil Contractor, to address the likes of: - Safety and security; - Site fencing; - Stormwater and sediment controls; - Stockpiling adjacent boundaries; - Vehicle movements; and, - Timing and program.			

Monitoring:

Corrective Action:

Responsibility:

(vi) Construction Heritage Management Plan

Objectives:

To minimise degradation or inadvertent damage to those items or areas of heritage-significance at North Penrith during construction. To manage items and areas within later stages of construction.

There is no specific item or area within the Stages 2B & 2C, 2D, 3A and 3B area.

Construction of the wetland in Stages 2B & 2C will be adjacent to Combewood.

Legislation/Policy/Guidelines/References:

Performance Criteria:

No unauthorised disturbance to potential indigenous heritage material. No breach of protocols set out in relation to Aboriginal Heritage. No complaints received in relation to the management of indigenous heritage values.

Implementation Strategy			
Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Removal of old footings at the rear of Combewood to be removed under archaeological supervision prior to earthworks commencing.	**X**	**X**	
A straightforward Indigenous Artefact Finds Protocol is to be prepared . The Protocol is to be on the lines of: Should any site person discover a suspected indigenous artefact on or within the ground then: - work is to immediately cease in the area of the discovery (10m clearance all round); - the site person is to immediately report the discovery to the Principal Civil Contractor's Site Foreman; - the area of the discovery is to be cordoned off; - the Principal Civil Contractor's Site Foreman or Principal Civil Contractor's Site Manager is to immediately call the Landcom Project Manager; - Landcom's Project Manager is to arrange for its heritage consultant to visit the Site and access the discovery. The environmental engineer is to advise on the required course of action – in the immediate term and in the longer term considering, inter alia, statutory obligations – to appropriately deal with the discovery.	**X**		
The Protocol is to be displayed at the site for the benefit of all site personnel.		**X**	**X**
Introducing the measures to identify potential indigenous artefacts and the steps to be taken in the event that a potential artefact is discovered is to be part of the site induction program and its existence is to be refreshed at likes of routine toolbox talks.		**X**	**X**

Monitoring:
Corrective Action:
Responsibility: Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager, Principal Civil Contractor's Site Foreman.

(vii) Construction Noise and Vibration Management Plan

Objectives:

To mitigate noise and vibration generated as a result of the construction activities so as to maintain the local acoustic amenity at an acceptable level.

The most sensitive receivers will be the residents in the Lemongrove precinct to the east of the site. In addition, there is potential for construction noise and vibration to be nuisance for the Penrith Training Depot.

Construction noise impacts may result from construction traffic, materials and waste handling and from the operation of construction plant and equipment.

The Noise and Vibration Assessment predicted statutory compliance for noise would be achieved at all offsite receiver locations provided best practice amelioration measures are adopted.

Legislation/Policy/Guidelines/References:

Environmental Planning and Assessment Act, 1979.

Protection of Environment Operation Act, 1997.

NSW Interim Construction Noise Guidelines (2009).

Assessing Vibration: A Technical Guideline (2006).

Performance Criteria:

Nil complaints from neighbours or the relevant Authorities.

Implementation Strategy

Requirements	Project Stage		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Appropriate respite times are to be identified for any particular noisy activity.	**X**	**X**	**X**
Consider whether temporary noise barriers are required during the undertaking of mitigate noise impacts to neighbours.	**X**	**X**	**X**

Implementation Strategy			
Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
Set up and maintain a complaints anti feedback hotline or equivalent and promptly address all complaints pertaining to noise and vibration.	**X**	**X**	**X**
Give advance notification to nearby residents and business owners of construction activities that have the potential to cause noise or vibration nuisance.	**X**	**X**	**X**
Use of a broadband style 'quacker' alarm or flashing lights in lieu of the conventional 'beeper' style reversing alarms.		**X**	**X**
Use of silenced equipment where feasible, with appropriate mufflers fitted and maintained on construction and earth-moving equipment.		**X**	**X**
Trucks transporting materials to and from the site are to avoid local roads. This will be achieved by virtue of the Construction Traffic Management Plan.		**X**	**X**
Combustion engine plant, such as generators, compressors and welders, are to be carefully checked to ensure they produce minimal noise, with particular attention to residential grade exhaust silencers and shielding around motors.		**X**	**X**
Trucks and other machines are to be turned off when not in use and are not to be left idling.			
Monitoring: Environmental Management Representative site inspections. Receipt of any noise and vibration related complaints.			
Corrective Action:			

If a complaint is received from a neighbour or the relevant Authorities, the Principal Civil Contractor's Site Manager will immediately:

- take steps to resolve the complaint; and,
- take steps to implement further mitigation measures to prevent further disturbance from the same cause.

All complaints will be recorded in the Complaints Register.

Responsibility:

Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager, Principal Civil Contractor's Site Foreman.

(viii) Construction Traffic Management Plan

Objectives:

To safely manage construction traffic and to mitigate any potential impacts to public transport, walking and cycling accessibility, amenity and safety during construction.

Primary construction entry to the Site will be *off* the access road to the Commuter Car Park. Some access through the Stage 1 area may also be required during various stages of work. Vehicles will enter and exit the Site in a forward motion. All large construction vehicles will be required to turn left from the Commuter Access Road into Coreen Avenue.

Alternative access to the commuter car park will be provided via the Stage 1 area before the existing access road is shutdown.

Local Roads will not be impacted by construction traffic.

Appropriate management arrangements and where necessary, diversions, will be implemented for pedestrians and cyclists as required.

The nearest public transport route is along Coreen Avenue and it will only be impacted by the Works for those works beyond the boundary of the Site in Coreen Avenue.

There will be car parking for Site Personnel within the Site. Site Personnel will be encouraged to car pool. The existing road network within the Site will be used, wherever practical.

Construction traffic will be generated by these principal activities:

- trucks removing excess material off the site;
- general delivery of materials and equipment; and
- daily movement of small vehicles for site personnel coming to from work.

Adjacent the Site is Castlereagh Road, a main arterial road, which via Mulgoa Road, connects directly with the M4 motorway, the predominant major route in the region. It can be expected the majority of large vehicles will use this route.

Legislation/Policy/Guidelines/References:

Performance Criteria:

Safe and efficient movement of vehicles and pedestrians at all times.

Implementation Strategy

Requirements	**Project Stage**		
	Pre Construction (Design and	**Earthworks**	**Infrastructure**

	Planning)		
Individual Traffic Control Plans (TCPs) will be prepared for specific areas of work or activities on Coreen Avenue. In preparing each TCP, the Principal Civil Contractor will liaise with the appropriate Roads and Traffic Authority. , (Future Stages: Lemongrove Road, The Crescent and again at Castlereagh Road at end of access road to Commuter Car Park).	**X**		**X**
Plan and implement traffic control measures (temporary signage, traffic barriers, traffic control crew, delineation devices, ROL applications, temporary speed zones).	**X**		**X**
Movement of large construction vehicles will be timed so as not to interfere with the tidal movements of commuters (in early morning, and out early evening).		**X**	**X**
Construction vehicles entering and exiting the Site will be controlled by security access at the entrance gates. These gates will be set back into the Site to enable arriving vehicles to be off the access road whilst undertaking entry formalities.		**X**	**X**
Monitoring: The Principal Civil Contractor's Site Manager will undertake a daily inspection of any work area in Coreen Avenue and be satisfied on all matters relating to safety and traffic movement, and compliance with the TCP.			
Corrective Action: The Principal Civil Contractor's Site Manager will immediately direct and oversee any shortcomings relating to safety and traffic movement, including liaising with the roads and traffic Authorities and amending the TCP as required.			
Responsibility: Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager, Principal Civil Contractor's Site Foreman.			

(ix) Unexploded Ordnance (UXO) Management Plan

Objectives:

To manage the process immediately following discovery of an item that may or may not be a UXO to safeguard the risk to life and the environment.

A UXO is explosive ordnance, such as artillery shells, mortars or grenades, which did not explode when used.

The potential discovery at North Penrith is considered very low, however, considering the site's history, it is appropriate that .there be an Unexploded Ordnance (UXO) Management Plan.

Legislation/Policy/Guidelines/References:

Performance Criteria:

Nil injury to anyone on the site in the course of carrying out the construction works due to inappropriate action or inaction arising from discovery of a UXO item.

Implementation Strategy

Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
A straightforward Unexploded Ordinance (UXO) Protocol is to be prepared. The Protocol will be on the lines of: Should any site person discover an item on the site that may be an UXO item then: - there is to be no attempt to touch the item; - there is to be no attempt to move the item to a 'safer' location; - the site person is to immediately report the discovery to the Principal Civil Contractor's Site Manager; - the location is to be immediately cordoned off and all site personnel are to be moved well clear of the cordoned off area; the Principal Civil Contractor's Site Manager is to immediately inform the Police;	**X**		

Implementation Strategy			
Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**
- upon arrival of the Police, the Principal Civil Contractor's Site Manager is to follow the instructions of the Police and arrange for the Principal Civil Contractor to facilitate the Police; - depending on the location of the find, it may be appropriate for the Principal Civil Contractor's Site Manager to inform neighbours to the site; - with the immediate site adjacency of the Department of Defence's Penrith Training Depot (PTD), the Principal Civil Contractor's Site Manager is to inform the senior personnel in the PTD after informing the Police; and, - the Principal Civil Contractor's Site Manager is to inform Landcom and/ or Landcom's Project Manager.			
The Protocol is to be displayed at the site for the benefit of all site personnel.		**X**	**X**
Introducing the Protocol is to be part of the site induction program and its existence is to be refreshed at likes of routine toolbox talks.		**X**	**X**
Monitoring:			
Corrective Action: It is the responsibility of the Police to instigate and oversee the process of investigation and disposal.			
Responsibility: Principal Civil Contractor's Project Manager, Principal Civil Contractor's Site Manager, Principal Civil Contractor's Site Foreman.			

(x) Soil and Water Salinity Management Plan

Objectives:

TO BE PREPARED BY THE GEOTECHNICAL ENGINEER AND THE PRINCIPAL CIVIL CONTRACTOR

Legislation/Policy/Guidelines/References:

Performance Criteria:

Implementation Strategy

Requirements	**Project Stage**		
	Pre Construction (Design and Planning)	**Earthworks**	**Infrastructure**

Monitoring:

Corrective Action:

Responsibility:

APPENDIX B PROFORMA CHECKLISTS, FORMS AND REGISTERS

This Appendix contains proforma checklists, forms and registers to be utilized as part of the environmental management process. These documents will be developed and customized for inclusion in the final CEMP:

i) Environmental Monitoring and Inspection Checklist;

ii) CEMP Amendment Register;

iii) Training Register;

iv) Complaint Log Sheet; and,

v) Complaints Summary Register

(i) Environmental Monitoring and Inspection Checklist			
Date:	**Inspection by:**	**Inspection no.**	
Item	**Satisfactory Yes/No/NA**	**Follow up Required Yes/No (Responsibility)**	**Comments**
Stormwater Erosion and Sediment Control			
Have open areas of excavation and disturbed soils been kept to a minimum?			
Are temporary sediment and erosion controls (e.g. silt fences) installed and maintained in an effective condition?			
Road status (is there sediment/material on roads surrounding the site?)			
Shake-down area established and maintained			
Visual signs of water pollution			
Are stockpiles clear of drains, gutters and footpaths?			
Is surface water diverted from upstream areas to minimize the amount of water flowing through the site?			
Are wheels on trucks leaving the site inspected for soil and cleaned if necessary?			

Contamination			
Are suspected Acid Sulphate Soil being tested and treated (if required) as per ASS Management Plan?			
Are liquid storage areas well bunded?			
If flooding has occurred, have construction works ceased?			
Are spill kits available on site? If so are they appropriately stocked?			
Has potentially contaminated stormwater been contained in storage bunds and first flush tanks?			
Have disturbed areas been revegetated?			
Air Quality			
Is plant and equipment in proper working order?			
Has dust been effectively controlled by water or ceasing work if necessary?			
Have site access and no go zones been established to minimise the site footprint?			
Noise Management			

Is construction equipment of appropriate size and capacity and inspected and maintained regularly?			
Have noise control measures been implemented around noisy activities?			
Is the Complaints register up to date?			
Waste Management			
Are bins and waste disposal recycling facilities available on site and clearly labelled?			
Are soils being re-used on site where feasible?			
Is the Site tidy and clear of general refuse?			
Is waste being separated and recycled?			
Heritage Management			
Are Heritage items appropriately protected?(e.g. fencing)			
If any indigenous or non-indigenous items have been found, has NPWS or the Heritage Council been notified?			
Flora and Fauna Management			
Are trees and vegetation to be retained on site adequately protected?			

Is landscaping being carried out using native flora endemic to the region?			
Inspected by: Signature: Date:			

(ii) CEMP Amendment Register				
Date	**Amendment**	**Reason for Amendment**	**Responsibility**	**Follow up required Yes/No**

(iii) Training Register					
Date	**Name**	**Company**	**Position**	**Training Details**	**Follow up required Yes/No**

(iv) Complaint Log Sheet	
Complaint Information	
Received: Date: Time:	
Name of person logging complaint:	
Type: (Circle)	Phone call / Fax / Personal Contact / Letter / Email / Other
Name of Complainant:	
Contact Details:	
Commitment Given: Action Taken:	
Details of Resolution:	
Signed: Name: Title: Date:	

(v) Complaints Summary Register			
Name of Person Making Complaint	**Address and Contact Phone Number**	**Brief Description of Complaint (including Date Complaint Received)**	**Follow Up Date and Details of Resolution Process and Outcome**

APPENDIX C EMERGENCY CONTACTS

This Appendix contains a schedule of emergency contacts in the event of an environmental incident.

Emergency Contacts

Project Contacts		
Position	**Name and Organisation**	**Phone**
Principal Civil Contractor's Project Manager		
Principal Civil Contractor's Site Supervisor		
Principal Civil Contractor's Site Foreman		
Landcom nominated contact(s) (Project Director/ Senior Development Manager)		
Landcom's Project Manager		
Superintendent		
Environmental Management Representative		

Emergency Services and Others	
Ambulance	000
Fire Brigade	000
Police	000
District Hospital	TBA

DECCW (EPA) Pollution Line	131 555
Dangerous Goods Licensing Hotline	131 050
Work Cover – Sydney	(02) 4321 5000
WIRES	1300 094 737
Sydney Catchment Management Authority	1800 061 069
Local Aboriginal Land Council	
Telstra	132 000
Sydney Water	132 090
Integral Energy	
Jemena	
Penrith City Council	
Penrith Training Depot (neighbouring site)	
Museum of Fire (neighbouring site)	
SkillsWest Training Centre (neighbouring site)	
Penrith Station (neighbouring site)	
Mobil (neighbouring site)	