GUIDELINES

for

LOCAL GOVERNMENT

ENVIRONMENTAL SPECIFICATIONS IN CONTRACTS

These guidelines are a joint initiative of the Local Government Association and the LGA Mutual Liability Scheme in the interests of promoting best practice in Local Government. The guidelines have been prepared by Tony Lawson Consulting Pty Ltd.

March 2003
Overview of the Guidelines

These guidelines aim to translate Ecologically Sustainable Development (ESD) principles into contractual requirements by developing model contracts containing environmental specifications which can be used by all Councils.

By improving environmental practices in the supply chain and achieving an institutional change for achieving ESD this process will also assist Councils to comply with those provisions of the Local Government Act 1999 relating to implementing environmental management programs and strategies to achieve improved environmental performance.

The guidelines also aim to influence the activities of major suppliers and service providers through the inclusion of a standard set of environmental specifications in contracts, the establishment of a tender assessment process and evaluation criteria for the assessment against environmental or other management plans.

Specifically these guidelines;

- Provide model contract clauses and approaches for Local Government to achieve its objectives, roles, functions and strategic management plans as prescribed in the Local Government Act 1999.
- Assist Local Government to comply with provisions of the Environment Protection Act 1993
- Limit risk and liability for potential breach of provisions of the Environment Protection Act 1993 by Local Government and its contractors

These guidelines have been prepared based on a review of existing approaches for inclusion of environmental considerations in contracts. Accordingly, the practices of other tiers of Government and other organisations have been reviewed. Discussions have been held with the Civil Contractors Federation and a small number of Councils. It is noted that a number of councils subscribe to and use the Civil Contractors Federation Integrated Management System and as such are satisfied that system meets their requirements. These guidelines may assist those Councils that do not have access to that system to develop and tailor a system to meet their particular needs.

It is also noted that a number of Councils indicated that in the main their systems are quite adequate except when it comes to monitoring and auditing the practices of contractors to ensure they are meeting the requirements of their Environmental Management Plans during the actual course of projects. This process has resource implications for Councils and a number of them are considering or have contracted this function to external suppliers. This is an area which does not have a ready solution to it and hence requires some considerable thought by Councils on how to deal with it.

These guidelines have drawn extensively on the Environmental Management Framework of Transport SA and the Adelaide City Council. This contribution is gratefully acknowledged.
The Guidelines

These guidelines attempt to identify a range of approaches from the minimum (eg model clauses) through to comprehensive environmental management plans which could be adopted and applied by Councils to ensure that they not only comply with relevant legislation but that they also achieve “best practice” in their operations.

A number of issues/questions have been prompted by the research/investigations undertaken in the preparation of these guidelines. These include the following;

<table>
<thead>
<tr>
<th>What are the determining factors for a project being a major project or a minor project?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the determining factors related to number of people employed by a contractor to undertake a project, the longevity of a project, the level of complexity (as opposed to the repetitiveness of the project), the dollar value of a project, and/or the perceived environmental sensitivity?</td>
</tr>
<tr>
<td>What standards/guidelines do Councils currently use? Do Councils use the Australian Standard (AS/NZ ISO 14000 series)?</td>
</tr>
<tr>
<td>Does the system or approach deal appropriately with the monitoring /auditing of projects to ensure contractors are meeting the requirements of the Environmental Management Plan?</td>
</tr>
</tbody>
</table>

These guidelines have been prepared with the assistance of the following organisations;

- Transport SA
- Adelaide City Council
- City of Burnside
- City of Onkaparinga
- City of Salisbury
- DC of Streaky Bay
- Civil Contractors Federation

Thanks go to the above organisations for the considerable investment of time, materials and interest in this project.
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Management Checklist for an Environmental Risk Management Plan (ERMP) – example courtesy of Adelaide City Council

Application
This checklist supports the exercising of the Councils environmental duty of care in the management of any activities which might impact on the environment.

1. Activity
The activity over which the Council has responsibility for management of environmental impact.

(identify activity area and provide clarifying notes as necessary)

Event
Major Capital Works
Minor Capital Works
Maintenance Projects
Project Management

Notes: ____________________________________________________________

2. Documentation
Environmental Risk Management Plan document or series of documents received.
(Indicate receipt of ERMP and provide date of receipt)
Received on _______ day, of __________ (month), ___________(year)

3. Specified information

3.1 The description of the activity proposed or planned and its context, comprising relative location, information about the site and the design and size or scale of the activity proposed or planned.
(Indicate this part of the ERMP is satisfactory. If it is not satisfactory, provide notes which specify the deficiency and the corrective action required)

Description of the activity

Notes: __________________________________________________________________

3.2 the data necessary to identify and assess the main effects which that activity is likely to have on the environment.
(Indicate this part of the ERMP is satisfactory. If it is not satisfactory, provide notes which specify the deficiency and the corrective action required)

Data necessary to identify and assess the main effects
3.3 Descriptions of the likely significant effects on the environment of the activity. (Indicate these parts of the ERMP are satisfactory. If they are not satisfactory, provide notes which specify the deficiency and the corrective action required)

3.3.1 human beings
A description of the likely significant effects of the activity on human beings

Notes: __________________________________________________________

3.3.2 flora
A description of the likely significant effects of the activity on flora

Notes: __________________________________________________________

3.3.3 fauna
A description of the likely significant effects of the activity on fauna

Notes: __________________________________________________________

3.3.4 soil
A description of the likely significant effects of the activity on soil

Notes: __________________________________________________________

3.3.5 water
A description of the likely significant effects of the activity on water

Notes: __________________________________________________________

3.3.6 air
A description of the likely significant effects of the activity on air

Notes: __________________________________________________________

3.3.7 material assets
A description of the likely significant effects of the activity on material assets

Notes: __________________________________________________________

3.3.8 cultural heritage
A description of the likely significant effects of the activity on cultural heritage
3.3.9 the interaction between any of the foregoing

A description of the likely significant effects of the interaction between the foregoing

Notes: ____________________________________________________________

3.4 An assessment of the risk level of the activity proposed or planned using a methodology similar to the one described in Attachment A.
(Indicate this part of the ERMP is satisfactory. If it is not satisfactory, provide notes which specify the deficiency and the corrective action required)

An assessment of the risk level

Notes: ____________________________________________________________

3.5 A risk treatment action plan - where significant adverse effects are identified with respect to any of the foregoing, a description of measures to be undertaken in order to avoid, reduce or remedy those effects by recording of the risk on a risk register and the recording of the risk treatment and the associated action plan on templates derived from or similar to “Section H: Risk management documentation” of AS/NZS 4360:1999 Risk Management.
(indicate this part of the ERMP is satisfactory. If it is not satisfactory, provide notes which specify the deficiency and the corrective action required)

A risk treatment action plan

Notes: ____________________________________________________________

3.6 A summary in non-technical language of the information in sub-paragraphs 3.1 to 3.5 above.
(Indicate this part of the ERMP is satisfactory. If it is not satisfactory, provide notes which specify the deficiency and the corrective action required)

A summary in non-technical language

Notes: ____________________________________________________________

4. Signoff

The Environmental Risk Management Plan for this activity meets the requirements of the Council.
(Indicate acceptability of the ERMP, sign and date)

The Environmental Risk Management Plan is acceptable.

Signed by
(Print Name: ______________________________________________________)
______ day, of ________ (month), _________(year)
Attachment A

RISK ASSESSMENT (Analysis + Evaluation = Assessment)
1. Risk Analysis: Qualitative measures of consequences or impacts.

These particular criteria relate specifically to judgements about Occupational Health and Safety, and the Environmental Impacts of an organization’s operations or activities.

Environment is broadly defined as the surroundings in which the Corporation operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation. (Source: ACC Environment Policy).

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Example: Description / Indicator</th>
</tr>
</thead>
</table>
| 1     | Insignificant | • PEOPLE: no significant injuries;  
|       |             | • ECOSYSTEMS: some minor adverse effects to few species/ecosystem parts that are short term and immediately reversible,  
|       |             | • LEGAL: e.g. criteria related to “nuisance” category under the South Australian Environment Protection Act (1993) met,  
|       |             | • SOCIO-POLITICAL: social issues reflecting insignificant level of community concern (sensitivity such as imposed risk, dread, equity, and involvement of culturally cherished asset). |
| 2     | Minor      | • PEOPLE: first aid treatment;  
|       |             | • CONTAINMENT: on-site release immediately contained;  
|       |             | • ECOSYSTEMS: slight, quickly reversible damage to few species/ecosystem parts, animals forced to change living patterns, full, natural range of plants unable to grow, air quality creates local nuisance, water pollution exceeds background limits for short period;  
|       |             | • LEGAL: e.g. criteria related to “nuisance” category under the South Australian Environment Protection Act (1993) met,  
|       |             | • SOCIO-POLITICAL: social issues reflecting minor level of community concern (sensitivity such as imposed risk, dread, equity, and involvement of culturally cherished asset). |
| 3     | Moderate   | • PEOPLE: medical treatment required;  
|       |             | • ECONOMIC: interference with production capability;  
|       |             | • CONTAINMENT: on-site release contained with outside assistance;  
|       |             | • ECOSYSTEMS: temporary, reversible damage, loss of habitat and migration of animal population, plants unable to survive, air quality constitutes potential long term health hazard, potential for damage to aquatic life, pollution requires physical removal, land contamination localised and can be quickly remediated;  
|       |             | • LEGAL: e.g. criteria related to “material” category under the South Australian Environment Protection Act (1993) met,  
|       |             | • SOCIO-POLITICAL: social issues reflecting moderate level of community concern (sensitivity such as imposed risk, dread, equity, and involvement of culturally cherished asset). |
| 4     | Major      | • PEOPLE: extensive injuries;  
|       |             | • ECONOMIC: disruption to production capability;  
|       |             | • CONTAINMENT: off-site release with no detrimental effects;  
|       |             | • ECOSYSTEMS: death of individual animals, large scale injury, loss of keystone species and widespread habitat destruction, air quality requires “safe haven” / evacuation decision, remediation of contaminated soil only possible by long term programme;  
|       |             | • LEGAL: e.g. criteria related to “serious” category under the South Australian Environment Protection Act (1993) met,  
|       |             | • SOCIO-POLITICAL: social issues reflecting significant level of community concern (sensitivity such as imposed risk, dread, equity, and involvement of culturally cherished asset). |
Guidelines – Environmental Specifications in Contracts

5 Catastrophic

• PEOPLE: death;
• ECONOMIC: loss of production capability;
• CONTAINMENT: toxic release off-site with detrimental effect;
• ECOSYSTEMS: death of animals in large numbers, destruction of flora species, air quality requires evacuation, permanent and wide spread land contamination;
• LEGAL: e.g. criteria related to “serious” category under the South Australian Environment Protection Act (1993) met,
• SOCIO-POLITICAL: social issues reflecting high level of community concern (sensitivity such as imposed risk, dread, equity, and involvement of culturally cherished asset).

2. Risk Analysis: Measures of likelihood of occurrence
(Derived AS/NZS 4360:1999; and “Rivers of doubt” by Fred Pearce, in the New Scientist, 20 Feb 1999)

<table>
<thead>
<tr>
<th>Level</th>
<th>Descriptor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Almost certain</td>
<td>Is expected to occur in most circumstances – 99%.</td>
</tr>
<tr>
<td>B</td>
<td>Likely</td>
<td>Will probably occur in most circumstances – 90%.</td>
</tr>
<tr>
<td>C</td>
<td>Possible</td>
<td>Might occur at some time – 50%.</td>
</tr>
<tr>
<td>D</td>
<td>Unlikely</td>
<td>Could occur at some time – 10%.</td>
</tr>
<tr>
<td>E</td>
<td>Rare</td>
<td>May occur only in exceptional circumstances – 1%.</td>
</tr>
</tbody>
</table>

3. Risk Evaluation: Qualitative risk evaluation – level of risk
(From Table E3, AS/NZS 4360:1999)
Using the information gained from the analysis judgements are then made to place the risk within a matrix that aligns consequences and likelihood in order to advise appropriate management actions.

<table>
<thead>
<tr>
<th>Consequences</th>
<th>Likelihood</th>
<th>Insignificant</th>
<th>Minor</th>
<th>Moderate</th>
<th>Major</th>
<th>Catastrophic</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (almost certain)</td>
<td>M</td>
<td>H</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>B (likely)</td>
<td>M</td>
<td>M</td>
<td>H</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>C (moderate)</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>D (unlikely)</td>
<td>L</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>E (rare)</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>H</td>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>

Legend: Actions linked to levels of risk
E: Extreme risk – immediate action required: emergency situation, priority focus of available resources.
H: High risk – senior management attention needed: for prompt action at policy levels as soon as normal management systems permit.
M: Moderate risk – management responsibility must be specified: for attention at policy and implementation levels, and inclusion in future programmes and standard operating procedures.
L: Low risk – manage by routine procedures: for incorporation and implementation through standard operating procedures.
Model contract clauses

A number of Councils are using standard clauses in their contract specifications which are largely based on the Australian standards model clauses and/or the Civil Contractors Federation Integrated Management System model clauses. These clauses usually contain the following general information.

ENVIRONMENTAL REQUIREMENTS

PROTECTION OF THE ENVIRONMENT

All work shall be carried out in such a manner as to avoid nuisance and/or damage to the environment. The Contractor shall comply with the requirements of any Environmental Impact Statement and Assessment Report or Review of Environmental Factors for the project, the conditions of approval imposed by the Environment Protection Authority, the Clean Waters Act, the Noise Control Act, the Bushfire Act and any other Local Council requirements and environmental Act relevant to the project. No variation in costs or extensions of time will be considered due to these requirements.

Further provisions may include such matters as control of erosion and sedimentation, toxic chemicals, noise and smoke, dust control and stormwater control and diversion.

Many organisations are now exercising greater “duty of care” in the environmental management area by developing and implementing comprehensive and detailed environmental management systems (EMS) and environmental management plans (EMP) which provide a mechanism to identify, manage and monitor environmental risk.

These processes suggest that organisations need to be operating at a high strategic level and have comprehensive environmental planning processes in order to effectively manage contracts which impact on the environment.

Environmental Management Systems and Plans

Environmental management systems (EMS) and environmental management plans (EMP) covers a range of areas including:

- Education - being aware of environmental risks
- Instituting and maintaining a system for environmental compliance
- Supervising those responsible for managing the system
• Reacting to incidents or system failures by amending and improving the management system

Many EMS/EMP's draw upon the **Australian Standard (AS/NZS ISO 14000) series** which include:

• Environmental Policy: An organisation should define its environmental policy and ensure commitment to its EMS
• Planning: An organisation should formulate a plan to fulfil its environmental policy, including the identification and management of environmental risk.
• Implementation and Operation: For effective implementation an organisation should develop the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets.
• Checking and Corrective Action: An organisation should measure, monitor, report and evaluate its environmental performance.
• Management Review: An organisation should review and continually improve its environmental management system with the objective of improving its overall environmental performance.

**Environmental Impact Assessment and Management Process**

In many organisations infrastructure projects are assessed for environmental impact in accordance with the organisations Environmental Impact Assessment (EIA) procedures.

For minor projects an Environmental Impact Assessment Report (EIAR) is prepared.

Projects of major social, economic or environmental importance may require external approval in the form of an Environmental Impact Statement (EIS) or a Public Environmental Report (PER)

The Environmental Management Plan (EMP) is a method of ensuring that the measures identified and commitments made in the environmental assessment process are delivered in the construction and operational phases of construction projects. Using the EMP as a source document an Environmental Management Implementation Plan (EMIP) may be prepared. **The EMIP is usually prepared by the construction contractor.**

**Is an EMP required for all Projects?**

Transport SA for instance suggests that an EMP should be prepared wherever there are **significant environmental impacts** associated with all **major projects** or projects with significant environmental issues or impacts, for example, work that will affect a heritage site, vegetation, fauna, air, noise or water quality. The scope and content of each EMP will be a function of the significance of the potential impact and environmental significance of the project.
Organisation Responsibilities for Phases of Projects

All organisations have a responsibility for mitigating the environmental impacts of infrastructure/construction projects. However, detailed responsibilities may vary depending on the contractual arrangements applicable for each project.

The development and implementation of the measures documented in EMPs should facilitate mitigation of the identified potential impacts.

Planning Phase

The organisations responsibilities during this phase include:

- Assess the environmental impact of the project*
- Document the environmental impact of the project*
- Prepare the Working Report or EIAR for minor projects*
- Prepare the Draft EMP*
- Consult with the community*
- Prepare the Concluding Report (including the draft EMP)
- Obtain environmental clearance*
- Incorporate any conditions or amendments into the final EMP
- Prepare the Project Definition Report (PDR), incorporating the final EMP
- Accept the PDR

Note: *It is suggested these steps are generally all that are required for minor projects (definition of minor/major projects require clarification)

Implementation Phase

The organisations responsibilities during this phase include:

- Negotiate service agreements
- Design and document the recommended solution (plans should include environmental requirements and constraints cross-referenced to the EMP)
- Manage pre-construction activities
- Deliver the project in accordance with the documented design, systems and plans
- Review, update, maintain and control the approved EMP
- Accept the EMIP
- Monitor, audit and report the construction contractor’s environmental performance against the EMIP
- Ensure the Contractor maintains a current EMIP
- Consult with the community

Note: The organisation may contract an independent project manager or consultants to discharge some or all of these responsibilities.

The Contractors responsibilities during this phase include:

- Prepare an acceptable EMIP, prior to commencement of works
• Undertake environmental training and induction
• Implement the EMIP
• Monitor, audit and take corrective action as necessary
• Ensure the EMIP remains current and relevant during the contract
• Report environmental impacts and performance in accordance with contractual, statutory, EMP and EMIP requirements

Operations and Maintenance Phase:

The organisations responsibilities during this phase include:

• Overall responsibility for the maintenance of the environmental performance of the project
• Implement an operational impact monitoring program if required
• Implement post construction corrective measures as required
• Incorporate any on-going requirements for the project into maintenance contracts.

Preparing the EMP

Development of the EMP

The EMP should be prepared during the project’s Planning Phase and a draft EMP incorporated into the Concluding Report or EIAR. The EMP should be amended and refined taking into account resolution of issues arising from stakeholder and community consultation, environmental impact assessment and environmental clearance. The final EMP should be included in the Project Definition Report.

The EMP is to clearly recognise the environmental requirements associated with each distinct phase of a project’s lifespan; namely the:

• Planning phase
• Implementation phase
• Operations and maintenance phase

Planning Phase

During the Planning Phase environmental data should be collected to establish baseline conditions. Establishment of the baseline conditions should provide the basis for assessing alternative solutions, selecting the preferred alternative solution, selecting the preferred alternative, stakeholder consultation and monitoring the project’s impacts, both during construction and operation.

The EMP should document the applicable legislative requirements and approvals and provide reference to the appropriate standards, policies, codes and guidelines. Hence ensuring the project is managed in accordance with the best practice environmental management and, as such, environmental impacts are minimised. Project-specific performance criteria should be identified in the EMP schedules and the source of the criteria identified for example environmental clearance condition, statutory requirement, EPA guidelines etc.
**Implementation Phase**

The EMP should be utilised as a basis for the detailed design to ensure that the environmental requirements and undertakings established in the planning phase such as noise barriers, sediment control structures, drainage and landscaping are integrated into the design.

The EMP should reflect the environmental management requirements for the individual construction packages or contracts. Issues arising from letting of contracts and/or staging of the project such as location of depots, disposal sites for clear fill, location of access tracks, should be addressed.

The EMP should identify the performance criteria to be achieved during construction and highlight issues requiring specific management. The contractor should document, in the EMIP, how the project impacts will be mitigated and how the construction impacts will be managed.

**Operation and Maintenance Phase**

The EMP should provide details of any approvals and performance criteria to be achieved during the operation and maintenance of the asset, ie. approvals for the maintenance dredging, or performance criteria in relation to noise air quality or rehabilitation of vegetation. Some of these aspects may require monitoring for a number of years after the completion of construction.

The monitoring and auditing of the impacts during the Operations and Maintenance Phase provide the basis for reviewing and improving aspects of the Organisation’s environmental management in relation to projects.

This review is important in the context of continuous improvement and the achievement of best practice environmental management.

**Format and content of the EMP**

The EMP should cover all relevant aspects of the project including pre-construction, construction, and operation and maintenance of the asset. The EMP is not restricted to construction activities only.

The EMP’s primary purpose is to ensure the environmental requirements, identified during and following the Planning Phase, are implemented and effectively managed during a project’s life cycle.

The EMP will be part of the contractual requirements for the project and should be incorporated into the project specifications.

The EMP should reflect the requirements of these guidelines; however, these guidelines are not intended to be prescriptive and may be varied depending on project-specific issues, requirements and circumstances.
The contents of an EMP, typically, should include:

- Objectives of the EMP
- Project management structure and responsibilities
- Training/induction requirements
- Consent authorities’ conditions of approval (either internal or external)
- Any additional environmental safeguards required as part of the environmental clearance and/or approvals process
- Legislative requirement summary
- Approval and permits required and who is responsible for obtaining them
- The requirements of the Organisation’s environmental policies, guidelines and codes. If the standards or specifications are to be varied, this should be stated explicitly
- Assignment of responsibility for the implementing/maintaining/monitoring each environmental requirement
- Any additional environmental safeguards considered necessary as a result of further design development or new information
- Issue based schedules eg for run-off, erosion and sediment control.
- Administrative reporting and audit requirements
- Plans required to comply with guidelines or Environmental Protection Policies, eg. a soil, erosion and drainage management plan (as required under EPA’s Stormwater Pollution Control General Code of Practice for Sate and Federal Government Agencies); emergency response plans and traffic management plans
- Inspection, monitoring and audit program requirements
- Nomination of hold points. Hold points are normally imposed at a stage where further activity could cause environmental damage if the appropriate protection measures are not in place
- Site plan showing environmental sensitivities

**Who prepares and controls the EMP?**

The organisation retains primary responsibility for the environmental performance of its projects and, as such, the organisation’s Project Manager assumes responsibility for ensuring the preparation of an acceptable EMP.

While the EMP might be prepared by consultant the document should be controlled and maintained in accordance with the organisation’s document control procedures.

**Consultation**

During preparation of the EMP all relevant parties should be consulted, including the statutory authorities which have environmental protection responsibilities. Broader community involvement might be appropriate, depending on the circumstances of the project. In all cases the specific requirements arising from environmental assessment, environmental clearance and consultation should be established and defined as early as possible.
Can the EMP be amended?

The EMP should be reviewed and updated by the organisation as required during the project’s lifecycle. Any amendments should be reviewed and agreed by the author and the appropriate officer.

Before Finalisation of Contract Specifications

Minor changes may occur to the project scope after the completion of the Planning Phase. Planning Phase completion is noted by the acceptance of the PDR, which includes the EMP. These changes may result from, for example, availability of additional environmental information, agreements made during design changes and issues arising from project staging. As such, an iterative process is required to integrate the detailed design and the EMP ensuring that appropriate hold points are documented in the EMP schedules.

This is accepted as a normal part of project development in the Implementation Phase. However, care should be taken to ensure that any changes to the project and the EMP do not compromise the environmental management requirements identified during the EIA process.

If there are changes to the scope of the project, reassessment of the environmental impacts may be necessary. Advice should be sought from the organisation’s authorised officer in such circumstances.

After Finalisation of Contract Specifications

As a result of auditing or changed circumstances an EMP may be amended during the implementation phase. Caution should be exercised in relation to any proposed changes, as reassessment of the environmental impacts may be required. The need for the changes should be documented and discussed with the Environmental Services Manager and the Contractor. Changes may require discussion with relevant statutory authorities and, if necessary, the community. Any contractual ramifications should be carefully examined.

Operational Phase

The EMP should be reviewed at hand over of the project. Any EMP requirements during the operational phase are to be managed by incorporation into maintenance or monitoring contracts. As such, it is unlikely that the EMP will require amendment during the operational phase.

Approval of EMP

The EMP, as revised during the projects life, should be a controlled document approved by the organisation’s authorised officer and controlled by the Project Manager, prior to hand over.
1. INTRODUCTION

1.1 Background

- State the organisation’s environmental policy and goals as referred to in the Corporate Plan and Environment Strategic Plan.
- Identify the objective(s) of the organisation’s environmental management process, including the EMP and EMIP.
  For example:
  - to identify and minimise the environmental impacts of construction
  - to implement and manage an environmental management system which ensures construction practices and outcomes achieve environmental best practice, while fully complying with statutory and regulatory requirements
  - to continually improve the system by analysing and, where appropriate, incorporating stakeholder and audit feedback via regular management reviews
  - the EMP to ensure all requirements and commitments made during the planning and environmental assessment process are incorporated and managed effectively during the construction and operational phases of the project
  - to ensure the Construction Contractor develops an acceptable EMIP, in response to the EMP, to minimise construction impacts
- Identify the construction Contractors environmental obligations accepted under the conditions of contract.

  For example:
  - This EMP contains contractual requirements and performance criteria, as specified in the EMP schedules, that are to be satisfied under the terms and conditions of the contract.

The Construction Contractor is required to prepare, implement and maintain an EMIP in accordance with the Department’s published EMIP guidelines.

1.2 Project and Enviorns

- Provide brief description of project, purpose and key environmental issues.
- Attach or refer to site plans showing key environmental sensitivities, constraints and migration measures.
2. ENVIRONMENTAL MANAGEMENT PROCESS

2.1 Management Structure and Responsibilities

• Describe environmental management process both internally and externally to apply to the project.
• Describe roles and responsibilities of personnel during the project’s implementation and operational phases (use of a project organisational chart will assist).
• Describe the training and induction requirements.

2.2 Environmental Requirements

• Identify the relevant environmental legislation and describe how it applies to the project.
• Identify the permits, authorisations and approvals required under the relevant legislation and responsibility for obtaining them.
• Identify relevant best practice documents including Australian Standards, policies, codes and guidelines.
• Describe emergency response and environmental control requirements.
• Identify Mandatory Hold Points (MHP) in relevant EMP schedules.
• Describe non-conformance process and corrective action steps.
• Describe and reference the EMIP process, procedures and responsibilities. (Note reference to the organisation’s EMIP Guidelines.)

3. ENVIRONMENTAL MANAGEMENT SCHEDULES

• Identify key environmental issues for the project, and specify the objective(s) for each issue. The impact of construction activities may be managed collectively under the specific issues, for example, erosion and sediment control. For this issue, a key objective may be "to minimise the quantity of soil lost during and after construction and to maintain the quality of stormwater entering drainage systems".
• Identify specific commitments or actions to achieve each objective, eg. "design, install, maintain and monitor erosion and sediment control structures during the project’s life cycle".
• Identify for each commitment whether it is a task relevant to:
  • design
  • construction
  • operation

Prepare schedules, identifying the project stage relevant for each commitment as shown in the following tabular format titled “An example of an EMP schedule”.

• Identify conditions of approval, standards, policies, codes and guidelines to comply with legislative and best practice requirements; eg. Stormwater Pollution Control – General Code of practice for State and Federal Government Agencies, EPA, 1996.
• Include in the schedule the monitoring requirements for the project including any monitoring required prior to construction activities commencing. For example, a typical schedule for stormwater pollution control would identify:
- area of risk: sediment controls, silt fences and traps
- purpose: to determine effectiveness of installation
- monitoring requirements: eg. Measurement of suspended solids on the downstream side of control devices during a rainfall event and compare to approval, licence or best practice standards.
- remedial action: improvement of design, operation or maintenance of control devices as required.

4. AUDITING

- Identify key project activities that may generate significant environmental impact and develop an audit plan.
- Major project impacts are expected during construction and, hence, the audit focus should concentrate on this phase of the project. The audit objective is to verify that specified environmental activities, events, conditions and management systems conform to contractual performance criteria.
- This is an important area which Councils need to give due consideration to in terms of resources and skill requirements.

FORM AND CONTENT OF AN ENVIRONMENTAL MANAGEMENT IMPLEMENTATION PLAN - TO BE PREPARED BY THE CONTRACTOR (for guidance only)

1. Introduction

The introduction of the EMIP should include:
- A brief description of the project
- The contractor’s environmental objectives
- An explanation of the role of the EMIP and how it will be used during Construction to achieve the project’s environmental objectives.

2. Environmental management system

The contractor shall provide details of the environment management system to apply during the contract.

The basic elements of the contractor’s environmental management system to be detailed are likely to include:

2.1 Contractor’s environmental policy
Include a copy of the policy document and an explanation of how the policy will apply to the project.
2.2 Project organisation chart
An organisational chart showing the reporting/responsibility relationships, position titles and personnel, including subcontractors, should be included. The personnel with specific site environmental management responsibility should be highlighted.

2.3 Training, awareness and competence
Describe how the organisation training policy will apply to this contract to ensure that all employees and subcontractors are aware of and adequately trained to discharge their environmental responsibilities. A specific site briefing prior to commencement of works shall occur.

2.4 Environmental management system documentation
Provide documented details of the system, if available, including any manuals, standard report sheets, checklists, etc.

2.5 Document control
Describe the document control system to apply to the contract.

2.6 Checking and corrective action
Describe the procedures to apply to inspection, monitoring and auditing including non-conformance and corrective action.

Procedures applicable for these basic elements should be documented. Existing quality assurance procedures may already respond to issues such as document control and corrective action.

3. EMIP schedules
Schedules may be presented under two categories, namely:

- Specific response to EMP
- Best practice response

Best practice responses should be detailed, particularly when a project-specific EMP is not developed.

Plans can either be issue based or activity based. The Environmental Code of Practice for Construction – Road, Bridge and Marine Facilities is issue based with headings such as Flora and Fauna Protection Air Quality Controls and Water Quality Protection.

An activity-based plan would be likely to have headings such as vegetation clearance, excavation, topsoil removal, demolition, dredging and drainage works, etc.

An example of a typical EMIP response to EMP requirements is provided in Table 1 for the issue of run-off, erosion and sediment control.

The contractor shall include an inspection, monitoring and audit plan based on the EMIP Schedules. These are essential in order to establish if the contractor’s performance has achieved the project objectives. The EMIP must be relevant to the site activities and effectively implemented and managed. Inspections, monitoring and auditing will provide
the basis to implement corrective action and to ensure the environmental outcomes are achieved. Resultant action may involve upgrading the EMIP, changing procedures, training staff or providing additional or re-positioning controls.

## RELEVANT LEGISLATION

The following listing provides environmental issue-based groupings of legislation commonly applicable to construction projects.

The application of the following legislation to a specific project must be determined and would form the basis of the relevant listing within the body of a project-specific EMP:

<table>
<thead>
<tr>
<th>Environmental Issue</th>
<th>Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetation</td>
<td>Native Vegetation Act, 1991</td>
</tr>
<tr>
<td></td>
<td>National Parks and Wildlife Act, 1972</td>
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<tr>
<td></td>
<td>Pastoral Land Management Act, 1989</td>
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<tr>
<td></td>
<td>Animal and Plant Control Act, 1986</td>
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<tr>
<td></td>
<td>Endangered Species Protection Act 1992 (Commonwealth)</td>
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<tr>
<td></td>
<td>Coast Protection Act, 1972</td>
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<tr>
<td></td>
<td>Development Act, 1993</td>
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<tr>
<td></td>
<td>Fisheries Act, 1982</td>
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<tr>
<td>Weed, Pest and Disease</td>
<td>Animal and Plant Control Act, 1986</td>
</tr>
<tr>
<td>Control</td>
<td>Agricultural Chemicals Act, 1955</td>
</tr>
<tr>
<td></td>
<td>Dog Fence Act, 1946</td>
</tr>
<tr>
<td></td>
<td>Fisheries Act, 1982</td>
</tr>
<tr>
<td>Fauna</td>
<td>National Parks and Wildlife Act, 1972</td>
</tr>
<tr>
<td></td>
<td>Endangered Species Protection Act 1992 (Commonwealth)</td>
</tr>
<tr>
<td></td>
<td>Fisheries Act, 1982</td>
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<tr>
<td>Special Environmental Areas</td>
<td>Wilderness Protection Act 1992</td>
</tr>
<tr>
<td></td>
<td>Coast Protection Act, 1972</td>
</tr>
<tr>
<td></td>
<td>National Parks and Wildlife Act, 1972</td>
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<tr>
<td></td>
<td>Water Resources Act, 1997</td>
</tr>
<tr>
<td></td>
<td>Native Vegetation Act, 1991</td>
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<tr>
<td></td>
<td>Fisheries Act, 1982</td>
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<tr>
<td></td>
<td>Forestry Act, 1950</td>
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<tr>
<td></td>
<td>Endangered Species Protection Act 1992</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Environment Protection Act, 1993, including</td>
</tr>
<tr>
<td></td>
<td>Environment Protection (Marine) Policy</td>
</tr>
<tr>
<td></td>
<td>Pollution of Waters by Oil and Noxious Substances Act, 1987</td>
</tr>
</tbody>
</table>
Guidelines – Environmental Specifications in Contracts

- Noise and Vibration
  Environment Protection Act, 1993
  Fisheries Act, 1982

- Air Quality
  Environment Protection Act, 1993
  Harbours and Navigation Act, 1993

- Soil Management
  Soil Conservation and Land Care Act, 1987
  Pastoral Land Management and Conservation Act, 1989

- Run-off, Erosion and Sediment Control
  Environment Protection Act, 1993
  Water Resources Act, 1979
  Soil Conservation and Land Care Act, 1987
  Pastoral Land Management and Conservation Act, 1989
  Coast Protection Act, 1972

- Hazardous Materials Management
  Dangerous Substance Act, 1979
  Petroleum Products Regulations Act, 1995
  Agricultural Chemicals Act, 1995

- Waste Management
  Environment Protection Act, 1993
  Water Resources Act, 1997

- Fire Management
  Country Fires Act, 1989
  Environment Protection Act, 1993

- Rehabilitation and Restoration
  Harbours and Navigation Act, 1993
  Coast Protection Act, 1972
  Water Resources Act, 1997
  Environment Protection Act, 1993
  Soil Conservation and Land Care Act, 1987

- Heritage
  Aboriginal Heritage Act, 1988
  Aboriginal and Torres Strait Islander Heritage Protection Act, 1984 (Commonwealth)
  Historic Shipwrecks Act, 1976 (Commonwealth)
  Historic Shipwrecks Act, 1982 (SA)
  Heritage Act, 1993
  Australian Heritage Commission Act, 1975
ENVIRONMENTAL APPROVALS

The following tables provides a guide to the environmental approval requirements arising from application of the legislation listed previously:

<table>
<thead>
<tr>
<th>Relevant Legislation</th>
<th>Principle Approval</th>
<th>Relevant Government Minister/Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal Heritage Act, 1988</td>
<td>Authority to disturb an Aboriginal site or object.</td>
<td>Minister for Aboriginal Affairs; Division of State Aboriginal Affairs</td>
</tr>
<tr>
<td>Animal Plant Control (Agricultural and other Purposes) Act, 1986</td>
<td>Permit to move pest plants and animals into or within a control area</td>
<td>Minister for Primary Industries, Natural Resources and regional Development; Department for Primary Industries and Natural Resources</td>
</tr>
<tr>
<td>Water Resources ACT. 1997</td>
<td>Permission to interfere with Infrastructure vested in or under Management of Board</td>
<td>Minister for Environment and Heritage; Department for Environment, Heritage and Aboriginal Affairs; Relevant Board. Note; The Department may Have certain powers to interfere with catchment infrastructure under the Highways Act.</td>
</tr>
<tr>
<td>Country Fires Act, 1989</td>
<td>Permit to light a fire in the open where otherwise it would be unlawful (essentially Fire danger season or total fire ban).</td>
<td>Minister for Police, Correctional Services and Emergency Services: Department of Justice</td>
</tr>
<tr>
<td>Dangerous Substances Act, 1979</td>
<td>Licence to keep or transport a Prescribed dangerous substance.</td>
<td>Minister for Government Enterprises; Department of Administration and Information.</td>
</tr>
<tr>
<td>Environmental Protection Act 1993</td>
<td>Authorisation to undertake Prescribed dangerous substance.</td>
<td>Minister for Environment and Heritage; Department for Environment, Heritage and Aboriginals Affairs</td>
</tr>
<tr>
<td>Environment Protection (Sea Dumping) Act, 1984</td>
<td>• Permit required to dump waste at sea from a vessel, aircraft or platform. Latter includes jetty. • Permit required to load waste onto a vessel, aircraft or platform for purpose of dumping.</td>
<td>Minister for Transport; Transport SA</td>
</tr>
<tr>
<td>Relevant Legislation</td>
<td>Principle Approval</td>
<td>Relevant Government Minister/Organisation</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Fisheries Act, 1982</td>
<td>Permit to:</td>
<td>Minister for Government Enterprises; Department of Administrative and Information Services.</td>
</tr>
<tr>
<td></td>
<td>• Disturb bed of any waters or Interfere with aquatic or seabed Flora:</td>
<td>Note: Authority provided by the Powers under Highway Act to carry Out road works within a forest reserve. Also to take materials from reserves for works to be undertaken by the Department.</td>
</tr>
<tr>
<td></td>
<td>• Disturb seabed or aquatic flora in an aquatic reserve:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Disturb seabed of marine park.</td>
<td></td>
</tr>
<tr>
<td>Historic Shipwrecks Act, 1976 (Commonwealth)</td>
<td>Permit to carry out certain Activities within a declared zone.</td>
<td>Minister for communications and the Arts: Australian Cultural Development Office.</td>
</tr>
<tr>
<td>National Parks and Wildlife Act, 1972</td>
<td>Permit required to be within a Prohibited area in a reserve.</td>
<td>Minister for Environment and Heritage; Department for Environment, Heritage and Aboriginal Affairs.</td>
</tr>
<tr>
<td>South Eastern Water Conservation and Drainage Act, 1992</td>
<td>• Licence to erect a bridge or Construct a culvert through Board or council works;</td>
<td>Minister for Primary Industries, National Resources and Regional Development; Department for Primary Industries and Natural Resources.</td>
</tr>
<tr>
<td></td>
<td>• Permit to interfere with Board Or council works/drainage Reserve.</td>
<td></td>
</tr>
<tr>
<td>Water Resources Act, 1997</td>
<td>• Licence to take water from a Proclaimed water resource.</td>
<td>Minister for Environment and Heritage; Department for Environment, Heritage and Aboriginal Affairs.</td>
</tr>
<tr>
<td></td>
<td>• Permit required to obstruct or interfere with watercourse in certain circumstances.</td>
<td></td>
</tr>
<tr>
<td>Wilderness Protection Act, 1992</td>
<td>• Construction of roads in Wilderness protection area or zone Prohibited unless authorised by Plan of management;</td>
<td>Minister for Environment and Heritage; Department for Environment, Heritage and Aboriginal Affairs.</td>
</tr>
<tr>
<td></td>
<td>• Offence to be within prohibited Area unless permit issued by Minister.</td>
<td></td>
</tr>
</tbody>
</table>
AUSTRALIAN STANDARDS

The following list outlines the relevant standards relating to environmental factors involved with construction projects.

**Acoustics**

- AS 1055.1-1989  
  Description and measurement of environmental noise, Part 1: General Procedures
- AS 1055.2-1989  
  Description and measurement of environmental noise – application to specific situations
- AS 1949-1988  
  Measurement of airborne noise emitted by vessel in waterways, ports and harbours.
- AS 2012.1-1990  
  Measurement of airborne noise emitted by earth moving machinery and agricultural tractors – stationary test condition – determination of compliance with limits for exterior noise
- AS 2221-1979  
  Methods for measurement of airborne sound emitted by compressor units including prime movers and by pneumatic tools and machines.
- AS 2436-1981  
  Guide to noise control on construction, maintenance and demolition sites
- AS 2659.1-1988  
  Guide to the use of sound-measuring equipment Part 1 – Portable sound level meters
- AS 2702-1984  
  Methods for the measurement of road traffic noise
- AS 2922-1987  
  Ambient air - Guide for the siting of sampling units
- AS 2923-1987  
  Ambient air - Guide for measurement of horizontal wind for air quality applications
- AS 2957.0-1988  
  Earth-moving machinery – operation and Maintenance – general introduction and listing
- AS 3671-1989  
  Road traffic noise intrusion – building siting and Construction

**Air Quality**

- AS 2724.3-1987  
  Ambient Air-Particulate Matter. Part 3: Determination of total suspended particulates (TSP)  
  High volume sampler gravimetric method
- AS 2922-1987  
  Ambient Air–Guide for the siting of sampling units
- AS 2923-1987  
  Ambient Air–Guide for measurement of horizontal Wind for air quality applications
Demolition
• AS 2601-199  The demolition of structures

Emergency Procedures Guides
• AS 1678.3T1-1987  Transport – group text EPGs for Class 3 substances - flammable liquids – bitumen products
• AS 1678.0.0.001-1994  Transport – vehicle fire
• AS 1678.9C1-1993  Transport – group text EPGs for Class 9 substances - environmental hazardous substances, N.O.S
• AS 1678- various  Emergency procedure guides for transport of dangerous goods
• AS 1931-1994  Selection and use of emergency procedure guides For the transport of dangerous goods

Environmental Auditing
• AS/NZS ISO 14010-1996  Guidelines for environmental auditing – audit Principles
• AS/NZS ISO 14011.-1996  Guidelines for environmental auditing – audit Procedures – auditing of environmental Management systems

Storage and Handling
• AS 1216-1665  Class labels for dangerous goods
• AS 1940-1993  The storage and handling of flammable and Combustible liquids
• AS 2187.1-1984  Explosives – storage, transport and use (known as The SAA Explosives Code)- storage and land Transport
• AS 2187.2-1993  Explosives – storage, transport and use– use of Explosives
• AS 2507-1984  The storage and handling of pesticides
• AS 2508 (Lst)  Safe storage and handling information cards for Hazardous materials
• AS3780-1994  The storage and handling of corrosive substances

Water Quality
• AS 2031.1-1986  Selection of containers and preservation of water Samples for chemical and microbiological analysis Part 1: Chemical
• AS 2031.2-1987  Selection of containers and preservation of water samples for chemical and microbiological analysis Part 2: Microbiological
### ENVIRONMENTAL IMPACT CHECKLISTS - ACTIVITIES WHICH MAY CAUSE ENVIRONMENTAL IMPACT

- Above ground works, structures
- Access changes
- Access tracks
- Acquisition
- Amenities provided or removed
- Barriers, fences
- Blasting
- Demolition of structures, removal of pavement
- Disposal of clean fill
- Disposal of wastes
- Diversion roads
- Drainage to waterways
- Dredging, reclamation
- Earthworks, excavation, cut and fill
- Emissions to atmosphere, grits, dust, smoke, exhaust fumes
- Erosion control, flood control
- Extraction of materials
- Fencing
- Land clearing, burning
- Lighting
- Noise and vibration
- Parking of vehicles
- Pest plant removal
- Pile driving
- Relocation of services
- Revegetation, landscaping
- Signs, hoardings
- Siting of camp facilities, site offences, equipment compounds
- Stockpiling on road reserve or private property
- Temporary drain construction
- Underground works, tunnels, wells, piling
- Vehicle turn-arounds
- Waterworks, drainage, de-watering

### SPECIFIC ENVIRONMENTAL ISSUES

<table>
<thead>
<tr>
<th>Category</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>Road Traffic noise</td>
</tr>
<tr>
<td></td>
<td>Construction noise</td>
</tr>
<tr>
<td></td>
<td>Demolition</td>
</tr>
<tr>
<td>Vibration</td>
<td>Dust</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Vehicle emissions</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Soil Conservation
  Demolition
  Siltation, erosion
  Cuts and Fills
  Slope stability, (batters)
  Borrow pits
  Haul routes
  Rehabilitation
  Compaction

(This section should cover the requirements for a Soil Erosion and Drainage Management Plan as required in the EPA Stormwater Code of Practice.)

• Water Quality
  surface/sub-surface resources
  Drainage patterns
  Run-off, flooding
  Wetlands

• Vegetation
  removal (collection of seed, timber reuse)
  Revegetation
  Visual impact
  Identification of sensitive areas including:
  Protected rare/threatened species, heritage etc.
  Control of weeds
  Control of root rot fungus, phytophthora
  Aquatic flora freshwater marine

• Wildlife
  Effect on habitat, breeding areas, migratory species
  Identification of sensitive areas egProtected/rare/threatened
  Barriers to movement
  Aquatic fauna freshwater/marine
  Wildlife corridors

• Access
  Accessibility
  Travel Patterns
  Severance
  Parking
  Disabled
  Pedestrians
  Cyclists

• Amenity
  Privacy
  Visual, landscape
  Open space

• Community
  Acquisition
  Relocation
  Severance
  Community concerns
  Adjoining land uses
  Disposal of surplus land
Guidelines – Environmental Specifications in Contracts

- Cultural
  - Aboriginal heritage
  - Native title
  - European heritage

- Transport, Utilities
  - Public transport
  - Pedestrians
  - Cyclists
  - ETSA, SA Water, Telstra

- Management of materials
  - Contaminated land
  - Fuel/chemical storage
  - Stockpiles
  - Recycling
  - Waste disposal
  - Emergency measures for polluting incidents