



New South Wales
Government

Environmental Management Systems Guidelines

Environmental Management Systems

Guidelines

November 1998

Environmental Management Systems Guidelines

This initiative is aimed at providing a systematic approach to the management of the environmental impacts of the construction industry within the context of the principles of Ecologically Sustainable Development.

Ecologically Sustainable Development requires a commitment by industry participants to ensuring that business priorities and developments meet the needs of the present without compromising the abilities of future generations to meet their own needs. Implementation of Environmental Management Systems by industry participants will improve the industry's environmental performance and assist in the achievement of Ecologically Sustainable Development.

The Construction Policy Steering Committee (CPSC), in collaboration with the Environment Protection Authority New South Wales, has developed the NSW Government Construction Environmental Management System model as described in this document.

The CPSC membership includes representation of:

- Cabinet Office
- Department of Housing
- Department of Industrial Relations
- Department of Public Works and Services (Chair)
- Olympic Co-ordination Authority
- Pacific Power International
- Rail Access Corporation
- Rail Services Australia
- Roads and Traffic Authority
- Sydney Water
- Treasury

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Terms used in these guidelines

The term '**contractor**' is used in this document to include contractors and consultants engaged by a client, including a government construction agency, to perform the work specified under a contract.

The term '**subcontractor**' is used to include the subcontractors, consultants and suppliers who provide a service and/or product to a contractor and/or subcontractor or client.

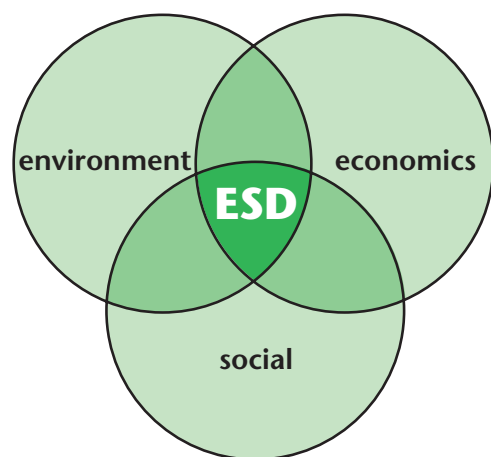
1 Summary: Why environmental management?

Towards ecologically sustainable development

The construction industry produces roads, railways, schools, hospitals, community and recreational facilities as well as other installations that form our built environment and shape our landscape.

In the past, economic development, social programs and environment protection occurred largely in isolation from each other. Today, however, there is a growing understanding that these systems are interlinked and that social, economic and ecological objectives are interdependent.¹

Ecologically Sustainable Development has been defined in Australia as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.



The community's demand for ESD puts the performance of the industry under a sharp light. The NSW Government is committed to support the principles of ESD. In its integrated development framework for the construction industry, *Construct New South Wales*, the Government offers the industry the opportunity to become environmentally more responsible by improving its practices. (Further information on ESD is included in Appendix A.)

The NSW Government's *Code of Practice for the Construction Industry* and attendant *Code of Tendering* define the minimum levels of acceptable behaviour and emphasise the need to develop an industry culture committed to improving and achieving high standards in environmental management.

These *Environmental Management Systems Guidelines* have been developed to facilitate the achievement of improved environmental performance of the construction industry.

The purpose and scope of the guidelines

The guidelines apply to all government projects and activities concerned with demolition, building, landscaping, maintenance, civil engineering, process engineering, mining and heavy engineering. This includes projects involving private sector participation in the provision of the State's assets, for example by way of Build/Own/Operate schemes and similar arrangements.

The thrust of these guidelines is to make environmental management a part of the culture of organisations in the construction industry. Sound environmental practices above and beyond mere compliance with regulatory requirements will thus become integrated with day-to-day work practices. In this way, organisations can be recognised for their environmental performance.

In order to achieve this, the government construction agencies will seek to:

- use contractors with a demonstrable capacity to effectively implement an Environmental Management System, and
- achieve an effective environmental focus in the industry which will lead to continuous improvement in environmental management.

While this will not negate the need for externally imposed compliance measures, it is an effective tool for substantially and permanently improving the industry's environmental performance.

¹ *New South Wales State of the Environment 1997*
Environment Protection Authority, NSW

1 Summary (continued)

These guidelines are intended to assist contractors both in complying with the Government's policy (*see Section 2*), and in demonstrating that compliance.

The policy will be introduced in stages, to reflect the time needed by industry and government construction agencies to plan, develop and implement appropriate systems.

The policy is intended to embrace the whole range of capital investment project activities, from concept development to construction, implementation and ultimately demolition or disposal.

These guidelines do not in any way relieve contractors of their environmental obligations under statute or general law.

The benefits of an EMS

The primary benefit of an EMS is that it gives an organisation a way of managing its environmental performance, thereby allowing it to contribute to improved environmental quality.

The secondary benefits are numerous and can include:

- cost control, through improved understanding of input requirements, greater process control and more efficient waste management practices;
- improved relations with stakeholders (who might include customers, employees, shareholders, regulators, lenders or neighbours);
- development and transfer of knowledge and technology;
- reduced insurance premiums;
- early access to emerging markets for both new products and by-products, including those that might previously have been considered wastes;
- improved corporate image and differentiation from competitors;
- improved control over liabilities, leading to greater access to capital;
- staying ahead of the competition;

- avoiding unnecessary involvement with regulators; and
- reducing negative perceptions in the community.

Structure of these Guidelines

This section provides a background to the Government's policy for the construction industry.

Section 2 presents the policy and its staged program for implementation.

Section 3 describes how the accreditation register for Environmental Management Systems (EMSs) will be established and maintained.

Section 4 describes the requirements for Environmental Management Plans (EMPs) and details the components of an EMP.

Section 5 describes the Government's requirements for corporate Environmental Management Systems.

Section 6 outlines the key elements of a corporate Environmental Management System that an organisation must have in place in order to achieve accreditation, and **Section 7** lists optional elements that may be considered for inclusion in an EMS.

Section 8 is a supplement for government construction agencies. It details the requirements for contract documentation and project management.

Section 9 details the process that will be used by government construction agencies when auditing EMPs and EMSs.

The appendices include the Principles of Ecologically Sustainable Development; a compilation of the relevant environmental legislation, approvals, permits and licences; and two checklists designed to assist both contractors developing EMPs and EMSs and government construction agencies auditing them.

2 Government policy and its application

The policy

The major components of the NSW Government policy are as follows:

All projects

- All projects will require the preparation of an appropriate site-specific Environmental Management Plan (EMP) prior to the commencement of the relevant site works.
- Contractors will be required to prepare an EMP as a condition of contract.

Major projects

Contractors seeking to work on major projects will need to have a corporate Environmental Management System (EMS) accredited by a NSW government construction agency.

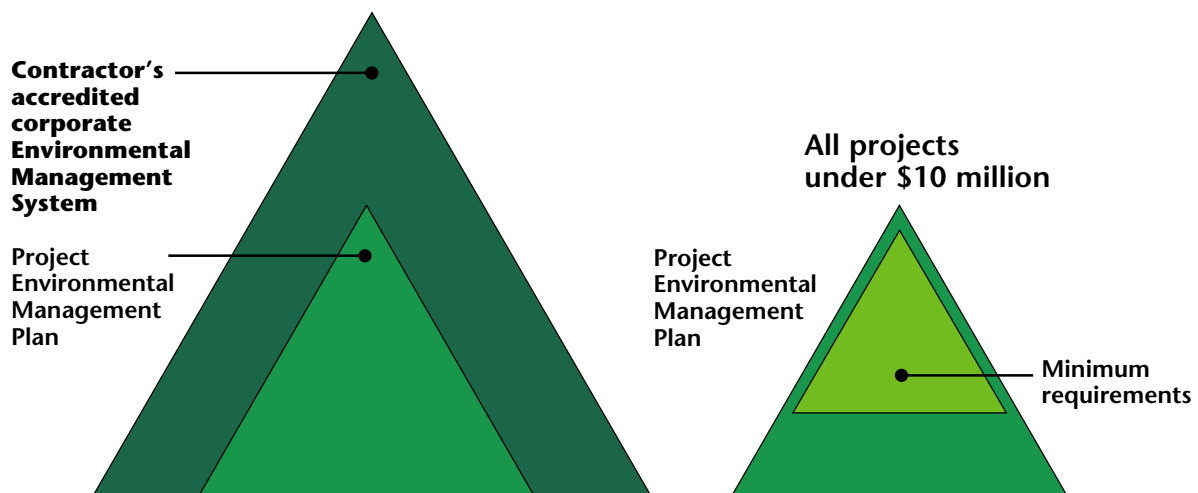
That is, tenders and application for pre-qualification or pre-registration for major projects will only be accepted from contractors with an accredited corporate Environmental Management System in place.

For the initial policy application, a *major project* is defined as being either:

- a project having a value of **\$10 million or more**, or
- a project having a value of **under \$10 million** where the relevant agency determines that:
 - the work is of high environmental risk; or
 - the work interfaces with other projects of high environmental risk; or
 - the work is otherwise **sensitive in terms of the environment**; or
 - project application will apply at a lower threshold.

The minimum requirements for Environmental Management Systems are detailed in Sections 5 & 6 of these Guidelines.

All projects of \$10 million or more, and projects under \$10 million if they are environmentally sensitive



2 Government policy and its application (continued)

Reviews and audits

Contractor EMSs will be subject to review, and EMPs will be subject to audit. Accreditation may be withdrawn if audits of EMPs or Contractor and Consultant Performance Reports indicate that the contractor's EMS is not being satisfactorily implemented.

Review of the policy

The policy's effectiveness will be assessed and a further statement may be issued to detail the time frame for further implementation.

The assessment will include a review of the \$10 million minimum threshold for Environmental Management System accreditation.

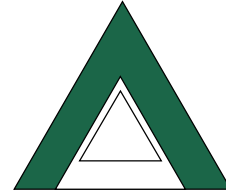
Implementation

Implementation of the policy will be staged to allow time for the industry to establish the necessary procedures and practices.

The full policy will apply from 1 May 1999. From this date EMPs will be required on all projects, and EMSs for all major projects (as defined).

An accreditation period will begin from 1 February 1999. In this period, contractors likely to be awarded contracts for major projects, including those seeking pre-qualification or pre-registration, will be required to submit their Environmental Management System documentation for accreditation. The documentation is to include the key elements of the NSW Government Construction Environmental Management System.
(See Sections 5 & 6.)

Implementation of this policy, including accreditation of EMSs, will be managed within the mainstream business activities of the NSW government construction agencies.



3 Accreditation of EMSs

Gaining of accreditation

Accreditation of contractor Environmental Management Systems (EMSs) is the responsibility of the NSW government construction agencies.

An organisation's corporate EMS will be accredited if it meets one or both of the following requirements:

- it has been assessed or accepted by the relevant NSW government construction agency as complying with the requirements of these guidelines (in particular it must address the key elements described in Sections 5 & 6 of these Guidelines);
- it has been certified by an appropriately recognised third party body as complying with AS/NZS ISO 14001:1996 Environmental Management Systems and the organisation can also demonstrate that the EMS addresses the specific requirements of these guidelines—in particular, evidence of implementation.

Minimum accreditation criteria to be applied by NSW government construction agencies will be defined by the CPSC and updated from time to time. Agencies may include additional criteria.

Following an assessment of a contractor's corporate EMS, a report and recommendation regarding accreditation will be provided to the contractor as well as to the agency. This is the responsibility of the agency.

The contractor will be given a chance to comment on the report and recommendation. The agency must properly consider any comment by the contractor before making a decision not to grant accreditation.

Registers of accredited contractors

Each agency will establish a register of contractors whose EMSs have been accredited.

Information on an environmental accreditation register may be made available to another NSW government construction agency.

Agencies may, but are not obliged to, grant accreditation of a contractor's EMS on the basis of accreditation by another agency.

Withdrawal of accreditation

A contractor's accreditation may be withdrawn if audits of EMPs or Contractor and Consultant Performance Reports indicate that the contractor's EMS is not being implemented satisfactorily.

Determinations will only occur after the contractor has been given an opportunity to comment on the project audit and the agency has properly considered the contractor's comments.

4 Environmental Management Plans

What is an Environmental Management Plan?

An Environmental Management Plan (EMP) is a site-specific plan developed to ensure that all contractors and sub-contractors comply with the environmental conditions of approval for the project and that the environmental risks are properly managed.

In some projects there are no environmental impact assessment undertakings, consent conditions or pollution control approvals. Some contractors may even not be aware of any statutory obligations attached to their activities on the project. In determining environmental aspects and impacts, a contractor needs to consider if any of the organisation's activities, products or services relevant to the project will have any effect on air, water, land or waste.

In the simplest of organisations this may entail the asking of basic questions such as:

Air

What sort of emissions to air will the organisation be responsible for: noise? smoke? exhaust fumes?

Water

How much water will the organisation use? Where will it go? Will anything be discharged or spilled into drains or watercourses (rivers, streams, ponds, dams, etc)?

Land

Do any of the organisation's activities, products or services affect the soil, local wildlife or plants?

Waste

How much material or energy does the organisation waste?

In asking these questions the contractor should take into account reasonably anticipated events such as spillages, plant breakdowns or inclement weather which could affect its day to day activities.

Having identified the potential environmental aspects and impacts, the contractor must then determine how the organisation is to manage these issues—for example *How are we going to wash our paint brushes? How will we control soil erosion if it rains?*

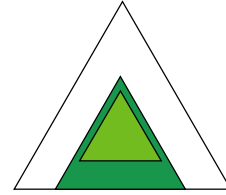
All of this must be documented and communicated so that all personnel on the project will know:

- what environmental risks are involved in the project;
- what is the plan to manage these risks;
- who is responsible for ensuring that the plans are followed;
- what to do and who to contact if there is an accident.

An EMP may be developed by an individual contractor or by a government construction agency.

For some smaller projects (as defined by the government construction agency) contractors may be required to operate under a nominated EMP.

For larger projects where there are more complex environmental aspects and impacts, the EMP could include all the key elements of an Environmental Management System. (See Sections 5 & 6.)



What elements must be included in an EMP?

The scope of an EMP may vary, depending on the scale and environmental impact of the project.

For all projects

All EMPs should include at least the following four elements:

Commitment and policy

- 1 Objectives of the EMP.

Planning

- 2 A listing of the environmental aspects and impacts associated with the work, including:
 - specific undertakings arising from the environmental impact assessment;
 - consent conditions;
 - pollution control approvals and any conditions attached to the approvals;
 - statutory obligations; and
 - environmental risks.

Implementation

- 3 Documentation of the measures to be taken to manage the identified aspects and impacts. These measures are subject to approval by the responsible agency and in compliance with the tender documents.
- 4 A clear indication of the respective environmental responsibilities of the contractor and subcontractors.

For major projects

Typical contents of an EMP for major projects, ie. projects estimated to cost more than \$10 million, would include the four elements already listed, as well as the additional elements below.

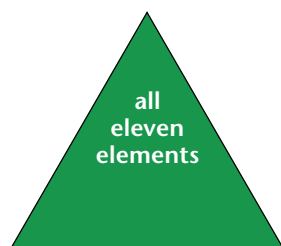
Implementation

- 5 Assignment of corporate responsibilities for implementing, maintaining or monitoring each environmental requirement.
- 6 Assignment of individual responsibilities for implementing, maintaining or monitoring each environmental requirement.
- 7 Procedures and instructions for implementing, maintaining or monitoring each environmental requirement.
- 8 Administrative and supervisory arrangements, responsibilities and accountabilities (eg. supervisory protocols; provision of a site environmental manager; management of subcontractors, training of site staff; submission of regular reports on the implementation of the EMP; compliance bonds and penalties for non-compliance).
- 9 Cross-references to other environmental management documents (eg. landscape plans, soil and water management plans, statements of heritage significance, incident management plans).
- 10 Emergency response procedures.

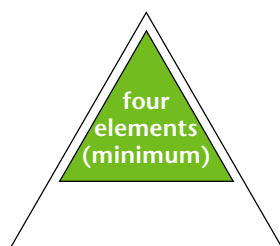
Measurement, evaluation and review

- 11 Monitoring and audit procedures including provisions for corrective action.

Projects over \$10M



All projects



4 Environmental Management Plans (continued)

Are EMPs subject to audit?

Yes. From time to time, government construction agencies will arrange for a contractor's Environmental Management Plan to be audited. This audit will involve an on-site verification that the plan is being correctly implemented. Audit results may be shared amongst the government construction agencies.

A sample of an EMP audit checklist has been included as Appendix C.

This audit may also form part of an agency's Contractor and Consultant Performance Reporting System. Reports produced as part of this system may be used to assess the accreditation status of a contractor's Environmental Management System.

For audit details see Section 9.

I don't want to tender for major projects. Do I need an EMS?

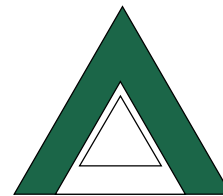
No. However, it is expected that the minimum threshold of \$10 million for EMS accreditation will be reduced over time. If you want to maintain or increase tendering opportunities for Government work, you may eventually have to seek environmental accreditation.

Developing an EMS for accreditation need not be excessively difficult or time-consuming.

For example, you may be involved in a number of projects where the implementation an EMP is operating successfully. You may find that:

- staff are able to understand the procedures and instructions for implementing, maintaining or monitoring each environmental requirement;
- new staff are being properly trained;
- the documented responsibilities are working;
- monitoring is being properly carried out;
- records are being kept;
- audits are being performed regularly; and
- corrective actions found as a result of the audits are leading to the EMP being fine-tuned.

In this case it might be said that you are undergoing a project-based process of continual improvement. Having achieved this milestone you might find it worthwhile—and relatively simple—to develop a full Environmental Management System.



5 Environmental Management Systems

What is an Environmental Management System?

An Environmental Management System (EMS) comprises those elements of an organisation's overall management system which ensure that environmental issues are identified and managed.

An Environmental Management System involves a contractor:

- accepting that its activities, products or services have an impact on the environment;
- developing an Environmental Policy that has the total support of management;
- having planning processes and procedures in place that have the capacity to identify possible environmental impacts;
- having planning processes and procedures in place to develop mitigation measures to minimise environmental impacts;
- establishing responsibilities and procedures for implementing required mitigation measures;
- establishing systems and procedures to review the implementation process; and
- establishing a process of management review of those systems and procedures which support the Environmental Policy: this will lead to continually improving performance.

The following section describes the minimum requirements and provides scope and the opportunity to continually improve environmental performance.

What elements must be included in an EMS?

To meet minimum requirements for accreditation an Environmental Management System will need initially to address the following key elements, which are described in detail in the next section.

Commitment and policy

- 1 Environmental policy

Planning

- 2 Environmental review and identification of environmental impacts
- 3 Identification of legal and other requirements
- 4 Setting environmental objectives and targets

Implementation

- 5 Resources
- 6 Accountability and responsibility
- 7 Training and induction
- 8 Documentation
- 9 Operational control
- 10 Emergency preparedness and response

Measurement and evaluation

- 11 Measuring and monitoring ongoing performance
- 12 Corrective action
- 13 Records and information management

Review

- 14 Audit and review

Two optional elements may also be considered for inclusion:

- 16 Communication and reporting
- 17 Third party certification

5 Environmental Management Systems (continued)

What are the requirements for EMS documentation?

Documentation is needed to ensure that all personnel share a common understanding of the Environmental Management System and that its requirements are communicated effectively throughout the organisation.

Contractors with existing documented and implemented quality or occupational health, safety and rehabilitation management systems may find it convenient to extend these systems to address and incorporate the environmental management requirements. Other contractors may prefer a separately documented system.

Either approach can be used to satisfy the requirements, providing the system is effective and aims for continual improvement.

The nature of the documentation will vary according to the size and complexity of the contractor's organisation.

However, the system documentation should in all cases include:

- the environmental policy;
- the policy objectives; and
- the key roles, responsibilities, procedures and controls for achieving environmental objectives and targets.

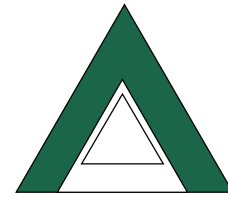
How is an EMS assessed to gain accreditation?

A contractor's submitted EMS documentation is reviewed to ensure that it fully describes the requirements of the key elements listed in Section 6.

A sample of an EMS checklist has been included as Appendix B.

The accrediting agency gives the contractor a copy of the review checklist and accreditation recommendation.

The agency must consider any comment by the contractor before making any decision on accreditation.



6 Key elements of an Environmental Management System

This section defines a model which represents the minimum Environmental Management System standard.

Commitment and policy

1 Environmental policy p13

Planning

2 Environmental review and identification of environmental impacts p14

3 Identification of legal and other requirements p14

4 Setting environmental objectives and targets p14

Implementation

5 Resources p15

6 Accountability and responsibility p15

7 Training and induction p16

8 Documentation p16

9 Operational control p17

10 Emergency preparedness and response p17

Measurement and evaluation

11 Measuring and monitoring ongoing performance p18

12 Corrective action p18

13 Records and information management p19

Review

14 Audit and review p19

1 Environmental policy

This element is about confirming the organisation's commitment to environmental management and defining its policies and objectives. It spells out responsibilities for environmental management and for verification of the system. The policy can really only be articulated after the Planning elements described below have been finalised.

To ensure the effectiveness and success of an Environmental Management System, one of the early steps in its development or improvement involves obtaining the commitment of the organisation's senior management to improve the environmental management of its activities, products and services. Ongoing commitment and leadership from the top are vital.

The organisation makes a clear statement to define its environmental policy and its commitment to ESD. In adopting an environmental policy the organisation sets overall goals by which its environmental responsibilities and performance will be judged.

The policy needs to:

- have the full support and commitment of the Chief Executive Officer and senior management;
- be relevant to the organisation's activities, products and services;
- reflect the organisation's values and guiding principles;
- provide a guide to the setting of environmental objectives and targets; and
- include a guide towards the monitoring of appropriate technology and management practices.

6 Key elements of an EMS (continued)

Planning

2 Environmental review and identification of environmental impacts

This element is about considering the range of activities to determine their impact on the environment.

Organisations are to consider which of their activities, services or products have an interaction with the environment.

This is an ongoing process that determines the past, present and potential impacts. While doing this review it is worthwhile revisiting existing environmental management practices and procedures. An important part of the review is for the organisation to consider the legislation and regulations affecting the environmental interactions of its activities, services or products.

For example:

*In examining the activity of pouring concrete, a construction contractor might recognise that one of the **interactions with the environment** is that substantial amounts of waste are generated. The **impact** is that this waste uses up landfill (ie. in the tip).*

3 Identification of legal and other requirements

This element is about identifying legislative and regulatory requirements.

To maintain legal compliance the organisation must identify and understand the regulatory requirements applicable to its activities, products or services.

To keep track of legal requirements, the organisation should establish and maintain a list of all laws and regulations relevant to the environmental impact of its activities, products or services. (See Appendices A & B.)

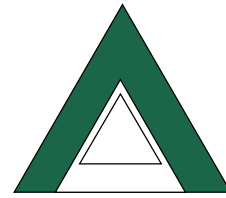
4 Setting environmental objectives and targets

This element is about the organisation setting objectives to meet the environmental policy.

These objectives are the overall goals for environmental performance identified in the policy, having regard to the environmental impacts identified under elements 2 and 3 above. Then environmental targets can be set to achieve these objectives within a specified time frame. Each target should be specific and measurable.

For example:

*An EMS **objective** might be 'to reduce waste to landfill'. A building contractor's **target** might be 'to reduce wastage of steel to a maximum of 2%'. One of the **indicators** can be the amount of steel in rubbish skips as a proportion of the amount of steel purchased.*



Implementation

5 Resources

This element is about identifying the resources necessary to implement the system.

The resources essential to the implementation of the organisation's environmental policies and the achievement of environmental objectives should be defined and made available.

Resources include human, physical (eg. facilities and equipment) and financial. In allocating resources, the organisation can develop procedures to track the benefits as well as the costs of its environmental activities.

6 Accountability and responsibility

This element is about defining the responsibilities and authorities of all personnel whose roles can affect the environment.

Personnel at all levels should be accountable, within the scope of their responsibilities, for environmental performance in support of the overall Environmental Management System.

By clearly spelling out the responsibilities and authorities of personnel for specific tasks relating to environmental management, there should be no doubt about who is responsible for taking decisions and acting on issues, including actual and potential non-conformances/problems.

Specific environmental issues for which responsibilities and authorities need to be defined, both in job descriptions and in documented procedures include, but are not limited to:

- defining environmental management policies and objectives, priorities and targets;

- defining the responsibilities of personnel for environmental matters;
- identifying system verification requirements and allocating human, technical and financial resources adequate to meet those requirements;
- ensuring compliance with environmental legislation, regulations and licensing conditions;
- keeping abreast of changes in legislation and regulations;
- acquiring and disseminating environmental management information;
- planning and conducting training in environmental management, including induction for new employees;
- developing and implementing procedures;
- assessing subcontractors' and suppliers' abilities to comply with environmental management system requirements;
- ensuring compliance with environmentally sound work practices; and
- monitoring appropriate technology and management practices.

A Management Representative should be nominated to have the specific task of 'ensuring that the requirements of the organisation's Environmental Management System are implemented and maintained'.

6 Key elements of an EMS (continued)

Implementation (cont)

7 Training and induction

This element is about establishing procedures and allocating resources to identify and provide for the training needs of personnel.

Training of all personnel is necessary to introduce the cultural change required to meet these guidelines.

This is particularly important on construction projects where conditions change frequently, and where the environment can be put at risk by the incorrect performance of a simple task—such as incorrect disposal of waste, or inadequate provisions for erosion control.

Contractors are therefore required to:

- identify the environmental training needs of all personnel involved in a project;
- ensure that all personnel undergo the necessary induction and task training to ensure conformance with environmental management standards; and
- maintain appropriate records of environmental management training.

Effective environmental management requires sound individual judgement and personal responsibility in addition to compliance with environmental rules and documented procedures.

A training program will need to build understanding and a capability to accept responsibility, as well as knowledge about environmental hazards and procedures.

Induction training (new personnel or new process) will be important on changing work sites. Refresher training will also be required on some long duration sites or projects, as it is in any best practice workplace culture.

A properly designed training program will consider training needs for each project phase, and ensure that appropriate training is delivered by qualified persons.

8 Documentation

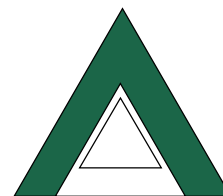
This element is about ensuring that documents and data used in the work are readily available, and that they are approved and current versions.

Projects depend for success on accurate and detailed documents such as briefs, plans, specifications, standards and codes. These include standards and codes dealing with environmentally sound work practices.

The Management Representative must approve system documents, procedures, work instructions, checklists and forms before they are used.

An organisation should be able to guarantee that at any point during the project:

- all environmental management procedures are identified, documented and communicated;
- documents being used are accurate, easy to understand and up to date;
- documents can be easily found when required and are available to all people who need them, where and when they need them;
- changes are recorded and, unless otherwise required, old documents are removed from use; and
- documents are periodically reviewed and revised as necessary and approved by authorised personnel prior to issue.



Implementation (cont)

9 Operational control

This element is about establishing and maintaining operational procedures and controls to ensure that the organisation's environmental policy, objectives and targets can be met.

The procedure may be a specific activity or a number of activities undertaken by contractors and/or subcontractors in carrying out the work required to complete a project.

For effective environmental management, the organisation needs to consider all operations and activities contributing to its impacts on the environment.

Such operations may include:

- purchasing
- contracting
- management of subcontractors
- handling and storage of materials (hazardous or otherwise)
- disposal of wastes
- maintenance.

Each procedure must detail as a minimum:

- the manner of providing or completing a process;
- the use of suitable equipment;
- compliance with standard codes;
- standards of workmanship;
- approval process;
- records;
- qualifications of personnel.

10 Emergency preparedness and response

This element is about ensuring that emergency plans and procedures are in place describing the responses required if an incident occurs, eg. a chemical spill, damaged water pipelines, run-off due to excessive rain.

The plans can include:

- emergency organisation and responsibilities
- a list of key personnel with full contact details
- details of emergency services (eg. ambulance, fire brigade, spill clean-up services)
- communications strategy (internal and external)
- details of actions to be taken in the event of different types of emergencies
- information on hazardous materials, including each material's potential impact on the environment and measures to be taken in the event of accidental release
- training plans and testing for effectiveness.

6 Key elements of an EMS (continued)

Measurement and evaluation

11 Measuring and monitoring ongoing performance

This element is about establishing procedures for the routine monitoring of environmental performance to ensure that environmental impacts are being measured.

For example:

Suppose a contractor was aiming to achieve a target of maximum wastage of steel of 2% as suggested in Element 4. The following procedures would be necessary:

Measurement and checking of all materials coming to each site.

This would not be unusual on any site as the contractor would be wanting to check invoice quantities. The check might need to satisfy accounting, safety, and quality criteria as well as environmental criteria (eg. correct type and quantity, correct packaging and labelling, correct documentation and no transit damage), so it would have to be carried out by suitable qualified personnel.

Separation of waste on each site

Apart from being an environmental and waste management issue there are cost savings to be accrued with this type of practice.

Measurement of waste as it leaves each site or as it is accepted at the tip or landfill.

This procedure would have to be carried out anyway to determine the tipping fee.

Calculation of the percentage of wasted steel.

12 Corrective action

This element is the process of ensuring that environmental issues are appropriately addressed and that similar issues do not recur.

‘Corrective action’ is concerned with what an organisation can do to keep improving its environmental performance.

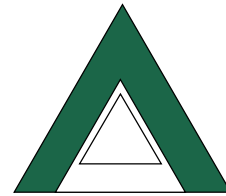
Environmental management audits and incidents provide definite pointers to unsound work systems. Incidents should be recorded, investigated and analysed. The aim is to facilitate improvements in policies, standards and work practices that progressively lift the organisation’s environmental performance.

However, corrective action should not necessarily wait until an audit is carried out or an incident occurs. Workplace activities should be analysed for potential risks to the environment, and action should be taken to reduce the risks before incidents occur.

Procedures should be established for the rehabilitation of environmentally degraded areas, as well as for ensuring that corrective actions are taken and are effective.

Action undertaken as a result of reviewing past errors or anticipating future errors is the learning that will enable an organisation to keep improving its level of environmental management.

Procedures for recording the results of risk or incident analysis and corrective action must be put in place by the organisation.



Measurement and evaluation (cont)

Review

13 Records and information management

This element is about establishing procedures for the identification, filing, retrieval and retention of environmental management records.

Records must be kept to provide evidence of compliance with the organisation's Environmental Management System and EMPs as well as to provide evidence of compliance with standards and legislation.

These records would include but are not limited to:

- legislative and regulatory requirements
- permits
- details of qualifications held by individuals
- monitoring/inspection reports
- internal audit reports
- external audit reports
- reports of environmental incidents, complaints and follow-up action
- minutes of environmental management meetings
- incident analyses
- incident statistics—discharge quantities, lost time, frequency rates and duration rates
- minutes of management review meetings
- evidence of action taken as a result of such meetings/events
- induction and training records
- supplier and sub-contractor information.

A complex range of information can result. The effective management of these records is essential for the successful implementation of the environmental management system.

14 Audit and review

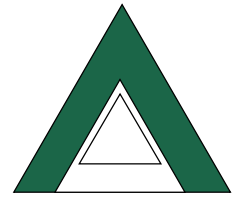
This element is about establishing a system of internal audits and management reviews to verify that the Environmental Management System is being adhered to and is effective. This aim is to ensure continuous improvement in performance.

The organisation must have a planned system of internal audits and management reviews to verify that its environmental management activities match its stated plans, including targets set to meet the policy, and that the activities resulting from audit and management reviews are effective.

Results of internal reviews must be brought to the attention of the people who are responsible for the area reviewed. These people will ensure that corrective action is taken immediately to remedy any deficiencies found.

The environmental management system itself, and the organisation's environmental performance, should continuously improve as a result of such audit and management reviews.

7 Optional elements of an EMS



These elements may be considered for inclusion in an organisation's Environmental Management System but they are not mandatory for achieving accreditation.

15 Communication and reporting

Environmental reporting is a voluntary public disclosure of information about the organisation's impacts on the environment, its performance in managing those impacts and its contribution to ecologically sustainable development. It can be targeted at the organisation's employees, clients and anybody else interested in the environmental performance of the business.

A report on environmental performance should include statistical information rather than just qualitative remarks. This statistical information should also be linked to targets so that the report becomes part of a process of continuous improvement and can be verified by a third party.

For example:

An environmental report might say 'in the last year the organisation reduced its waste to land fill by crushing waste concrete and reusing it as fill'. While this is might be an admirable endeavour it gives little indication of the organisation's environmental performance.

An example of a better environmental report might be: 'last year the organisation reduced its waste to landfill by x m³ by crushing y tonnes of waste concrete to be reused as fill. The percentage of waste concrete crushed, $a\%$, is an improvement over last year's figure of $b\%$ (the organisation's target for 2002 is 95%)'.

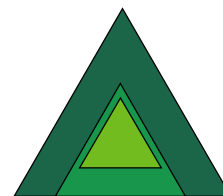
The NSW Environment Protection Authority has produced a generic guideline on this element entitled *Corporate Environmental Reporting*.

16 Third party certification

This element is about using an independent agency to affirm that the organisation's Environmental Management System meets all the requirements of an accepted standard.

The universal standard is the ISO 14000 series. Other standards include BS 7750 and the European Community's EMAS.

Seeking third party certification of an Environmental Management System may be of assistance to the organisation in setting up an effective system. It may also be useful for organisations wishing to satisfy the requirements of other clients both locally and internationally.



8 What is required of agencies

Understanding the policy

Agency staff should be familiar with NSW government's environmental management policy for the construction industry as outlined in these Guidelines.

In addition they should be familiar with

- the background to the policy;
- the timetable for implementation; and
- the details of its application.

It is important for agency staff to recognise that the overall environmental effect of a construction project is influenced by what happens throughout the life of the asset—not just by what happens during the construction phase.

Preparing tenders

Agencies must ensure that the requirement for a corporate EMS or for an EMP is included in tender documents, in accordance with the Government's policy requirements.

Similarly, where calls are made for pre-qualification or pre-registration of contractors for major projects, the call document should require that one or both of the following be submitted for assessment and acceptance for accreditation:

- documentary evidence of the contractor's corporate EMS;
- evidence of EMS accreditation by another NSW government construction agency, which will be available through the Construction Policy Steering Committee secretariat.

Carrying out audits

The ultimate objective of this initiative is to help the Construction Industry improve its environmental performance. Agencies and auditors should therefore adopt a practical approach and offer helpful comments if any discrepancies are detected.

Environmental Management Plans

It will be a condition of all government contracts that the contractor prepares an acceptable site-specific EMP.

Before site works commence

The contractor must submit the EMP to the superintendent's representative before the relevant site works commence. This should operate by way of a contract hold point.

The superintendent's representative will review the EMP. He or she must be satisfied that the requirements detailed in these *Environmental Management Systems Guidelines* are clearly addressed. Only then should he or she accept the EMP.

After site works commence

As soon as possible after initial review of the contractor's EMP, the superintendent's representative should plan the audit requirements for the contract. A schedule of site EMP audits should be planned for the duration of a contract.

It is expected that by the completion of the project, all the relevant key elements will have been audited.

Appendix C provides a checklist to assist the superintendent's representative in auditing the EMP. The completed checklist should be retained by the superintendent's representative, with other contract records.

8 What is required of agencies (continued)

Environmental Management Systems

A contractor seeking to achieve pre-qualification or pre-registration status for government contracts or wanting to tender for a major project must have a corporate EMS accredited by the relevant NSW government construction agency as complying with the requirements of these guidelines as described in Sections 5 & 6.

Appendix B provides a checklist to assist in the review of the EMS documentation.

Following review of a contractor's corporate Environmental Management System, the agency is responsible for forwarding a copy of the report and recommendation to the contractor.

The contractor will be given a chance to comment on the report and recommendation. The agency must properly consider any comment by the contractor before making a decision not to grant accreditation.

Maintaining records

Each agency must retain and centralise records of the environmental performance of its contractors, including:

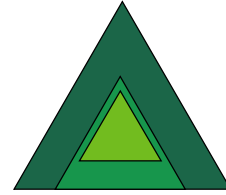
- EMS review reports,
- EMP audit reports, and
- comments by contractors on review and audit reports.

Access by other agencies

Review and audit reports are to be made available to other NSW government construction agencies on request, subject to the provisions regarding exchange of information on Contractor and Consultant Performance Reporting between agencies, as detailed in the *Capital Project Procurement Manual*.

Contractor and Consultant Performance Reporting

EMP audit results must be included in Contractor and Consultant Performance Reporting assessments.



9 Audit guidelines

Responsibility

When the development and implementation of an Environmental Management Plan is specified in a contract, the responsible agency will plan and execute reviews and audits.

An auditor appointed by the agency will manage the audit, but the agency will retain responsibility for managing communication with the contractor so that the contractual rights and obligations of the parties are not affected.

Notice

The agency will give the contractor reasonable notice of an impending EMP audit.

However, an agency is not required to give any notice where it proposes to carry out an audit of specific operations or activities.

Scope

An EMP audit will examine the extent to which the contractor has complied with the requirements of the EMP.

The number of audits and the scope of each audit for each contract will be determined by the relevant agency and, for EMP audits, will depend on the size and nature of the project.

There must be a clear written understanding between the auditor and the agency as to the scope and terms of any audit.

Conduct

The appointed auditor must carry out the audit:

- with honesty and fairness,
- with full regard to confidentiality,
- with reasonable skill and care, and
- in a timely manner.

Access to information

The auditor has a right of access at all reasonable times to the contractor's environmental management records and is entitled to obtain from the contractor any information and explanations he or she desires for the purposes of the audit.

Reports

The auditor will provide a written report to the agency on the contractor's compliance with the requirements regarding the Environmental Management Plan. Any irregularities found during the audit must be noted in the report.

Any constraints that impair the ability of an auditor to express an unqualified opinion must be noted and an appropriate qualified opinion expressed in the report.

The agency is responsible for forwarding a copy of the report to the contractor and inviting the contractor to comment on it.

Access to reports

Audit reports and any comments by contractors will be kept in a central location by each agency and made available to other NSW government construction agencies on request.

Appendix A

Ecologically Sustainable Development

Principles for implementation

As detailed in the *Protection of the Environment Administration Act, 1991*, Ecologically Sustainable Development (ESD) can be achieved through the implementation of the following principles and programs:

The precautionary principle: namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Inter-generational equity: namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

Conservation of biological diversity and ecological integrity.

Improved valuation and pricing of environmental resources.

- Environmental factors should be included in the valuation of assets and services.
- Polluter pays—ie. those who generate pollution and waste should bear the cost of containment, avoidance, or abatement.
- The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.
- Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.

NSW Government commitment

In support of these environmental principles, the NSW Government is committed to the following for its capital investment programs and projects:

Comprehensive environmental impact assessment, encompassing all stages from inception through to operation and, ultimately, decommissioning or demolition, will be conducted for all projects. All identified impacts will be eliminated (where possible) or mitigated.

Environmental management principles and systems will be integrated throughout the overall project lifecycle.

Environmental awareness programs will be implemented to ensure that agencies and contractors are able to fulfil their environmental management roles and responsibilities.

Resource conservation and management will be a key consideration at all stages from project inception through to operation and, ultimately, decommissioning or demolition.

The key requirement for effective environmental management is that environmental issues must be identified, assessed and managed during every phase of a project's life: from inception through design, construction and operation to eventual demolition/disposal.

Ecologically Sustainable Development has been defined in Australia as *using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.*

Appendix B

Environmental Management System accreditation checklist

This checklist has been designed to assist government agencies in examining a contractor's EMS.

It can also be used by organisations as a guide when developing their Environmental Management Systems.

Key to symbols used in check-boxes

✓ = Yes

✗ = No

O = Not applicable
(This symbol may be used where necessary)

1 Accreditation by another NSW government construction agency

Q1
Is the contractor's Environmental Management System currently accredited by another NSW government construction agency?

(If so, you may wish to accept this as sufficient for your agency.)

(If ✓ please give details.)

Q2
Has the contractor provided satisfactory evidence of implementation through:

- minutes of management review;
- internal audit reports;
- typical EMP.

Q3
Has any NSW government construction agency withdrawn the contractor EMS accreditation?

(If ✓ please give details.)

If the answers to these questions are satisfactory (ie. ✓ to Q1 and Q2 and ✗ to Q3) and supported by documentation, this is sufficient evidence that the contractor's Environmental Management System meets the NSW Government's requirements and no further assessment is necessary.

2 Certification under ISO14001

Q1
Is the contractor's Environmental Management System currently accredited by an accredited certifying body in accordance with ISO14001?

(If ✓ please give details.)

Q2
Has the contractor provided satisfactory evidence of implementation through:

- minutes of management review;
- internal audit reports;
- typical EMP.

Q3
Has any NSW government construction agency withdrawn the contractor EMS accreditation?

(If ✓ please give details.)

If the answers to these questions are satisfactory (ie. ✓ to Q1 and Q2 and ✗ to Q3) and supported by documentation, this is sufficient evidence that the contractor's Environmental Management System meets the NSW Government's requirements and no further assessment is necessary.

continued ...

Appendix B

Environmental Management System accreditation checklist (continued)

3

Detailed assessment by agency

When a contractor is seeking accreditation of an Environmental Management System which has not been accredited by another Agency or has not been certified under ISO 14001, or where an Agency requires a detailed assessment for accreditation, the following checklists can be used.

Commitment and policy

Does the contractor's environmental policy:

- have the documented support and commitment of the Chief Executive Officer and senior management?
- relate to the contractor's activities, products and services?
- reflect the contractor's values and guiding principles?
- provide a guide to the setting of environmental objectives and targets?
- include a guide towards the monitoring of appropriate technology and management practices?

Planning

Is there documented evidence:

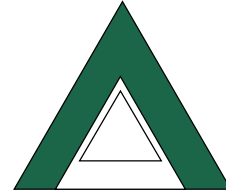
- that the environmental impacts of each of the activities, services or products that the contractor offers have been considered?
- that the legal compliance of each of these activities, services or products has been considered?
- of the contractor's environmental targets (these targets must be relevant to the significant legal and environmental impacts identified above)?
- Is there a documented procedure for ensuring that the above three items are regularly kept up to date?**

Implementation

- Is there a management representative responsible for ensuring that the EMS is implemented and maintained?**
- Are details of the EMS included in the organisation's training and induction program?**

Are there people or resources within the organisation nominated to:

- define environmental management policies and objectives, priorities and targets;
- define the responsibilities of personnel for environmental matters;
- identify system verification requirements and allocating human, technical and financial resources adequate to meet those requirements;
- ensure compliance with environmental legislation, regulations and licensing conditions;
- keep abreast of changes in legislation and regulations;
- acquire and disseminate environmental management information;
- plan and conduct training in environmental management, including inducting new employees;
- oversee the development and implementation of procedures;
- assess subcontractors' and suppliers' abilities to comply with Environmental Management System requirements;
- ensure compliance with environmentally sound work practices;
- monitor appropriate technology and management practices.



Implementation (continued)

Are there documented procedures for:

- purchasing;
- contracting;
- management of subcontractors;
- handling and storage of materials (hazardous or otherwise);
- disposal of wastes;
- maintenance;
- emergency responses—which must include:
 - emergency organisation and responsibilities
 - key personnel with full contact details
 - details of emergency services (eg. ambulance, fire brigade, spill clean-up services)
 - communications strategy (internal and external)
 - actions to be taken in the event of different types of emergencies
 - information on hazardous materials, including each material's potential impact on the environment and measures to be taken in the event of accidental release
 - training plans and testing for effectiveness;
- corrective action.

Are there records for:

- legislative and regulatory requirements;
- permits;
- details of qualifications held by individuals;
- monitoring/inspection reports;
- internal audit reports;
- external audit reports (if any);
- reports of environmental incidents, complaints and follow-up action (if any);
- minutes of environmental management meetings;
- incident analyses;
- incident statistics—discharge quantities, lost time, frequency rates and duration rates;

- minutes of management review meetings;
- evidence of action taken as a result of such meetings/events;
- induction and training records;
- supplier and sub-contractor information.

Measurement and evaluation

- Is there a documented procedure for the planning and implementation of environmental performance monitoring?**

Is there a procedure for corrective action which includes:

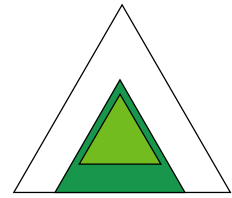
- an environmental management review;
- investigation into the causes of incidents and recording of the results;
- determination of the corrective action needed;
- analysis for evaluating further environmental risks;
- development and implementation of the corrective action.

Review

- Is there evidence that the EMS has been audited to determine whether the system conforms to planned arrangements and has been correctly implemented and maintained?**
- Is there any follow-up or corrective action to the audits?**
- Is there evidence that the EMS has been reviewed by management to ensure its continuing applicability and effectiveness?**
- Are these reviews regular?**
- Is there any follow-up to the reviews?**

Appendix C

Environmental Management Plan audit checklist



This checklist has been designed to assist government construction agency staff in auditing contractors' Environmental Management Plans. It may also assist contractors in developing their Environmental Management Plans.

Answering some of these questions may require specialist knowledge. It is the responsibility of the agency's auditor to seek this specialist advice. Where this is not available, the auditor should at least verify that the contractor has adhered to the Plan as documented.

Minimum requirements

Does the EMP include

- A statement of objectives?
- A listing of the environmental aspects and issues associated with the work?

Do the environmental aspects and issues listed include:

- Specific undertakings arising from the environmental impact assessment?
- Consent conditions?
- Pollution control approvals and any conditions attached to the approvals?
- Statutory obligations?
- Environmental risks?

Does the EMP include

- Documentation of the measures to be taken to manage the identified aspects and issues? *(These measures are subject to compliance with the tender documents.)*
- A clear indication of the respective environmental responsibilities of the contractor and subcontractors?
- Can it be demonstrated that all personnel are familiar with the EMP and can understand it?**

Enhancements

Does the EMP include the following, as applicable to the nature and scope of the project?

- Assignment of corporate responsibilities for implementing, maintaining or monitoring each environmental requirement.
- Documented procedures and instructions as well as assignment of individual responsibilities for implementing, maintaining or monitoring each environmental requirement *(list all environmental requirements)*.
- Administrative and supervisory arrangements, responsibilities and accountabilities:
 - supervisory protocols
 - provision of site environmental manager
 - management of subcontractors
 - training of site staff
 - submission of regular reports on the implementation of the EMP
 - compliance bonds and penalties for non-compliance
 - cross-references to other environmental management documents
 - landscape plans
 - erosion control plans
 - statements of heritage significance
 - incident management plans
 - OHS&R management
 - quality management
 - monitoring and audit procedures including provisions for corrective action
 - emergency response procedures.

Key to symbols used in check-boxes

= **Yes**

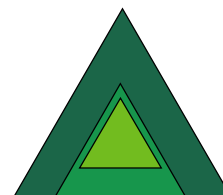
= **No**

= **Not applicable**

(This symbol may be used where necessary)

Appendix D

Relevant environmental legislation



At the time of publication, the following is a list of NSW Acts that regulate environmental matters. This list is not intended to be exhaustive nor to contain all or any of the various exemptions (ie. from the need to obtain licences or approvals).

The *Protection of the Environment Operations Act, 1997*, which is expected to commence in the second half of 1999, brings several of the pollution statutes under a single act. It will replace and incorporate the major regulatory provisions of the *Clean Air Act*, *Clean Waters Act*, *Environmental Offences and Penalties Act*, *Noise Control Act*, *Pollution Control Act*, and *Waste Management and Minimisation Act*.

Air quality

Clean Air Act, 1961

Ozone Protection Act, 1989 (Commonwealth)

Ozone Protection Act, 1989

Environmental planning and impact assessment

Environmental Planning and Assessment Act, 1979

Local Government Act, 1993

Soil Conservation Act, 1938

Rivers and Foreshores Improvement Act, 1948

National Parks and Wildlife Act, 1974

Land and Environment Court Act, 1979

Hazardous substances and waste management

Environmental Hazardous Chemicals Act, 1985

Waste Minimisation & Management Act 1995

Pesticides Act, 1978

Poisons and Therapeutic Goods Act, 1966

Dangerous Goods Act, 1975

Biological Control Act, 1984 (Commonwealth)

Biological Control Act, 1985

Road and Rail Transport (Dangerous Goods) Act, 1997

Heritage conservation

Commonwealth

Australian Heritage Commission Act, 1975

World Heritage Properties Conservation Act, 1983

State

Aboriginal and Torres Strait Islander Heritage Protection Act, 1984

Heritage Act, 1977

Wilderness Act, 1987

Threatened Species Conservation Act, 1995

Aboriginal Land Rights Act, 1983

Forestry Act, 1916

Mine rehabilitation

Mining Act, 1992

Noise

Noise Control Act, 1975

continued ...

Appendix D

Relevant environmental legislation (continued)

Occupational health and safety

Occupational Health and Safety Act, 1983

Unhealthy Building Land Act, 1990

Radiation Control Act, 1990

Pollution—general

Environmental Offences and Penalties Act, 1989

(Commonwealth Environment Protection (Impact of Proposals) Act 1974)

Pollution Control Act, 1970

Protection of the Environment Administration Act, 1991

Soil conservation, land care and catchment management

Catchment Management Act, 1989

Coastal Protection Act, 1979

Contaminated Land Management Act, 1997

Crown Lands Act, 1989

Native Vegetation Conservation Act, 1997

Recreation Vehicles Act, 1983

Soil Conservation Act, 1938

Water Board (Corporatisation) Act, 1994

Water quality

Clean Waters Act, 1970

Fisheries Management Act, 1994

Marine Pollution Act, 1987

Water Act, 1912

Water Administration Act, 1986

Water Board Act, 1987

Water Supply Authorities Act, 1987

Miscellaneous

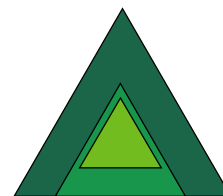
Environmental Education Trust Act, 1990

Environmental Research Trust Act, 1990

Environmental Restoration and Rehabilitation Trust Act, 1990

Appendix E

Approvals, permits and licences



The following information is included as a guide only. Organisations should seek appropriate professional advice in relation to their own circumstances.

Building and other approvals from council

Under the *Local Government Act* certain approvals may need to be obtained from council on such matters as:

- installing temporary structures on land
- certain activities on community land
- carrying out sewerage works.

Pollution licences and approvals from the EPA

Licences and approvals may be needed for:

Water

- discharge to any waters
- install or modify equipment for waste treatment discharge.

Air

- emissions on scheduled premises
- emissions and use of plant consuming more than 300kg fuel/hour.

Noise

- noise conditions of operation on scheduled premises.

Heritage and aboriginal items

Approval is needed from the Heritage Council under the *Heritage Act* to demolish, damage, remove or alter an item of heritage. There are also restrictions that can be placed on works that expose relics without consent.

For aboriginal relics and places, a licence is needed from the National Parks and Wildlife Services (NPWS) to damage, deface or remove any relics or places in the site of any works. Under the *National Parks and Wildlife Act*, there is a duty to notify NPWS of the discovery of such relics and places.

Vegetation protection and weed control

Several Acts relate to the protection of vegetation, and along with it the fauna habitats and soil.

Protected land

Under the *Native Vegetation Conservation Act* development consent will be required from the Minister for Land and Water Conservation to clear native vegetation and State Protected Land. Exclusions may apply if the land is subject to a Regional Vegetation Management Plan.

State Protected Land is determined by the Minister on the basis that:

- it has a slope of 18 degrees or more; *or*
- it is within 20 metres of the bed or bank of any river or lake; *or*
- it is environmentally sensitive.

Habitat of threatened species (flora & fauna)

If any works, including clearing are:

- likely to significantly affect threatened species, populations or ecological communities or their habitats;
- likely to harm or result in the picking of threatened species, populations or ecological communities;
- on land that is mapped as critical habitat; *or*
- likely to damage a critical habitat of threatened species, pollution or ecological community.

A NPWS approval of a Species Impact Statement is required prior to planning consent or approval being given under the relevant planning legislation.

Appendix E

Approvals, permits and licences (continued)

Vegetation protection and weed control (continued)

Habitat of threatened species (fish and marine vegetation)

Under the *Fish Management Act*, NSW Fisheries Department approval is required if any activity is likely to significantly affect threatened species, populations or ecological communities, or is in an area mapped as a critical habitat.

Protected plants

Native plants are protected under the *National Parks and Wildlife Act*. A licence is needed from the NPWS to pick certain plants.

Mangroves, sea grasses and other marine vegetation

A permit is needed from NSW Fisheries to cut, remove, damage or destroy mangroves, sea grasses and other marine vegetation on public water or land, agricultural leases or foreshores. These are valuable habitats protected under the *Fisheries Management Act*.

Noxious weeds

Noxious weeds must be controlled and destroyed under the *Noxious Weeds Act*.

Other works on or near waterways

Apart from controls on State protected land under the *Native Vegetation Conservation Act* and controls on vegetation removal under the *Fisheries Management Act*, other requirements apply specifically in or near waterways.

Rivers and foreshores improvements

The *River and Foreshores Improvements Act* aims to prevent erosion of land by waters and protect rivers, lakes and foreshores. Permits are likely to be needed under the Act to:

- excavate or remove material within 40m of protected waters;
- reclaim or till land;
- design, realign, or divert a channel;
- cause any change to a riverbed or bank.

A permit is not required by a public authority to carry out the above activities.

Dredging and reclamation

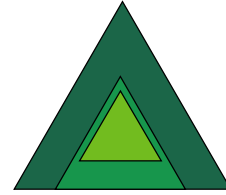
Under the *Fisheries Management Act* the Minister for Fisheries must be informed of any proposal to dredge or reclaim in any waters.

Protection of fish passage

A number of notifications in writing must be made to the Minister for Fisheries by public authorities (ie. relieving the need to obtain a permit) in the following circumstances:

- before carrying out or authorising (ie. a contractor's works) of dredging or reclamation works in any waters;
- before proposing to construct, alter or modify a dam, weir or reservoir (so as to include a suitable fishway design).

In addition, it is an offence to create and obstruction across a bay, inlet or river so that fish will or could be left stranded.



Unhealthy or contaminated land

The *Contaminated Land Management Act* (anticipated to commence on 1 September 1998) imposes the following duties to report contamination to the EPA:

- the first duty is for any person who becomes aware that their activities in, on or under land (ie. land includes water on or below the surface and the bed of such water) have caused contamination;
- the second duty is for a land owner who has become aware that the land has been contaminated (whether before or during the owner's ownership of the land).

Storage, transport and disposal of substances and wastes

Apart from requirements under the *Local Government Act* and pollution control laws, several other Acts aim to reduce harm to human health and the environment from dangerous substances.

Environmentally hazardous chemicals

Under the *Environmentally Hazardous Chemicals Act* a licence is needed from the EPA and safeguards are needed for storage, transport and disposal of certain chemicals eg. chlorine, pickle liquor.

Dangerous goods

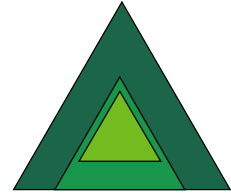
Under the *Dangerous Goods Act*, licences are required from the WorkCover Authority for the storage or transport of dangerous goods and the transport of explosives. Under the *Road and Rail Transport (Dangerous Goods) Act*, the WorkCover Authority administers on-premises provisions relating to dangerous goods eg. packaging, loading/unloading vehicles and classification of dangerous goods; and the EPA licenses and administers the on-road provisions for the transport of dangerous goods.

Waste disposal

Under the *Waste Management and Minimisation Act* a licence may be needed to operate a waste facility, to transport certain types of waste or if certain hazardous wastes are generated. The relevant authority is the EPA.

Attachment F

Government agency contacts for corporate EMSs



Contractors can seek information about accreditation of their organisation's corporate Environmental Management System from these agencies:

Construction Policy Steering Committee

phone (02) 9372 8846
fax (02) 9372 8851
website <http://www.cpsc.nsw.gov.au>
email cpssc@dpws.nsw.gov.au

Department of Public Works and Services

phone (02) 9372 8876
fax (02) 9372 8851

Department of Housing

phone (02) 9821 6570
fax (02) 9821 6179

Environment Protection Authority

phone (02) 9325 5823
fax (02) 9325 5828

Pacific Power International

phone (02) 9268 7310
fax (02) 9268 6644

Roads and Traffic Authority

phone (02) 9218 6420
fax (02) 9218 6970

State Rail Authority

phone (02) 9224 3496
fax (02) 9224 3923

**Environmental
Management
Systems**
Guidelines