



**C**

# **Road Management Process**

## **PART C**

# TABLE OF CONTENTS

<b>C</b>	<b>ROAD MANAGEMENT PROCESS</b>	<b>FEB 98</b>
C1	Road Management Processes	C-1
	Road Management Phases	C-1
	Overall Management Processes	C-1
	Non-Main Roads Implementation	C-1
C2	Environmental Processes In The Concept Phase	C-1
	Description of the Concept Phase	C-1
	Form F2289	C-1
	Review of Environmental Factors	C-2
	Certified Statement of Environmental Effect (National Highways Projects)	C-2
	Certified Statement of Environmental Effect (State Controlled Roads Projects)	C-2
C3	Environmental Processes in The Planning and Preliminary Design Phase	C-3
	Description of the Planning Phase	C-3
	Planning Review of Environmental Factors and Impact Assessment Study	C-3
	Impact Assessment Study	C-5
	Form F2290	C-5
	Environmental Management Plan (Planning)	C-6
	Format of the EMP Planning	C-6
	Purpose of the Environmental Management Plan (Planning)	C-6
	Content of EMP (Planning)	C-7
C4	Environmental Management in the Detailed Design Phase	C-7
	Description of the Design Phase	C-7
	Environmental Design Report	C-8
C5	Environmental Management During the Construction Phase	C-9
	Description of the Construction Phase	C-9
	Contractors' EMP	C-10
	Format of Contractors' EMP	C-11
	Content of the Contractors' EMP	C-11
	Submission of the EMP (Construction)	C-13
	Review of EMP (Construction)	C-13
C6	Environmental Management in the Operational Phase	C-13
	EMP (Maintenance)	C-14
	Corridor Management Plan	C-14



C7	Auditing	C-14
	Justification for Auditing	C-14
	Description of Auditing for Road Management	C-14
	Objectives of Auditing	C-15
	Benefits of Auditing	C-15
	Timing of Environmental Audits	C-16
	Guidelines For An Audit Report	C-16
	Non-Conformity and Corrective Action	C-17
	Program Notice And Environmental Management Program	C-18

# ROAD MANAGEMENT PROCESS

## C1 Road Management Processes

### Road Management Phases

The manual recognises four phases of road management:

- Concept
- Planning and Preliminary Design;
- Detailed Design;
- Construction; and
- Operation and Maintenance.

The Planning phase involves a number of distinct stages and is sometimes split between the concept phase and the planning phase. The distinction is made in this chapter, however for the remainder of the manual, both the concept and planning phases are dealt with under planning.

Figures 2 and 3 depict the Main Roads Environmental Management Process.

### Overall Management Processes

This manual does not provide guidance on the various modes of delivery of each phase. Rather the manual sets out the guidelines for implementing best practice environmental management during each phase.

### Non-Main Roads Implementation

The remainder of this chapter sets out specific processes for environmental management and accountability of each

stage. These procedures include specific approvals and forms used by Main Roads. Other organisations implementing this manual (such as Local Government and the Departments of Environment and Natural Resources) should comply with the processes outlined and may use these forms to scope their implementation of the guidelines.

## C2 Environmental Processes in the Concept Phase

### Description of the Concept Phase

The Concept Phase of the infrastructure planning process is when, having established the strategic need for a proposed activity, ways to satisfy that need are addressed.

The aim of the Concept Phase is to provide a summary of how all relevant factors, including environmental factors, have been considered when selecting and examining options associated with particular broadly defined routes, or corridors.

### Form F2289

Before inclusion in the Roads Implementation Plan (RIP) a variety of data should be provided for this purpose, including some broad economic assessment and a statement of any significant environmental impacts perceived at that time.

The minimum requirements for all projects is the approval of Form F2289 (Road Infrastructure Proposal Concept Phase) by

C1

the Regional Director in the project Concept Phase.

The use of the REF in the concept phase is an opportunity to raise issues of environmental concern, along with issues of transport, financial, engineering and community interest. It demonstrates that options have not been selected solely on the basis of financial or engineering constraints and the likely environmental impacts are examined. It also verifies that the impact assessment process has not been relegated to a subsidiary role.

C2

It should be noted however that entry into the RIP is not a commitment to carry out a scheme but implies an intent to continue further investigation and studies. It is merely an announcement of the Government's intention to build, provided that further studies show it to be justified and eventually affordable, both economically and environmentally.

## Review of Environmental Factors

The REF undertaken in the concept phase is carried out in conjunction with Infrastructure Proposal - Concept Phase documents. For roads projects this is Form F2289. The REF is a supporting document to 2289.

Form F2289 incorporates consideration of the following environmental issues:

### Environmental Sustainability Outcomes

- Impacts on the natural environment
- Impacts on the built environment
- Impacts on the cultural environment

### Social Justice Outcomes

- Equitable access
- Community viability
- Employment

### Development Outcomes

- Economic
- Trade
- Regional
- Sensitivity test of travel time

### Safety Outcomes

- Hazardous goods
- Vulnerable groups

### General Considerations

- Policy/strategy match
- Risk/feasibility:
  - socio/political; and
  - technical/delivery
- Network effects

### Community Consultation

## Certified Statement of Environmental Effect (National Highways Projects)

In order for a project to receive Federal Department of Transport Stage 2(a) Approval for National Highways Projects, the District Director should submit a Project Proposal Report.

The Project Proposal Report should include:

- a copy of the Concept REF; and
- a certified statement of environmental effect signed by the District Director.

## Certified Statement Of Environmental Effect (State Controlled Roads Projects)

The Planning (and Preliminary Design) Phase cannot commence without Regional Director approval of:

- F2289;
- the District Director's recommendations of the environmental implications of the project.

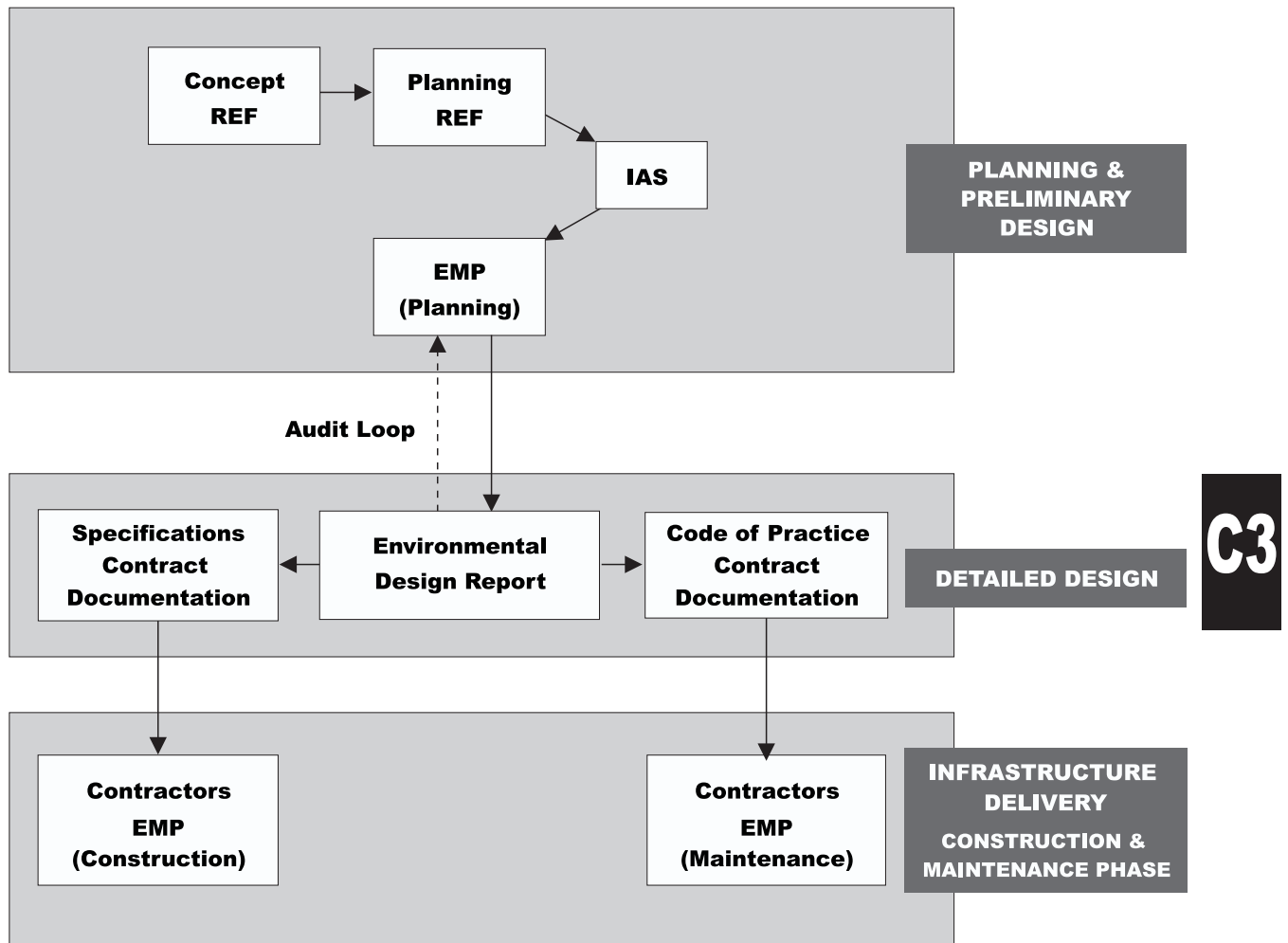


Figure 3 Main Roads Environmental Management Process

This approval may be conditional on further environmental investigations being carried out during the planning phase.

more detailed studies are undertaken in a variety of fields to determine and select a suitable route.

### C3 Environmental Processes in the Planning and Preliminary Design Phase

The Planning Phase investigates alternatives from which a final route is selected based on a variety of criteria including community preference, environmental sensitivity, native title holdings economic viability and engineering practicalities.

#### Description of the Planning Phase

#### Planning Review Of Environmental Factors And Impact Assessment Study

The Planning and Preliminary Design Phase of the infrastructure planning process is when, having established a broad corridor,

Projects which have progressed into the Planning and Preliminary Design Phase will require a further more detailed Review of

C3

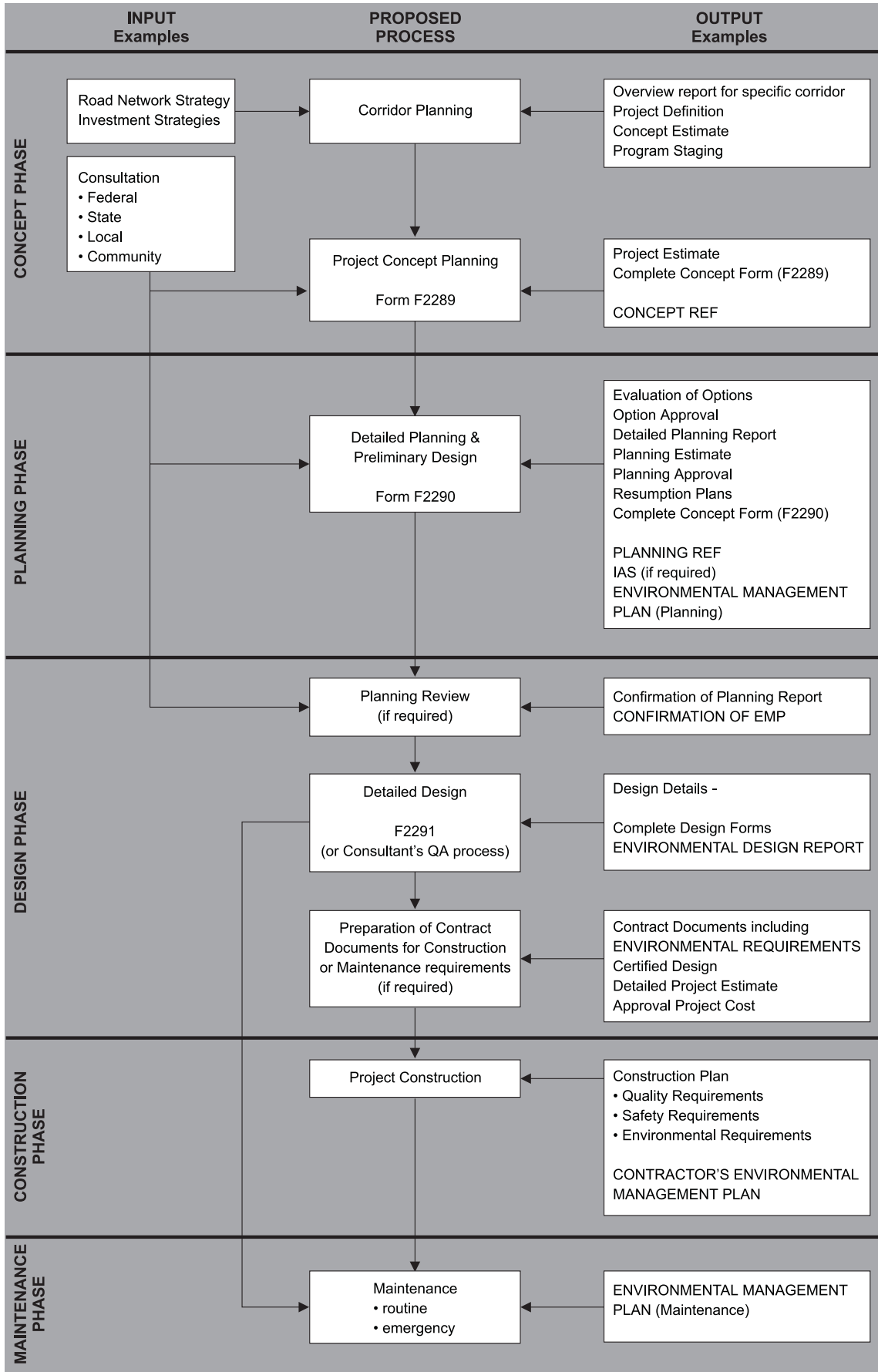


Figure 4 Main Roads Infrastructure Delivery

Environmental Factors to determine if a formal Impact Assessment Study (IAS) is required pursuant to Section 29 of the *State Development and Public Works Organisation Act 1971*.

The Planning REF provides:

- a detailed description of the project;
- the examination and consideration of its likely impact on the environment;
- level of significance of the impact; and
- an indication as to whether the project should proceed.

A discussion of environmental safeguards and mitigating measures that are proposed to address these environmental impacts may be covered in the REF but is normally dealt with more fully in an IAS, if one is required.

The assessment of REFs and IASs by the District Director results in a decision on whether a proposed activity should proceed and in which form. Accordingly, the Design and Construction Phases should not be initiated unless the decision is in favour of proceeding.

## Impact Assessment Study

An impact assessment study should be prepared when the REF finds that there are likely to be significant environmental impacts. In some circumstances the REF will identify environmental impacts which can be mitigated, in this case an IAS is not usually necessary. In circumstances where the REF identifies potential environmental impacts which are not precisely determined in as much as the magnitude, duration, extent of the impacts are not ascertained an IAS should be prepared.

## Form F2290

Formal approval is required of the Planning and Preliminary Design Phase including, where appropriate, approval of the Impact Assessment Study. This requires completion of Form F2290 (Road Infrastructure Project Planning and Preliminary Design Phase).

Form F2290 incorporates consideration of the following environmental issues:

### Environmental Sustainability

- Nature habitats.
- Air quality.
- Water quality.

### Environmental Preservation (National Estates)

- World heritage listings.
- National parks.
- Sacred sites.

### Environmental issues

- Rehabilitation landscape work.
- Effect on noise sensitive environments.
- Sensitive environmental issues eg., physical, cultural, biological and visual.

### Public/Private Utility Services

- Provision for bicycles.
- Provision for pedestrians.
- Provision for passenger transport.
- Provision for local access.

### Safety Considerations

- Hazardous goods.
- Vulnerable groups.

### Community Consultation

The Planning REF and IAS should be submitted to the District Director with F2290 for approval.



## Environmental Management Plan (Planning)

The Manager (Transport Planning) prepares an Environmental Management Plan (EMP) (Planning) to ensure that the environmental issues, requirements and constraints identified in the REF and IAS are carried forward for application, monitoring and evaluation, during the construction and operational phases of the project.

The scale and detail of the EMP (Planning) will depend on the scale of the project and extent and complexities of the environmental issues.

C3

### Format of the EMP Planning

The EMP (Planning) should be prepared to be consistent with the REF and Final IAS.

Because of the probability of engaging more than one construction Contractor to construct a project, the EMP (Planning) should be prepared to provide a common approach to environmental management.

All EMPs share a common format, as outlined in Section 7, however the EMP (Planning) also should outline the following:

- designer's responsibilities;
- construction contractors' responsibilities; and
- maintenance contractors' responsibilities.

These should be set out in separate sections:

- pre-construction phase;
- construction phase; and
- operational/maintenance phase.

This information will be used in the preparation of Environmental Design Report, and Contractors' EMPs for construction and maintenance, respectively.

During the preparation of the EMP (Planning) interested parties should be consulted. This may include, for example, Local Government and the Department of Environment. Broader community involvement may also be appropriate, depending on the circumstances of the project.

In all cases the specific requirements of other authorities arising from the REF/IAS or licensing/approval conditions should be established as early as possible.

Sufficient time for adequate consultation and preparation of the EMP (Planning) should be allowed.

### Purpose of the Environmental Management Plan (Planning)

The EMP (Planning) is the source document for environmental management issues related to a project.

The basis of the EMP (Planning) is the suite of issues documented in the REF and IAS. Its primary purpose is to ensure that all environmental requirements arising out of the REF or IAS are carried forward into the pre-construction, construction and operation of the project.

The EMP (Planning) is a management tool designed with the overall purpose of reducing the environmental harm that can occur during the implementation and maintenance of a project. It also assists in achieving compliance with the various environmental legislation. The EMP (Planning) is a whole of project overview document written specifically to ensure that a holistic approach to environmental management is achieved.

The EMP (Planning) also serves to document the Department's expectations regarding the environmental management of the project, and acts as a guide for the designers and various contractors (construction and maintenance) that will be required to respond to issues of potential environmental harm to the Department's satisfaction.

## Content Of EMP (Planning)

The EMP (Planning) should cover pre-construction, construction, operation and maintenance of the project. It should be noted that the EMP (Planning) is not restricted to construction activities.

Conditions and safeguards in the EMP (Planning) cannot be of a lesser standard than those in the REF or IAS, but improved standards can be included.

The EMP (Planning) should address the final route selected using a generic plan which will set the overall requirements for the more prescriptive and detailed Environment Design Report, and Contractors' EMPs for construction and maintenance.

The EMP (Planning) should include sections to:

- describe relevant aspects of the existing environment likely to be affected by the construction phase;
  - identify and analyse the likely environmental and socio-economic impacts of the new development during both the construction and operation phase;
  - report on the consultation process with affected local communities and other interested bodies on the socio-economic impacts of the new development;
  - define measures proposed to mitigate adverse impacts in order to avoid or minimise environmental (including socio-economic) impacts;
  - present a management program and plan to monitor actual environmental impacts (including socio-economic) of the new construction and to ensure mitigation of these adverse impacts during both the construction and operation phases; and
- provide performance criteria for the design and construction of key environmental issues including issues such as, but not limited to:
    - construction impacts;
    - vegetation protection;
    - habitat protection;
    - water management;
    - erosion and sediment control;
    - road traffic noise;
    - traffic management during construction;
    - material sources;
    - management of storage, site camps and stockpiles;
    - site hygiene;
    - construction working times; and
    - revegetation treatments.
  - provide for formal evaluation to review procedures.

**C4**

## C4 Environmental Management In The Detailed Design Phase

### Description of the Design Phase

The Design Phase is the phase of the Infrastructure Planning and Design Process in which the design of the proposal is carried out. In the Design Phase, formal documentation of the department's environmental requirements for its proposed project activities are prepared.

These documents include the Environmental Design Report and contract Documentation such as Supplementary Specifications and Addendum to the Conditions of Contract.

The Design Phase utilises the environmental management criteria and strategies developed during the Planning and

Preliminary Design Phase. As such the design of the project should be in accordance with the environmental requirements defined in the EMP (Planning) (which carried forward information from REFs and IAS).

Additional environmental issues, requirements and constraints may be raised during the design phase as a result of the proposed design.

The Manager (Transport Planning) should liaise with the Manager (Infrastructure Delivery) to ensure constructability in accordance with these requirements.

## C4

### **Environmental Design Report**

A summary of all relevant environmental issues, requirements and constraints for the subsequent Construction and Operation Phases are documented in the Environmental Design Report which is prepared by the Design Office.

The EDR provides a feedback response from the Design Office to the Manager (Transport Planning) on how the environmental issues, requirements and constraints have been integrated into the design and Contract Documentation.

The Environmental Design Report contains the design requirements required to minimise environmental harm and to meet environmental standards in the subsequent construction and maintenance phases of the project.

The Environmental Design Report (EDR) ensures that designers review and incorporate issues defined in the IAS, REF and EMP (Planning) into the design of the proposal. The main reasons for preparing an EDR are:

- the integration of environmental issues in the design phase;

- to demonstrate an increasing awareness of environmental issues in the design phase to the Principal; and
- for auditing purposes to ensure that all relevant issues outlined in the EMP (Planning) have been addressed in the design phase.

It is the responsibility of the designers preparing the Environmental Design Report to:

- Investigate and report on performance standards to be established and complied with to alleviate problems associated with:
  - erosion;
  - siltation;
  - water quality;
  - wildlife movement;
  - acid sulphate soils; and
  - rehabilitation.
- Incorporate features into the design that minimise the potential environmental impacts of the construction, maintenance and operational phases of the project.
- Prepare documents to incorporate appropriate environmental issues (including plans, specifications, conditions of Contract, etc.).
- Prepare test schedules for environmental issues specifying appropriate test procedures, testing levels, testing areas and locations to ensure compliance with the EPA and EMP (Planning).

The EDR should be prepared by design staff and submitted with the detailed design. It should form an Appendix to F2291 Roads Infrastructure - Detailed Design Phase.

The EDR should contain sections which address the following issues:

- legislative requirements;
- specific environmental performance objectives;
- specific environment strategies;
- specific environmental programs/plans/methodologies/tasks;
- responsibilities of individuals and resources required, performance indicators and targets and timeliness;
- monitoring requirements; and
- program reporting.

The EDR should be prepared taking into consideration the requirements of the contract specifications and previous environmental assessment findings.

The EDR should be structured in the following format:

### **Executive Summary**

#### **1.0 Introduction**

##### **1.1 Background**

##### **1.2 Previous Studies**

##### **1.3 Purpose of the EDR**

##### **1.4 Structure of the EDR**

#### **2.0 Project Description**

#### **3.0 Environmental Management Processes and Responsibilities**

#### **4.0 Statutory and Other Obligations**

#### **5.0 Existing Environmental Conditions and Management Requirements**

#### **6.0 Environmental Management Program**

#### **7.0 Environmental Monitoring Program**

#### **8.0 Conclusion and Summary**

#### **9.0 References**

#### **10.0 Appendices**

Chapters 2, 3 and 4 describe the project, the overall environmental management structure and responsibilities. They also set out the statutory (legislative and policy obligations) for the EDR.

Chapter 5 identifies the environmental issues and their associated design considerations and recommended management. Chapters 6 and 7 detail the environmental management and monitoring program.

Chapter 8 provides a summary of how all environmental issues have been integrated into the design phase.

**C5**

## **C5 Environmental Management During the Construction Phase**

### **Description of the Construction Phase**

The Construction Phase is the phase of the Infrastructure Planning and Delivery Process in which the construction of the proposal is carried out.

The environmental requirements of the project and the Environmental Conditions of Contract and Specifications should be discussed at the pre-close of tender.

The successful Contractor is responsible for the preparation of an Environmental Management Plan for the construction of the project, the EMP (Construction).

It is the role of the Contractor to implement their Environmental Management Plan (Construction) in accordance with contract documentation.

Throughout the construction of the project it is expected that monitoring and auditing will be carried out by both the Contractor and the Road Owner to ensure compliance with legislation and adherence to the EMP (Construction).

At the completion of the project the Contractor's Environmental performance will be evaluated by the Project Engineer for the Road Owner in the Contractor's Performance Report.

## **Contractors' EMP**

Contractor's Environmental Management plans are prepared to specifically address the potential and actual negative and positive environmental impacts identified in the REF, IAS and other documents, and any other potential environmental impact(s) identified during the construction or maintenance.

**C5**

The aim of Contractor's EMPs is to provide:

- Evidence of practical and achievable plans for the management of the project to ensure that environmental requirements are complied with by producing an integrated framework for comprehensive monitoring and control of construction or maintenance impacts.
- Specific commitments on environmental management strategies to be employed by Contractors.
- Local, State and Commonwealth authorities and the Contractor with a framework to confirm compliance with policies, legislation and conditions of contract.
- The community with evidence of the management of the project in an environmentally accountable manner.
- A management structure for the identification, monitoring and control of impacts.

It is important that Contractor's EMPs are developed and implemented by the Contractor as the "owner" of that part of the project for which they have successfully tendered. Main Roads responsibility is to ensure the Contractor's EMP, whether construction or maintenance, meets the

broader requirements of the EMP (Planning) and that it is implemented properly.

In the case of construction contractors, in their bids, tenderers are required to demonstrate their capability to prepare and implement an EMP according to the brief.

The EMP (Construction) is prepared by the successful tenderer for the construction of a project. The EMP is prepared in accordance with the design and contract documentation. The EMP (Construction) is then audited by the Department and approved before construction begins.

Each construction contractor will be required to prepare, implement and maintain an EMP (Construction) which is consistent with the EMP (Planning) and specifications provided, and directly applicable to the particular part of the works incorporated in each contract.

The EMP (Construction) is essentially the construction Contractor's own environmental management plan for that part of the project covered by their contract.

The EMP (Construction) should be incorporated as part of the Contractor's Quality Plan.

An EMP should be prepared taking into consideration the requirements of the contract specifications and previous environmental assessment findings, and environmental performance reported as part of the Contractor's management and quality processes.

The Contractor's EMP should:

- outline a practicable and achievable plan of environmental management for the contractor to implement;
- contain clear commitments, framed in a way which enables later assessment to the extent to which the commitment has been met. The commitments should be auditable;



- outline strategies to ensure that the environmental impact of the works is minimised and that all work under the Contract is based on best practice;
- cover all on-site and off-site construction works required for the completion of the contract;
- list all relevant Australian Standards, Federal and State Government Legislation and Local Authority Laws and other documents referenced in the Contractor's EMPs;
- recognise Departmental objectives derived from any previous site specific environmental report, such as a REF or an IAS;
- establish performance criteria and objectives in relation to environmental impacts and social impacts where not established by previous environmental reports;
- detail the implementation responsibilities for environmental management;
- detail timing of environmental management issues;
- detail reporting requirements and auditing and management responsibilities for meeting environmental performance objectives; and
- reference all documentation including standards, levels, limits, conditions of permits, licences or approvals etc. imposed by various governmental agencies.

### **Format of Contractors' EMP**

Contractor's EMPs, regardless of type, usually have a similar format. The first part of the EMP deals with the general requirements for and context of the EMP, including overall environmental policy and management

systems.

The second part of an EMP deals with more detailed requirements for specific sections of the EMP, such as noise management, water quality management etc. The format usually includes sections on:

- environmental systems;
- legislative requirements;
- specific environmental performance objectives;
- specific environmental strategies;
- specific environmental programs/ plans/ methodologies/ tasks;
- responsibilities of individuals and resources required, performance indicators, targets and timeliness;
- monitoring requirements; and
- program reporting.

**C5**

### **Content of the Contractors' EMP**

The Contractor's EMP should detail environmental controls, safeguards and design features, and describe proposed management arrangements for the project.

Functionally, the Contractor's EMP should incorporate at least the following information to detail the procedures proposed for the protection, management and monitoring of each of the environmental domains nominated in the EMP (Planning):

- all control measures that the Contractor will implement during the construction process (including any pre or post construction or maintenance activities);
- tasks to be carried out;
- deliverables to be produced;
- hold points;

**C5**

- the trigger for undertaking action;
- timing of actions (eg., before construction, during construction or during operation);
- details of responsibilities for performing tasks, monitoring performance, auditing and reporting;
- procedures for reporting on monitoring programs and proposed recipients of reports;
- details of corrective actions to rectify any deviation from performance standards or problems detected by monitoring, including the designation of responsibility for monitoring and reporting arrangements; and
- details of auditing requirements.

The Contractor's EMP should address any combination of the following issues, as relevant:

- all off-site disposal of excavated, demolished and surplus materials;
- environmentally sensitive areas;
- flora and fauna;
- landscaping, revegetation and rehabilitation;
- cultural heritage;
- water quality, erosion and sediment control;
- construction noise;
- ground vibration and air blast levels;
- air quality, dust and vehicle emissions;
- storage and handling of hazardous goods and fuels etc.;
- land contamination;
- disposal of waste and site clean up;
- lighting;

- project environmental auditing;
- environmental complaints;
- environmental incidents;
- environmental training;
- provision of:
  - air, water and soil pollution control plans;
  - liquid, gas and solid waste management plans;
  - spill contingency plans; and
  - sedimentation and erosion control methods;
- clean up and disposal measures if required;
- a management strategy for the protection of vegetative zones, corridors and rare, endangered or otherwise valuable species, with rehabilitation measures if necessary.

Strict contract conditions should be incorporated to ensure compliance with the requirements of the Department of Environment (DoE) and the EMP (Planning) and Environmental Design Report.

The EMP Construction should be structured for each as follows:

- Element;
- Identification of Potential Harm;
- Policy Legislation;
- Performance Criteria;
- Implementation Strategy/ Tasks;
- Monitoring;
- Reporting; and
- Corrective Action.

## **Submission of the EMP (Construction)**

The EMP (Construction) should be submitted to the Road Owner within 28 days of contract award.

The Road Owner notifies the Contractor of the acceptance or otherwise of the EMP (Construction) within 14 days of it being submitted. Should the EMP (Construction) not be accepted by the Road Owner, the contractor is required to submit a revised EMP (Construction) within 7 days of the advice of non-acceptance.

Should the Contractor wish to commence any construction operations prior to approval of the completed EMP (Construction), sections of the EMP (Construction) relevant to that construction operation may be submitted to the Road Owner for approval at least 7 days prior to the planned commencement of that construction operation.

A hold point occurs and no site construction works may proceed until written approval of the complete EMP (Construction) or section of EMP (Construction) relevant operation is received from the Road Owner.

## **Review of EMP (Construction)**

The EMP (Construction) should be reviewed and periodically updated to reflect knowledge gained during the course of operations.

The EMP (Construction) may require amendment as a result of the monitoring or auditing program or for reasons identified by the contractor, Road Owner or any other relevant Authority.

Should an amendment be required work should immediately cease on the operations causing the need for amendment, if of sufficient concern to warrant such a hold point.

If a hold point is imposed no construction works for the affected area should proceed until written approval of the amended section of the EMP (Construction) relevant to that particular construction operation is received from Road Owner.

If a hold point is not warranted work may continue but the EMP (Construction) should be amended accordingly.

Changes to the EMP (Construction) should be implemented in consultation with the Road Owner and then relevant authorities.

The Contractor should submit a revised EMP (Construction) within 5 working days of the need for amendment being identified.

**C6**

## **C6 Environmental Management in the Operational Phase**

The ongoing maintenance and operation work associated with the roads system is the final phase of environmental management.

The Maintenance phase extends from completion of defects liability to when the road is removed or substantially upgraded.

Environmental considerations in this phase focus on maintenance requirements of the road and its shoulders. Examples include mowing grass, resurfacing and cleaning out table drains.

Environmental requirements which relate to the Maintenance Phase should be carried forward from the REF, IAS, EMP (Planning), Environmental Design Report and EMP (Construction) if appropriate. These environmental requirements should be incorporated into Road Maintenance Performance Contracts and the application of the requirements monitored.



## EMP (Maintenance)

The EMP (Maintenance) should be prepared in a prescriptive detailed form by the Maintenance Contractors to provide ongoing environmental management throughout the maintenance of the road network according to the generic requirements of the EMP (Planning), if available, and contract documentation.

The EMP (Maintenance) will often not have to deal with specific environmental issues which have arisen from previous reports. If it is required to do so these requirements will be outlined in the contract documents.

**C7**

Generally the EMP (Maintenance) will outline the contractor's environmental commitment and procedures generally rather than in response to specific site based issues.

## Corridor Management Plan

For sections of road through the Wet Tropics World Heritage Area (and other natural areas of high conservation significance), a Road Corridor Management Plan may be prepared. This plan sets out the environmental considerations which need to be addressed during road operation and maintenance procedures. One important component of the Road Corridor Management Plan is the inclusion of a strip map, presenting the unique environmental aspects along the corridor.

## C7 Auditing

### Justification for Auditing

Auditing is required in order to allow the Department of Main Roads (DMR) to assess (audit) contractor compliance with all relevant environmental requirements. The project environmental performance evaluation processes within this manual should be tailored to the specific requirements of the

District, its activities and quality system requirements.

This section provides an introduction to project environmental performance evaluation which will enable DMR employees, Contractors and sub-contractors to conduct effective and meaningful environmental compliance audits.

Auditing can be used to assess compliance with:

- legislation;
- permits/licences;
- codes of practice;
- contract specifications;
- environmental management plans; and
- best practice environmental management.

It is the responsibility of all employees and contractors to adopt environmentally responsible work practices. Environmental auditing will provide DMR with a consistent evaluation technique with which to monitor Contractor's compliance with EMPs and with the Department's aim to achieving best practice environmental management.

## Description of Auditing for Road Management

Environmental auditing is an examination of environmental performance to ensure compliance with (environmental) requirements and is checked against nominated environmental criteria. Such criteria can include environmental legislation, industry standards, policy or workplace guidelines.

Performing environmental audits on projects provides a logical, structured and more formal approach to such assessment, rather than practices of sporadic inspection and general supervision.

## Objectives of Auditing

Identifying and appointing a suitable contractor should include a consideration of the environmental impact of the activity and the contractor's demonstrated expertise in managing and controlling adverse effects. (This is beginning to be addressed in the pre qualifying of Contractor's for construction jobs, where tenderers will be required to demonstrate their capacity to implement an environmental management system).

Simply including environmental terms into the contract is not enough. It remains the road owners (eg. Main Roads) responsibility within the management of environmental effects to ensure that all contractors and subcontractors comply with the legal minimum requirements and are aware of relevant policy.

The intention of environmental management auditing is to:

- determine the compliance or non compliance of the implementation of the EMP (Construction) or EMP (Maintenance) with the specified requirements set out in the Contract Documents;
- determine the effectiveness of the implemented EMP in meeting specified quality objectives;
- identify inefficiencies with current practices;
- provide the Contractors with an opportunity to improve their systems;
- highlight the positive aspects of the operation;
- meet regulatory requirements; and
- protect and improve the quality of the environment.

## Benefits of Auditing

The benefits of auditing for the road owners are:

- Improved relations with State and Commonwealth Government Advisory Bodies and the Community are likely to improve the Department's public image and increase corporate credibility.
- Areas of weakness are identified so that they may be addressed before becoming a larger problem which may impact upon the environment.
- The recording and analysis of "near-misses" is vital in determining the extent of the future requirements for Environmental Management Plans, Contingency Plans and Emergency Plans.

The benefits of auditing for contractors are:

- Having a documented system encourages the development of a more uniform approach to managing environmental activities between different works within the same company.
- Transfer of information will result in the communication of effective solutions to common environmental issues/impacts.
- The project environmental audit serves as a warning detection device for potential problems and provides time to develop effective solutions.

C7

## Timing of Environmental Audits

Timing of environmental audits should be conducted so that they at least coincide with the key stages of the project, namely:

- site preparation and clearing (including haul road);
- construction adjacent to major river crossings;
- where there is disturbance to sensitive riparian vegetation;
- major earthworks;
- post construction; and
- post commissioning.

For each audit, the auditor should meet with the project manager to inspect the works, liaise with the relevant authorities, review the environmental management records and complete a de-briefing discussion with the project manager. The auditor should address the recent and future works forms, corrective actions at hand, current environmental issues and other matters as required.

## Guidelines For An Audit Report

An Environmental Audit report should include (but not be limited to) the following:

- recording of any visual inspections of the site;
- details of the condition of natural water courses, waste disposal areas and other activities;
- a sampling and analysis program to determine compliance with levels set in Environmental Management Plans including:
  - detection limits (levels chosen and how derived);

- quality assurance (procedures);
- quality control details;

- the results of the sampling and analysis program.

Environmental Audit Reports should be concise and informative with information being displayed in an easily interpreted fashion.

The Environmental Audit report should contain the following information:

- name of auditor;
- position title;
- address of site in question;
- completion date of the environmental audit;
- documentation reviewed;
- quality, completeness and date of prior assessments of the site;
- this should include brief details of things like sampling and analytical methods chosen and type of assessment undertaken;
- verification of an environmental assessor's conclusions about;
- the nature and extent of any contamination etc.;
- any site rehabilitation method(s) used, quality control procedures followed, and subsequent validation monitoring of the site where appropriate;
- verification of compliance with soils, surface water, ground water, air criteria etc. used to determine the status of the site - generally through contractor monitoring (as outlined in Environmental Management Plans); and
- comments on the nature and extent of risks associated with any on-going activity at the site.

As environmental management audits may be undertaken as a component of a larger audit report it is important that environmental management findings are listed in the executive summary.

## **Non-Conformity and Corrective Action**

The Construction EMP outlines areas of environmental management for the project and compliance levels for each of the various components such as the management of sensitive riparian vegetation or erosion control. As a result of the on-going monitoring and auditing of the project, it is possible that areas of non-conformance with the intent of contract documents and the EMP (Planning) will occur. The following outlines the obligations for reporting non-conformance with the EMPs.

During the Construction Phase:

- the Contractor should report non-conformance to the Road Owner; and
- the Contractor should report to the relevant regulatory agencies (eg., DoE) any perceived breaches of legislative requirements.

During the Operational Phase:

- the Contractor should report any non-conformance to the Project Manager during the defects liability period; and
- the Project Manager and Main Roads should report to the relevant regulatory agencies any non-conformance after the defects liability period in respect to any perceived breaches of legislative requirements.

It should be noted that non-conformity with the Construction EMP as determined by the auditor must be rectified by the contractor to the satisfaction of Main Roads.

If a complaint regarding any pollution or other environmental impact caused by the project is received, when a departure from agreed/approved procedure is observed, or subsequent to any self-assessment audit, formal audit or a major non-conformance for any of the actions outlined in the EMP, then a Corrective Action Request should be completed and supplied to the Road Owner within one working day. The corrective action request should include details of the complaint or environmental effect, action taken to correct the problem and proposed measures to prevent the occurrence of a similar incident.

The Road Owner's Project Manager should direct work to cease in the area where the corrective action request has been recorded. Once corrective action have been undertaken, clearance can be given for works to recommence.

During the Construction Phase:

- the Contractor is responsible for carrying out corrective action resulting from non-conformance with the construction EMPs;
- the Road Owner's Project Manager is responsible for reviewing and auditing the Contractor's EMP and issuing corrective action requests as appropriate; and
- the regulatory agencies are responsible for enforcing corrective action under applicable legislation.

During the Operation Phase:

- the Contractor is responsible for carrying out corrective action resulting from non-compliance with the EMP during defects liability period;
- the Road Owner's Project Manager is responsible for reviewing and auditing the Contractor's compliance with the EMP and issuing corrective action requests as appropriate during the defects liability period;

**C7**

- Main Roads is responsible for corrective action resulting from non-compliance with the project managers duties in the EMP; and
- the regulatory agencies are responsible for enforcing corrective action under applicable legislation.

## **Program Notice and Environmental Management Program**

**C7**

Section 36 of the Environmental Protection Act sets out a duty for all persons to notify environmental harm. Further, a person or company who causes or may cause environmental harm may notify the "administering authority" (usually either the Department of Environment or local government) by lodging a program notice.

The program notice must set out all relevant information and include a commitment to preparing an environmental management program setting out how the harm will be repaired and how future instances will be avoided. In most instances, the lodgement of a program notice provided indemnity from prosecution and the information provided within it is privileged.

When an audit identifies environmental harm the lodgement of a program notice should be considered.

