

ENVIRONMENTAL IMPACT STATEMENT
GUIDELINES FOR A SOLID WASTE LANDFILL DEPOT
DISTRICT COUNCIL OF MALLALA

INTRODUCTION

The Minister for Housing, Urban Development and Local Government Relations decided in October 1994 that an Environmental Impact Assessment (EIS) would be required under Section 46 of the Development Act 1993 for the landfill proposal in the District Council of Mallala. An EIS under the Development Act is intended to address the critical issues relating to a proposal.

The proponent is P. & M. Borrelli and Sons Pty Ltd. The proposal is for a landfill for disposing of domestic, solid industrial and commercial waste. Hazardous liquids or chemical wastes will not be accepted at this site. The site chosen covers 440 hectares. The landfill operational life is envisaged to be between for 30-55 years.

THE EIS PROCESS

An Environmental Impact Statement, as defined in the Development Act, means a statement of the expected social, economic, and environmental effects of the development or project. The EIS should consider the extent to which the expected effects of the development or project are consistent with the provisions of any relevant Development Plan, the Planning Strategy, and any matters prescribed by the Regulations. The EIS should also state the conditions (if any) that should be observed in order to avoid or satisfactorily manage and control any potentially adverse effects of the development or project on the environment. Further it should consider any other particulars required by the Minister or by the Regulations.

The EIS process is intended to ensure that the implications of a project considered to be of environmental, social or economic importance are examined, these can then be taken into consideration by the decision-makers.

The EIS process allows public participation at several points and is conducted with reference to a timeframe agreed by the proponent and the Environmental Impact Assessment Branch (EIA Branch) of the Department of Housing and Urban Development (DHUD). The steps of the process where public input is invited are marked with an asterisk * as follows:-

- EIS required
- * Guidelines prepared and exhibited publicly
- Proponent prepares EIS document
- * Public exhibition of EIS document (at least 6 weeks). Written submissions invited. Public meeting may be held during the exhibition period to assist people in the preparation of their submissions
- Proponent responds to public submissions and any other matters required by the Minister
- The Assessment Report is prepared for the Minister by the EIA Branch of DHUD.

The EIS, response, Assessment Report and development application are then sent to the Governor who is the decision maker. There is no appeal against a Governor's decision.

Copies of the EIS, response and Assessment Report will be publicly available for inspection and purchase at a place determined by the Minister and notified in public advertisements.

A flow chart describing the process is attached in Appendix A.

THE EIS DOCUMENT

The following should guide the production of the EIS document.

The document can be presented in two main sections

Part A Draft Waste Depot Management Plan describes the environment, the proposal, and how the depot is to operate. (Appendix B contains the index for the plan)

Part B Environmental Impacts discusses the environmental, social and economic impacts and how they have been considered in formulating the operating plan (including monitoring and rehabilitation) and seeking planning approval. It must also deal with any matter set out in Section 46(1) of the Development Act not already referred to.

The Document should provide the following.

SUMMARY

The Environmental Impact Statement (EIS) should incorporate a discussion of the matters set out in Section 46(1) and include a concise summary of all aspects covered under the headings set out in the guidelines below, in order for the reader to obtain a quick but thorough understanding of the proposal and the resulting environmental impact.

BROAD OBJECTIVES OF THE PROPOSED DEVELOPMENT

The EIS introduction should contain a brief statement of the objectives of the proposed development with reference to the present and future operations of the company/developer, the nature of the waste disposal operation, type of waste, and the timing of the operation. Alternative locations within the region should be discussed. Reference should be made to current waste management plans prepared by the S.A. Environment Protection Authority - Recycling and Waste Branch.

PART A WASTE DEPOT MANAGEMENT PLAN (WDMP)

Appendix B contains the Index provided to the applicant for the preparation of the Plan (as required by the Environment Protection Authority for licensing purposes) which should identify the nature of the site, the proposal and the details of how the depot will be operated.

The General Conditions of Licence Applying to Solid Waste Depots are attached in Appendix C.

PART B ENVIRONMENTAL IMPACTS

This section should provide the information and discussion of the issues which have been considered and evaluated in arriving at the proposed operation outlined in the Waste Depot Management Plan (WDMP) described in Part A.

3.

This part of the EIS should describe all other factors of the existing environment which have not been included in the WDMP and evaluate the potential environmental impact of the development, both direct and indirect, both beneficial and detrimental, using the description of the existing environment (site and surrounding area) as a baseline. Due consideration should be given to the short-term effects of construction and establishment as well as those of long term operation, site rehabilitation and future use. It should give due regard to Section 46(1) of the Development Act which states:

"environmental impact statement", in relation to a development or project, means a statement of -

- (a) the expected social, economic and environmental effects of the development or project;
- (b) the extent to which the expected effects of the development or project are consistent with the provisions of -
 - (i) any relevant Development Plan; and
 - (ii) the Planning Strategy; and
 - (iii) any matters prescribed by the regulations;
- (c) the conditions (if any) that should be observed in order to avoid or satisfactorily manage and control any potentially adverse effects of the development or project on the environment;
- (d) any other particulars in relation to the development or project required -
 - (i) by the regulations; or
 - (ii) by the Minister.

Description of Existing Environment - off site

This section should include information on those other characteristics of the environment not incorporated in the WDMP. These should include;

meteorological data - rainfall, temperature, wind, air quality
nature and type of adjacent land uses

Potential Environmental Impact

The following points should be addressed in the evaluation of the potential environmental impact of the proposed waste disposal site development and operation.

1. Location

Site Area Required for Development

The effects of the proposed land use change, given the area required for the development, and adjacent existing land uses should be examined.

Constraints on Proposal

This section should discuss how constraints on the proposal are to be resolved.

Constraints to be considered include;

- . proximity of other land uses including other similar operations;
- . suitability of local geology and soil conditions;
- . impact on existing road access and current users (Pt Wakefield Rd and local roads):
- . existence of local surface water movement;
- . impact of the proposal on local regional groundwater systems and the environment.

Groundwater

Impact of the proposal on groundwater, the aquifers, recharge/leakage/outflow, water quality, existing uses and the potential effects on the Gulf should be examined.

Visual Impact

Visual representations of the waste disposal depot at progressive stages would be useful. The general visual impact of the depot on the local area in both the short and long terms should be described and evaluated. The estimated time for rehabilitation to take effect should be discussed, and the visual impact of the proposed future use described.

Noise

The frequency, regularity, sources and impacts of any noise associated with depot preparation and operation should be evaluated with respect to accepted standards and legislation.

Air quality

The proposal's acceptability in terms of standards and legislation for air quality should be discussed and any significant source of pollutant material (including dust) in the proposal examined and remedial measures to be adopted described.

Cost and Economic Impact

A cost estimate should include site acquisition, planning development, operation and rehabilitation costs. Consideration should also be given to costs associated with the adoption of safeguards and standards for the protection of the environment. The undertakings proposed should be included in the Appendices to the WDMP. Regional economic consequences should be addressed. Employment opportunities and the sections of the community affected must be addressed.

2. Site Preparation and Operation Implications

Describe in detail the implications of site preparation and depot operation methods to be used, and any environmentally sensitive aspects where impacts should be minimised. Protective measures for sensitive areas should be described. The results of many of these investigations will be in the WDMP.

Resources Required

The impacts of the type of material required for site preparation and operation, sources of materials, and transportation methods to and within the depot location should be described.

Solid Waste Characteristics

The reasons for the choice of operation and procedures to be used should be discussed in relation to the sources, quantity and nature of wastes to be disposed at the site. Reference should be made to alternative methods and appropriate legislation and regulations. Litter management on and off site should be addressed.

Leachate Control and Disposal

Provision should be made for the minimisation of leachate. The document should evaluate the potential for leachate, and migration of leachate, and include plans for the environmentally acceptable disposal of any leachate which may occur.

Construction and Operating Traffic

Measures to restrict traffic or the impacts of traffic in environmentally sensitive areas should be described.

Rehabilitation Measures

Proposed measures for rehabilitation, which may include landscaping, topsoil conservation and native seedling protection, the expected final state of the site, and possible end use of the land should be described. The commitments to be made by the applicant should be included in the WDMP.

Public Health

Measures to be taken to protect public health should be discussed and the commitments included in the WDMP.

3. Associated Biophysical and Social Impact

Flora

Consideration should be given to impacts on population stability and the ability of the flora to regenerate after disturbance. The conservation significance of the flora should be indicated, and any significant associations discussed. A discussion of any expected impact on protected, rare and endangered plant species should quantify affected plants and analyse the effect on the viability of the populations.

Fauna

The impacts of the proposed waste disposal depot on fauna (aquatic and terrestrial) should be evaluated (e.g. destruction of habitats, disturbance of breeding patterns, etc.). It should be ensured that adequate feeding and breeding grounds are maintained in an undisturbed state for the region's fauna.

Natural Drainage

Impacts on natural drainage patterns, including both semi-permanent and permanent swamps, and measures to minimise these impacts should be discussed. The ecological value of local wetland habitats should be assessed.

Erosion

The probabilities of erosion resulting from the project should be evaluated and appropriate ameliorative measures proposed. Specific problem areas should be discussed separately.

Introduction of Pests

The risk of escalation of vermin should be investigated in relation to construction and operation of the depot, and the potential impacts on the surrounding areas and uses of the lands. Preventive and control measures should be described and incorporated in the WDMP.

Heritage

Sites of archaeological, anthropological or historical significance should be recorded and legislative requirements observed. Their conservation significance should be evaluated and protective measures proposed if they are likely to suffer detrimental impact from the proposal.

PUBLIC PARTICIPATION

The level of public involvement in the planning and decision-making process leading to the compilation of the application and the EIS document should be described. Outline the nature of objections raised in any known public response.

LEGISLATION AND CODES OF PRACTICE/ENVIRONMENTAL SAFEGUARDS AND STANDARDS

The appropriate legislation and codes of practice applying to the proposal should be identified and its compliance discussed.

The safeguards and/or standards proposed to minimise the environmental effects of the proposed action should be discussed, together with the costs and benefits of adoption or non-adoption of such safeguards and standards. Reference should be made to existing environmental legislation and relevant codes of practice, such as those relating to noise, leachate and dust control with the intended actions described. Some of this information will be included in the WDMP.

Contingency plans should be formulated to deal with accident events, such as fire, and surface flooding. Commitments to ameliorative action could include measures such as special equipment, drainage, fencing, hours of operation, restricted access, restriction of traffic movement and special rehabilitation measures.

MONITORING AND REVIEW

Monitoring is required to determine the actual environmental impact of the proposal after commencement of operation. Baseline data extracted from the survey of the existing environment are necessary to gauge relative changes in environmental parameters. This will enable the effectiveness of environmental safeguards and standards that have been incorporated into the development and the actual environmental impact of the project to be checked and compared with the predicted impacts. A monitoring programme for this purpose should be formulated and discussed in this section and the appropriate section of the WDMP. These monitoring studies should be carried out over a time span long enough to obtain information on any seasonal or long-term changes, they should be commenced prior to operations starting and continue until long-term impacts are fully documented.

Monitoring is also required during the initial site preparation phase to cover those areas likely to be affected by that activity. If monitoring gives an indication of unacceptable environmental degradation, there must be provision in the design to allow for tightening of the initial standards and rectification of damage where possible.

SOURCES OF INFORMATION

The sources of information (e.g. reference documents, literature sources, research projects, authorities consulted) should be fully referenced. Where judgements are made, these will need to be clearly identified and the basis on which these judgements are made and the expertise of those making the judgements will need to be spelled out. The qualifications of consultants and authorities should also be provided.

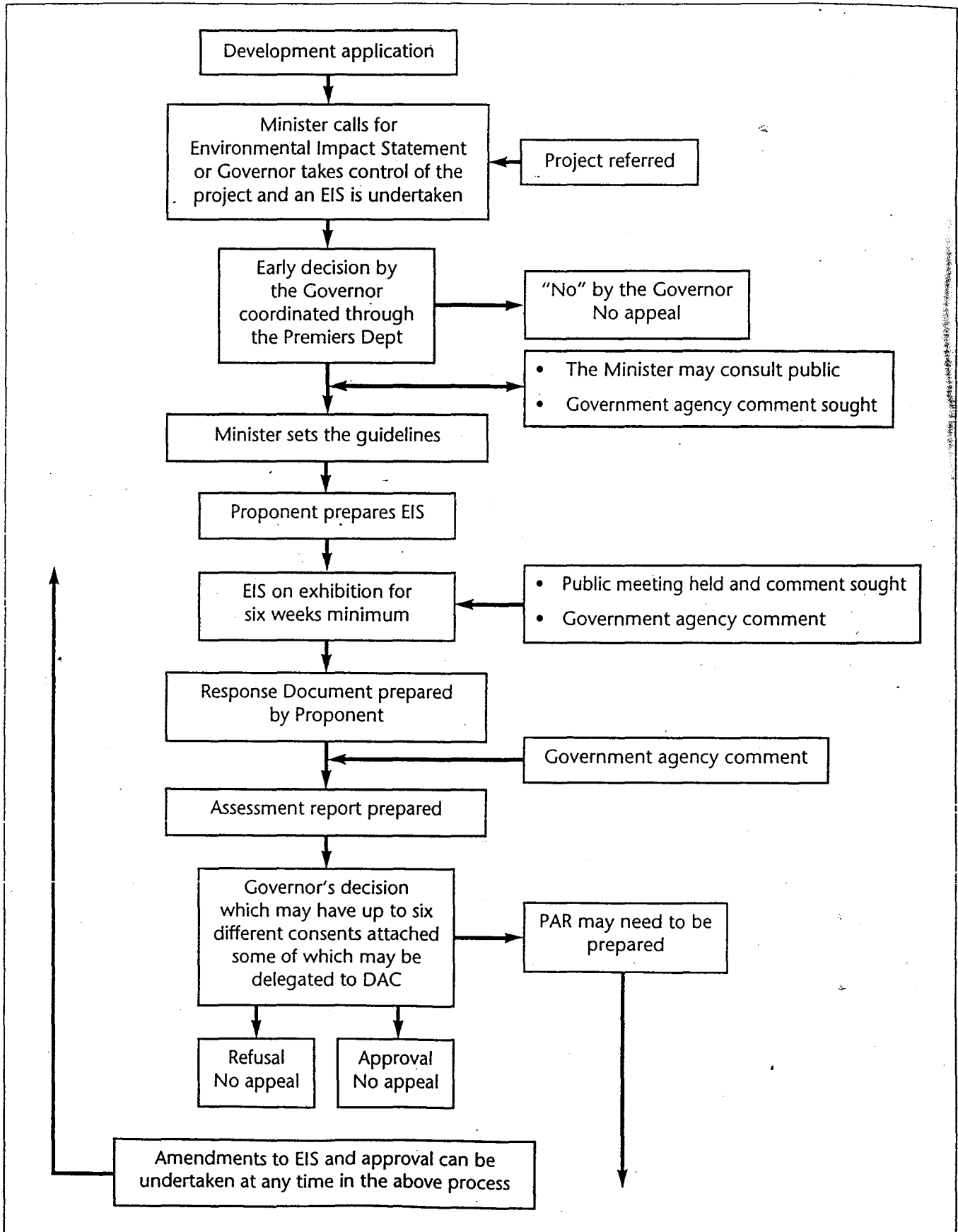
APPENDICES

Additional information relevant to the EIS that is not included in the text should be included in the appendices (maps, graphs, tables, photographs, reports, etc.). A glossary may be appropriate.

The design of the proposal should be flexible enough to incorporate changes to minimise any impacts highlighted by this evaluation or by post - operational monitoring programmes.

ASSESSMENT PROCESS FOR PROJECTS OF MAJOR SIGNIFICANCE

Key steps



WASTE DEPOT MANAGEMENT PLAN

INDEX

LOCATION

1. Site Details

- 1.1 Land Owner
- 1.2 Depot Operator
- 1.3 Site manager
- 1.4 Locality Description
- 1.5 Section & Hundred
- 1.6 Certificate of Title
- 1.7 Australian Map Grid Coordinates
- 1.8 Council Area
- 1.9 Zoning & Land Use Policies
- 2.0 Distance to adjoining Zones

2. Site Description

- 2.1 Operation Visibility
- 2.2 Traffic Routes to the Site
- 2.3 Exposure to Prevailing Winds
- 2.4 Buffer Zones within the depot
- 2.5 Proximity to Houses
- 2.6 Distance to Surface Water/Watercourses
- 2.7 Groundwater
- 2.8 Siting of Active Operations/Topography
- 2.9 Geology / Hydrogeology
- 2.10 Adjoining Fire Hazards
- 2.11 Distances to other Sensitive Land Uses

OPERATIONS

1. **Establishment / Improvement Details**
 - 1.1 Screening/Windbreaks/Buffer Zones
 - 1.2 Amenities
 - 1.3 Plant/Equipement
 - 1.4 Fencing/Signage
 - 1.5 Access Roads
 - 1.6 Drainage
 - 1.7 Safety measures

2. **Waste Quantities/Types**
 - 2.1 Types of Waste Received
 - 2.2 Capacity of Site / Annual Volumes
 - 2.3 Area of Depot

3. **Site Control**
 - 3.1 Depot Access
 - 3.2 Hours of Operation

4. **Waste Disposal**
 - 4.1 Waste Disposal Areas
 - 4.2 Method of filling / Compaction
 - 4.3 Areas of Exposed Waste (m.2)
 - 4.4 Burning
 - 4.5 Type of Cover Material
 - 4.6 Cover Requirements

5. Waste Treatment

- 5.1 Recycling
- 5.2 Composting
- 5.3 Other activities

6. Maintenance

- 6.1 Signage
- 6.2 Internal Roads
- 6.3 Stockpiles
- 6.4 Amenities
- 6.5 Landscaping / Windbreaks / Buffer Zones
- 6.6 Drainage
- 6.7 Fire Control
- 6.8 Progressive Rehabilitation

7. Site Monitoring / Controls

- 7.1 Landfill Gas
- 7.2 Leachate
- 7.3 Groundwater
- 7.4 Stormwater
- 7.5 Smoke
- 7.6 Odours
- 7.7 Noise
- 7.8 Vermin
- 7.9 Dust & Mud

SITE END USE

- 1 Final Landform
- 2 End Use
- 3 Post Closure Monitoring Period
- 4 End Use Maintenance Period

APPENDICES

1. Plans

- 1.1 Locality Plan
- 1.2 Site Operating Plans / Staging
- 1.3 End Use Plans

2.. Attachments

- 2.1 Rehabilitation Trust Fund
- 2.2 End Use Maintenance and Monitoring Fund
- 2.3 Land Use Consent
- 2.4 Licences & Conditions
- 2.5 Proof of Site Tenure
- 2.6 Public Liability Cover
- 2.7 CFS / MFS Requirements
- 2.8 Depot Improvement Programme
- 2.9 Community Consultation Programme,
Community Agreements.
- 2.10 Annual Landfill Volumes
- 2.11 Specifications
- 2.12 Agreed Sanctions.