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ENVIRONMENTAL ASSESSMENT WORKSHOP

Proceedings

BULLETIN NO. 15

DEPARTMENT OF CONSERVATION AND ENVIRONMENT
Western Australia July 1976

PROCEEDINGS

from an

ENVIRONMENTAL ASSESSMENT WORKSHOP

held at

The R.H. Doig Executive Development Centre
5 Alvan Street,
Mount Lawley,
Western Australia

on

19 - 23 July, 1976

BULLETIN No. 15

Department of Conservation and Environment

Western Australia

Department of
CONSERVATION and ENVIRONMENT

The Environmental Assessment Workshop was held between Monday 19 and Friday 23 July, 1976. The series of half-day working sessions was organised by the Department of Conservation and Environment in conjunction with the R.H. Doig Executive Development Centre.

The purpose of the series was to provide practical assistance to persons having responsibilities for developments which may significantly affect the environment. The emphasis on practical aspects was deliberate, especially in illustrating such matters as State and Commonwealth procedures for environmental assessment and statutory requirements under existing legislation. It is hoped that the major result will be a clearer understanding of procedures and facilitation of interactive processes both withi government, between governments and between government and industry.

I have pleasure in making these Proceedings from the Workshop public especially as the limited accommodation facilities necessitated attendance by invitation only.

Brian J. O'Brien
DIRECTOR

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ENVIRONMENTAL ASSESSMENT WORKSHOP

OPENING ADDRESS : ENVIRONMENTAL RESPONSIBILITY

Hon. Sir Charles Court, O.B.E., M.L.A
Premier of Western Australia

Monday 19 July 1976

I congratulate the Minister for Conservation and the Environment, Hon.Peter Jones, the Environmental Protection Authority and the Department on the preparations they have made to run this Environmental Assessment Workshop on five succeeding half-days this week.

As far as we know, this is the first Environmental Assessment Workshop ever held in Australia. If so, it is expressing the leadership on environmental concern consistently demonstrated at the public policy level in Western Australia.

I warmly welcome:

* Representatives of the Commonwealth Department of Environment, Housing and Community Development

* Senior officers of Perth-based Commonwealth Departments

* Senior officers of State Government Departments

* and representatives of the Confederation of Industry and the Chamber of Mines.

I am sure you will all agree that the best way to make the most of this opportunity is to go into your discussions on a "bull session" basis, saying exactly what you think - meaning no harm and taking no offence. Let me therefore set the example by making these opening comments short and to the point.

THE NEED FOR CLEAR CUT AUTHORITY

My first comment is that I believe that environmental decision making should rest primarily with the State governments. The environmental factor now reaches into almost every area of decision making. If there is to be a Commonwealth override of State environmental decisions, then there must always be some doubt as to how far it will go. In the end, scarcely a decision

can be made without checking with Canberra. Furthermore, the State authority is made to feel uncertain because guidelines cannot cover every situation.

We had a "purple patch" in this respect under the previous Federal Government. I would like to feel that this phase has now passed and that environmental decision making now rests firmly in the hands of the States.

Naturally, we agree that the Commonwealth has a right to an environmental interest in National matters, but an interest is different from control. For example, the Commonwealth has a right to insist, where necessary, that Commonwealth funds given to the States for specified purposes shall not be spent on environmentally unacceptable projects, but the Commonwealth should be willing to trust the State environmental authority to determine whether such projects are environmentally acceptable.

I believe our own Environmental Protection Authority has a very worthy record. It has done an excellent job in catching up on a great deal of backlog and seems to me to be now ready, not only to handle current matters more speedily but to assemble data with which it can anticipate future responsibility. In other words we have good reason to believe that our own Authority is "on the ball".

It seems unlikely that a National Authority, no matter how good it is, can become so closely aware of local environmental detail. On environmental matters, I therefore look forward in the future to more co-operative federalism than dictatorial centralism on environmental matters. The officers present from Canberra will, of course, realise that there is nothing personal in these remarks. I am referring only to the balance of policy in this vital area.

AVOIDING ENVIRONMENTAL CONFLICT

The second comment I would like to make is that I believe we are moving quite quickly now towards a new and very desirable phase in the sharing of environmental concern in the community. We started off, naturally enough, with a fair amount of confusion. Not enough was known, in so many areas, that needed to be known for sound environmental assessments. You might say that was phase one.

In phase two, we found Government departments and the community at large going through a learning process in order to adapt to the inclusion of environmental considerations in their planning and activity - as a matter of course. While phase two was still under way, we had phase three - the increasing environmental override of the Federal Government.

This coincided with a rapid proliferation of community environmental groups which applied a great deal of pressure at the point of division between Commonwealth and State. During this phase, many people became very confused as to what was what.

Now, in phase four we have a very wide acceptance of basic environmental requirements and it is one of the great values of this Workshop that it will assist this acceptance by making more familiar the procedures through which the environmental assessment process works best.

I would like to see the community groups, in addition to Government and industry, being better familiarised with these processes. Understandably, many of them do not know how much environmental concern is already built into legislation, and into the processes for evaluating public and private sector projects and activities. It may even surprise those attending this Workshop to know that there are more than 50 Acts of Parliament in Western Australia relating to various facets of the environment.

Of course the Environmental Protection Act, 1971, has overriding authority but the fact that more than 50 Acts of Parliament expressed environmental concern before the Environmental Protection Authority was established is a fair indication of Western Australia's long standing and effective interest.

I think the stage has now been reached where the issue is not so much whether we have environmental concern, but how we work together co-operatively to express it. It worries me sometimes to see so much conflict when what is needed is co-operation.

Recently, a small part was taken out of a 45 minute lecture I gave - a small part relating to what I described as a "fifth column" misusing environmental concern. I do not regret making those remarks, even though they were immediately misconstrued and presented as an attack on genuine environmentalists. Let me assure you, that those remarks had quite the reverse intention.

The worry I was expressing then, and which I express again now, is that genuine environmental concern is so easy to exploit for disruptive purposes because it is making use of genuine, decent strong feeling about something that really matters.

As a Western Australian, I naturally share the deep concern of most people in this State that we should have a sensible regard for our environment in which we are living and making our living, but on no matter is there any justification for some of the hate campaigns we have seen conducted, sometimes with the backing of some very misleading statements, presented as basic information.

I give full credit to our Environmental Protection Authority and the Department for seeking out the views of the community on environmental matters and taking them into account when making its assessments.

In a democratic community, the right procedure, when you want to express your right to a point of view, is to get all the facts, and express your viewpoint with the backing of those facts. If

there are other viewpoints, and if, in the best judgement of those responsible, other viewpoints are accepted before yours, then there must be some respect for the orderly process of Government in the community at all levels. There is nothing in democracy which guarantees instant public acceptance of any views an individual or group may hold. In fact, it is the persistent experience of those who are active in public life that some of the ideas they hold most dearly are often not accepted at all. The process of public persuasion is far from perfect, but we must place some trust in responsible people whom we have appointed to carry out essential tasks in a responsible way.

I feel hopeful that the next five years will see a greater availability and a greater understanding of the kind of common knowledge we all need in order to think together in a balanced way on matters of common concern - and especially those relating to the environment.

By 1980, I believe environmental procedures will be so well run in that the issues they are handling will be less controversial than they are now, and more an accepted part of everyday life.

THE PRACTICAL APPROACH

Of course, we all realise that a matter as important as the environment will always be the subject of some normal tension. Environmental concern is not the only concern we have - or need to have. As our communities grow, and as our activities increase, man becomes a larger element in the environment, but this does not mean that man himself is not part of the environment or has no rights. On the contrary, it is to keep the environment fit for mankind that environmental assessment systems have been introduced, and this is where the Government itself must take final responsibility. Even within the Government organisation, there are outlooks with different emphasis. In the community the same applies. Where some people may want to live, other people may want to preserve untouched. Where some people may

want to work, other people may want to prevent activity.

It therefore remains - and must remain - the task of Government to weigh up, carefully and impartially, the advice received and the views expressed from all sides before making a decision in the overall community interest. Rational development is part of that interest. Rational conservation is part of that interest. Often the two can proceed together. Often they can provide us with valuable environmental information. At all times, we should be taking a rational, constructive approach which enables us to learn. From what we learn, we can correct mistakes or improve performance.

As part of that performance, I am sure that we all agree that environmental assessment - to be worthwhile - needs to take place very early in the planning of projects or any other future activity. In fact, I strongly recommend this procedure, especially for projects of any size.

We have had advance environmental reports, for example, on the Jumbo Steel Plant proposal and on the Alwest proposal - and in both cases, I am very pleased to say, the forward studies done for these purposes have given us a lot of valuable information which we can use in the future in other ways.

It is our approach to work on a guideline basis that enables agreement to be reached in advance of action, so that action will not be disrupted at a later stage, after substantial investments have been made.

I regard this Workshop as an opportunity for the testing of these guideline procedures and, I hope, the evolution of still better ones for our use in the future.

I have much pleasure in declaring this Environmental Assessment Workshop officially open.

ENVIRONMENTAL ASSESSMENT WORKSHOP

CONSPECTUS OF WESTERN AUSTRALIAN LEGISLATION

CONCERNING THE ENVIRONMENT

Mr. G. Delaney
Assistant Crown Solicitor
Crown Law Department
Western Australia

Monday 19 July 1976

INTRODUCTION

The present brief treatment of this very extensive subject falls into three parts:

(a) A fairly detailed look at the Environmental Protection Act.
(b) An outline of some other legislation relevant to the subject.
(c) A short statement of the principles relating to nuisance in common law.

ENVIRONMENTAL PROTECTION ACT

General object of the Act

> *'the prevention and control of environmental pollution and the protection and enhancement of the environment'.*

Definitions

These give some idea of the wide ambit of the Act; *'environment'* means the physical factors prevailing in the State, including the land, and the coastal waters, sea-bed and subsoil adjacent thereto, water, atmosphere, sound, odours, tastes and radiation, the social factor of aesthetics and all factors affecting animal and plant life.

'Pollution' means any direct or indirect alteration of the environment to its detriment or degradation.

Scope of operation of the Act

The Act applies to the Crown (i.e. Government and its instrumentalities) to the same extent as it applies to persons and corporations. This is an important safeguard because the activities of Governments are now so diverse that they can have

a significant impact on the environment.

If any other law of the State (except ratified agreements) is inconsistent with the Act then the Act prevails over that law.

State Agreements ratified by legislation will prevail over the Act in event of inconsistency. It should be noted that most of those agreements expressly require observance of State laws concerning the environment.

The Governor may grant exemptions from the Act but these may be disallowed by Parliament.

Administration structure - Environmental Protection Authority

This is the executive body for the purpose of the Act.

It comprises the Director of the Department of Conservation and Environment and two other persons.

It has the duty of carrying out objects of the Act.

Functions include initiating the means of enhancing the quality of the environment and the means of dealing with pollution, and carrying out investigations into problems of environmental protection.

Administration Structure - Conservation and Environment Council

The Council consists of 16 members widely representative of public and private interests.

It is advisory in nature and has the duty of assisting and making recommendations to the Minister and the Authority.

Included in its functions is that of advising the Authority on any matter within the responsibility of the Authority, irrespective of whether such advice has been requested.

Mode of establishing State environmental policies

A major purpose of the Act is to lay down procedures by which environmental policies for the State may be determined by the Authority. These procedures have not been invoked but it is likely they will be put into operation soon in relation to the proposed policy on the coastal zone in Western Australia.

The Authority first publishes its proposals to allow for public submissions.

The matter is then reported to the Minister and a decision is made whether a Committee should be appointed to conduct a public inquiry.

The Authority may then revise and republish its proposals in the light of the findings of any public inquiry so held and the revised proposals shall not be inconsistent with those findings.

At this point any person aggrieved by the proposals may appeal to the Environmental Appeal Board except where the proposals follow and are consistent with the findings of a public inquiry held on the proposals in which case there is no right of appeal.

After including any changes made necessary by a decision of the Environmental Appeal Board the proposals are then submitted to the Governor.

The Governor approves the proposals and a declaration to that effect is gazetted.

A declaration has the force of law just as if it were part of the Act and is fully enforceable as the basis upon which the Authority will act to preserve or enhance the environment to which the declaration relates, and it enables the Authority to prohibit or control activities affecting that environment.

Environmental Appeal Board

The only function of Board is in the context of proposals to establish environmental policies explained above.

The Board is to consist of 3 members, the President of which is to be a legal practitioner.

When an appeal is lodged with the Board the Authority may object to the appeal.

If the Authority so objects the Governor may issue a notice declaring that upholding the appeal would be contrary to environmental protection principles and would prejudice the public interest.

Such notice prevents the Board from hearing the appeal.

The notice may be disallowed by Parliament.

Powers to Control Waste

The Act makes special provision to enable the Authority to deal with pollution caused by discharge of wastes.

In the case where such discharge is authorised by permit or license under any other Act the Authority shall consult with the public body concerned and may if necessary issue a recommendation which that public body shall be obliged to observe.

In other cases the Authority itself may require the polluter to cease or modify the discharge, and failure to comply is an offence.

Other powers

The Authority may request the Ministers responsible for the Land Act, Mining Act, and Town Planning Act to notify the

Authority on certain specified matters arising under those Acts which affect the environment and the Ministers shall not exercise their powers in relation to those matters until the Authority has made recommendations. The Ministers are not obliged to implement the recommendations but the Authority is at liberty to publish the recommendations if it sees fit.

All Ministers of the Crown are obliged to notify the Authority of any proposed development project, industry or other thing which may have a detrimental effect on the environment and to keep the Authority informed thereon.

Any person may refer to the Authority any matter which gives rise to concern as a possible cause of pollution and the Authority may report thereon to the appropriate Minister.

The Authority may obtain an analysis of any pollution and publish the results thereof together with any comment regarded as in the public interest.

OTHER LEGISLATION AFFECTING THE ENVIRONMENT

In a review conducted three years ago it was found that there were more than 60 Acts of Parliament in Western Australia which operate to control or protect the natural environment against detriment. And even that survey proceeded on a limited concept of what matters could be said to be concerned with the environment.

Under the following headings, mention is made of merely some examples drawn from this vast legislative field.

AIR

Clean Air Act

Occupiers of certain kinds of premises (set out in Act by reference to nature of industry or activity) must be licensed.

License fees vary according to size and nature of premises. Licenses may be subject to conditions (e.g. as to replacement of fuel burning equipment, increased height of chimney etc.). In addition the premises must not emit dark smoke or air impurities above a prescribed level. Other premises are not required to hold a license but the occupier must not allow dark smoke to be emitted or the emission of air impurities above a prescribed or reasonable level.

Road Traffic Act

Regulations contain prohibition on emission of excessive smoke and require compliance with current vehicle emission control standards for all vehicles constructed after 1st July 1976.

Health Act

Creates offence where burning of rubbish emits smoke causing nuisance.

WATER

Metropolitan Water Supply, Sewerage and Drainage Act

Power to prevent pollution of water within any water reserve or catchment area. Also power to protect underground water within prescribed areas against anything that is liable to harm the purity of the water directly or indirectly. Prohibits diversion or other act likely to reduce quantity or quality of water in any catchment area. Requires license to draw water from any area declared to be underground water supply area.

Rights in Water and Irrigation Act

In the areas to which it applies the Act severly restricts riparian rights. Requires license for drawing underground water. Extensively controls pollution of surface and underground water throughout the State.

Health Act

Makes provision for offences concerned with pollution of water supplies.

Swan River Conservation Act

Contains extensive provisions for maintaining and improving the conditions of the waters and foreshores of the Swan River. The Act binds the Crown and is made predominant over rights arising under other laws. Regulates detrimental discharges into the river and other harmful activities on or near the river.

Port Authority Legislation

Petroleum Legislation

Oil Pollution Legislation

Note: That the above is only a limited sample of the relevant statute law can be judged from the fact that the Senate Select Committee on Water Pollution compiled a list of 16 Western Australian enactments directly relating to the subject.

NOISE

Noise Abatement Act

Sets up statutory bodies whose functions are to control excessive noise and promote research into noise reduction. Creates offence of causing noise which is injurious or dangerous to health or has a disturbing effect on the state of reasonable well-being of a person. Prescribes noise levels which shall be taken to constitute evidence of a nuisance. Facilitates noise abatement action by local authorities. Also contains the unusual provision that in certain circumstances private individuals may, where the local authority fails to act, take proceedings under the statute.

Local Government Act

Traffic Act

Factories & Shops Act

LAND

Soil Conservation Act

Concerned with conservation of soil resources and mitigation of erosion. Is made predominant over certain other legislation if there is inconsistency of laws (e.g.Land Act). Provides a range of powers, from proclaiming a soil conservation district to making tree preservation orders. Controls imposed may be very stringent and there is generally no right of compensation or appeal. Erosion is defined to include salt encroachment.

Land Act

Approval of applications for land may be made subject to such conditions and reservations as are thought necessary in the public interest. Act gives power for Crown land to be reserved for public purposes.

National Parks Authority Act 1976 (proclaimed after this paper was delivered)

Provides for management of national parks and reserves, for the conservation of the natural environment, the preservation and enhancement of natural beauty. The Act binds the Crown. Provides for co-operation with and representations to the Environmental Protection Authority. Allows control or prohibition of activities in National Parks. Mining Act and Petroleum Act are not affected by this Act.

Mining Act

A complete code regulating use of land for mining. Generally

over-rides most other land use legislation.

Town Planning Act

Authorises inclusion of conservation provisions in town planning schemes. Such schemes have the force of law.

FLORA, FAUNA, WILDLIFE

Native Flora Protection Act

Gives power for the protection of native flora throughout State on Crown lands and, to a limited extent, on private lands.

Forests Act

Controls use of timber resources.

Main Roads Act

Prohibits damage to flora on verges of main roads.

Land Act

Makes provision re timber on lands and clearing of lands. Makes progressive clearing mandatory with respect to some holdings.

Wildlife Conservation Act

All fauna (as defined) throughout the State is protected at all times except as otherwise declared under the Act. Provision for establishing nature reserves and wildlife sanctuaries.

Fisheries Act

Deals with taking and conservation of fish (any variety or marine or fresh water fish and crustacea or marine animal life). Allows for closing of waters to fishing.

GENERAL

Aboriginal Heritage Act

Museum Act

Maritime Archaeology Act

Radiation Safety Act

LEGAL CONTROL OF THE ENVIRONMENT BY NON-STATUTORY MEANS

Where the environment has been dealt with in such a way as to cause some general harm to the community or particular harm to an individual the search for a remedy is not confined to statute law but may extend to what is known as the common law. For practical purposes the relevance of the common law can be said to be limited to that body of legal principles concerned with the tort of nuisance.

Private Nuisance

An action for private nuisance protects occupiers of land against unreasonable interference with their use and enjoyment of land. At common law the owner of land could do what he wanted with his land, short of committing nuisance by interfering with his neighbours. Private nuisance developed as a cause of action designed to find a socially acceptable balance for competing uses of land in the neighbourhood in question. Cases involving emission of smoke from a factory, smells from a tannery, effluent from a gas works, noise from a quarry are instances where nuisance claims have succeeded. The aggrieved person may be awarded damages or, if the wrongful behavious is likely to be repeated, an injunction against continuance.

Public Nuisance

Broadly speaking actions for public nuisance are concerned with nuisance as they occur in public places and not with the private owner's right to free enjoyment of his property. An individual cannot sue for public nuisance unless the nuisance has caused him special damage over and above that of the general community. If no person can show this special damage the Attorney General, acting to protect the public interest, may bring the proceedings.

ENVIRONMENTAL ASSESSMENT WORKSHOP

STATUTORY RESPONSIBILITY AND DECISION - MAKING AT THE STATE LEVEL

PROVISIONAL PROCEDURES FOR ENVIRONMENTAL ASSESSMENT OF NEW PROJECTS AND PROPOSALS IN WESTERN AUSTRALIA

Mr. P.J. Browne-Cooper
Chief Environmental Officer (Evaluation)
Department of Conservation and Environment
Western Australia

Monday 19 July 1976

PREAMBLE

The ever-increasing public and political desires for environmental assessments could produce unnecessary confusion, being relatively new and often disorganised.

To assist State Government departments and instrumentalities and private individuals and organisations which are contemplating undertaking a development proposal, to interact as efficiently as possible with the bodies responsible for environmental management in Western Australia, the following procedures have been drafted. It is stressed that these procedures are to assist only in the environmental assessment of new projects or proposals and are not relevant to the various other responsibilities of the Environmental Protection Authority such as pollution control, education and policy development. This is to be regarded as a working paper for the Environmental Assessment Workshop held in Perth 19-23 July, 1976, Critical objective comments are invited.

Dr. B.J. O'Brien
Director
Department of Conservation and Environment
Western Australia

1. GENERAL

The Environmental Protection Act (1971) sets up three permanent bodies for the prevention and control of environmental pollution and for the protection and enhancement of the environment in Western Australia. In this context the following statutory definitions apply:

"Environment" means the physical factors prevailing in the State, including the land, and the coastal waters, sea-bed and subsoil adjacent thereto, water, atmosphere, sound, odours, tastes and radiation, the social factor of aesthetics and all factors affecting animal and plant life;

"Pollution" means any direct or indirect alteration of the environment and its detriment or degradation;

1.1 Environmental Protection Authority (EPA)

The EPA consists of three persons appointed by the Governor. The Chairman of the EPA is the Director of the Department of Conservation and Environment, and at least one other member must have knowledge and experience in environmental matters. The EPA is charged with the duty to enhance the quality of the environment and to control and where practicable prevent pollution.

1.2 Conservation and Environment Council (CEC)

The CEC consists of the Director of the Department of Conservation and Environment as Chairman and fifteen other members appointed by the Governor representing eight State Government departments, local government, environmental interests (2), primary industry, secondary industry, mining and tertiary education institutions. It is the function of the CEC to assist and advise the EPA and the Minister for Conservation and the Environment.

1.3 Department of Conservation and Environment (DCE)

To assist the EPA in the exercise and performance of its powers and duties it has, subject to the Minister for Conservation and the Environment, the control of the Department of Conservation and Environment, which is a branch of the Public Service.

1.4 Functions of EPA

To achieve its primary function of environmental management in the State the EPA has available several courses of action, the major ones being;

1.4.1 The obtaining of advice from the CEC, the DCE or expert groups or individuals.

1.4.2 The initiation and coordination of investigations or research through various committees and informal working groups, and the implementation of the results of such investigation and research.

1.4.3 The declaration of environmental policy to be followed by the State. After public scrutiny, enquiry and appeal (as necessary) such policy may be adopted by Government and have the force of law as if it were part of the Act.

1.4.4 The setting of standards and making of regulations for the assessment of the extent of environmental change or pollution.

1.4.5 The consideration of, and recommendation upon, matters referred to it by Government Ministers, departments and instrumentalities or private organisations or individuals.

1.5 Administration

Although the EPA is the statutory body to which all

environmental matters should be referred, in practice, many referrals are handled on a DCE level. It is therefore requested that only major development projects, projects under Agreement Acts or highly controversial matters be addressed to the EPA. All other matters should be addressed to the DCE.

Where there is doubt as to the appropriate body to be advised, the proposal should be referred to the DCE. The DCE, on examining the proposal may refer it to the EPA if it considers such referral warranted.

1.5.1 Forms of Address

a) EPA : The Chairman
Environmental Protection Authority
BP House, 1 Mount Street
PERTH WA 6000

b) DCE : The Director
Department of Conservation and Environment
BP House, 1 Mount Street
PERTH WA 6000

2. REFERRAL OF PROPOSED ACTIONS

In order to achieve the purposes for which the Environmental Protection Act (1971) provides, the EPA requires the environmental assessment of proposed actions which may have a significant or controversial effect on the environment. Matters may be referred to the EPA by Ministers, the DCE or any other person or body.

2.1 EPA Requests

Under Sections 54, 55 or 56 of the Act the EPA may request the Ministers for Lands, Mines or Town Planning respectively for particulars of a proposal under their

jurisdiction and the relevant Minister shall not act on such a proposal unless and until he has received and considered the advice of the EPA. (This gives the initiative to the EPA).

2.2 Ministerial Referrals

Under Section 57(1) of the Act, a Minister of the Crown (herein called the *"Action Minister"*) must refer to the EPA any proposed action (generally those under his control) which may have a detrimental effect on the environment. The Minister is then bound to supply all such aid and information as are practicable and the EPA shall report to the Minister when and as often as required. (This gives the initiative to any Minister).

2.2.1 Preliminary Proposal and Assessment

Except as otherwise provided for in these procedures, referral of proposals by Action Ministers should take the form of a Preliminary Proposal and Assessment (PPA) which should include the following:

a) A summary of any preliminary planning undertaken with respect to the proposal and in particular describing any alternatives considered.
b) A summary description of the environment likely to be affected by the proposal and any feasible alternatives.
c) An indication of the likely effects on the environment of the proposal and any feasible alternatives.
d) An indication of the safeguards proposed for the protection of the environment in connection with the proposal.
e) A summary of the environmental investigations including research and monitoring proposed to be undertaken with respect to the proposal.

2.2.2 Mining Tenement Applications

Where mining tenements are applied for in potentially environmentally sensitive areas* the Action Minister (in this case the Minister for Mines) shall refer such applications to the EPA generally prior to their being heard in the Warden's Court or otherwise assessed. The EPA shall examine the applications and advise the Minister for Mines to approve or refuse the application or as to conditions which should be a prerequisite of approval. The present DCE policy is that, since the Mining Wardens Court is not considered the appropriate venue to decide on environmental issues, the DCE will not raise objections in such a court. Instead the Director or the EPA will make recommendations directly to the Under Secretary for Mines or the Minister for Mines, as appropriate.

2.2.2.1 Minor Environmental Hazard

Where the EPA assesses the possible environmental hazard of mining on the tenements applied for as minor, it will normally provide or waive specific conditions to be observed by the applicant.

**Footnote:* *The areas referred to as environmentally sensitive in para. 2.2.2 are:*

a) The coastal zone.

b) The immediate vicinity of any wetland, lake, river estuary, or watercourse.

c) Any area reserved for purposes other than mining including State Forests and water supply catchments.

d) Any other area of the State from time to time so declared by the EPA.

2.2.2.2 Significant Environmental Hazard

Where the EPA assesses the possible environmental hazard of mining on the tenements applied for as significant, it will normally request conditions of approval of the following general form:

a) No developmental or productive mining being commenced without the holder/holders first supplying the Minister for Mines with a detailed Environmental Review and Management Programme.
b) No developmental or productive mining being commenced until the Environmental Review and Management Programme has been submitted to the Environmental Protection Authority and their recommendations considered by the Minister for Mines.

These conditions are aimed at ensuring that adequate environmental assessment is undertaken before any mining proceeds, without interfering unduly with mineral exploration.

2.2.3 Major Mining Proposals

Since these are normally undertaken through an Agreement with the State the procedure is as outlined in para. 2.2.5. Mining proposals not subject to an Agreement or applicable to para. 2.2.2 should be referred under para. 2.3.

2.2.4 Wetlands

The EPA considers that the wetland areas of the State (reedbeds, swamps, lakes, estuaries, rivers, lagoons) are of such importance to the conservation of flora and fauna and the provision of recreation

that any interference with such areas should only be undertaken after careful consideration of the possible environmental consequences. Since proposals to alter wetland areas may be subject to approval by a Minister or Local Government Authority, where there is a proposal to alter significantly the status or physical nature of any wetland area of the State or of any adjacent area such that the wetland may be consequently affected, the Action Minister or Local Government Authority shall refer such a proposal to the EPA and such referral should be in the following form:

a) Location of proposed development.
b) Ownership or vesting of wetland area.
c) Local authority zoning of wetland area.
d) Details of nature of development proposal.
e) Nature of wetland area.
f) Assessment of potential effects of development on wetland.

2.2.5 Industrial Agreement Acts

Major industrial developments including most of the larger mining projects are normally undertaken subject to an Industrial Agreement Act which sets out the obligations and responsibilities of the proposer and the State. Such agreements are normally under the jurisdiction of the Minister for Industrial Development who refers the draft Agreement to the EPA. If the EPA considers that the proposal involves significant environmental consequences it will advise the Minister for Industrial Development of the form of environmental safeguards to be incorporated in the agreement. In some cases specific environmental conditions may be advised but more commonly the EPA requests the inclusion of clauses requiring the company to:

a) Submit proposals detailing measures to be taken for the protection and management of the environment with respect to the proposal itself and all matters pertaining thereto.

b) Carry out a continuous programme of investigation, research and monitoring to ascertain the effectiveness of the measures detailed in (a) and to submit regular reports thereon and to modify its operations in the light of its findings.

The resulting proposals are referred to the EPA by the Action Minister for advice, and the EPA maintains a watching brief - through whatever administrative machinery is appropriate in each case - on the results and progress of the studies.

2.3 Other Referrals

In order to avoid the post-hoc imposition of possibly onerous conditions on developments in order to satisfy the EPA requirements for pollution control and environmental management, persons contemplating the implementation of a proposal which may affect the environment are advised to refer such proposals to the EPA at an early stage of planning. Such referrals should take the form of the Preliminary Proposal and Assessment outlined in para. 2.2.1, but should include additional information as to the statutory (planning) procedure under which it is intended that the proposal be implemented.

It is stressed that the preparation of a Preliminary Proposal and Assessment will be greatly facilitated if environmental factors are considered concurrently with the technical and economic evaluation of a proposal. In this way a basic understanding of the environmental interactions will be available as a matter of course and can be an input to feasability decision-making.

3. ENVIRONMENTAL ASSESSMENT

On receipt of a referral under any of the categories outlined in Section 2, the EPA will examine the proposal and determine what conditions should apply to development of the proposal or whether a full Environmental Review and Management Programme (ERMP) should be undertaken by the proposer. In undertaking its examination the EPA, through the DCE will liaise with the proposer and may request the provision of further information. Where an ERMP is required, the following procedure will apply.

3.1 Format

The form of the ERMP requested under para. 3 will vary with the type, magnitude, location and other factors of the proposed development. The main text of an ERMP should not be of a highly technical nature but should be concise and able to be read and understood by the informed layman. Detailed technical data on which conclusions are reached should be attached as appendicies to the document. Where pertinent data are of a confidential nature they should be included in a separate volume of confidential appendicies which will be respected as such. Detailed guidelines for each individual proposal can be prepared by the DCE in consultation with the proposer and other affected Government Departments and Instrumentalities. The general form of such guidelines is:

A. Environmental Review

a) Objectives of proposed action.
b) Need for the proposed action.
c) Description of proposed action.
d) Alternatives to the proposed action.
e) Consequences of not undertaking the proposed action.

f) Description of existing environment likely to be affected by the proposal or any feasible alternative.

g) Assessment of the potential effect on the environment, of the proposal, or any feasible alternative.

h) Outline of reasons for choosing the proposed action in terms of the above and other constraints/ advantages (eg economic, technical).

i) Description of the specific safeguards and actions which can be taken to ameliorate the effects assessed in (g).

B. Management Programme

a) Details of the unavoidable deleterious effects and benefits which the proposed action is assessed to have on the environment.

b) Environmental management proposals including research, monitoring, periodic reassessment and reporting.

c) Commitment by the proposer to amend the operation of his proposal in the light of results from (b).

3.2 Consultation

The proposer should maintain continuous liaison with DCE during the compilation of the ERMP, and DCE will render advice and assistance and liaise with other Government departments and instrumentalities on behalf of the proposer as far as is practicable.

3.3 Draft ERMP

The proposer should first prepare a draft ERMP for submission to the EPA for its assessment. The draft

ERMP should contain all the information and be in the general format of the proposed final document but may be in a less finished form, (e.g. unbound, containing editorial corrections, sketch maps, etc.).

3.3.1 Further Information

The EPA may, in the course of its assessment, call upon the proposer to provide further information relevant to any aspect of the ERMP.

3.3.2 Public Comment

If the EPA or the Minister for Conservation and the Environment considers the proposal to be of significant public interest, it may release the draft ERMP, or part thereof, for public or professional comment and the EPA will take such comments into account in its assessment. Such release will only be made after prior consultation with the proposer.

3.3.3 Supplementary Management Conditions

As a result of its assessment the EPA may, through the Action Minister, call upon the proposer to include in the Management Programme such supplementary conditions, monitoring, research or other matter as the EPA considers necessary for the proper protection and management of the environment.

3.4 Final ERMP

The EPA, through the Action Minister, will provide to the proposer the results of its assessment of the draft ERMP together with relevant public input. The proposer should then prepare a final ERMP which takes account of these matters.

3.5 Evaluation and Recommendation

Upon receipt of the final ERMP the EPA, with the assistance of DCE and such other departments, instrumentalities or expert persons as it considers appropriate, will evaluate the proposal and make recommendations thereon to the Minister for Conservation and the Environment and/or the Action Minister, as the occasion requires.

3.5.1 Form of Recommendation

The recommendation of the EPA to the Action Minister or the Minister for Conservation and the Environment shall be such as to:

a) support the project as described in the ERMP.
b) support the project conditional upon the proposer agreeing to specified changes to the project and/or Management Programme.
c) oppose the project.

4. CRITICAL COMMENT

These procedures have been drawn up as part of a developing process of environmental management in Western Australia. The procedures are only provisional and critical comment on any aspect, whether philosophical or procedural is welcomed.

ENVIRONMENTAL ASSESSMENT WORKSHOP

STATUTORY RESPONSIBILITIES, DECISION MAKING AND ADMINISTRATIVE REFERRALS BETWEEN STATE AND COMMONWEALTH

Dr B.J. O'Brien

Director of Conservation and Environment

Western Australia

Tuesday, 20 July, 1976

PREFACE

This paper is applicable to the situation that existed in July 1976. At the time of printing these Proceedings, December 1976, a State - Commonwealth Memorandum of Understanding is in an advanced state of preparation but has not been formalised.

INTRODUCTION

Both Western Australia and the Commonwealth have enunciated statutory environmental responsibilities; the State has the Environmental Protection Act 1971-75 and the Commonwealth has the Environment Protection (Impact of Proposals) Act 1974-75. The bilateral interaction between the two must of course be determined at policy level by the respective Governments from time to time. A 'Memorandum of Understanding' between the Court and Fraser Governments has yet to be negotiated. However a major function of this Workshop is to delineate areas of concern so that actual mechanics of operation and administrative referral, to be discussed between the Western Australian Department of Conservation and Environment (DCE) and the Commonwealth Department of Environment, Housing and Community Development (EHCD) can look towards alleviating the problems which have arisen needlessly in the past.

The inclusion of industry adds the other dimension to this interaction. Industry, understandably, needs to know how to satisfy both State and Commonwealth statutory requirements expeditiously and avoid duplication of effort and cost.

The interactions experienced in the past have been classified into :-

(a) State - Industry - Commonwealth;
(b) State - State - Commonwealth; and
(c) State - Commonwealth - Commonwealth,

and will be illustrated later as to how the EPA and the Department of Conservation and Environment have handled these in the past and how it is proposed to handle them in the future.

HISTORICAL PERSPECTIVE OF STATE - COMMONWEALTH INTERACTION

Until the proclamation of the Environmental Protection (Impact of Proposals) Act 1974-75, liaison between the State and Commonwealth Governments on environmental matters was consultative and took place largely through the auspices of the Australian Environment Council (A.E.C.) The A.E.C., consisting of the State and Commonwealth Ministers having responsibility for environmental control, was formed following a Prime Minister - Premier agreement in 1971. Its function is to provide for consultation and coordination between State and Commonwealth Governments on appropriate environmental matters.

However just prior to losing office in 1972, the McMahon Government announced that it had decided to introduce a system of "impact statements" designed to protect the environment. Subsequently the Whitlam Government altered the policy to one of mandatory provision for EISs from 1 January, 1974 "in cases where the Government has constitutional powers". The Environment Protection (Impact of Proposals) Act 1974-75 was assented to on 17 December, 1974 and the Administrative Procedures gazetted on 20 June, 1975. Provision was made for interaction with the States under Section 4.4 of these Administrative Procedures - a necessary step since all States had environmental legislation of their own prior to the introduction of the Commonwealth Act.

With the Commonwealth asserting some statutory responsibilities for environmental matters, the complexities of interaction increased, especially as some States also had provision for Environmental Impact Statements in their legislation. Although the Commonwealth's interest lay in two broad areas -

(a) the granting of export licences; and

(b) grants to the States for specific projects,

it significantly affected Western Australia's development - especially in the mining field. Previous bilateral interaction became tripartite with resultant confusion.

There have been legal challenges to the Commonwealth Act and no doubt the Commonwealth representatives will speak on the Fraser Island case. There were also allegations made that the Act intruded into State rights. A local example of the latter was

when the former Commonwealth Minister for Transport, Mr C. Jones announced on 24 April, 1975 that a public enquiry on the proposed Southern Extension of the Kwinana Freeway would be held despite the matter being fully aired within the State and subject to three Acts of State Parliament. Subsequently the Fraser Government decided not to proceed with the enquiry.

THE ROLE OF ENVIRONMENTAL IMPACT STATEMENTS

In a recent paper* I conceptualised the Western Australian approach to environmental assessment as one which does not rely on specific EIS legislation but seeks to ensure, through consultative machinery, that the environmental factors associated with development are studied and assessed as routinely as the engineering and economic factors.

The success of the 'push me - pull you' approach is in the efficiency of bilateral interaction within the State. It has been an evolutionary process which is now leading to the incorporation of environmental awareness into early planning stages.

The inclusion of Commonwealth EIS requirements in Proponent - State interactions led to the conflict of satisfying both responsibilities. The State does not have statutory EIS requirements and in keeping with the "polluter pays" philosophy, if the proponent needs to prepare both the Notice of Intent and subsequent draft impact statement (if required) for the Commonwealth and the Preliminary Proposal and Assessment for the State, logically the EPA should coordinate all assessment in the State to ensure that there is minimum duplication of effort. The question of who should determine whether an impact assessment study is required conjointly for State and Commonwealth must be determined in the political arena.

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* O'Brien, B.J. (1976) - "Environmental Impact Statements and a 'Push me - Pull you' Approach" Search, 7, 6, 264-267.

In more practical terms, one of the disadvantages of formal requirements, certainly in this State, is the task of basic background data to work from. The large geographic area plus the wide diversity in the natural environment in Western Australia has not allowed such study to be uniformly comprehensive. The 'Push me - Pull you' approach is the rationalisation that since there is a proposed development, more knowledge of the environment is needed, and hence more can be learnt about the environment in studies justified by virtue of the proposed development. This way, limited resources are directed at environmental 'hot spots' but at the same time background data is collected and techniques established for more general use.

CATEGORIES OF INTERACTIONS

It is the experience of the Department of Conservation and Environment that the fewer parties involved in interaction on environmental matters, the more efficient the interchange. Doubtless this theorem is valid for most other fields as well. The following are categories of interaction where three-way administrative machinery has been reduced to a bilateral interface with appropriate liaison.

(a) State - Industry - Commonwealth

In this class, the State liaises with the industry through the Minister for Industrial Development via an Agreement Act. This is an attempt to rationalise all inputs into a bilateral arrangement with industry through a focal point within the State administrative structure. The EPA then acts as the clearing house for the State on the environmental factors. Dr Kelly from the Department of Industrial Development will pursue this later.

(b) State - State - Commonwealth

The State, in this category, is the proponent and is subject to the Environment Protection (Impact of Proposals) Act 1974-75 usually because Federal funds are to be used on a specific project (e.g. roads, bridges, dams,

hospitals, etc.) It is of interest that revised State - Commonwealth financial arrangements may provide bulk funding (whereon the Commonwealth Act does not apply) rather than Section 96 funds*.

In general terms, of the three interactions categorised here, this class tends to be the clearest since the proponent Government department liaises directly with the EPA which in turn deals directly with EHCD. The State does its 'environmental homework' early in similar manner to economic or engineering homework. State Government representatives will be speaking on this category later.

(c) State - Commonwealth - Commonwealth

In this third class, the Commonwealth itself is the proponent through a Commonwealth Government department and the proposal requires clearance by the State. Such activities are wide ranging. Usually the Commonwealth's internal 'environmental homework' is in order and few problems have emerged. A current example is the proposed visit in the next fortnight by the U.S.N. nuclear powered submarine "Snook" where the proponent is the Department of Defence which worked through the EHCD - with the Department of Conservation and Environment as the State's focus. Negotiations have been fruitful to date and few problems experienced. However it has not all been such clear sailing. There was a recent incident where Telecom Australia had submitted a proposal for the construction of a communications link on Rottnest Island. EHCD asked for DCE's comment as to whether an EIS was required. The reply was to the effect that the question appeared immaterial since the Commonwealth was already building the device. Obviously the internal machinery of the Commonwealth was overtaken by circumstance.

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* Section 96 of the Constitution: "During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial assistance to any State on such terms and conditions as the Parliament thinks fit."

CONCLUSION

In summarising the Department of Conservation and Environment's position on internal interaction, I direct your attention again to the 'Provisional Procedures for Environmental Assessment of New Projects and Proposals in Western Australia' presented yesterday by Mr P. Browne-Cooper from the Department of Conservation and Environment. This represents the distillation from past interactions and presents an outline to follow in the future. In terms of State - Commonwealth interaction, I can state that the Department of Conservation and Environment is ready to move immediately the policy is determined at Prime Minister - Premier level. What this Workshop (and you as delegates) can do is to respond to the invitation for critical comment on the Provisional Procedures at a State level and to express difficulties and problems that have arisen in the past with Proponent - State - Commonwealth interactions.

At the working level of environmental assessment, the goal to aim for is routine environmental with economic and engineering assessment, with financing by a routine overhead charge. Statutory impact assessment should be phased out with increasing environmental awareness. To this end it is encouraging to find positions such as environmental officers with mining companies, environmental geologists with the Geological Survey, an ecologist with the State Herbarium, etc. so that 'environmental homework' is started at the fundamental planning stages. The EPA's and DCE's role of coordination, overall assessment and clearance/modification/ rejection in environmental management and control can then proceed efficiently and effectively.

Bluntly and in conclusion, I want this Workshop to explore at all levels - State, Federal and Industrial - who, environmentally, does or should do what, to whom, when, how, where and why!

ENVIRONMENTAL ASSESSMENT WORKSHOP

THE COMMONWEALTH'S ENVIRONMENTAL ASSESSMENT LEGISLATION

Mr H.J. Higgs
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and

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A/First Assistant Secretary
Environment Impact Assessment Division

Directorate of Environment,
Department of Environment, Housing
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Canberra.

Monday 19 July 1976
Tuesday 20 July 1976

PREFACE

The following paper was used as a basis for the addresses to the Symposium given by Messrs H.J. Higgs and R.F. Pryor of the Environmental Directorate of the Commonwealth Department of Environment, Housing and Community Development. It is applicable to the situation that was current in July 1976.

INTRODUCTION

The legislative basis for the Commonwealth's role in environmental impact assessment is provided by the Environment Protection (Impact of Proposals) Act which entered into force in December 1974. The entry into force of this Act marked the first endeavour in Australia to formalise into law, the complexity of procedures and issues involved in this area.

PURPOSE OF THE ACT

It would perhaps be appropriate to begin this paper by discussing the purpose of the Environment Protection Act and its accompanying Administrative Procedures. It can be put simply as an endeavour to ensure that those responsible for developing proposals and those responsible for taking decisions on those proposals, think about and take account of environmental factors when going about their tasks. Alternatively, it may be put as an endeavour to force the proposal developers and decision-takers to think more widely and deeply than they have in the past about the consequences of their actions.

Or again, to labour an important point, it can be seen as an attempt to upgrade the role of environmental factors in decision making so that these factors are considered along with economic, technical, financial and any other considerations before decisions are taken.

The purpose of the legislation is no more than that. It does not give those responsible for the environment a right to stop developments when these developments are likely to have adverse environmental effects. It does not give environmental considerations a veto power over decision making. It will not ensure that bad environmental decisions are not taken in the future although it should ensure that these decisions are taken in full knowledge of their environmental consequences.

COVERAGE OF ACT

Despite these limitations the Act is of critical importance to the Commonwealth's environmental performance. It is of very considerable importance, because, as suggested in explaining its purpose, it requires that, as a matter of course, a new element, a wider dimension, must be taken into account in the Commonwealth Government's decision-making processes. The importance of this new dimension is guaranteed by the manner in which environment is defined in the Act so as to provide a very wide scope for environmental assessment. It is also guaranteed by the fact that this new dimension must be taken into account throughout the whole range of the Government's decision-making processes, irrespective of the type of proposal involved or the arm of the Australian Government involved.

It might be useful if consideration were to be given at this stage about the Act's definition of environment and about the extent of its coverage in order to illustrate its potential impact and importance.

The Act requires "that matters affecting the environment to a significant extent are fully examined and taken into account in and in relation to -

(a) the formulation of proposals;
(b) the carrying out of works and other projects;
(c) the negotiation, operation and enforcement of agreements and arrangements .....;
(d) the making of, or in the participation in the making of, decisions and recommendations; and
(e) the incurring of expenditure,

by or on behalf of the Australian Government and authorities of Australia, either alone or in association with any other government authority, body or person".

Thus the Act empowers environmental examination of a complete range of activities subject to the qualifications that -

(a) they affect the environment to a significant extent; and that
(b) they involve the Commonwealth Government.

In respect of the latter qualification, it should be pointed out at this juncture that the coverage of the Act is not limited to proposals being developed by the Commonwealth Government. It extends, for instance, to projects being partly financed by the Commonwealth Government and to the projects of industry where these require Commonwealth Government approval in order to proceed. Such approvals are required, for example, in situations where a company's product is for export and is subject to the requirements of the Customs (Prohibited Exports) Regulations or where a company requires exchange control approval for the import of foreign capital for a development project. This aspect of the Act's coverage, of course, raises important considerations in respect of co-operation with State Governments in this area. This matter shall be referred to again later in this paper.

While discussing this question of coverage, it should be observed that already the Act has been challenged in the High Court. The challenge arose in relation to the decisions of the former Minister for Minerals and Energy in relation to the export of mineral sands mined on Fraser Island, off the Queensland coast. The case, Murphyores Incorporated Pty Ltd and Others Vs the Commonwealth of Australia and others, was heard by the full High Court. In a judgement handed down in April of this year the court unanimously upheld the validity of the Act and ruled for the defendents.

The plaintiffs had asked the court to declare that the setting up of the Fraser Island Environmental Inquiry under the Act was outside the powers of the Commonwealth Government, and that the action of the Minister for Environment in setting up the inquiry was not authorised by the Act.

In his judgement, the Chief Justice, Sir Garfield Barwick found that the Environment Protection (Impact of Proposals) Act was a valid law of the Commonwealth and that a Minister making decisions relating to prohibited exports under the Customs Act could properly take environmental matters into account.

This decision will have important consequences for the future of the Commonwealth's role in the environmental assessment of projects, the products of which are subject to export controls.

Subject to the qualifications of significance and Commonwealth government involvement, the Act places no limitation on proposals that could be subject to its provisions. Proposals to change a tax or subsidy, to change a tariff, to plan and develop a particular construction, to become a party to an international agreement, to build a new city, to purchase equipment or to commence a forestry or agricultural operation, for example, could all be the subject of environmental examination.

Similarly, there is no opportunity for any particular arm of the Commonwealth Government to avoid its obligations under the Act. Section 8 of that Act requires all Ministers of the Commonwealth Government to comply with its requirements and Section 9 makes provision for laws to be altered by the making of regulations so that matters affecting the environment to a significant extent can be taken into account in the decision-making process. In so doing it eliminates any scope that might have existed for a statutory authority of the Commonwealth Government to shelter behind its statute and claim that it cannot observe the requirements of the Act because it is not empowered to do so.

The definition of "environment" is another matter that has contributed to the importance of this Act. Environment is defined as including "all aspects of the surroundings of man, whether affecting him as an individual or in his social groupings". The emphasis on "man" is important. The definition in no way attempts to limit its consideration of environmental issues to those affecting the "natural environment". We are, in fact directed to concentrate our attention on the surroundings of man. An indication of the issues that might be considered are provided in that part of the Act's Administrative Procedures which list the factors that must be taken into account in determining whether an environmental impact statement is required. These include -

* a substantial environmental effect on a community
* a significant diminution of the aesthetic, recreational, scientific or other environmental quality, or value, of an area
* an adverse effect upon an area, or structure, that has an aesthetic, architectural, cultural, historical, scientific or social significance or other special value for the present or future generations
* increased demands on natural resources which are or are likely to be, in short supply.

The problems we have with the Act in this respect are not that it limits the scope of our examination of environmental issues but rather that it provides such a wide scope for examination that we must constantly be exercising care to ensure that the limited resources available are concentrated on those environmental issues that are relevant and important.

THE ADMINISTRATIVE PROCEDURES

Section 6 of the Act is one of the most important. It provides that "the Governor-General may, from time to time by order, approve, and approve variations of, administrative procedures for the purpose of achieving the object of the Act..." In fact, this section provides the framework of the Commonwealth's introduction and use of the environmental impact statement technique.

It should be noted that Section 7 of the Act provides for a process whereby the Procedures approved by the Governor-General are subject to Parliamentary review. This process is similar to that required for regulations made under the Commonwealth Acts of Parliament.

The Governor-General approved the Administrative Procedures in June 1975, and they entered into force on the 24th of that month.

THE DIFFERENT LEVELS OF ENVIRONMENTAL DOCUMENTATION AND REVIEW

The approach developed in the Environment Protection Act and its Administrative Procedures envisages different levels of environmental documentation and external review depending upon the environmental importance of a proposal.

At the one end of the scale are all those thousands of proposals or actions which, in no way, can be regarded as environmentally significant. As the Act is limited to matters affecting the environment to a significant extent these proposals or actions do not fall within its scope.

Next there are those proposals, or categories of proposals, which might conceivably be regarded as having some environmental significance but which most would consider not to be of sufficient environmental importance to fall within the scope of the Act. Nevertheless, because of possible uncertainties about the environmental significance of these proposals, steps are being taken for Ministers to reach agreements on whether or not certain categories of proposals are significant and therefore covered by the Act. These agreements are being referred to as "Memoranda of Understanding". They are discussed later. It should be mentioned at this stage, however, that agreement that a certain category of proposals is not environmentally significant might only be given on the understanding that certain conditions or procedures are observed in relation to these proposals.

The third group of proposals are those which have some environmental significance. Some of these may be exempted from all or part of the requirements of the Administrative Procedures by virtue of paragraph 11 of those Procedures. In determining whether to exempt a proposal or category of proposals, the Minister is required to take into account whether the application of the Procedures would -

(i) be prejudicial to national security;
(ii) be prejudicial to the interests of Australia;
(iii) adversely affect commercial or other confidences; or
(iv) be otherwise contrary to the public interest.

In fact in the 13 months in which the Procedures have been in force only one exemption has been granted.

Information on all those proposals which are of environmental significance, but which have not been exempted, is required to be provided to the Minister for Environment, Housing and Community Development at the earliest possible stage in their development in the form of a "Notice of Intention", best described perhaps as a question/answer type of document. This information is then assessed and on the basis of that assessment it may be decided that the environmental implications of the proposal are such that it is not necessary for the proposal to be subject to the preparation of an impact statement and to public review. Nevertheless environmental clearance for these proposals might be given only on the understanding that certain conditions are met.

On a lesser number of proposals, on which preliminary information had been provided, it may be decided that the environmental significance is such that they should be the subject of an environmental impact statement and normally, the public review that that entails. The word "normally" is used because in some circumstances, where, for instance, commercial confidences, national security or land speculation were clearly involved, this public review process would not be insisted upon. In most cases the public review would take the form of advertising the availability of the impact statement and asking for written comment upon it.

In a very small proportion of cases the public review would take the form of an open hearing at which any member of the public would be able to submit his views. It is emphasised however, that only a small proportion of proposals would be subject to this form of examination.

Thus under the Commonwealth Government's environmental assessment arrangements there are different levels of treatment for proposals that might be regarded as possessing some degree of environmental significance. The approach that has been adopted and, in fact, is still being developed is designed to ensure, on the one hand, that no environmentally important proposals are able to avoid consideration in accordance with the requirements of the Act and Procedures, yet, on the other hand that there is no blanket and time absorbing referral of environmentally unimportant proposals to the Environment Department. It should ensure that ultimately our attention is concentrated on only those proposals of real environmental importance. This in turn, will mean that the resources devoted to environmental assessment, both on the part of the proponent and on the part of the Government's environment authority are used in the most efficient manner possible.

It might be said by way of background that the approach that we have adopted recognises that given the community's priorities there will be a tendency for a minimum of resources to be devoted to examination of environmental issues. It recognises that, in many cases, environmental impact statements are expensive to prepare, requiring considerable effort by highly trained persons whose skills are often in short supply. It recognises too that the public inquiry is an expensive and time-consuming procedure.

WHO PREPARES THE IMPACT STATEMENT

Questions of effectiveness and efficiency have, of course, also heavily influenced the development of other aspects of the Government's environmental assessment procedures.

In examining the extent of environmental assessment required for proposals coming forward for the Government's consideration, we were very quickly impressed with the magnitude of the task involved and with the realisation that this could not be centralised

within the environment department. In these circumstances, we had no hesitation in adopting the practice followed in the United States which requires the proponent to prepare the necessary environmental studies or statements, rather than the environment authority.

This approach has led to a good deal of criticism, particularly from conservationist and environmental groups, who have argued that it is unrealistic to expect the proponent of a proposal to put forward an objective or unbiased account of the proposal and alternatives to it. They claim that the only means of obtaining a worthwhile report of the environmental effects of a proposal is to have responsibility for that report vested in a third party with no interest in any particular outcome. Many have suggested that the third party should be the Environment Department.

As had already been implied, there are very considerable practical difficulties in adopting such an approach. It would require a very substantial increase in both the Department's financial and manpower resources - an increase that could not be expected, at least in the current circumstances. But in addition to this there are more fundamental objections to placing the basic responsibility for environmental assessment in the hands of the Environment Department rather than the proponent. Such an approach would be in conflict with our long-term objective which is to improve the consideration of environmental factors in the Government's decision-making that eventually these factors would be taken into account by the proponents and decision-makers as a matter of course rather than because of some administrative or legal requirement. This objective would certainly not be served if all the responsibility for environmental assessment was taken from the proponent and placed in the hands of the Environment Department.

Such an approach would also conflict with our objective of ensuring that environmental considerations are fully integrated into the whole process of proposal formulation and decision taking rather than introduced at the end of the day when all the key decisions have been taken. Once the responsibility for environmental assessment is removed from the proponent the most effective means of ensuring this integration is also removed.

So we have come down in favour of the proponent preparing the impact statement but in full recognition of the bias this could lead to. However, there are several checks or balances in our requirements which we believe should compensate if not fully, then very substantially for any bias that might arise.

There is, first of all, the requirements of the Administrative Procedures which specify in some detail the type of information that is to be provided. The impact statement for instance is required to include discussion on the objectives of the proposal, the need for the proposal, the practical alternative solutions available to meet the proposal's objective, and the assessments of the environmental impact of each of these alternative solutions, the reasons for the choice of the preferred alternative and a summary of the environmental safeguards proposed.

There is not space in this paper to explore, in depth, all the implications of these specific documentation requirements. However, some aspects which are particularly useful in judging the bona fides of a particular proposal from the environmental viewpoint will be highlighted. The requirements to state the objective of the proposed action and to analyse the need for it, for instance, sometimes reveal basic flaws in reasoning which often prove to be important in arguing the environmental case.

The requirement to describe any practical alternative solutions and to assess their environmental impact is also critical in ensuring that the system remains "honest". It is quite true of course that the comparison of alternatives can be used simply to justify the preferred approach but there are limitations to the extent to which this can occur. These limitations are frequently revealed when the preferred course of action has serious environmental disadvantages.

A second check against possible distortions by the proponent is provided by the requirement for public review. As I mentioned earlier most impact statements will be subject to this requirement. The proponent is required to reveal his proposal not only to those who might be directly and adversely affected by it (for instance nearby residents) but also to individuals or groups whose expertise in relation to the issues involved might far exceed the expertise he has been able to muster. A formidable requirement for any

proponent and one likely, I hope, to encourage a greater degree of honesty than would otherwise prevail.

A third and I believe equally important check, resides in the authority that is given to the Minister administering the Act and his Department to be involved with the environmental assessment of a proposal. The Minister, or in some cases his Department on his behalf, can rule, for instance, on the depth of environmental assessment required, the coverage of that assessment, and the extent of public review. In addition, the Minister or his Department is required to examine all environmental documentation prepared and to make any comments, suggestions or recommendations concerning the proposed action.

In summary, then, the three checks outlined above namely, the documentation requirement, the public review requirement and the role given to the environment authorities, provide an important balance to the advantages that accrue to the proponent from his position of responsibility for preparation of the environmental documentation. The approach we have adopted in this respect, we believe, is the most practical and advantageous from the environmental viewpoint given the current levels of environmental awareness and responsibility in the community at large.

PUBLIC REVIEW

An important, in fact key, element of the Commonwealth's assessment procedures is the requirement for public review. As mentioned earlier, the Administrative Procedures require that, as a matter of course, all proposed actions, on which an impact statement has been directed are required to be subjected to public review. Public review is the rule rather than the exception. Only in a situation in which the Minister for Environment, Housing and Community Development has agreed, can an impact statement be excluded from public review. This agreement is only likely to be given in cases where, for instance, the public release of an impact statement might be likely to endanger commercial confidences or national security or where it might lead to land speculation.

As noted earlier, in most cases, the public review takes the form of advertising the availability of the draft impact statement and asking for written comment upon it. The nature and extent of the advertisement is a matter for decision by the Department of Environment, Housing and Community Development. Normally, it takes the form of a display type advertisement which appears in the appropriate newspapers on at least two occasions. The public is given a minimum of 28 days to comment.

As mentioned previously, only in a very limited number of cases does the public review process extend to the situation of a public inquiry. In this respect, a quick reading of the Act can be misleading, for the number of sections devoted to the establishment and conduct of inquiries are out of all proportion to the actual importance of hearings in the Commonwealth's environment assessment process.

In respect of those sections of the Act concerned with the inquiry process, several points of importance are worth noting -

(a) First that the Act provides authority for an inquiry into the environmental aspects of matters listed in Section 5 of the Act. In other words, it cannot be used as a basis for an inquiry into the environmental aspects of any matter that comes to attention and raises public concern.

(b) Second that any Commission established under the Act is guaranteed independence by virtue of Section 11(5) which provides that subject to the direction relating to its establishment "... a Commission is not subject to direction by the Minister, or otherwise by or on behalf of the Commonwealth Government, in or in relation to the conduct of an inquiry".

(c) Thirdly that the Commission has powers akin to that of a Royal Commission in its conduct of an inquiry, including the power to summon a person to appear as a witness.

The extensive provision for inquiries within the Environment Protection Act should not be interpreted to mean that the intention at the time of drafting is to conduct inquiries of a formal or legalistic nature. The provisions were in fact included to cover what might be ordinarily regarded as unusual situations. In fact the intention was to conduct informal inquiries with the minimum of court type procedures. Two such inquiries were successfully conducted by the Commonwealth in the year or so prior to the entry into force of the Act - one concerned the proposed construction of a petrochemical complex at Redcliff in South Australia. Both of these inquiries were conducted expeditiously and without the participation of the legal procession. We regarded them as useful prototypes although we were, of course, not anxious to again have to observe the short time frame imposed on the Redcliff inquiry.

The two inquiries established since the Act entered into force have been quite different from the earlier inquiries being legalistic, time consuming and costly processes. While the nature of the matters under review in these inquiries has been more complex than in the earlier case and has no doubt justified in some respects a different approach, we are concerned that these inquiries might establish precedents that might not be appropriate in other circumstances. Attention is therefore being given to means of ensuring that any future inquiries established under the Act are more along the lines of the less informal inquiry that was originally envisaged.

EARLY CONSIDERATION OF ENVIRONMENTAL ASPECTS

There is another aspect of the Administrative Procedures which is worth drawing to attention. That relates to the timing of the assessment requirement.

The Procedures provide that "as soon as possible after a proposed action has first been formulated" the action Minister shall designate a proponent and that in turn the proponent shall, as soon as possible after a proposed action has first been formulated, provide information to the Minister responsible for the Act so that he can determine whether or not an impact statement is required.

In this respect is might be helpful to observe that the Oxford Dictionary defines the meaning of "formulate" as "set forth systematically". Thus the proponent should be designated and details of the proposed action provided as soon as that proposed action is capable of being put forward systematically. These steps should not occur immediately prior to when decisions or approvals will be sought but at the very earliest stages of proposal development and certainly before environmental studies in relation to the proposal are commissioned.

This matter is emphasised in this particular forum because many, if not most, of the difficulties that have arisen between the Commonwealth and States in relation to the environmental assessment of proposals have arisen from the fact that the Commonwealth has been brought into the assessment process at too late a stage. Many of the disagreements that have occurred could have been avoided if the Commonwealth had been given an opportunity to discuss the issues involved at an earlier stage. A satisfactory resolution of this issue is critical to the establishment of good working relationships between the Commonwealth and the States in this area.

The question of early advice relates directly to one aspect of how the Act is administered. The practice is to apply the necessary assessment procedures to the substantive decisions and avoid the subsequent application of these procedures to consequent decisions of lesser importance. Thus the export control area, for instance, the Act has been administered in a way that has been designed to ensure that the assessment process is related to the decisions concerned with the establishment of the industry that will ultimately provide the exports. Subsequent and consequent decisions on particular export shipments are not subject to the requirements of the Act.

THE ADMINISTRATION OF THE ACT: OTHER COMMONWEALTH MINISTERS

It would perhaps assist this explanation of the Act if it were to conclude by spending some time on two aspects of its administration which will provide an added insight into the Act itself - those aspects being the interface with other Commonwealth Ministers and with State assessment requirements.

There are clearly very considerable problems in administering an Act and Procedures designed to cover, in fact intervene in, many aspects of the Commonwealth Government's activities and which at the same time, is necessarily couched in general or non-specific terms. Both these problems I believe, are common to any legislation or administrative rules applicable in this area. We recognised this problem in developing the legislation at an early stage but took the attitude that from the environmental viewpoint, it would be preferable to enshrine the ground rules in legislation as soon as possible and from that basis refine its application to particular areas of government activity. The alternative approach was to wait upon the resolving of problems in particular areas before developing general rules. If that alternative had been adopted it is likely that the Commonwealth would still be without ground rules for environmental legislation.

But the approach that has been adopted has left many questions unanswered - "When is a proposal of sufficient environmental importance to fall within the scope of the Act? What precise information should be provided to determine the need for an impact statement in relation to, say, a mining proposal activity? What information should be included in an impact statement on say a road project? What factors will be taken into account when determining whether or not a proposal will be excluded from public review? What account is to be taken of the views of State authorities?" and so on.

In an endeavour to answer these questions and to facilitate the operation of the Act we are proposing to develop what we have called "Memoranda of Understanding" between our Minister and other Ministers. These memoranda would set down understandings on how the Act would be applied in respect of a particular Minister's portfolio. They would cover such matters as -

(a) the definition of "significant" in relation to specific areas of government activity;

(b) the environmental clearances that would be given without the full E.I.S. requirements being met provided certain standards are met and procedures observed (e.g. clearances with State and local authorities);

(c) the specific information that will be required, in relation to certain categories of proposals, in order to assist in determining whether an impact statement is required;

(d) the specific information that will be required in different categories of impact statements;

(e) the definition of those matters which are considered to be confidential and therefore not subject to the public review requirements.

Work on the first of these memoranda has been underway for some time now and is expected to be completed later this year.

THE ADMINISTRATION OF THE ACT: INTERFACE WITH THE STATES

The second aspect of the Act's administration which warrant further discussion being particularly relevant to this Workshop, concerns the relationship of the Act to the requirements of State Governments in this area.

This is important because many of the proposals that the Commonwealth considers under the requirements of the Act are also considered by one branch or other of a State Government. You will, of course, be familiar with the often quoted example in the minerals area where State Governments have responsibility for the granting of exploration and mining leases but the Commonwealth has the authority to make decisions in relation to the export of the product concerned.

The problems in this area were recognised at an early stage both by the Commonwealth and the State Governments. Fortunately, the magnitude of the problem was greatly diminished by the fact that at the time, nearly all the Governments involved had decided on a means of assessment based upon the environmental impact statement technique. In 1973 the environment authorities of each Government met under the umbrella of the Australian Environment Council and agreed on the philosophy and broad principles applicable in this area, including agreement on the coverage expected of impact statements. This agreement has enabled each Government to proceed

with the development of its own arrangements with some basic reference point. It has meant that the environmental assessment procedures now in operation in New South Wales, Tasmania and Queensland, while differing in many points of detail from the Commonwealth's requirements, are not incompatible with the latter in so far as it is possible to marry any one of the three State procedures to the Australian Government's requirements without any real difficulty. It has also meant, and this is important from a proponent's viewpoint, that where two Governments are involved in examining a proposal only one impact statement will be required.

It is stressed that the Commonwealth's environmental assessment procedures were drawn up after the Australian Environment Council (A.E.C.) agreement had been reached. They are fully compatible with the decisions of the A.E.C.

In relation to these Procedures, it should perhaps be pointed out at this stage, the extent to which they provide for consultation with State Governments. Paragraph 3.3 gives the Minister authority to consult with any State or authority of a State concerning the need for an environmental impact statement. Paragraph 4.4 provides authority for similar discussions in respect of the content of any impact statement that is directed. Paragraph 6.4 provides for comments on impact statements to be obtained from any State or authority of a State. Paragraph 11.2 provides for consultation with the States before exemptions from the requirements of the Procedures are granted. In addition to these specific references paragraph 7.2 requires the Minister, in determining whether or not to direct a hearing to take into account "whether all or any of the environmental aspects of the proposed action have been, are or will be the subject of a public inquiry conducted otherwise than under the Act". Clearly this particular requirement is designed to make allowances for an inquiry that might be held by a State Government.

It is fair to say that few other pieces of Commonwealth legislation go to this extent to accommodate the States' position.

Since 1973 discussions within the Australian Environment Council, there have been further consultations concerning the Commonwealth/State co-operation in the environmental assessment of proposals in the Loan Council and export control areas. In August 1975, the

Council made certain recommendations to the Premiers and the Prime Minister on this matter but these recommendations were overtaken by the events of November and December 1975.

The present Commonwealth Government has been considering the whole complex of State/Commonwealth relations in the environmental assessment area and is expected to finalise its position shortly.

CONCLUSION

In conclusion, it is stressed that there is very considerable scope for co-operation and integration of State and Commonwealth procedures in this area so that while both spheres of Government can meet their legitimate responsibilities, duplication and unnecessary expense can be avoided. There has already been considerable progress in this area and it is expected that this progress will continue in the future.

ENVIRONMENTAL ASSESSMENT WORKSHOP

STATE AGREEMENT ACTS

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Tuesday 20 July 1976

INTRODUCTION

Agreements between companies and the State, incorporated in legislation enacted by the Parliament, have played a significant role in the development of Western Australia.

The Minister for Industrial Development has more than 50 separate acts that he must administer and most of these relate to development Agreements (Appendix A).

It is apparent that the surge in development in the State has been paralleled by an increase in the number of Agreements (Appendix B).

This workshop is timely in that it gives an opportunity to re-examine the rationale underlying Agreements, and in particular, to see how the concern for the environment, which has arisen within the community, has found its way into these Agreements.

WHY DO WE NEED AGREEMENTS?

This is an oft asked question. It is asked by some companies who feel that the only thing likely to flow to them from an Agreement is increased obligations in respect of infrastructure. It may even be asked by some State officers who recognise the great deal of effort involved in negotiating and formalising an Agreement sometimes in relation to projects which seem to have little prospect of implementation.

Critics of Agreements would point to the extensive resource development undertaken throughout the State without recourse to special Agreements relating to a single project or industry. The gold mining industry that has been such a major contributor to the State's economy was done under the Mining Act and Regulations and the other laws of the land. The major mines in

Kalgoorlie have developed in this way; then why is it necessary to have an Agreement for a mining development such as Agnew?

The decision to have an Agreement is based upon several factors which may be examined.

The Scale of the Project: Small mining and industrial developments are being established all over the State and will continue thus without recourse to special Agreements. Their size is of an order which enables their individual power and water needs to be met by the existing State operated systems. Housing for their employees, schooling for their employees' children, and all the other social and community needs can be provided by State and Local Government in the usual way that these things are provided.

Compare this with the Mt Newman Project where:

(a) thousands of workers are involved;
(b) millions of tonnes of iron ore are railed and shipped each year; and
(c) hundreds of thousands of tonnes of consumables are required each year;

all of which is beyond the capacity of the State's infrastructure.

Conflicts with Existing Statutes: The existing statutes are designed to cope with the general everyday situations. Thus the Land Act has in it machinery to allow for the release of land on a fair and equitable basis to members of the public who wish to acquire a housing lot, a pastoral run, or a farm. However, its general provisions do not easily provide for a long term lease of land for a railway or the grant of a total townsite lease. In these circumstances, it is necessary to amend specific sections of the Land Act to make these things possible.

There are other circumstances where Company is obliged to build a complete township, including all engineering services and to operate and maintain the township. This is usually the responsibility of a Local Authority or of a State Government department which are clothed with special powers to enable them to do these things. A public authority has special powers allowing officers to enter property or to dig up roads to repair services. If a company is to be requested to undertake these tasks, it must be given similar powers and it requires an Act of Parliament to do this.

This can be approached by either taking to Parliament amendments of all the individual Acts, or alternatively taking one Act which specifically provides for the single project. The latter course is the Agreement Act approach which is the one that has been adopted.

Rights and Obligations: Before commencing a project, it is important that the obligations likely to devolve upon the Company are clearly established before the project commences. What will be the railway freight rate? At what price will water be supplied? Will a road be built and sealed, and if so by whom? Who will supply schools and who will supply the teachers to operate them?

The answers to all these questions can be set out in an Agreement.

Co-ordinate State's Activities: A decision by a company to proceed with a project can impose a number of responsibilities on the various Government departments. These will be in the fields of water supply, schools, hospitals, police stations, roads, and so on. The Agreement, and in particular the proposals machinery under it, provide an opportunity for the extent of the State's responsibilities to be defined and the programme for their implementation to be established.

Rationalise Company Development: There are instances where a number of companies may be involved in the same industry in the same area. Often the approaches which companies individually adopt vary greatly and very quickly one can find the State straining in a number of different directions in respect to the provision of infrastructure. The mineral sands industry would be a good example of this, and in that case the Agreement machinery has been used as the basis for rationalising the infrastructure and thus the projects.

Location: The location of a project has much to do in respect of the need for an Agreement. A significant investment in the Metropolitan Area (for example, in a new brewery) does not need an Agreement because there is ready access to existing infrastructure. A similar investment in a remote area requiring a specific performance by the State in providing infrastructure is in contrast to this.

So, for a combination of the reasons set out above, it is frequently better for all concerned for an Agreement to be made and that such Agreement should be ratified.

Ratification of an Agreement by Parliament: There are a number of reasons why an Agreement relating to a major project should have the approval of Parliament. As mentioned, frequently there is a need for changes in the laws of the land to permit the project to proceed, and this can only be done by Parliament.

Secondly, it is of assistance to companies endeavouring to secure international markets to know that the State is closely identified with a project; thus the association with Parliament by way of an Agreement brings a dignity and a force to it.

THE DEVELOPMENT PROCESS

The first stage of any major project is the exploration phase. It is usual that this is undertaken under the provisions of the Mining Act and usually the Department of Industrial Development is not involved at this stage.

If the results of an exploration programme are encouraging enough, the next step is for the developing company to undertake a feasibility study. It is at this stage that the company frequently needs assistance in respect of the amounts that it should allow in its capital cost estimates for items of infrastructure that it may well be asked to provide. The Department frequently has a role at this stage in suggesting appropriate figures for inclusion in these studies. At the same time, the company would undertake preliminary marketing and financial studies, and based on the outcome of all these investigations it would make a decision as to whether the project should go on.

If the decision is in the affirmative, the company approaches the State and says *"We believe we have a project subject to detailed studies. Before we go any further we want to know under what ground rules the project is to proceed and an Agreement be negotiated."*.

The company is asked to submit to the State a description of the project and details of its preliminary feasibility study sufficient to convince the State that an Agreement is worthwhile and that it is likely the project will proceed.

The State does not lightly enter into an Agreement. It is an expensive undertaking in terms of officers' time and above all the State's participation in an Agreement identifies it with the project. This is desirable if it is a soundly based development which has every prospect of proceeding in the reasonably near future. The State is acutely aware of the desire of some companies who wish to have a State Agreement associated with somewhat shaky ventures. The developers fully recognise that identification of the State with a project by means of an Agreement gives such a development a dignity and a respectability which is of value in the market places of the world.

Assuming that the State does consider an Agreement desirable, the first step is for the company and the Minister for Industrial Development to confer and then, in association with the Departments within the State most closely associated with the development decide upon the Heads of an Agreement.

When these have been agreed between the State and the company, it then becomes the State's task to prepare a first draft of the Agreement which is circulated to State departments. It is not usually made available to the company at this stage. After feed-back from the Departments, the Agreement is amended and the second draft thus prepared is made available to the company. Negotiations with the company then proceed on the second draft and amendments are formulated. A third draft is then prepared and circulated within the State prior to further negotiations with the company and this procedure is repeated until company and State can agree upon a draft.

The Minister for Industrial Development then takes the final draft to Cabinet and says:

(a) Here is an Agreement which has been negotiated with the company. It is consistent with Cabinet's previous decision that such an Agreement would be negotiated.
(b) Will Cabinet approve the execution of the Agreement in this form?
(c) Will Cabinet approve the preparation of a Bill so that Parliament can ratify the execution thus performed?

Meanwhile, the company is taking the agreed draft to its Board for approval. Provided that approval comes from both sources, the document is prepared in its final form and executed. The formalities within Parliament of ratification then follow.

It is only after ratification by Parliament that the Agreement comes into being.

There has been a difference of approach between State Governments of different political persuasion in respect to the handling of Agreement Acts. A Labour Government prefers to go to Parliament and ask the question *"Does Parliament authorise the Government to execute the Agreement in this form?"*. Such an approach permits Parliament to change the terms of the Agreement prior to execution. The present Government prefers to execute the Agreement and then to go to Parliament asking the question *"Does Parliament ratify the execution of this Agreement?"*. This approach gives Parliament the opportunity of either accepting or rejecting the Agreement in toto. There is a difference in the underlying philosphy behind these two approaches and advantages and disadvantages of either can be cited.

IMPLEMENTING AN AGREEMENT

As mentioned above, the provisions of the Agreement do not apply until its execution has been ratified by Parliament. The Agreement provides for a number of steps all leading towards the development of the project.

The first step is usually additional steps to be undertaken by the company to prove up the various facets of the project. The Agreement usually requires that the company will report to the State at regular intervals on the progress which is being made with these investigations and studies.

The second step, which is only applicable in some Agreements, relates to the elimination of options relating to one or more facets of the project which must be clarified so that planning can proceed. For example, in some instances it is necessary that the port for export of the product is determined at an early stage. In these circumstances, following investigations the

company is required to put into the State for its decision proposals on the location of the port. When this has been determined, additional studies relating to the other aspects of the project can proceed.

Following the completion of studies, the company is then required to formulate its detailed proposals. The proposals machinery is a most important step in the Agreement process. It is by proposals that the State is informed on the full extent of the company's project and it enables the company to set out the extent to which it proposes that the State is involved. Thus the proposals would contain an overall description of the mine and treatment plant. Details of the mine township would be given including the planning for engineering services and civic and community facilities. The extent of schools, hospitals and police station to be provided by the company and manned by the State would be set forth. Other aspects of the project such as the means of transportation, the details of the port and the port township, and processing in the port area are similarly explained.

Companies are encouraged to liaise with the Department of Industrial Development and thereby with other departments so that the proposals can be formulated in such a way that when they are finally submitted their approval is but a formality.

When the proposals are submitted to the Minister for Industrial Development they are circulated within State to see if they have the support of the other Government departments. Following the resolution of any matters which may arise, the Minister is in a position to advise the company of either:

(a) his acceptance of the proposals; or
(b) changes that he wishes to have made in in the proposals before they are acceptable to him.

This reply must be given within two months of receipt of the proposals.

If an immediate Agreement with the company is not reached in respect to the content of the proposals, then it is possible for a process of arbitration which is governed by time limits to be implemented.

When the proposals have been approved by the Minister, the company then submits details of its marketing and financial arrangements. The approval of the proposals and these arrangements then triggers the construction phase.

Approval of the proposals also gives the Minister for Industrial Development powers under the Agreement to confer on the company particular rights. For example, the Minister is then in a position to cause a mineral lease to be granted or to cause land to be granted for a township or a railway.

It is clear that the proposals machinery is a most important one in the Agreements process.

ENVIRONMENTAL ASPECTS OF AGREEMENTS

Over the years, the thrust of the Agreements and the way in which they are written have changed constantly.

To a certain extent this reflects the changes in personnel who are associated with both writing the Agreements and in the actual negotiations. There have also been changes in those people within departments who contribute greatly to the process.

However, of far greater significance has been the changing attitudes in the community, particularly in respect of environmental matters which has meant the adoption of new policies by Government.

Of course, the culmination of this move towards increasing awareness of environmental matters was the Environmental Protection Act No 63 of 1971 which has also become something of

a milestone (not millstone) in the history of development Agreements.

The earlier Agreements have scant reference to environmental matters, if at all. The *"proposals"* did not specifically include environmental considerations. There was no general environmental clause drawing attention to the need to consider the environment, as there is now. Only rarely is there mention of requirements to control effluent - but to a certain extent this only reflects the nature of the industries the subject of the Agreements (the iron ore projects have relatively few effluent problems).

Those sections of the Agreement relating to important environmental factors, such as water, gave the companies rights to a greater extent that would be contemplated today.

The late 1960's saw changes in the Agreements in response to changing circumstances and attitudes including:

(a) A right for a company to explore for water and to get a determination for what was found could be contemplated in an area such as the Pilbara when there was virtually no development there; but, such an approach could not continue as the number of actual or potential developments increased; and

(b) in some agreements reference is made to the provisions of the Clean Air Act and in some cases to the disposal of effluent.

However, as mentioned above, the Environmental Protection Act of 1971 was a milestone in the preparation of Agreements.

Since its enactment in 1971 it has been related to all the development Agreements by the inclusion in such agreements of a general environmental clause (Appendix C).

In this way the requirement of developing companies to obey the environmental laws of the land has been emphasised : it is a *"flag waving"* clause.

The Alumina Refinery (Muchea) Agreement Act No 97 of 1972 *("PACMINEX")* was the first Agreement act to include environmental management in the required development proposals (Appendix D). This required the Company to specifically formulate proposals (and to have them approved by the Minister) in respect of *"environmental protection, including the disposal of red mud and mine lands restoration"*.

As well as the general environmental clause, this Agreement also carried specific provisions concerning a National Park and required the consideration of the report by the Environmental Protection Authority in any arbitration over the Company's mining proposals (Appendix E).

These recommendations related to such matters as:

*location of refinery stacks
*groundwater investigations
*investigation into red mud
*monitoring bores
*process water
*minimal intereference with State forests
*monitoring of mining areas
*air sampling

In recent times there has been a move to put more specific environmental machinery into Agreements.

I refer to the Eneabba mineral sands Agreements and for a number of reasons it is worthwhile amplifying on the ways in which the situation developed.

As is generally known, the Eneabba mineral sands deposits are owned by four or five different consortia. Whilst collectively

the capital investment totals a respectable $100 million, individually the projects are relatively small (c.f. with a Mount Newman Project) and one may well ask *"Why bother about an Agreement?"*.

It is pertinent that:

(a) Open cast mineral sands mining does affect considerable areas of land, some of which falls within a Flora reserve; and

(b) there are a number of different ways in which the projects can be developed:

* mining and wet concentration can be done by dredging and floating plant or by dry mining and land based plant;
* separation into constituent heavy minerals can be undertaken at the mine site or at the port;
* transport of material could be done by road or rail or pipeline or barge;
* export through Fremantle or Geraldton or a new port on the coast at Greenhead are options that were considered;
* housing of employees in Eneabba, or on the mineral leases, or in a new township or at Leeman or other townships on the coast were also studied;
* whilst there is an adequate underground water resource, the demands of the concentration process are substantial.

With four or five companies showing interest in proceeding (but not having to make decisions at the same time) it was no wonder that a confusing picture was emerging.

The State decided that the development had to be rationalised and the way to do this was to write similar Agreements with each of the companies. Agreements with Western Titanium and Allied Eneabba have been concluded whilst that with Jennings is expected to go to Parliament in the coming session.

The Agreements break new ground in respect to environmental matters in that as well as the environmental provisions that have virtually become standard in agreements:

(a) the general environmental clause;
(b) the inclusion of environmental proposals;

there has also been included machinery to monitor the effectiveness of rehabilitation measures and to permit changes in the environmental management programme.

These factors are illustrated in Appendix F. It should be noticed that the proposals machinery now includes not only the necessity to put forward proposals for *"the protection and management of the environment including rehabilitation...etc... etc..."* but there is a specific reference to the need for consideration of the environmental effects relating to all aspects of the project.

The machinery for consideration of proposals is as has been generally described before and as is illustrated in Appendix G.

There is machinery for the proposals procedure to be repeated in the event of a significant change in the scope of the project (Appendix H).

Of most significance is the requirement to monitor the effectiveness of the management programme, to report at regular intervals and to be prepared to alter the management programme (Appendix I).

As has been previously mentioned, the mineral sands mining areas adjoin, and in some cases intrude into flora reserves. The unique nature of the wildflowers in the Eneabba area is well known and satisfactory restoration after mining is a matter of which little knowledge is available at this time.

The procedure for further proposals established in the mineral sands Agreement is therefore of great importance in ensuring monitoring and enabling adjustment to restoration programmes as more experience and data is obtained.

So, the *"state of the act"* at this stage as it relates to the mineral sands agreements is to include:

(a) environmental proposals broadened to ensure that all aspects of the project are considered in this light;
(b) the general environmental *"flag waving"* clause; and
(c) machinery to monitor the success of rehabilitation measures and to alter the management programme.

This would not necessarily be the approach adopted in respect of other developments and other Agreements : each would be judged on their merits. The extent to which environmental measures have been included in the Agreements to date is set out in Appendix J.

AGREEMENTS, THE ENVIRONMENT AND THE FUTURE

I have outlined the development process and the role that Agreements have played in this procedure.

There is no doubt that the Agreements have provided a vehicle whereby major resource developments have been implemented in record time.

To refer to *"record time"* should not be interpreted as an indication that speed for speed sake is in any way a motivation. Rather, when large sums of money are involved, as is the case in major developments, it is absolutely essential to the whole viability of the project that the construction period be minimised. For this reason the Agreements which set out the rights and obligations of both parties before development commenced was a great aid to swift implementation.

Another significant factor has been the co-ordinating role of the Department of Industrial Development (DID) which devolves to it as a consequence of that Department's responsibility to administer the Agreements. DID has had to act as a focal point for the State's part in the project and a single point of contact for the companies. It is our understanding that this approach is welcomed by companies and is believed to be a helpful one.

Of course it must be stressed that it is a co-ordinating role in which there is no attempt or intention to usurp the responsibilities of the many Government departments who each have their statutory role to play. This co-ordinating role is becoming more complicated as time goes by. There was a time, perhaps 10 years ago, when submissions by companies would be circulated for comment to maybe 10 different authorities. At present, proposals and like documents would be distributed to more than 30 interested parties. A not inconsiderable task when responses must be sought within a time limit.

Acting as a point of contact for the company has been mentioned. It is a role which continues throughout the whole development process. In every phase : feasibility studies, negotiating an Agreement, studies under the Agreement, formulation of proposals, submission and consideration of proposals, construction of the project, and (as a result of the latest agreement provision) in monitoring the environmental management programme.

The question therefore arises *"How does this traditional machinery cope with the problem of facilitating the company's compliance with both State and Commonwealth environmental legislation?"*.

In the Commonwealth arena, the Agreements have little to say other than to call upon the State to use its best offices to obtain the necessary Commonwealth licenses (Appendix K).

The manner in which this would be implemented would be for the Company to approach the Minister for Industrial Development which would result in an approach from Premier to Prime Minister in the matter. Some Agreements have similar provisions in respect of transfer of funds to and from overseas and a similar *"best endeavours"* action by the State applies.

In respect of the Commonwealth environmental legislation I believe the State through DID should be closely identified with the Company's actions to fulfil the requirement of that legislation. In particular, DID should:

(a) Encourage the Company to recognise its environmental responsibilities at an early stage of its studies;
(b) foster a close liaison between the Company and the State Department of Conservation and Environment in the preparation of the Notice of Intent and the Environmental Impact Statement guidelines and ensuing action;
(c) be associated with the Company in the submission of the Notice of Intent, draft Environmental Impact Statement and so on.

In respect of the State Environmental Legislation, DID has a responsibility to ensure that the Environmental Protection Authority (EPA) is informed under Section 57(1) of the Environmental Protection Act 1971-75 of the proposed development. Both the EPA and the Department of Conservation and Environment

would be involved with other departments in the consideration of successive drafts of the Agreement whilst it is being negotiated.

The proposals arising out of the Agreement would be similarly submitted for review before approval by the Hon. Minister for Industrial Development. The EPA and the Department of Conservation and Environment would also be involved by DID in the Company's activities under the sections of the Agreements requiring monitoring and review of the environmental management programme.

What I see to be the challenge for DID is the situation which now exists, is that its traditional liaison with companies should continue in a way which ensures that the companies' endeavours result in investigations, reports and actions which:

(a) satisfy the Commonwealth's statutory environmental requirements;
(b) satisfy the State's statutory environmental requirements; and
(c) does so without duplication of effort.

CONCLUSION

The role of Agreements and their relationship with the environmental statutes is but one of the matters before the Environmental Assessment Workshop but I submit that it is an important one and suggest that you go to work on it.

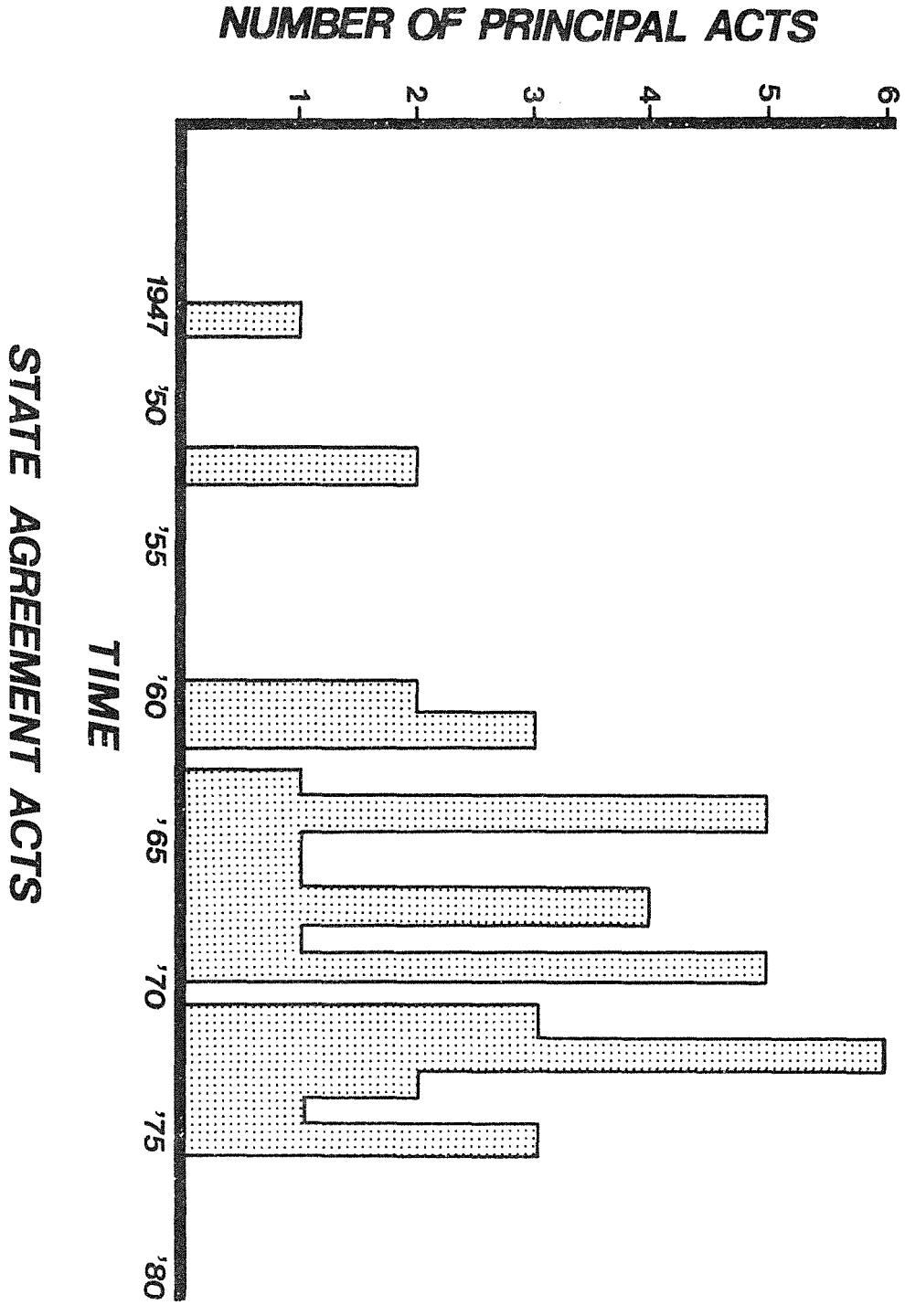
APPENDIX A

ACTS ADMINISTERED BY THE HON.

MINISTER FOR INDUSTRIAL DEVELOPMENT

Alumina Refinery Agreement Act.
Alumina Refinery (Mitchell Plateau) Agreement Act.
Alumina Refinery (Muchae) Agreement Act.
Alumina Refinery (Pinjarra) Agreement Act.
Alumina Refinery (Worsley) Agreement Act.
Assistance to Decentralised Industry Act.
Broken Hill Pty. Co. Ltd., Integrated Steel Works Agreement Act
Broken Hill Pty. Co. Ltd., Steel Industry Agreement Act.
Cement Works (Cockburn Cement Limited) Agreement Act.
Dampier Solar Salt Industry Agreement Act.
Evaporites (Lake MacLeod) Agreement Act.
Exmouth Gulf Solar Salt Industry Agreement Act.
Industrial Development (Kwinana area) Act.
Industrial Lands Development Authority Act.
Industrial Lands (CSBP & Farmers Ltd) Agreement Act.
Industrial Lands (Kwinana) Agreement Act.
Industrial Lands (Maddington) Agreement Act.
Inventions Act.
Iron and Steel Industry Act.
Iron Ore (Cleveland Cliffs) Agreement Act.
Iron Ore (Dampier Mining Company Limited) Agreement Act.
Iron Ore (Goldsworthy-Nimingarra) Agreement Act.
Iron Ore (Hamersley Range) Agreement Act.
Iron Ore (Hanwright) Agreement Act.
Iron Ore (McCamey's Monster) Agreement Authorisation Act.
Iron Ore (Mount Bruce) Agreement Act.
Iron Ore (Mount Goldsworthy) Agreement Act.
Iron Ore (Mount Newman) Agreement Act.
Iron Ore (Murchison) Agreement Authorisation Act.
Iron Ore (Nimingarra) Agreement Act.
Iron Ore (Rhodes Ridge) Agreement Authorisation Act.
Iron Ore (Scott River) Agreement Act.

Iron Ore (The Broken Hill Proprietary Company Ltd.) Agreement Act.
Iron Ore (Wittenoom) Agreement Act.
Lake Lefroy Salt Industry Agreement Act.
Laporte Industrial Factory Agreement Act.
Leslie Solar Salt Industry Agreement Act.
Mineral Sands (Allied Eneabba) Agreement Act.
Mineral Sands (Western Titanium) Agreement Act.
Nickel (Agnew) Agreement Act.
Nickel Refinery (Western Mining Corporation Limited) Agreement Act.
Paper Mill Agreement Act.
Poseidon Nickel Agreement Act.
Snowy Mountains Engineering Corporation Enabling Act.
The Broken Hill Proprietary Company Limited (Export of Iron Ore) Act
Wesply (Dardanup) Agreement Act.
Western Australian Products Symbol Act.
Wood Chipping Industry Agreement Act.
Wood Distillation and Charcoal Iron and Steel Industry Act.


NUMBER OF PRINCIPAL ACTS
1
2
3
4
5
6
1947
'50
'55
'60
'65
'70
'75
'80
TIME
STATE AGREEMENT ACTS

APPENDIX C

GENERAL ENVIRONMENTAL CLAUSE

Nothing in this Agreement shall be construed to exempt the Company from compliance with any requirement in connection with the protection of the environment arising out of or incidental to the operations of the Company hereunder that may be made by the State or any State agency or instrumentality or any local or other authority or statutory body of the State pursuant to any Act for the time being in force.

Joint Venturers to Submit Proposals.

6. (1) The Joint Venturers will on or before the 31st day of December, 1973 or within such extended time after that date as the Minister may as hereinafter provided allow submit to the Minister—

(a) to the fullest extent reasonably practicable their detailed proposals (including where practicable plans and where reasonably required by the Minister specifications) for the development of land in the mining area and of certain privately owned land adjacent to that area, for the mining and transport of bauxite and for the production, transport and shipment of alumina including the location, area, lay-out, design, materials and time programme for the commencement and completion of construction or the provision (as the case may be) of each of the following, namely—

(i) mine development and operation;

(ii) ore treatment and handling at the mine;

(iii) transportation of ore, alumina and operating supplies;

(iv) port site storage, handling and loading facilities;

(v) construction and operation of the refinery including buffer zones;

(vi) power, fuel and water supplies;

(vii) environmental protection, including the disposal of red mud and mine lands restoration;

(viii) regional development, including any projects likely to make an impact on adjacent communities; and

(ix) construction of the Joint Venturers' wharf; and

Environmental Protection.

39. (1) Nothing in this Agreement shall be construed as exempting the Joint Venturers from compliance with any requirement in connection with protection of the environment arising out of or incidental to the operations of the Joint Venturers hereunder that may be made by the State or by any State agency or instrumentality or any local or other authority or statutory body of the State pursuant to any Act for the time being in force.

(2) The Joint Venturers will not carry out any operations nor erect any structures nor clear nor construct any roads within the boundaries of the Avon Class A Reserves 30191 or 30192 nor without the consent of the Minister within any other reserve created under the Land Act in the mining area and the State may in its discretion prohibit any mining or ore transportation operations that are likely to threaten the natural state of Walyunga National Park.

(3) The Minister and where appropriate the arbitrators or umpire as the case may be, shall, in approving or determining proposals made pursuant to Clauses 6 (1) and 7 (3) give effect (so far as the Minister the arbitrators or the umpire as the case may be considers practicable) to the report of the Environmental Protection Authority dated the 12th day of October 1972 and to its recommendations contained in that report which recommendations are summarised in the Third Schedule.

Company to submit proposals.

5. (1) On or before 30th June 1975 (or thereafter within such extended time as the Minister may allow as hereinafter provided) the Company shall submit to the Minister to the fullest extent reasonably practicable its detailed proposals (which proposals shall include plans where practicable and specifications where reasonably required by the Minister) for a mining and treatment project with a capacity to produce not less than 240 000 tonnes per year of heavy minerals from the mineral lease, and the transport and shipment through the port of heavy minerals and for making provision for the necessary work force and associated population required to enable the Company to mine ore and to separate heavy mineral concentrates into heavy minerals at the separation plant and including the location, area, lay-out, design, quantities, materials and time programme for the commencement and completion of construction or the provision (as the case may be) of each of the following matters; namely—

(a) the mining, and concentrating of ore and the separation of heavy mineral concentrates into heavy minerals;

(b) roads;

(c) facilities for the export of heavy minerals and heavy mineral products through the port;

(d) water supplies for the mining concentrating and separating of ore;

(e) housing, provision of utilities and services and associated facilities in the town;

(f) power supply;

(g) any other works, services or facilities desired by the Company;

(h) any leases, licences or other tenures of land required from the State; and

(i) measures to be taken for the protection and management of the environment including rehabilitation and/or restoration of the mined areas, the prevention of the discharge of tailings, slimes, pollutants or overburden into the surrounding country, water courses, lakes or underground water supplies, the prevention of soil erosion and, to the extent that the Company is responsible for implementing the matters referred to in paragraphs (a) to (h) of this subclause, consideration of the environmental effects relating thereto.

Order of proposals.

(2) The proposals may with the approval of the Minister and shall if so required by the State be submitted separately and in any order as to the matter or matters mentioned in one or more of paragraphs (a) to (i) of subclause (1) of this Clause.

Consideration of proposals.

6. (1) On receipt of the said proposals the Minister shall—

(a) approve of the said proposals either wholly or in part without qualification or reservation; or

(b) defer consideration of or decision upon the same until such time as the Company submits a further proposal or proposals in respect of some other of the matters mentioned in subclause (1) of Clause 5 not covered by the said proposals;

or

(c) require as a condition precedent to the giving of his approval to the said proposals that the Company makes such alteration thereto or complies with such conditions in respect thereto as he (having regard to the circumstances including the overall development of and the use by others as well as the Company of all or any of the facilities proposed to be provided) thinks reasonable and in such a case the Minister shall disclose his reasons for such conditions.

Advice of Minister's decision.

(2) The Minister shall within 2 months after receipt of the said proposals give notice to the Company of his decision in respect to the same.

Consultation with Minister.

(3) If the decision of the Minister is as mentioned in either of paragraphs (b) or (c) of subclause (1) of this Clause the Minister shall afford the Company full opportunity to consult with him and should it so desire to submit new proposals either generally or in respect to some particular matter.

Minister's decision subject to arbitration.

(4) If the decision of the Minister is as mentioned in the said paragraph (c) and the Company considers that the condition precedent is unreasonable the Company may within 2 months after receipt of the notice mentioned in subclause (2) of this Clause elect to refer to arbitration in the manner hereinafter provided the question of the reasonableness of the condition precedent.

Arbitration award.

(5) An award made on an arbitration pursuant to subclause (4) of this Clause shall have force and effect as follows—

(a) if by the award the dispute is decided against the Company then unless the Company within 3 months after delivery of the award gives notice to the Minister of its acceptance of the award this Agreement shall on the expiration of that period of 3 months cease and determine; or

(b) if by the award the dispute is decided in favour of the Company the decision shall take effect as a notice by the Minister that he is so satisfied with and approves the matter or matters the subject of the arbitration.

Effect of non-approval of proposals.

(6) Notwithstanding that under subclause (1) of this Clause any detailed proposals of the Company are approved by the Minister or determined by arbitration award, unless each and every such proposal and matter is so approved or determined by 30th June 1975 or by such extended date if any as the Company shall be granted pursuant to the provisions of this Agreement then the Minister may give to the Company 12 months notice of intention to determine this Agreement and unless before the expiration of the said 12 months period all the detailed proposals and matters are so approved or determined this Agreement shall cease and determine subject however to the provisions of Clause 32.

Implementation of proposals.

(7) The Company shall implement the approved proposals in accordance with the terms thereof.

Additional proposals.

7. If the Company at any time during the continuance of this Agreement desires to significantly modify expand or otherwise vary its activities carried on pursuant to this Agreement beyond those specified in any approved proposals it shall give notice of such desire to the Minister and within 2 months thereafter shall submit to the Minister detailed proposals in respect of all matters covered by such notice and such of the other matters mentioned in paragraphs (a) to (i) of subclause (1) of Clause 5 as the Minister may require. The provisions of Clauses 5 and 6 shall *mutatis mutandis* apply to detailed proposals submitted pursuant to this subclause. The Company shall implement the approved proposals in accordance with the terms thereof.

APPENDIX I

Additional proposals for the protection and management of the environment.

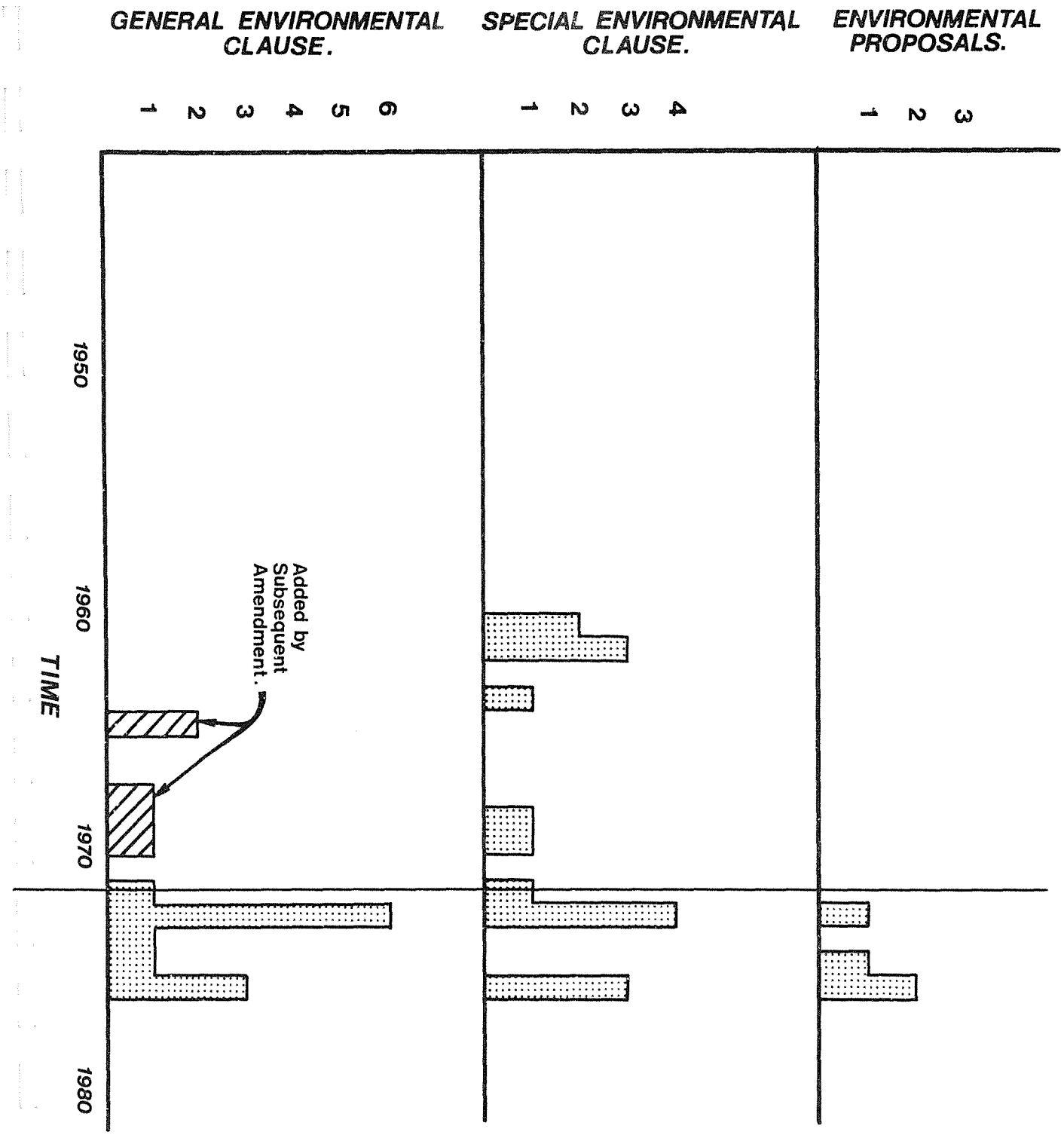
8. (1) The Company shall, in respect of the matters referred to in paragraph (i) of subclause (1) of Clause 5 and which are the subject of approved proposals under this Agreement, carry out a continuous programme of investigation and research including monitoring and the study of sample areas to ascertain the effectiveness of the measures it is taking pursuant to its approved proposals for the protection and management of the environment.

(2) The Company shall during the currency of this Agreement at yearly intervals commencing from the date when the Company's proposals are approved submit an interim report to the Minister concerning investigations and research carried out pursuant to subclause (1) of this Clause and at 3 yearly intervals commencing from such date submit a detailed report to the Minister on the result of the investigations and research during the previous 3 years.

(3) The Minister may within 2 months of the receipt of the detailed report pursuant to subclause (2) of this Clause notify the Company that he requires additional detailed proposals to be submitted in respect of all or any of the matters the subject of the detailed report.

(4) The Company shall within 2 months of the receipt of a notice given pursuant to subclause (3) of this Clause submit to the Minister additional detailed proposals as required and the provisions of Clauses 5 and 6 where applicable shall *mutatis mutandis* apply in respect of such proposals.

(5) The Company shall implement the approved proposals in accordance with the terms thereof.


GENERAL ENVIRONMENTAL CLAUSE.
SPECIAL ENVIRONMENTAL CLAUSE.
ENVIRONMENTAL PROPOSALS.
1 2 3 4 5 6
1 2 3 4
1 2 3
1950
1960
1970
1980
TIME
Added by Subsequent Amendment.

Export license.

22. (1) On request by the Company the State shall make representations to the Commonwealth for the grant to the Company of a license or licenses under Commonwealth law for the export of iron ore in such quantities and at such rate or rates as shall be reasonable having regard to the terms of this Agreement the capabilities of the Company and to maximum tonnages of iron ore for the time being permitted by the Commonwealth for export from the said State and in a manner or terms not less favourable to the Company (except as to rate or quantity) than the State has given or intends to give in relation to such a license or licenses to any other exporter of iron ore from the said State.

ENVIRONMENTAL ASSESSMENT WORKSHOP

THE METHODOLOGY OF ASSESSMENT

Prepared by: Professor D. O'Connor
Presented by: Dr. P. Newman

School of Environmental and Life Science
Murdoch University
Western Australia

Wednesday 21 July 1976

INTRODUCTION

The methods of preparing environmental impact statements are reviewed. The aim is to determine if a project will have significant or controversial impact. To determine this a variety of systematic approaches have been developed based on:

(a) The matrix approach (Leopold system & User Conflict system),
(b) The environmental evaluation approach (Batelle system),
(c) Map overlay systems.

Advantages and disadvantages of these approaches are discussed. The major difficulty appears to be associated with the need to combine an objective scientific study with a subjective human assessment about what constitutes environmental quality or impact. No technique seems better than the small committed group of trained people each with their own expertise but an understanding of each others, who can become totally absorbed in an environment and its possible uses and abuses.

In this paper I would like to get down to the fundamental task involved in getting environmental factors into the planning process - the collection and presentation of the information,and using it to try to predict the impact of our proposals on the environment.

Although much of the terminology is still rather loose, two terms which are vital to the procedures may be discussed. These terms are Environmental Assessment and Environmental Impact Statement. The conception of these procedures may not be universally accepted, but it is useful to consider them.

ENVIRONMENTAL ASSESSMENT

Environmental Assessment may be defined as those environmental planning activities concerned with describing and assessing the

quality of the environment in both the natural and disturbed states. It is in a sense a preliminary evaluation process to determine whether a proposed action is expected to have significant impact on the human environment, or is expected to be controversial. It is an attempt to measure and portray the environment, and it must be comprehensive, systematic and interdisciplinary. It must be comprehensive because the environment is an intricate system of living and non-living elements, held together in a delicate balance. It must be systematic because to be effective as a decision-making and planning tool, environmental assessment must be capable of being replicated by different analysts, and must be able to withstand scrutiny by various interest groups. It must be interdisciplinary because environmental actions which are related to resources, living organisms and people, obviously require a broad range of talents and disciplines for analysis, including as a minimum the physical, biological, and social sciences and engineering. As indicated in the definition, the purpose of the assessment is to determine whether a specific action will either significantly affect the quality of the human environment or be controversial. If the answer to either of these questions is "Yes" (Figure 1) then an environmental impact statement must be prepared and submitted through channels according to procedures currently being worked out.

ENVIRONMENTAL IMPACT STATEMENT

The environmental impact statement can be defined as a formally written, detailed objective analysis of the environmental consequences of a proposed action. It should describe environmental impacts in sufficient detail to permit the evaluation and independent appraisal of both the favourable and adverse environmental effects of the action, and each alternative. In no case should possible adverse effects be ignored in an attempt to justify an action. Care should also be taken to avoid overstating either favourable or adverse effects. It should discuss significant relationships between the project and other existing and anticipated developments. It should discuss the

significance of the national, regional and local environmental impact of the action. It should be prepared in simple and concise terms. It should be a factual document, not an ideological manifesto.

There is no set format for a statement, but normally it would contain the various headings listed below:

(a) Project Description
(b) The Probable Environmental Impact of the Proposed Action
(c) Any Probable Adverse Environmental Effects which cannot be avoided
(d) Alternatives to the Proposed Action
(e) The Relationship between the short-term use of the environment and the Maintenance and Enhancement of longterm Productivity
(f) Any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented.
(g) Any probable or unresolved controversy due to implementation of the proposed action.

It should be noted that in American experience, the responsibility for preparing the environmental impact statement lies with the developer, proposing agency, or company. This is a fundamental proposition which we can probably anticipate will apply in Australia, and we should be aware of it, and be ready to move as quickly as possible. One cannot help feeling that most of our recent problems with environmental impact statements would have been avoided had the developers concerned devoted adequate time and background preparation to the environmental impact statements. It can also be noted that in recent environmental statements relating to large projects the lack of adequate background information on which to base decisions was highlighted many times. Also, it is likely that we can anticipate requirements emerging which some of us cannot presently foresee. I refer particularly to environmental impact statements relating the environmental effects likely to be experienced during engineering construction

of large projects. It is well known that run-off, noise, dust, smoke, and the use of pesticides and chemicals on large construction projects can have very significant environmental effects. No development has yet been called upon to totally regulate these activities, but as has been mentioned before, pressure to do so will surely increase, and we will almost certainly be expected to develop construction techniques to contain everything on the site - a "spaceship" concept.

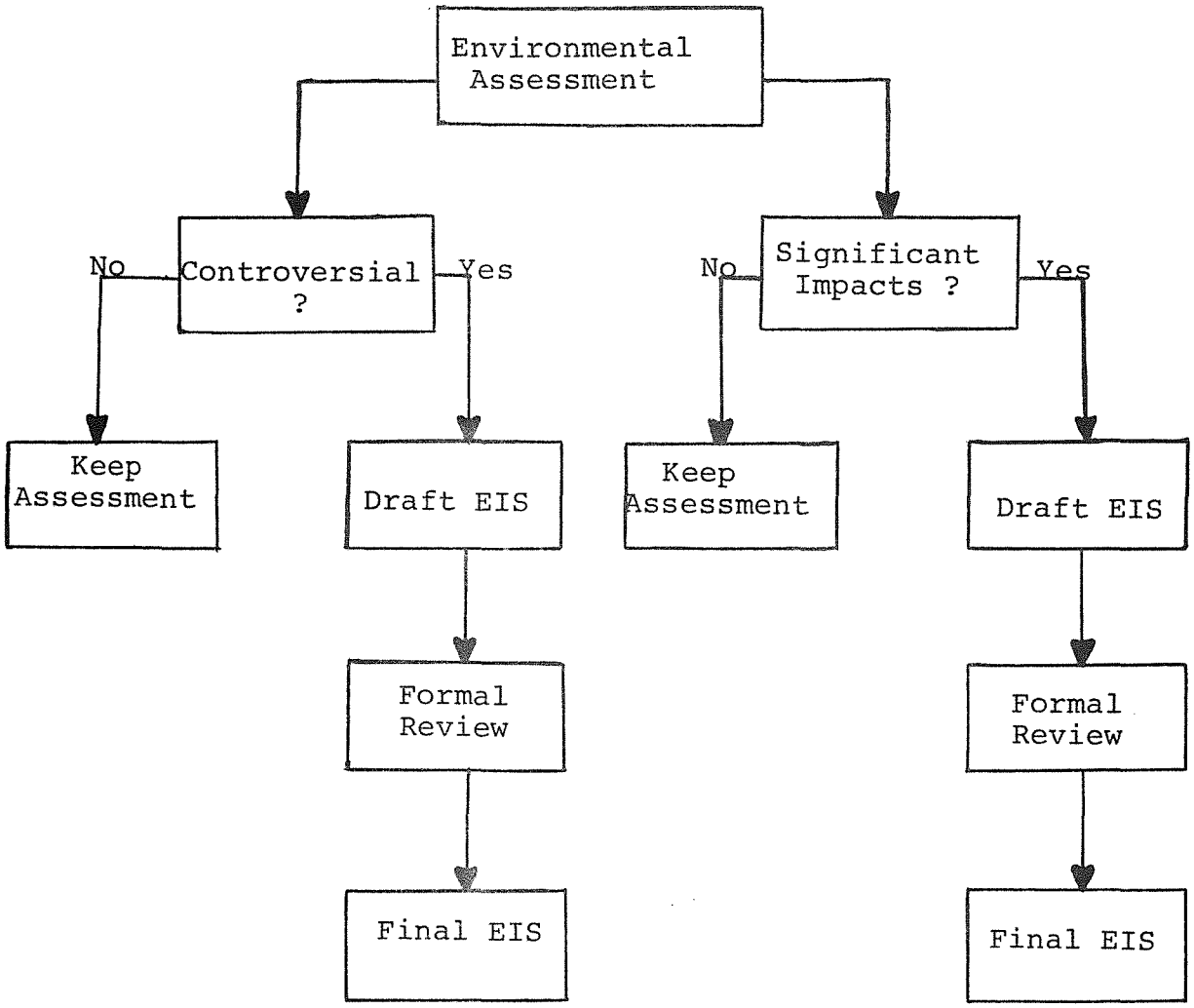

Environmental Assessment
Controversial ?
No
Yes
Significant Impacts ?
No
Yes
Keep Assessment
Draft EIS
Keep Assessment
Draft EIS
Formal Review
Formal Review
Final EIS
Final EIS

Fig. 1

With that introduction, it is now appropriate to consider the environmental impact statement, its format, and how it is prepared and assessed.

There is unfortunately a considerable amount of literature accumulating on this subject which is imparting to it a quasi-scientific nature, coupled with the formalised allocation of point scores to describe environmental impacts, the presumption being that when these are weighed and averaged in accordance with some law, a number of series of numbers will come up which will tell us whether a proposal is acceptable or not.

SYSTEMATIC APPROACHES

The actual procedural steps taken in making an environmental assessment as a basis for an environmental impact statement vary widely. There is no established format or approach for the assessment. However, it is generally agreed that some form of consistent and systematic approach should be employed. At present the approach which appears to be most widely recommended is the use of a matrix which relates the proposed action to a variety of environmental categories, elements and consequences. The approach basically uses a two-step procedure. The first is an assessment of the nature and magnitude of the impact, and second is the determination of the relative importance of the specific impact. Each proposal is evaluated in this manner to determine which alternative produces the least environmental damage in achieving the desired goals and objectives.

The environmental matrix must be considered to be only a tool or method of transforming all the impacts and their significance into several indices which can be used to compare each alternative considered. The matrix devices are more of an inventory or cataloguing system rather than an overall evaluation system. In fact, a good listing of all the factors which have to be considered may be just as useful.

It is obvious that one of the major tasks in using the matrix evaluation approach involves assigning numerical values to the various parameters included. The magnitude of impacts can in most instances be fairly accurately predicted. However the real core of this approach is the relative weighing assigned to the magnitude or importance of each environmental impact. Each parameter in this type of approach represents only a part of the total environment. It is therefore necessary to view these parts together as part of the overall environmental system. It is then obvious that some parameters are more important than others, but the less important ones are still part of the overall system and therefore cannot be overlooked or discarded. It must also be recognised that the relative importance between parameters varies from project to project. The greatest usefulness of the matrix approach is that it helps with the identification of all possible impacts.

The evaluation team establishes the parameters to be included and assigns the relative importance weights. The importance of having an interdisciplinary team is obvious. The team cannot afford to overlook any parameters and must not assign a lower value to a parameter because they lack expertise in that area. All parameters must be considered and subjectively weighed if the total evaluation procedure is to withstand scrutiny by others. Of course a considerable amount of subjectivity will enter into this process, and it must be reiterated that the matrix alone can only be considered as a form of check list to make sure that nothing is overlooked. It does not solve any problems of itself, and is not the environmental impact statement.

It might be worthwhile at this stage to review some of the typical matrix approaches in use. These are in general of two types, an impact matrix, and a user-conflict matrix.

(a) The Impact Matrix

In this type, (Figure 2), the existing environmental characteristics are arrayed against the actions proposed.

In this particular scheme the proposed actions are listed along the top, and the existing environmental characteristics are listed down the left. At each intersection cell a decision is required as to whether there is an impact or not. The recommended procedure is to identify all the actions across the top of the matrix that are part of the proposed project and under each of the proposed actions place a diagonal line at the intersection with each item on the side of the matrix if an impact is possible. Then in the upper left hand corner of each box with a diagonal, a number 1 to 10 is placed to indicate the magnitude of the possible impact. 10 represents the greatest magnitude and 1 the least. Before each number place a "plus" if the impact is beneficial. In the lower right hand corner of the box, a number from 1 to 10 indicates the importance of the possible impact. 10 represents the greatest importance and 1 the least. The text which accompanies the matrix should contain a discussion of the significant impact as indicated by the presence of large numbers in the boxes of the matrix. There are columns for computations along the right side and along the bottom. It must be stated that the original authors of this matrix* cautioned against relying on it completely. They stressed the importance of obtaining objectivity in allocating the weights on a basis of factual data rather than preference. Reference may be made to "Guidelines for application of environmental impact policy in New South Wales" published by the N.S.W. Department of the Environment, 1973.

The matrix is the abstract for the text of the environmental impact statement. The authors suggest that the matrix should be regarded as flexible and should be reduced or expanded to suit the needs required. As a matter of interest, this approach is that basis of the guidelines used in the State of New South Wales.

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* "A procedure for Evaluating Environmental Impact", L.B. Leopold et al., U.S. Geological Survey Circular No. 645, Washington 1971.

Variations of the Leopold matrix have been developed in which environmental impact analysis is seen as involving three steps:

(i) A very detailed listing of environmental characteristics is prepared.

(ii) Each unit's current condition is evaluated by means of an environmental study. Points are awarded on a graduated scale from 1 to 5. It is stressed that the system has essential crudities in that many parameters cannot be expressed in terms of a number.

(iii) The assessment of the impact of changes brought about by a proposed action is evaluated by means of a matrix which provides a means of compacting all the information obtained.

Once again, the approach is somewhat objective, complex, and not terribly easy to replicate.

(b) User-Conflict Matrix

The second type of matrix is a user/conflict matrix.** With this approach environmental impacts are identified through the conflict that is caused.

** A Socio-Economic Study of Narragannett Bay, Rhodes Island. Rorholm, N., Lampe, C., and Farrell, J., University of Rhode Island, 1969.

		A. Modification of regime	B. Land transform & construct	C. Resource extraction	D. Processing	E. Land Alteration	F. Resource Renewal	G. Changes in traffic	H. Waste replacement & treatment	I. Chemical treatment others
	(1) Instructions									
A. Physical & chemical characteristics	1. Earth									
	2. Water									
	3. Atmosphere									
	4. Processes									
B. Biological conditions	1. Flora									
	2. Fauna									
C. Cultural factors	1. Land Use									
	2. Recreation									
	3. Aesthetics & human use									
	4. Cultural status									
	5. Man made facilities									
D. Ecological relationships	others									

INSTRUCTIONS

1. Identify all actions (located across the top of the matrix) that are part of the proposed project.
2. Under each of the proposed actions, place a slash at the intersection with each item on the side of the matrix if an impact is possible.
3. Having completed the matrix, in the upper left-hand corner of each box with a slash, place a number from 1 to 10 which indicates the MAGNITUDE of the possible impact; 10 represents the greatest magnitude of impact and 1, the least, (no zeroes). Before each number place + if the impact would be beneficial. In the lower right-hand corner of the box place a number from 1 to 10 which indicates the IMPORTANCE of the possible impact (e.g. regional vs. local); 10 represents the greatest importance and 1, the least (no zeroes).

SAMPLE MATRIX

	a	b	c	d	e
a		2/1			8/5
b		7/2	8/8	3/1	9/7

Fig. 2

4. The text which accompanies the matrix should be a discussion of the significant impacts; those columns and rows with large numbers of boxes marked and individual boxes with the larger numbers.

Figure 2 (Con't)

For example an oil refinery built on the coastline causes a number of environmental impacts by creating a conflict between other forms of resource use, such as recreation, aesthetic appreciation, wild life preservation, etc. Below is outlined the general manner in which this type of matrix is used. In Figure 3, the horizontal and vertical rows list all possible activities that occur in that particular location. Within the cells of the matrix, numbers are placed indicating which of these activities conflict with other activities, and if there is a conflict within activities, for example, water skiers may conflict with people fishing and also with each other.

A point allocation system is generally used, the numbers 1 to 3 with appropriate suffixes being used.

$(1)_x$ Conflict associated within the activity itself

$(1)_o$ No conflict

(2) Known conflicts between activities are briefly described

$(3)_1$ Long term conflicts are described

$(3)_2$ Short term conflicts are described

$(3)_3$ Any pollution conflicts are described

These are virtually self explanatory on the matrix shown in Figure 2, the small cells at the bottom providing the necessary explanation.

This matrix is simply proposed as a means of identification of all possible conflicts for evaluation. It does not take much imagination to see that the operation can become extremely complicated, and because of this may give the impression that it has great value.

A variation of this approach is the use of compatibility matrix. This method requires two matrices. The first one showing the nature of the effects of the various uses on the environment, and the second, which builds on the first, is used as a basis for

	Swimming	Water Skiing	Motor Boating	Shipping
Swimming	(1)	(2)		
Water Skiing		(1)x		(2)
Motor Boating			(1)x	(2) (3) 2
Shipping				

Matrix cell for motor boating and shipping

(2) Motor boats crossing shipping rights of ways
(3) 2 Navigation channel displacing use of channels for motor boat activities

Fig. 3

deciding which activities to allow in an area. Once again it should not be regarded as yielding infallible information.

Yet another variation of the matrix approach is the cause/condition/effect matrix. This portrays uses, causes, conditions, and effects. The uses known to have an environmental impact are listed. Proceeding from these, causal factors are identified which produce changes in environmental conditions. The initial impacts of these causal factors are then identified and divided into groups. The changes induced are then listed. It is simply a variant for use as a review or reference tool by planners, large resource users, etc. who can consult the framework in order to obtain information on possible effects of proposed actions, and instances where effects have occurred before.

Before proceeding, it may be useful to summarise the main characteristics of the LEOPOLD MATRIX. Its main strength is as a checklist, it is comprehensive and systematic, but:

* Biased towards physical - biological environment.
* Does not focus attention on critical human concerns.
* Does not distinguish between immediate and longterm effects.
* Elements not mutually exclusive - double counting.
* Does not identify interactions.
* Predicted impacts treated as if certain to occur - cannot indicate variability or extremes.
* Not very objective - assessor free to develop own ranking - no explicit criteria for assigning weight.
* Too many (up to (100 x 88) x 2) entries, for each alternative 17600 (in the original).
* Sometimes useful for communication, but does not highlight issues for special interest groups.

In addition to the matrix system described above, two more approaches may be worthy of note. The first is the environmental evaluation system proposed by the Batelle Institute in Columbus, Ohio.* As shown on Figure 4 this uses a four-level structure to classify the total environment. A very complicated, almost theoretical procedure has been devised for measuring the properties of the environment in commensurate units. A value between 0 and 1 is allocated for environmental quality. Relative importance of each of the environmental parameters is then estimated on a numbers scale. Figure 5 shows the range of environmental parameters, and numbers have to be allocated to each element in this in accordance with its importance. Combining these first two steps, an estimate of environmental impact can be made. When projects are compared in terms of their environmental impacts, some relative assessment of damage or enhancement is obtained. In summary, the Battelle approach is comprehensive and selective and:

* Not mutually exclusive
* Predictions on normalized scales (0-1)
* Objective - value function curves
* Not good for displaying interactions
* The weighing system allows for comparison between alternatives
* Quite a good summary format - but mainly for "specialists".

Another approach which has appeal involves the use of map overlays in environmental analysis.** It has the advantage that it is simple, it is something that most people can understand and visualize, and it avoids the hypnotic effect of the use of matrices and coefficients. In this procedure, overlays are prepared to show

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* "An Environmental Evaluation System for Water Resource Planning". Dee, N. et al Water Resources Research, 9.3. June, 1973.

** An Ecological and Physiographic Survey of the proposed Tuggeranong City Area and surroundings. National Capital Development Commission, Canberra, May, 1970.

LEVEL 1 ...GENERAL ENVIRONMENTAL CATEGORIES (4)
(eg. Ecology)

LEVEL 2 ... INTERMEDIATE ENVIRONMENTAL COMPONENTS (18)
(eg. Species and population)

LEVEL 3 ... SPECIFIC ENVIRONMENTAL PARAMETERS (78)
(eg. Crops)

LEVEL 4 ... MOST SPECIFIC (DATA) ENVIRONMENTAL MEASURES

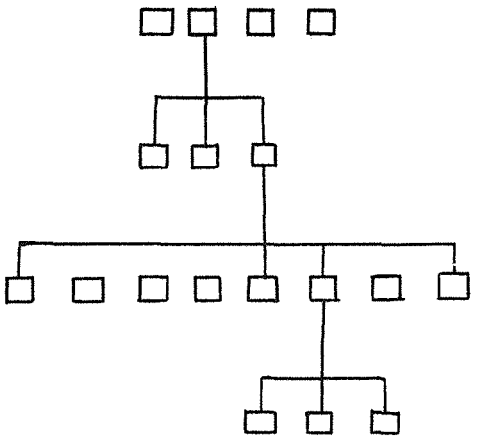

FIG. 4. HIERARCHICAL STRUCTURE OF THE BATELLE ENVIRONMENTAL EVALUATION SYSTEM.

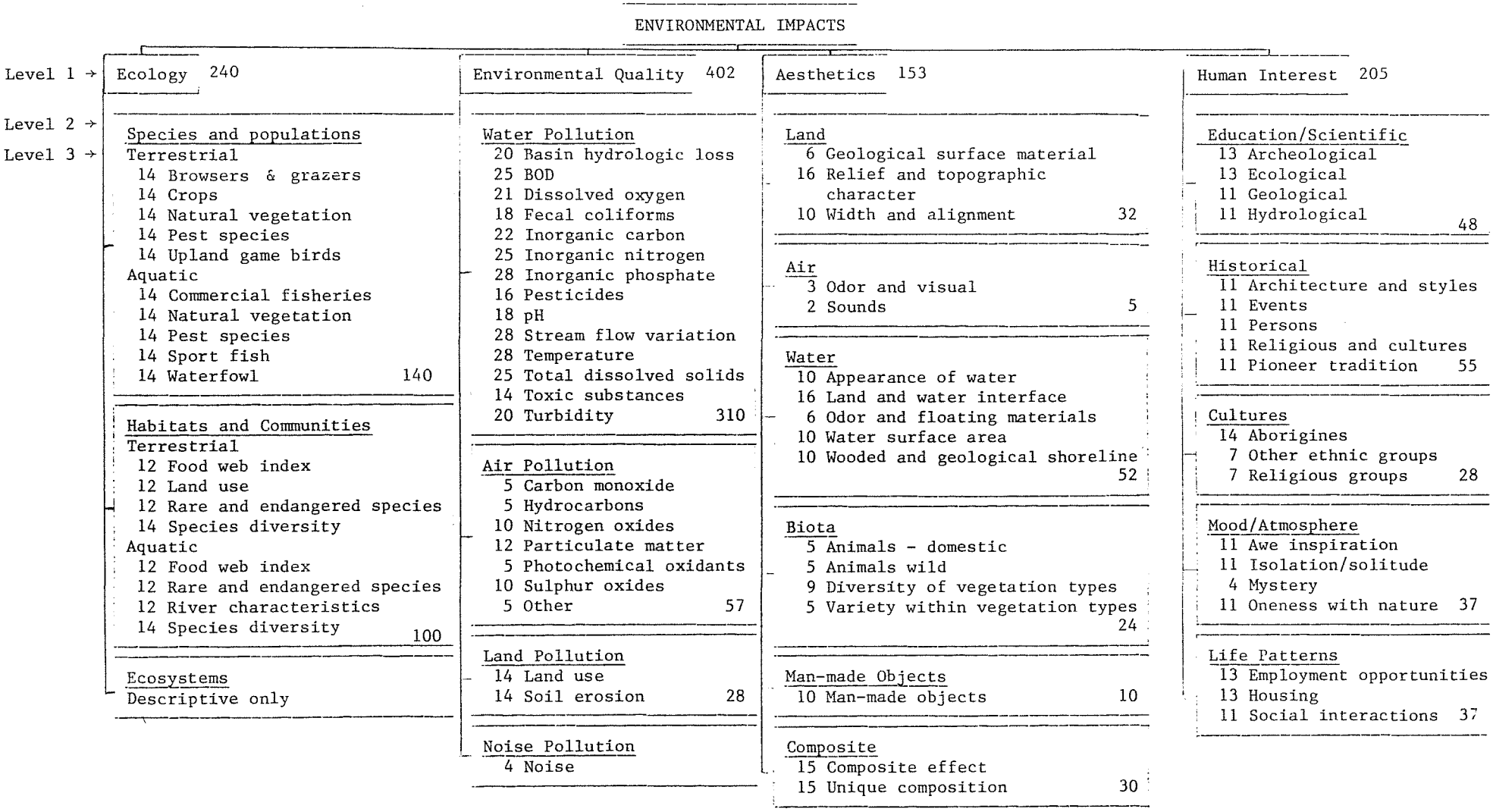

FIGURE 5 ENVIRONMENTAL PARAMETERS
Numbers represent Parameter Importance Units Total = 1000

environmental factors such as erosion potential, depth to bedrock, surface texture, general geology, permeability, water capacity, depth to water table, slope, ridges, and drainage, aspect, tree species, tree associations, tree conditions and regeneration, tree density, vegetation, wild life, climate, points of interest and skylines or vistas, etc. The resulting picture of land capability is then used to prepare a land-use plan that reflects all these environmental concerns, as well as aesthetic and social considerations. This compilation then provides the basis for the environmental impact statement.

The method may be used very effectively to describe the natural environment in conjunction with computers. Typically this would involve dividing the area into a grid, preparation of overlays for natural features, and depicting public concerns by combining the overlays. Items like land use suitability, action compatibility, and engineering feasibility can be evaluated visibly, by computer generation of "factor maps" or "Go-no go" maps.

The following summary comments might be made about the overlay method:

* Only moderately comprehensive - difficult to show all impacts
* Selective
* Mutually predictive patterns
* Weak on magnitudes
* Objective
* Not good for uncertainty and interactions
* Good for communication

CONCLUSION

The methods in current use for preparing environmental impact statements have been briefly reviewed. The whole matter of the preparation of environmental assessments and environmental impact statements is extremely complex, and as we are about to enter the

era when these procedures will become common place, we will have to be extremely flexible in selecting a method for a particular case. For most cases, a simple check-list approach is probably the most useful, although we must be sure to prepare a comprehensive list of environmental effects and impact indicators so that analysts will be able to get a broad picture of consequences of proposed actions. We have to be very careful in the compilation of the lists, because things that are not on the lists will be ignored. The matrix approach is methodical, but in cases where it contains numerical coefficient can be misleading.

It may sometimes be possible to combine all these in a flow-diagram to show action and effect relationships, particularly in small projects.

It is easy to place too much reliance on the allocation of numerical coefficients to items which in many cases are value judgements. Some purely physical parameters, like climatic data, wind, toxicity levels, and so on can be described in terms of numerical values or models, but methods for predicting the behaviour of the environment, quantitative variables are very difficult to find and to validate. Perhaps the best one can do is to simply select a number scale on which to place an estimate of the amount of impact or degradation. As the International Council of Scientific Unions says "The Environment is never as well behaved as assumed in models, and the assessor is to be discouraged from accepting off-the-shelf formulae".*

Presuming we have reached the stage where we have a check-list or matrix or some form of visual display which sets out out estimate of the environmental impact of our actions, how are these ranged side-by-side to facilitate the comparison of different alternatives? Once again, one should be cautious in attaching too much significance to numbers, averages, or other weighed values.

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* Much of this summary material is taken from Scope Report 5, "Environmental Impact Assessment", International Council of Scientific Unions, Toronto 1975.

It may be entirely misleading to compile a statistic from a table of numbers, and have a cut-off point such that all values on one side of the cut-off point are acceptable, and all on the other are unacceptable.

Rather than look for one statistic from an analysis, it may be possible to work within categories as in the Batelle System and compare the relative importance of alternatives within groups of impact indicators. This may make possible the selection of alternatives which have the least adverse impact.

It may not be possible to take this approach to the full extent of the Batelle system in using numbers to compare alternatives. Batelle states that to compare indicators numerically and to obtain aggregate impacts for each alternative, the impact indicator scales must be in comparable units, and an objective method for assigning numerical weights must be selected. Batelle produced what they call "Environmental Value Functions". A problem has grown up around this method, particularly when defining what is meant by environmental quality on the scales 0-1. The meaning varies depending on whether it is assigned by specialists or laymen. Specialists-scientists values have been found not to correlate terribly well with the views of laymen and the public.

The general trend appears to be towards a flexible method of judging environmental impacts, on a basis that laymen can understand. The methods of conveying the information derived from the overall study to decision makers to the public are of vital importance. It is here that the method of map overlays can be extremely useful. Volumes of figures and graphs are often very difficult for the public and decision makers to digest. It would be a breakthrough if the original map overlays which describe the physical characteristics of the environment could be harnessed to a computer programme which is designed to search the overlays and to select areas and locations where the environmental impacts are minimal. Computer methods are already in common use for the location and grading of highways, for example. It should be possible to programme in some environmental parameters, including

preservation of timber areas, the opening up of vistas, and so on. There is a problem of course associated with this method, in that in spite of the apparent sophistication that it involves, the results are not better than what we can put into it, so in a way it is not vastly different from the other methods except that with wise use it can present the data in an understandable form.

When we introduce computers, it is possible to think in terms of a full model into which variations in environmental parameters can be injected to study the impacts. It has to be remembered above all that models are only as good as the information that goes into them. Experience with models which depend on a knowledge of the physical world tends to suggest that an overdegree of simplification is often used and is extremely misleading. It is also very difficult to programme into a model the complex socio-economic factors that have great impact in environmental affairs. It is frequently mentioned elsewhere that the status of environmental science is such today that we are faced with great gaps in an underlying knowledge of the physical environment, and until these gaps are filled in, severe limitations are placed on the use of models.

Where, the, does this leave us when we are called upon to make an environmental assessment and prepare an environmental impact statement? It is essentially a very unglamorous and plodding operation, certainly in the initial stages. Firstly, it amounts to pulling together all the available information that we have about the area involved. The physical environment has to be described thoroughly, including topography, vegetation, soils, climate, perhaps micro-climate, wildlife and the social and economic patterns of life in the area. I say that this is unglamorous work because it essentially means getting together all the information that is hidden in files, maps, books and other records, and getting it into a form suitable for use. We have all the attendant problems of getting co-operation between departments, relating information to common datums, besides deciding just what information we need. This is where check-lists are useful.

It should be remembered that, even at this stage, the interdisciplinary nature of the group involved should be stressed so that we may be sure of getting the right information together. When we are looking over the information to assess the impact of the actions we propose, the interdisciplinary approach is very necessary indeed, and most successful environmental impact statements are prepared by closely knitted groups. It is not possible to simply pull together a group in the discipline areas and expect them to produce the desired result. They have to be sufficiently familiar with one another's discipline areas and the way in which the different disciplines work to make sure it all hangs together. Many impact statements look like a half-a-dozen separate reports stapled together behind an introduction, so one should be wary of assembling an ad hoc group and getting them into action immediately. A group should be build up over a period, and even if they are not working full time together they should meet regularly and simply discuss their areas of interest in relation to the broad field. In this way mutual sympathy and understanding is built up. If one point emerges, it is the fact that it is the totality of the approach that is more important than the detail of individual facets.

ENVIRONMENTAL ASSESSMENT WORKSHOP

EXAMPLES OF THE DEPARTMENT OF CONSERVATION AND

ENVIRONMENT'S INVOLVEMENT IN THE ASSESSMENT PROCESS

FITZGERALD RIVER RESERVE : A DECISION IN ENVIRONMENTAL MANAGEMENT

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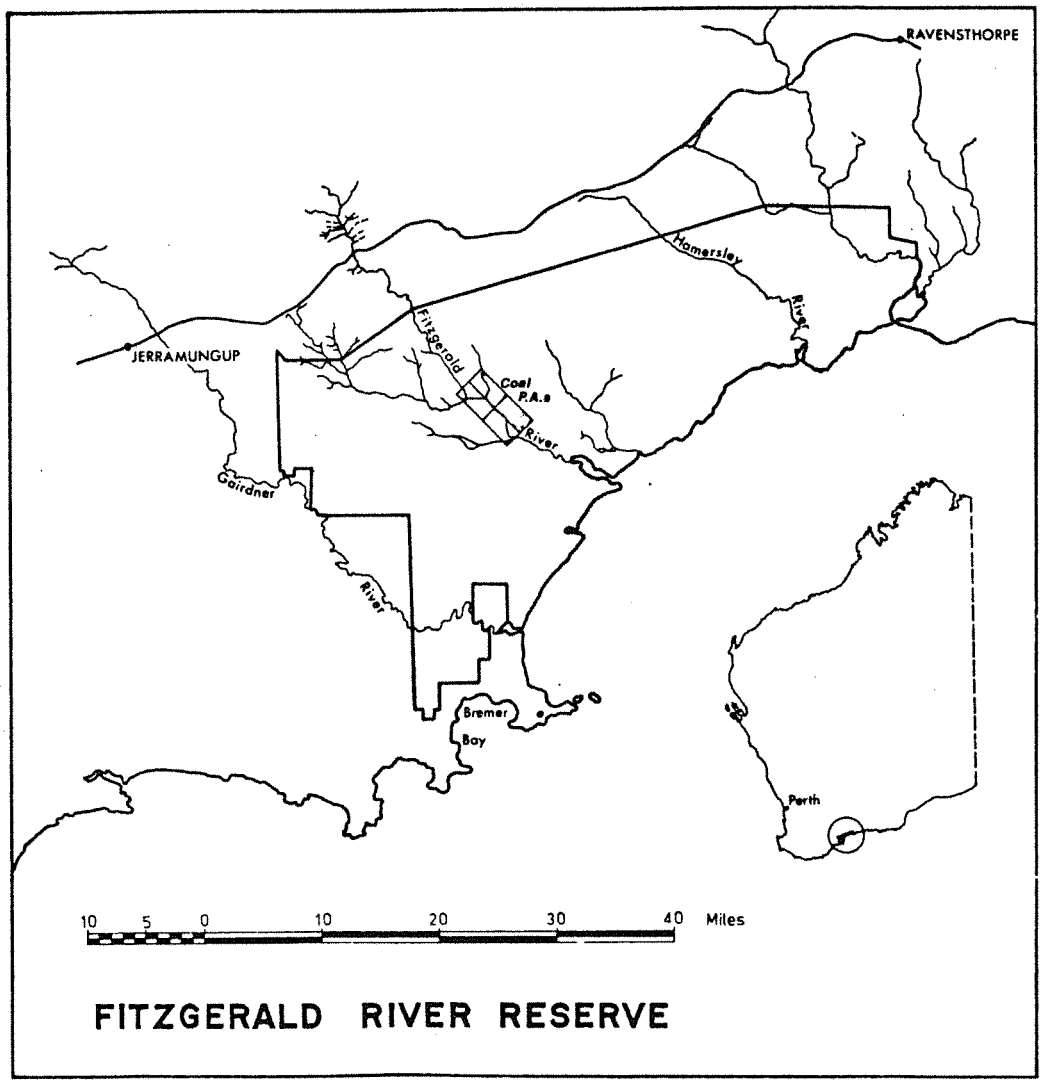
Wednesday 21 July 1976

INTRODUCTION

The Fitzgerald River Reserve covers some 243 000 hectares along 84 kilometres of the south coast of Western Australia. The area was first explored by Lt James Roe, the first Surveyor-General in Western Australia in 1848-1849 who named the Fitzgerald River after the then Governor Charles Fitzgerald. In 1950 the Government Botanist recommended that a reserve be set aside for botanical purposes, there being an estimated 25 endemic plant species in the area. In October 1954 an area of some 243 000 hectares was declared a C Class reserve for the preservation of fauna and flora. (The classification of C Class means that the boundaries or purposes of the reserve may be changed by the Governor on publication in the Government Gazette and without reference to Parliament.) Since that time there have been numerous recommendations that the status of the reserve be upgraded to A Class (an act of Parliament is then required to alter the reserve's purpose or area). The area achieved A Class status on 19 January 1973 with the creation of reserves A31737 and A31738.

The reserve became a focus for attention early in 1970 when coal mining leases covering about 19 500 hectares were applied for on behalf of Jupiter Minerals NL. The applications were first listed for hearing in the Mining Warden's Court in July 1970, the hearing was adjourned due to the large number of objections to be heard then adjourned further when the Director of Fisheries and Wildlife applied to the Supreme Court for a declaration that the Mining Warden was not empowered to adjudicate in the matter. The Supreme Court found in favour of the Mining Warden and the case was relisted. However, a further delay was caused due to the adjournment of all such cases until the completion of the Mining Act inquiry then in progress. The report of this inquiry was published in February 1971 and the hearing was again relisted for July 1971. Such was the opposition to the proposal that Cabinet decided to further postpone the hearing of the applications until the proposal was examined by the Environmental Protection Authority. (It should


RAVENSTHORPE
Homersley
River
Fitzgerald
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JERRAMUNGUP
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P.A.s
Gairdner
River
Bremer
Bay
Perth
10 5 0 10 20 30 40 Miles
FITZGERALD RIVER RESERVE

be pointed out here that the EPA was not yet in existence, but that legislation for it was in the making - passed in December 1971.)

CONTROVERSY

Between the pegging of the coal mining leases by Jupiter Minerals in the Fitzgerald River Reserve, and the passing of the Environmental Protection Act a great deal of correspondence was addressed to the Premier on the matter. The Ongerup Conservation Group presented a petition with 800 signatures against the mining proposal; 354 local residents of the area signed a petition urging that a feasibility programme be undertaken due to the desperate need for economic growth in the area; some 40 letters were sent from Victoria protesting against possible mining in the reserve; and innumerable letters were received from individuals and organisations, local, interstate and overseas both supporting, and protesting against, the venture. The predominating view of these correspondents was against the possible mining on the grounds of uniqueness of the area and the likely failure of restoration efforts should the mining proceed.

DECISION PROCEDURE

With such a complex issue to be solved and considering the magnitude of interest generated, the EPA decided to ask for assistance and advice from the Conservation and Environment Council. With the aid of the Department of Conservation and Environment an investigation was undertaken to determine the various conflicting interests associated with the project. As a result of this investigation a decision flow-chart was drawn up to show the flow of the decision process and the data inputs which were required at various stages in the decision making process. This flow-chart is shown in Figs. 1 - 6.

Fig. 1

FITZGERALD RIVER RESERVE MINING PROPOSAL ASSESSMENT FLOW CHART

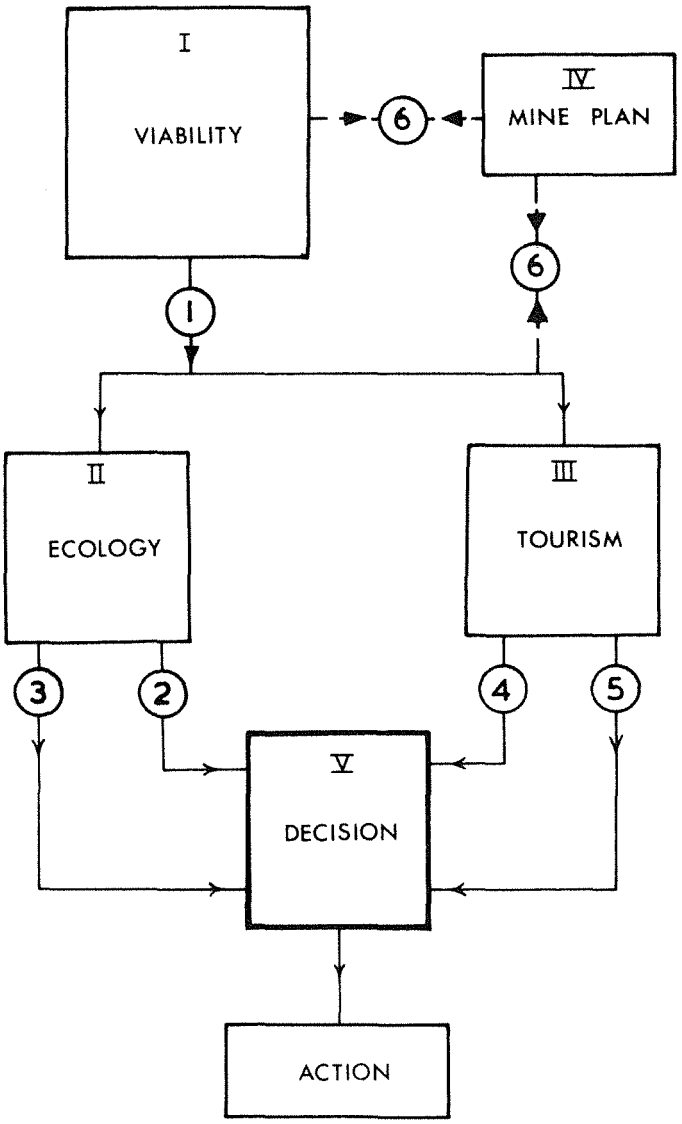


Fig. 2

SUBSET I

VIABILITY

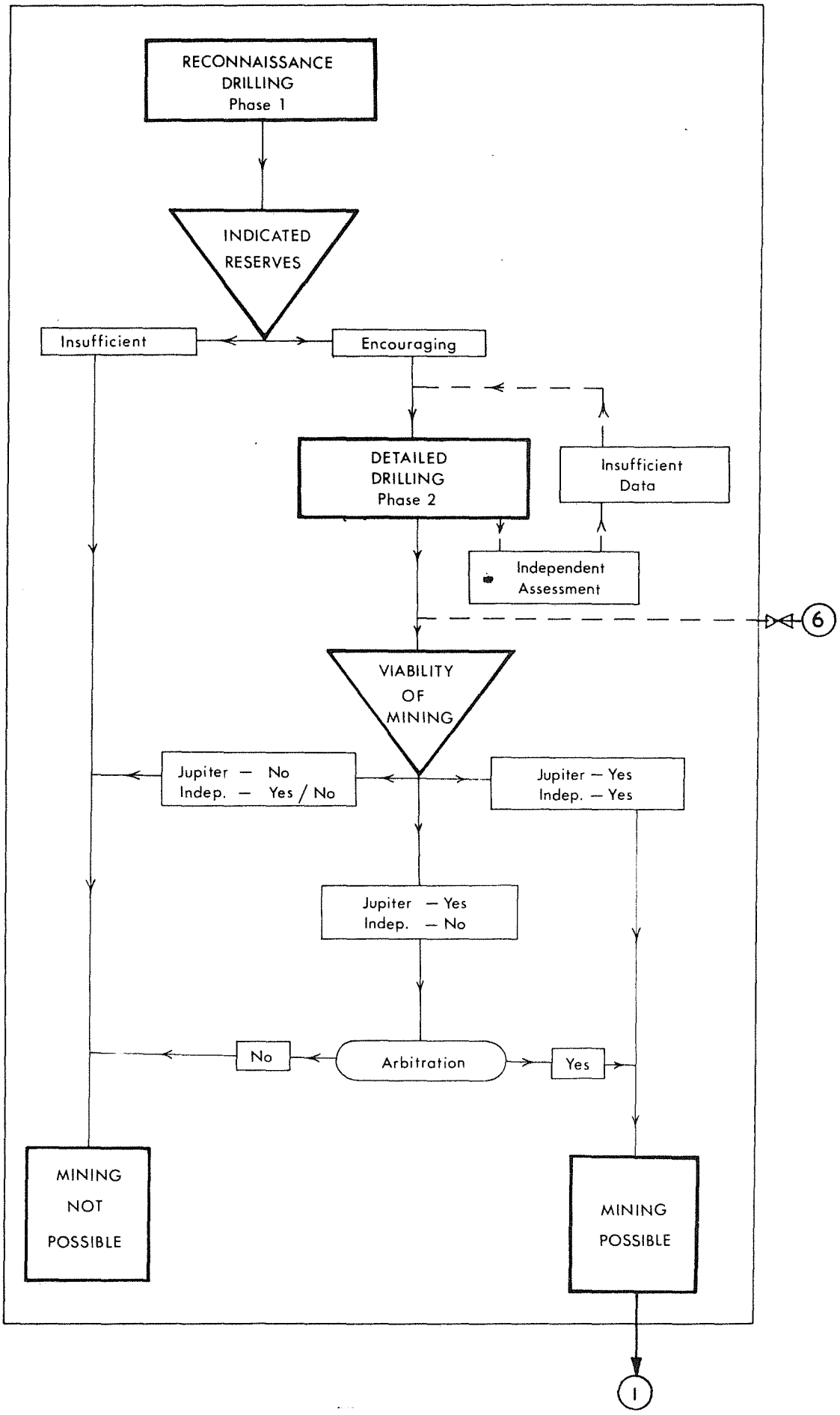


Fig. 3

SUBSET II

ECOLOGY

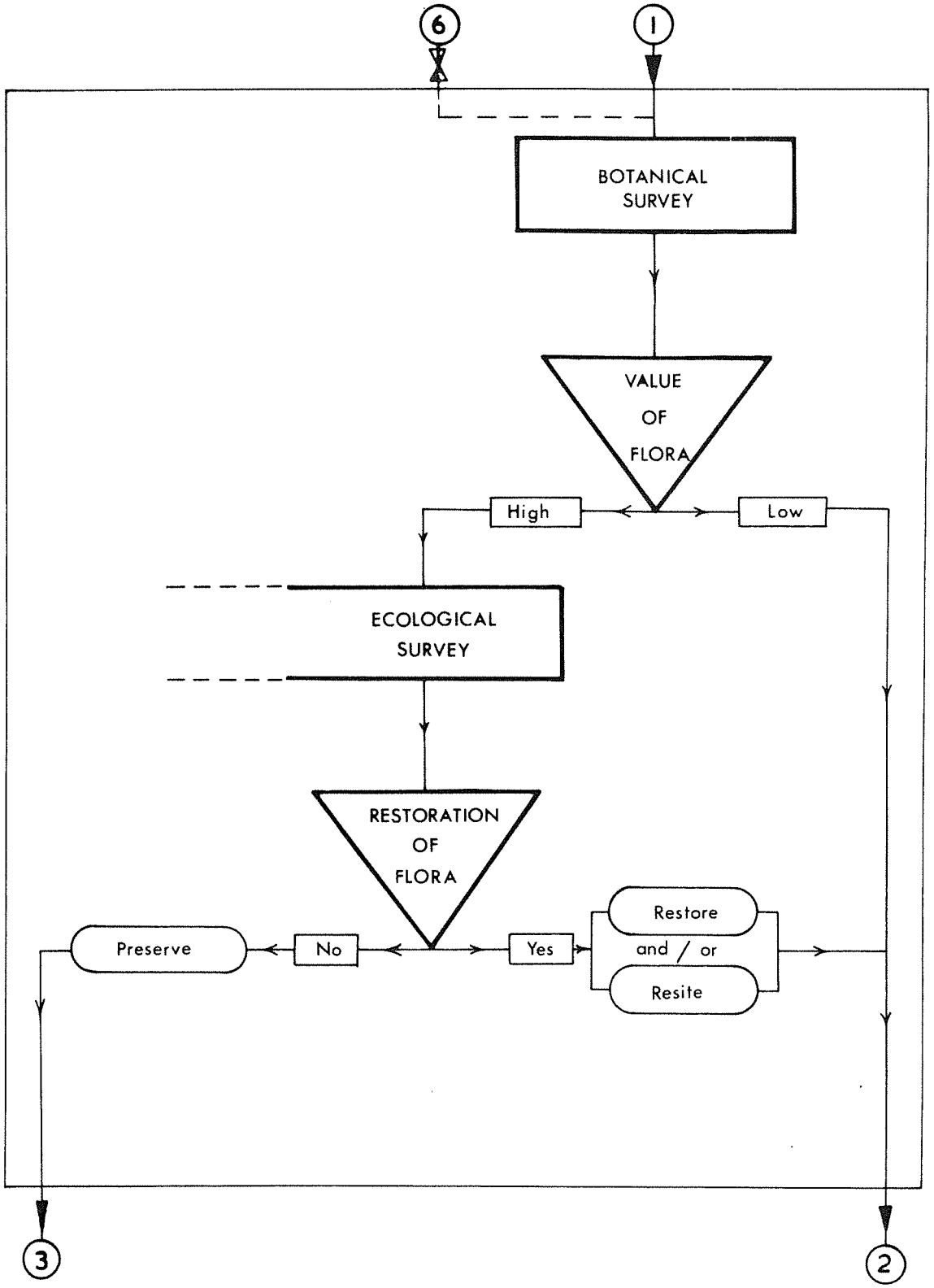


Fig. 4

SUBSET III

TOURISM

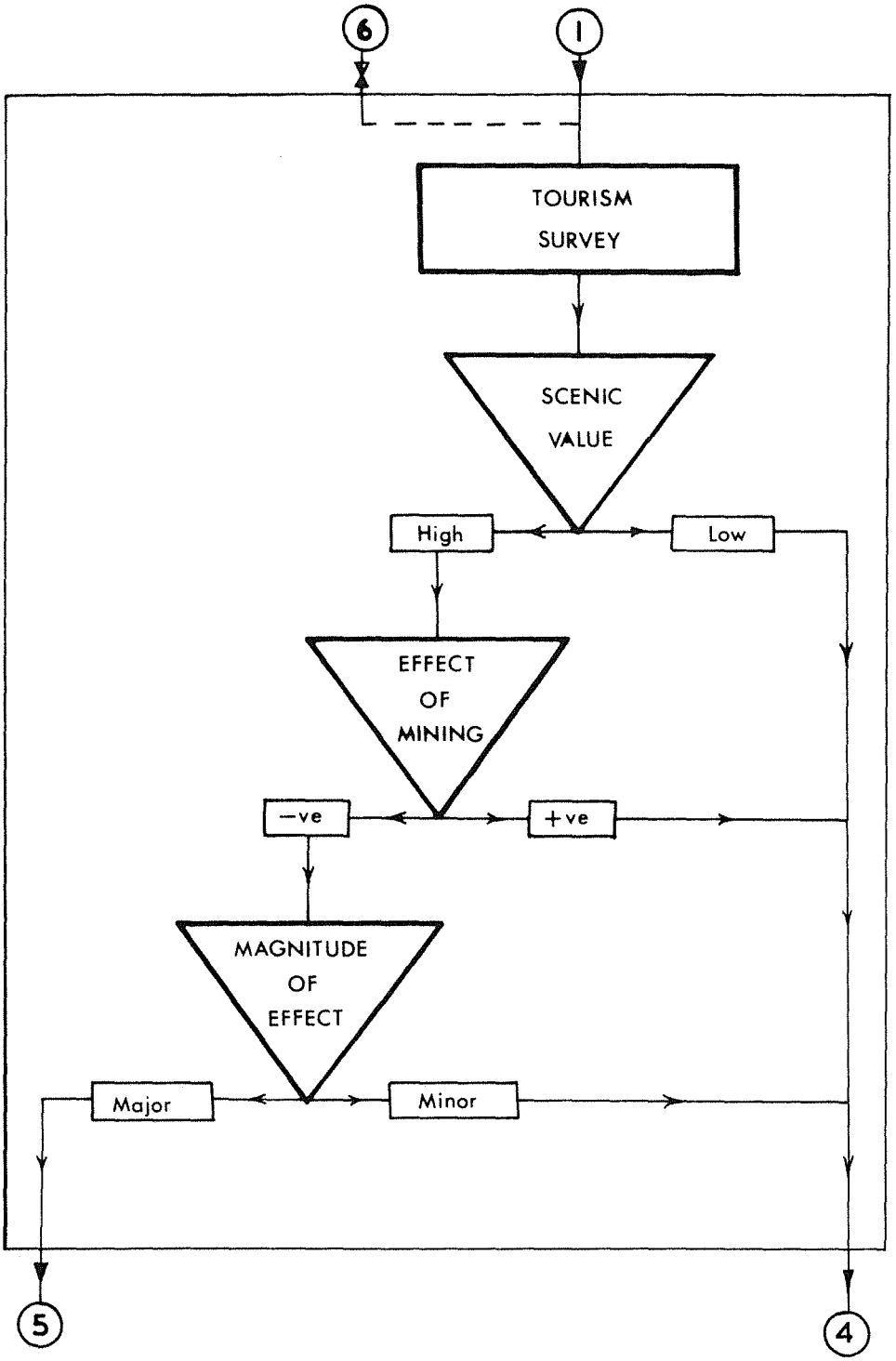


Fig. 5

SUBSET IV

MINE PLAN

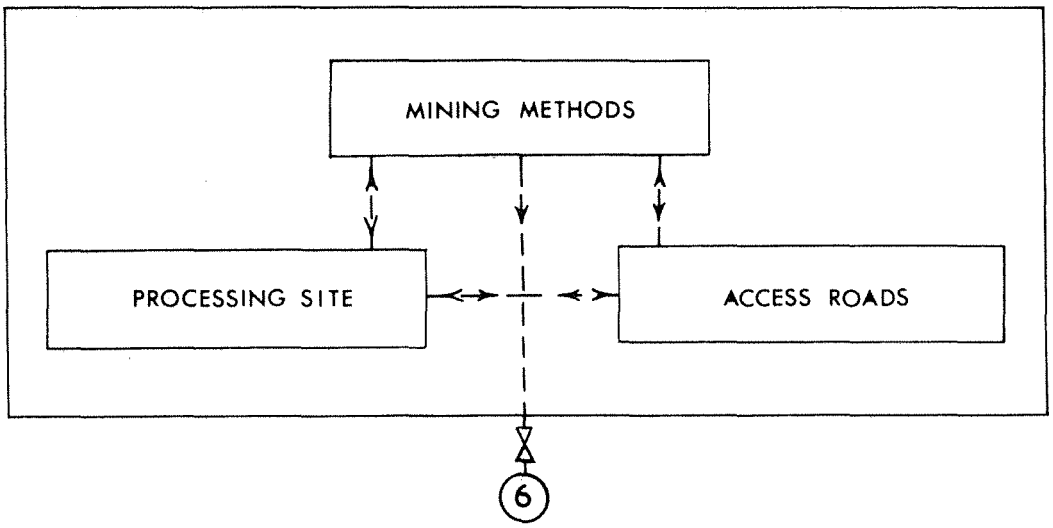
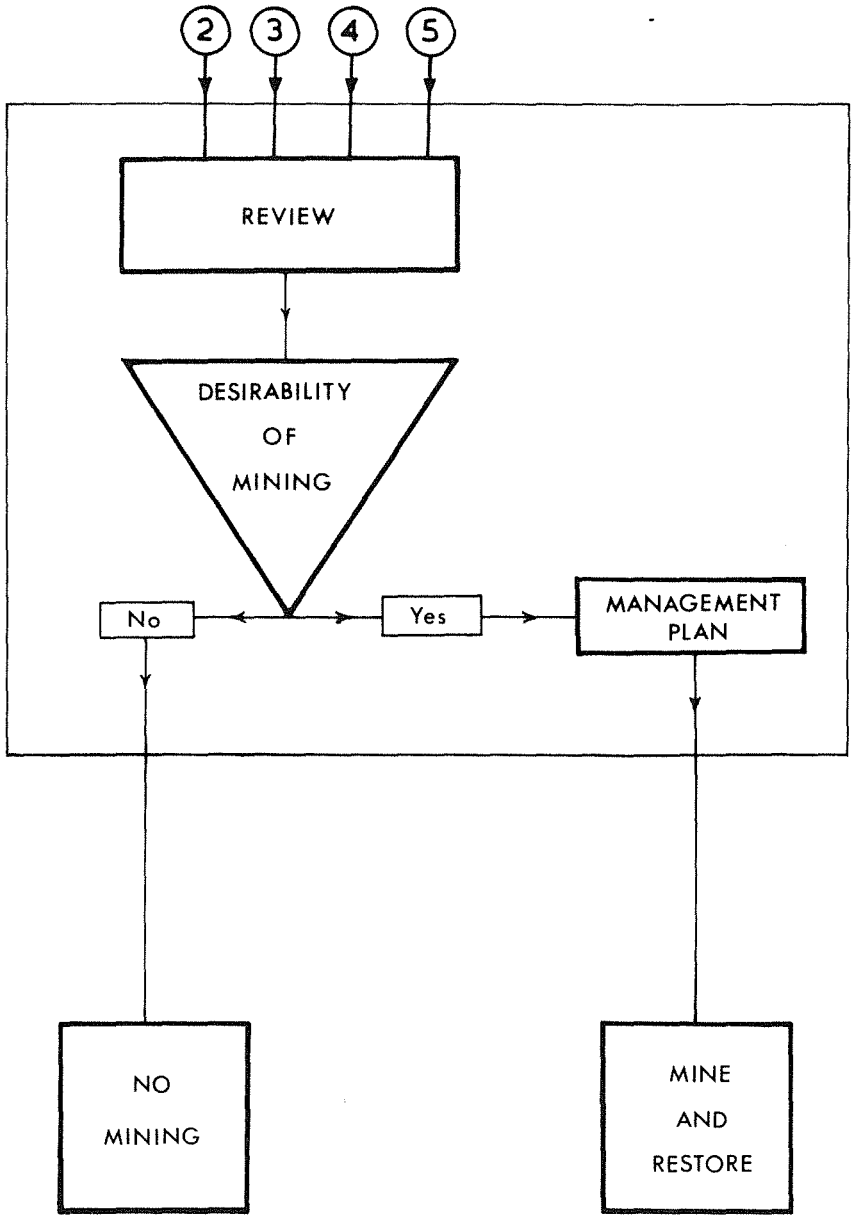


Fig. 6

SUBSET V

DECISION / ACTION



The outline of the decision flow process is shown in Fig. 1. The first component to be determined is the economic viability of the proposed mining operation. Having established this it is then necessary to examine the two major areas of impact of such a project viz:

(a) The ecological impact.
(b) The tourism impact.

Having evaluated these impacts a decision can be made as to whether mining can proceed and then action is needed to implement a plan of management to ensure that the operation proceeds under controls indicated by the earlier studies.

RECOMMENDATIONS

This decision making process was put before the Conservation and Environment Council as a basis upon which to work towards a recommendation to the EPA. The Council accepted that a first requirement was to assess the viability of the project since the geological information on which the present proposal was based consisted of extrapolation from surface mapping. These investigations estimated the coal reserves at 40 million tonnes containing some 6% montan wax and a drilling programme was obviously necessary to confirm these figures.

The applicant company had previously applied to the Department of Mines for permission to undertake a reconnaissance drilling programme, however, the department withheld permission pending the advice of the EPA. Recognising the need for such a drilling programme the Council was nevertheless concerned that in allowing the applicant company to proceed a precedent could be set such that it would be difficult to withhold permission to mine if thought necessary. It was therefore proposed that the Geological Survey Branch of the Department of Mines should undertake the investigation.

This course of action was generally acceptable to the Council but was in direct opposition to current Department of Mines policy, since it would in effect constitute the exploration of a private holding using State funds. The final resolution passed by the Council was:

> *"The Council desires that the Authority recommends to the Minister for Mines that an exploratory drilling programme..... be permitted in the Fitzgerald River Reserve 24048 to assess the extent and location of the coal deposit regarded as a source for Montan wax. Adequate conditions to keep disturbance of the area down to a minimum, to be imposed on any mining tenements granted to enable this exploration to be carried out."*

Thus leaving the EPA to decide on the mechanism by which such exploratory drilling would be carried out.

Noting the recommendation of the Council, the EPA recommended to the Minister for Mines that a 40-hole drilling programme *"be begun as soon as possible with the cost being borne by the State Government"*. It was suggested that, despite the contravention of Department of Mines policy, only in this way could the Government feel free of any obligation to Jupiter Minerals as regards their future exploration and exploitation of the area. In the event of the reconnaissance drilling giving favourable indications and more work being warranted, it was recommended that such further work be undertaken on a 50/50 cost share basis with Jupiter and the Government after Jupiter had reimbursed the Government for the initial drilling.

On August 11 1972, the Minister for Mines submitted to Cabinet a recommendation that a reconnaissance drilling programme be undertaken by the Geological Survey Branch of the Department of Mines. The recommendation was approved by Cabinet and the Geological Survey began their investigation in September 1972.

At the same meeting of the Conservation and Environment Council in which the reconnaissance drilling recommendation was made a resolution was carried recommending that the Fitzgerald River Reserve be proclaimed Class A for the purpose of a National Park.

This recommendation, supported by the Conservation Through Reserves Committee and the EPA was accepted by Cabinet and the Reserve proclaimed on January 19 1973. Subsequently, on February 27 1973 a report was received from the Geological Survey Branch of the Department of Mines on the reconnaissance drilling programme. The coal ore body had been delineated and was estimated to contain 1.1 million tonnes of lignite averaging 2.3% montan wax; a total of 15 000 tonnes of wax compared with the original company estimate of 2.4 million tonnes of wax.

As a result of this report the Conservation and Environment Council carried the following resolution:

> *"that this Council recommends that in view of:*
> *i) the small size and low grade of the montan wax deposits at Fitzgerald River indicated by the exploration and analysis undertaken by the Mines Department; and*
> *ii) the considerable scientific and tourist value of the Fitzgerald River Reserve*
> *the current application by Jupiter Minerals NL for coal prospecting areas in the reserve, should be refused..... and no future applications with respect to the lignite deposits be granted."*

The recommendation was supported by the EPA and endorsed by Cabinet which announced on April 2 1973 that coal mining applications had been rejected.

In the final analysis then, no real decision needed to be made - there was insufficient coal present to support an industry, so the refusal of the claims was a matter of form since the applicant would have withdrawn. However, this satisfactory outcome was a result of establishing a logical flow of actions which would ultimately lead to a rational decision by balancing the economic, social and aesthetic values of the alternative uses of the area.

ENVIRONMENTAL ASSESSMENT WORKSHOP

EXAMPLES OF THE DEPARTMENT OF CONSERVATION AND ENVIRONMENT'S INVOLVEMENT IN THE ASSESSMENT PROCESS

WEST COAST HIGHWAY - SWANBOURNE AREA STUDY

PUBLIC PARTICIPATION

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Wednesday 21 July 1976

INTRODUCTION

In briefly sketching the sequence of events in the public participation aspect of the Environmental Protection Authority's West Coast Highway Study there has been no attempt to judge its effectiveness but only to illustrate the Structure of the programme.

It has been said that since at least the time of the publication of the Stephenson Report in 1955 the route; Curtin Avenue, Servetus Street, Alfred Road and Rochdale Road has been used as a "West Coast Highway" by default.

Demands for a West Coast Highway through Army lands have been consistant from an early date: the replacement of the circuitous route described above having been suggested by a road linking from Challenger Drive through to Swanbourne via Army land.

All the ingredients for a tumultous social issue came together as traffic volumes rapidly increased in the Servetus Street area and especially when solutions involving dispersing traffic through the street systems of Cottesloe at the southern end of a north-south coast road were proposed.

A strong history of public debate,local authority activity and recourse to petitioning of politicians preceeded the Metropolitan Region Planning Authority's (MRPA) referral of the problem to the EPA in late 1973.

PUBLIC INVOLVEMENT

It seemed obvious that the EPA's study should embody public participation, not just because it was a commonsense, pragmatic thing to do, but hopefully because it would extend the EPA's philosophy of public involvement in planning.

It may be asked how in fact could a study of this sort seek out attitudes and experiences, define communities and assess reactions to the progress of the study without community involvement? I believe that it was recognised well before the terms of reference were established that there was a necessity for involvement and that it should not be foregone.

EVENTS

The first step was to incorporate in the terms of reference a flexible requirement for the consultant to interact with the public. This was followed by an invitation through the press, for comment on them. They were also circulated to local authorities, groups and individuals; rewritten following submissions and finalized by the EPA after referral back to MRPA.

The final terms of reference were used as a basis for submissions by consultants.

On appointment, the study team used the first five weeks in detailed planning, research into what was known about the problem locally and regionally, familiarization with social issues and designing the programme of public involvement. During this period early contact with communities in the study area took place and a public office established in North Street, Cottesloe. This concept had been used in the recent Geelong Transportation Study enabling the team to provide a local centre for display and community interaction.

A weekend long "Search Conference" formalized early contacts with communities in the study area: Groups of people with widely varying interests, councillors, action groups, residents, transport workers, and others were brought together to discuss the study objectives and to exchange views on the issues involved.

The Search Conference was followed by the formation of a Citizen Liaison Committee formed to review the progress of the Study, assist in communicating issues and attitudes to the Study Group and to act as an initial sounding board on public attitudes. This Committee remained together for the rest of the Study period, meeting informally and voluntarily advising the consultants when issues arose and acting as an information transfer link from consultants to communities.

One formal, large, public meeting was held midway during the Study with the aim of presenting a summary of work and showing the direction of the Study at that date. It was hoped that the meeting would elicite a vigorous response and indeed approximately three hundred people attended.

In addition, numbers of meetings with community action groups, local authorities and groups of individuals were held throughout the Study. Although local authority meetings resulted from planning others developed as the Study revealed significant issues.

In order to augment and verify sociological and other data gathered during public involvement procedures, a number of formal surveys involving questionnaires and household interviews were made. For example route affected surveys, school and other user surveys and community severence surveys were conducted. This basic sociological investigation tool should be kept in clear distinction from the many innovative public participation practises previously described in this paper.

During the study two major progress reports were published. Although they were initially thought of as technical reports to the EPA's Steering Committee they proved to be valuable public information available at the site office. A series of bulletins explaining study developments and inviting comments were also issued from the office.

As the study concluded the office was closed and the team prepared its final report for the EPA. Further public involvement took place when the EPA made the report available for review and comment so that submissions could be considered prior to the EPA recommending a course of action to the MRPA.

CONCLUSION

The mechanisms of public involvement in the study have been briefly outlined. In this context the process described will hopefully lead to a clarification of community attitudes and issues so assisting in the rational resolution of this problem.

ENVIRONMENTAL ASSESSMENT WORKSHOP

EXAMPLES OF THE DEPARTMENT OF CONSERVATION AND ENVIRONMENT'S INVOLVEMENT IN THE ASSESSMENT PROCESS

MINERAL EXPLORATION AND MINING PROPOSALS

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Wednesday 21 July 1976

INTRODUCTION

Broadly speaking, the Department of Conservation and Environment has two levels of involvement in the assessment of environmental effects associated with the mining industry. These occur at:

(a) the tenement application and mineral exploration stage; and
(b) the development and production of full scale mining.

In the first instance environmental involvement is largely a matter of referral between the various, responsible Government departments.

At the second level the Department is directly involved with the mining company or companies participating in the mining venture. Pending the types of environmental problems, and whether or not the developer is operating under the umbrella of a State Industrial Agreement, there may be other Government departments involved in the environmental assessment.

However before I give examples of the Department of Conservation and Environment's involvement at this level of assessment, I would like to expand a little more on the Department's involvement in what I have called the Tenement Application and Mineral Exploration Stage.

THE TENEMENT APPLICATION AND MINERAL EXPLORATION STAGE

As Mr. Browne-Cooper has already mentioned in his earlier paper,* there are two main methods in which tenement applications get referred to the Environmental Protection Authority (EPA), and therefore also the Department.

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* Provisional Procedures for Environmental Assessment of New Projects and Proposals in Western Australia. Presented on Monday 19 July, 1976 at this Workshop.

Under Section 55 of the Environmental Protection Act 1971-75, the Authority may request the Minister for Mines to refer all tenement applications in a certain area to the EPA. Such a request is usually only made when there are sufficient reasons for such obvious environmental concern. In these cases the issues are usually fairly clear and after an inspection by officers of the Department of Conservation and Environment, the likely environmental effects are determined and appropriate environmental conditions can be formulated. These recommended conditions are then forwarded to the Minister for Mines and are generally listed, along with the usual encumbrances, for those specific tenements.

Examples of areas where the EPA might make such a request are where tenements have been pegged in a swamp or wetland, or where a heavy mineral claim is pegged on a fragile part of the coastline already subject to severe wind erosion.

If the tenement application is referred to the EPA under Section 57 (1) of the Act (i.e. that part of the Act which covers General Ministerial Referrals); or if the application is referred Departmentally; often the environmental issues are not so clear, particularly as in most instances no one can readily forecast the specifics of any likely mining operation let alone whether there is even an ore body present at all.

In such instances an onsite inspection is made by Departmental officers. If there are any areas of significant environmental concern, these are noted and the EPA or the Department, pending the original referral, will usually recommend that the tenements be approved subject to the two general conditions to which Mr. Browne-Cooper previously referred, namely;

a) No developmental or productive mining being commenced without the holder/holders first supplying the Minister for Mines with a detailed Environmental Review and Management Programme.

b) No developmental or productive mining being commenced until the Environmental Review and Management Programme has been submitted to the Environmental Protection Authority and their recommendations considered by the Minister for Mines.

This enables the tenement applications to be processed as quickly as possible and therefore allows the companies to get on with their exploration with a minimum of delay. At the same time it provides the mechanism whereby environmental considerations can be incorporated at the appropriate stages of the feasibility studies should an ore body be located. (I am of course using *"ore body"* in its geological definition which signifies that it is economically viable, and I am therefore assuming that the company wants to get it out of the ground).

THE DEVELOPMENT AND PRODUCTION OF FULL SCALE MINING

The second level of involvement is where an ore body has indeed been located and where mining is to, or already has commenced. At this level there are two types of mining developments which require two different degrees of environmental interaction on behalf of the Department of Conservation and Environment. Specifically these are:

(a) those requiring State Industrial Agreement Acts; and
(b) those not requiring such legislation.

It should be remembered at this point that not all Industrial Agreement Acts involving mining operations have been initiated by the State. Many have been requested by the companies themselves in order to clarify the State's obligations and contributions to the proposed development.

MINING PROPOSALS REQUIRING AGREEMENT ACTS

As an example of the EPA's and the Department's involvement in those mining proposals requiring industrial agreements, I would like to refer to Dr. Kelly's previous examples and in particular his Appendix F relating to one of the Eneabba Mineral Sands Agreements.*

Historically as far as I can determine, the first expression of environmental concern related to these heavy mineral sand mining proposals came early in 1973 when the Eneabba Progress Association expressed it's concern, to the Minister for Town Planning, on the possible problem of dust pollution resulting from mining operations. This matter was referred to the Department of Conservation and Environment for advice.

In July of 1974 an inter-departmental meeting was called to make a preliminary examination of the environmental rehabilitation requirements and procedures for inclusion into the drafting of agreement acts for the Eneabba miners. The justification for this, as Dr. Kelly indicated, was the rationalization of infrastructure required by the four or five companies all hoping to operate in the one area.

At this meeting it was agreed that the major areas of environmental concern were:

(a) the rehabilitation of the barren silica tailings,
(b) disposal and rehabilitation of the slimes (clay sized wastes),
(c) the need to incorporate and mix these two fractions in order to increase the water and nutrient retention in the soil profile,
(d) the need for control of, and reduction in, the amount of underground water required for the operations, and

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* State Agreement Acts. Presented on Tuesday 20 July, 1976 at this Workshop.

(e) the possibility of wind erosion and its effect on both rehabilitation and the resident human population.

The meeting also concluded that there was the need for ongoing monitoring of both the rehabilitation and the underground water resources.

Subsequently the first draft Agreement was circulated by the Department of Industrial Development in August, 1974. Clause 5 (1) (i) was slightly different to that shown in Dr. Kelly's Appendix F in that it read:

> *"measures to be taken for the protection of the environment, including restoration of mined areas, the prevention of the discharge of tailings, slimes, pollutants or overburden into the surrounding country water courses, lakes or underground water supplies."*

It was felt that all the aspects covered under sub-paragraphs a) - h) affect the total environment (certainly as it is defined under the Environmental Protection Act of 1971-75) and as such, they should all be considered, together with those specific aspects mentioned in sub-paragraph (i), in the context of an environmental review.

In effect Clause 5 (1) (i) became a request for the company to submit an environmental review and management programme, even though there is no formal requirement for the preparation of an Environmental Impact Statement in this State.

However the involvement of possibly four other companies in the same area was recognised and rather than having five separate and probably widely differing environmental reports, the recommendation was made that the companies should pool resources and prepare a common environmental review. This would leave them with the individual responsibilities of preparing their own

management programmes. As they were operating on different types of land ranging from freehold land in one instance, to a flora reserve in another, this was considered to be a logical and realistic suggestion. Another benefit of the common environmental review was seen in cost sharing.

Subsequently through the liaison of the Department of Industrial Development and the Chamber of Mines, an environmental consultant was chosen to carry out the joint study. Guidelines or terms of reference for the study were prepared by the Department of Conservation and Environment.

For those involved in both Government and industry circles, the rest is a matter of history. The environmental review was submitted to the Minister for Industrial Development, assessed by the EPA and the other involved Government departments and, on the basis of their recommendations, duly processed. The only two companies with Agreement Acts so far assented to have, or are in the process of submitting their proposals, including their environmental management and monitoring programmes.

I do not suggest for a moment that the road has been smooth or that the companies have not had perhaps some legitimate grievances with regard to delays or time taken for Government decisions. However I would like to emphasize a point that was made several times during the Workshop, and in particular by Mr. Pryor with his satirical reference to possible delays because a species of bird may take two years to breed; we can't and don't want to stop the world. As far as I am aware no restraints have been put on the Eneabba companies which have hindered their present mining operations (other than those restraints brought about by a general world recession and drop in metal prices).

What we have achieved I think, and by we I mean the mining industry and Government together, is a fairly good start at laying some of the framework which will allow this particular

branch of the mining industry to operate in such a way that the results of their environmental management and monitoring will not be lost. With proper co-ordination and assessment these results should provide cheaper and more efficient means for the integrated management of all the involved natural resources in the Eneabba area.

MINING PROPOSALS NOT REQUIRING AGREEMENTS

As an example of the Department of Conservation and Environment's involvement in those mining ventures not involved with a State Agreement Act, I would like to quickly mention Newmont's proposal for gold mining at Telfer in the East Pilbara. For those who don't know where it is, Telfer is located in the Paterson Ranges about 260 air kilometres east south east of Marble Bar. This puts it on the edge of the Great Sandy Desert.

On their own initiative in May of 1974, Newmont approached the Department of Conservation and Environment to find out what likely environmental factors could be involved in a strip mining operation in this location. Their purpose was that they intended to prepare an Environmental Impact Statement (EIS) of their mining proposal and that they wanted to make sure that they were conforming with all State and Commonwealth environmental requirements.

In July of 1975, after considerable revision on behalf of the Company because of a fall in the price of gold, coupled with massive cost escalation in building and stripping contracts, Newmont submitted their EIS to both the State and the Commonwealth environmental authorities. I would point out that on submission to the then Labour Federal Government, the Company requested an exemption from the public review requirement under the Administrative Procedures of the Environment Protection (Impact of Proposals) Act of 1974-75. It should be further noted that this legislation was assented to on the 17 December, 1974. (i.e. some seven months after the Company had initiated their own studies).

Officers of the Department of Conservation and Environment inspected the Telfer prospect and adjacent area, and reported back to the EPA, upon which the Authority then endorsed the Company's development and environmental management proposal.

In conclusion I would like to point out that the Telfer case is an interesting one showing the degree of communication and co-operation that exists between the Commonwealth and Western Australian State environmental departments.

The Commonwealth was not happy with some of the environmental aspects and were rather loathe to waive the public review requirement. An example of their concern was over the need for protection of aboriginal sites. However after consultation with the State environmental officers who had been on site; and receiving the advice that all finds had been reported to the Conservator of Aboriginal Sites at the Western Australian Museum, who was duly satisfied with the Company's proposals for site protection; all Commonwealth environmental clearances were given in August of 1975.

ENVIRONMENTAL ASSESSMENT WORKSHOP

EXAMPLES OF THE DEPARTMENT OF CONSERVATION AND ENVIRONMENT'S INVOLVEMENT IN THE ASSESSMENT PROCESS

ENVIRONMENTAL MONITORING, RESEARCH AND MANAGEMENT

Mr. C.C. Sanders
Chief Environmental Officer (Planning and Research)
Department of Conservation and Environment
Western Australia

Wednesday 21 July 1976

INTRODUCTION

Environmental problems don't go away once a project comes on steam. Normally for larger projects management procedures must be instituted and this usually requires research and monitoring. The data provided from serveillance are used to permit the best decisions to be taken with respect of the continuing operation of an industry. Monitoring and research data may indicate a need for modification of practices, so as to ensure the impact of a project on the environment remains minimal.

In recognition of this the Department of Conservation and Environment has established a Special Services Division and the Planning and Research Branch to coordinate environmental management and to undertake research.

As indicated earlier the Department services the Environmental Protection Authority which consists of 3 men and is chaired by Dr. O'Brien. The EPA is aided by the sixteen man Conservation and Environment Council, a committee comprising heads of relevant Government Departments such as Agriculture, Forests, Fisheries and Wildlife etc and including representatives of conservation interests, local government, primary and secondary industry and mining.

MANJIMUP WOODCHIP INDUSTRY

Perhaps the best example of a project examined by and being continually reviewed by the EPA is the Manjimup Woodchip Industry. In August 1973 the EPA presented its First Interim Report on the Woodchip's Manjimup Project drawing *"attention to the fact that it was being called on to consider environmental aspects of a project approved by an act of State Parliament in 1969. The then State Government had approved and signed the new agreement with the venturers before the EPA had an opportunity to fully deliberate on the complex issues involved."*

"The EPA's statutory responsibility and obligation under law therefore was two fold:

1. *To ensure that legally the Conservator of Forests had sufficient powers to remove, because of conservation reasons, areas from Woodchipping activities; and*
2. *To ensure the best available expertise was used so that the judgements made by the Conservator in liaison with the EPA for management and excision for conservation reasons were the best that could be made at the time."*

The EPA was able to resolve these two points by firstly determining that clause 9 of the Forests Produce License Act gives the Conservator of Forests authority to excise areas of the forest for conservation reasons, and secondly the EPA established a research group chaired by Mr. Ken Kelsall, Deputy Director of Engineering of the Public Works Department, to investigate the hydrological effects of the Woodchip Industry. Additionally at that time the Conservation Through Reserves Committee was reviewing the need for National Parks and Nature Reserves throughout Western Australia.

One of the first tasks of the Department of Conservation and Environment was to assist and advise the Forests Department in preparation of an environmental impact statement. The Statement indicated that one of the major environmental problems likely to arise in the woodchip industry was the potential problem of increased surface and groundwater salinity. The brief of the Kelsall Committee is to investigate this and other hydrological problems in the south-west, mainly in the Manjimup Woodchip license area. The Committee is comprised of eight State and CSIRO representatives and supervises four research projects.

Project 1

Endeavours to identify areas vulnerable to salinity increase;

Project 2

Is a programme of monitoring surface and underground water on paired or comparable catchments in representative areas;

Project 3

Looks at monitoring quality and quantity of runoff from large catchments; and

Project 4

Has the task of monitoring fluctuations in the groundwater levels and salinity in selected coupes throughout the period of logging and re-vegetation.

Project 1, convened by the Department of Agriculture, has already reported initial results of studies into the quality of runoff water from forested and cleared catchments.*
The conclusion reached indicate that those rivers most likely to be effected by rising salt levels are those having catchments receiving less than a mean 1200mm rainfall per annum and having appreciable areas of permanently cleared or likely to be cleared alienated land. In other words agricultural developments are likely to have much greater effect upon the salinity load of streams than woodchipping or other forestry practices, or in frank terms agricultural developments have a significantly greater impact on the environment than timber operations.

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* (1974) - The Influence of Land Use on Stream Salinity in the Manjimup Area, Western Australia. Technical Bulletin No 27. Department of Agriculture of Western Australia.

It is to be remembered that the woodchip project is part of an overall forest management programme : the chipping of residual material being ancilliary to felling for wood production. Clear felling of forest followed by a regeneration burn is a silvicultural tool adequately proven and documented over 50 years, which assures the best renewal of prime forest.

The EPA additionally at that time requested from the CSIRO an independent report on stream quality following timber operations. That Report concludes that the risk of deterioration of water resources due to salinity induced by woodchip operations is low, the reason being that leaf area measurements show that evaporative capacity of the regenerated forest equals that of the original forest within a period of five years. In other words re-growth five years after cutting will be utilising or transpiring water into the atmosphere equal in amount to that of the original forest and should be sufficient to prevent excessive groundwater flow with its contained salt to stream systems.

In its Second Interim Report on the Manjimup Woodchips Industry (September 1975), the EPA concluded that it was satisfied that salinity problems associated with the industry would be minimal provided that logging areas were suitably selected, and the forest management techniques to be employed were considered the best for the assured regeneration of prime forest. The EPA also undertook to continue to maintain a watching brief of developments and ensure that appropriate surveys, monitoring and surveillance would be continued with the assistance of those groups who are active to date.

The Kelsall Committee continues to be active. In June, 1976 a Workshop was held for research workers investigating the hydrological effects of the woodchip industry and the hydrological effects of bauxite mining and agriculture developments. The meeting was so successful that it has prompted the Department of Conservation and Environment, jointly with the

CSIRO and the Public Works Department to sponsor a public seminar in September of this year. The seminar will be titled *"Current Research into the effects of land use and stream salinity and turbidity in Western Australia"*.

Hopefully it will bring the public's attention to the active research being undertaken by the State and the CSIRO on various land use problems. Moreover it indicates the value of Government awareness of environmental issues and a preparedness to facilitate continuous monitoring and if need be review.

GUIDELINES FOR AN ENVIRONMENTAL PROTECTION POLICY FOR THE COASTAL ZONE

There are many issues which the EPA sees advantage in bringing to the public's attention. A recent example would be that of initiatives in coastal management. Elsewhere in the world the need to have rational planning and management of the coastal zone has become imperative because of excessive pressures of use both recreational and developmental. California is a very good example with competition for coastal land being excessively competitive. Western Australia is now taking heed of problems recognized elsewhere, and we have time to both make appropriate warnings and move cautiously.

To that end a number of other State Government officers including myself attended a comprehensive Coastal Management course in New South Wales last year. The EPA has subsequently released a Preliminary Working Draft on Coastal Guidelines which was made available to coastal Shires, Government Departments, and concerned groups for their comments. On the whole the guidelines have been well received although some have suggested that the guidelines need to be tight while others recommend flexibility. Some unfortunately misinterpret the guidelines and consider the whole project as aimed at preservation rather than sympathetic management and utilisation. The emphasis, however is on sensitive planning and management and is not a preservationist

point of view, but rather is one favouring the conservation of resources and the erecting of a framework of best criteria for recreation and development.

The comments on the Preliminary Draft have been collated and the guidelines are being re-considered. A new draft will be released subsequently for full public review and comment.

CONCLUSION

In summary I have outlined two situations where the EPA and the Department are involved in continuous review. One, the woodchip industry where on-going research is seen as a means of minimizing any detrimental environmental impact, and second, a short discussion on moves to establish guidelines for rational coastal management.

ENVIRONMENTAL ASSESSMENT WORKSHOP

ASSESSMENT FROM THE USER VIEWPOINT (GOVERNMENT SECTOR)

Mr. K.C. Webster
Engineer for Planning, Design and Investigation
Public Works Department
Western Australia

Thursday 22 July 1976

INTORDUCTION

This paper will discuss the environmental assessment techniques used and the experience gained by the Public Works Department over the last two years in respect to the West Pilbara water supply investigations. A clear distinction must be made between an environmental assessment and an environmental impact statement. An environmental assessment is an integral part of the planning process and should be carried out to varying degress of depth for all projects. An environmental impact statement is a tool within the decision making phase of a project and may or may not be required depending upon the outcome of the environmental assessment.

CHANGES IN PLANNING

It is a fact that throughout the world public attitudes and Government policies have shown significant changes to resource development over the past five years. The greatest change has possibly taken place in the U.S.A. however there are already changing attitudes to major water supply studies occurring within Australia.

In the 1960's the all important factor in selecting priorities for water supply projects was a favourable benefit cost ratio. Engineering and economics were paramount. Evaluation and comparison of projects ignored the environment and assumed that social benefits correlated with economic benefits. It is not unfair to say that cost-benefit ratios could be and were manipulated to give the required results.

In the late 1960's and early 1970's there was a swing in public attitudes towards protecting the environment. In the U.S.A. the swing was quite violent and many projects were delayed and some abandoned on this account. In Australia the swing has not been so violent but nevertheless there has been a public awakening

towards environmental matters and government departments and private organisations have accepted that no longer can developmental projects be evaluated on engineering and economic factors alone and that environmental and social issues must receive equal evaluation and consideration. Sound planning and development requires a multi-objective approach.

WEST PILBARA STUDY

The Public Works Department recognised the change in public attitudes and in 1974 with the West Pilbara water supply investigations about to enter another stage it was decided that within the limits of the resources of money and manpower available a multi-objective type of approach would be adopted for the study. At the same time it was acknowledged that any major State project in the Pilbara would require special financial assistance from the Commonwealth Government and therefore not only would the project have to meet State environmental requirements but also those of the Commonwealth.

At the commencement of the study the Federal Administrative Procedures for Impact Statements were in their final stages of approval. These were studied and it was concluded that the Sections dealing with the *"Requirement for Impact Statements"* and *"Matters to be Dealt with by Environmental Impact Statements"* provided a sound basis on which to evaluate a project. By treating each project on its merits and interpreting the Federal Procedures responsibly and intelligently they are useful guidelines for achieving an objective environmental assessment.

Engineering planning studies carried out in 1974 showed that one of the most promising water sources, was the development of the Fortescue River by a dam some 15 to 20 kilometres downstream from the area known as Millstream, an attractive oasis in an arid environment. It was therefore decided that this source

should be further investigated and that an environmental assessment should be carried out as an integral part of the study with an interaction between the engineering and economic investigations. Further, it was decided that the public would be kept informed and invited to offer comment particularly with respect to environmental issues as input into the overall study.

A multi-objective approach to investigations giving equal weight to the engineering, environmental, economic and social factors requires a multi-disciplinary team. The Public Works Department has trained staff with experience built up over a long period in engineering studies. In the past, simple economic evaluations have been made by engineers, and in the small number of cases when a cost benefit analysis has been required, assistance has been obtained from trained economists. However, with the broadening of project studies a proponent organisation such as the Public Works Department now requires input to the study from a wide range of disciplines.

Most of the expertise required for such a study is available from Government departments, however short of setting up a full time study team it is quite impractical to expect other departments to provide inputs into a major investigation as and when required by the Public Works Department.

The policy adopted by the Public Works Department so far has been to treat each project on its merits. The procedure adopted for the West Pilbara Study will serve to give an indication of the multi-disciplinary approach which has been used successfully to date.

At the commencement of the study liaison was established with the Department of Conservation and Environment, and a small technical co-ordinating committee was established and convened by the Public Works Department. The following departments were represented:

Public Works Department (Convener)
Department of Conservation and Environment
Department of Fisheries and Wildlife
Forests Department
The State Herbarium, Department of Agriculture
The Geological Survey, Department of Mines

The composition of the Technical Committee would vary depending upon the scope and depth of the environmental assessment required.

At the outset it was realised that the wide scope of the environmental assessment required for the Fortescue Study made it quite impractical for the assessment to be carried out by Government departments and co-ordinated by the Public Works Department. It was therefore decided that a consultant should be engaged to carry out the environmental assessment.

The value of appointing a consultant is twofold:-

(a) the consultant can provide immediate staff which enables the environmental assessment to proceed within the time schedule prepared for the total study.
(b) the study is independent and not tied to a Government Department, and therefore more credible in the eyes of others.

A brief was prepared by the Department, discussed with the Technical Committee and submissions invited from a number of consultants. The brief provided for regular meetings between the Consultant and the Technical Committee so as progress could be reviewed and to allow for interaction between the engineering and environmental investigations. On receipt of the submission a consultant was selected for the study.

The appointment of the Consultant to carry out the environmental assessment was announced by the issue of a brochure outlining the investigation programme and seeking comment on the scope of the study from interested environmental groups and individuals.

A number of submissions were received and included in the consultants report.

As the engineering and environmental investigations proceeded and public comment received it was found necessary to change the study programme. Experience showed that it was necessary to issue progress statements to keep the interested public informed of progress and changes.

At the completion of the environmental assessment, a report was prepared by the Consultants' and made available to the public through libraries and conservation groups. Two meetings were convened to discuss the report. One was held in Perth with conservation groups and the public who had corresponded with the Department and the other was a public meeting held at Karratha.

An aboriginal bush meeting at Millstream was attended by project engineers to obtain the view of the aborigines. At all times engineers in the Department have made themselves available to discuss the study with small groups and individuals who were interested.

The present status with the study is that an environmental assessment has been completed for Dogger and Gregory dam sites and the engineering report is in the course of preparation. Environmental and engineering studies of alternative source are currently under investigation and should be complete by the end of 1976.

There is no doubt that there have been benefits and problems by seeking public involvement. The earlier the public are involved, the more beneficial the input. In the early stages, the study is more fluid and can be more easily manipulated to take account of all factors. The views expressed to us during the course of the study have certainly had an effect on the overall investigation programme.

Wherever possible the Consultant was encouraged to obtain input to the study from Government departments and instrumentalities, for example, the Museum was very helpful with information and undertook investigations relating to archaeology and anthropology.

The preparation of a draft Environmental Impact Statement and a Project Report are the next steps. The form that this report or reports will take still has to be resolved. The Department is mindful of the need to convey to the public concise, complete and yet easily understood information. At the same time unnecessary preparation of reports should be avoided. These documents will be made available to the public for comment before proceeding to the next phase. Fig. 1 depicts the sequence of events followed so far and Fig. 2 the subsequent stages.

This procedure has worked particularly well on the Fortescue Study so far, and there is no reason why this type of approach should not be continued by the Department. Variations to suit each particular project would be considered. In some studies input by Government departments would be greater and in others the Consultants input would be more. The extent of the environmental assessment required will vary between projects.

PROBLEMS

The study is still not complete, however as would be expected it has raised a number of problems and issues which are worthy of discussion. The main problem areas are:-

(a) Alternatives

The Federal Administrative Procedures call for an examination of any feasible and prudent alternative. The number of alternatives examined requires very careful consideration and is a matter of fine subjective judgement. Evaluation of too few alternatives will bring valid criticism from the public whereas

WEST PILBARA WATER SUPPLY STUDY PHASE 1

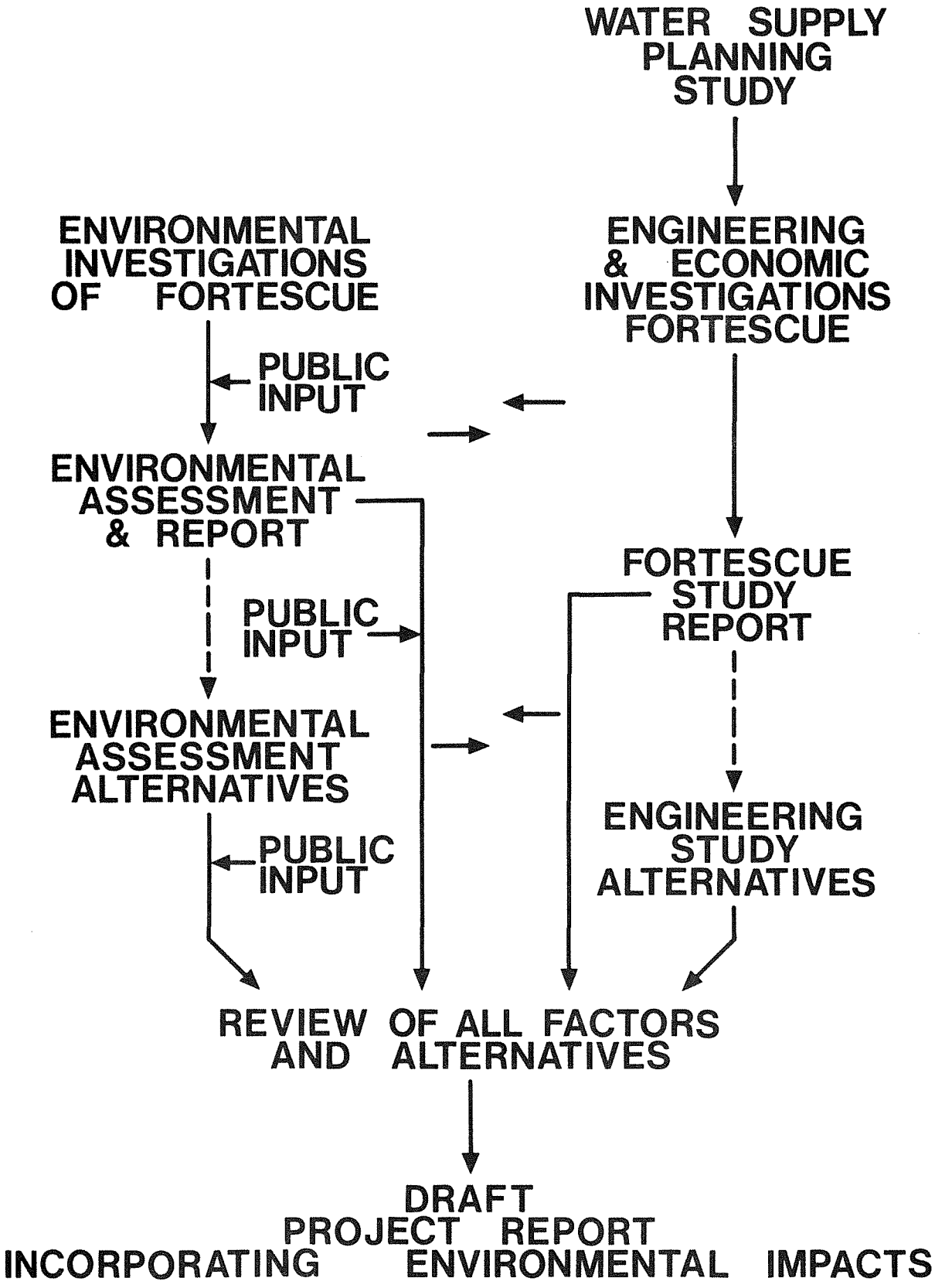


FIGURE 1

WEST PILBARA WATER SUPPLY STUDY PHASE 2

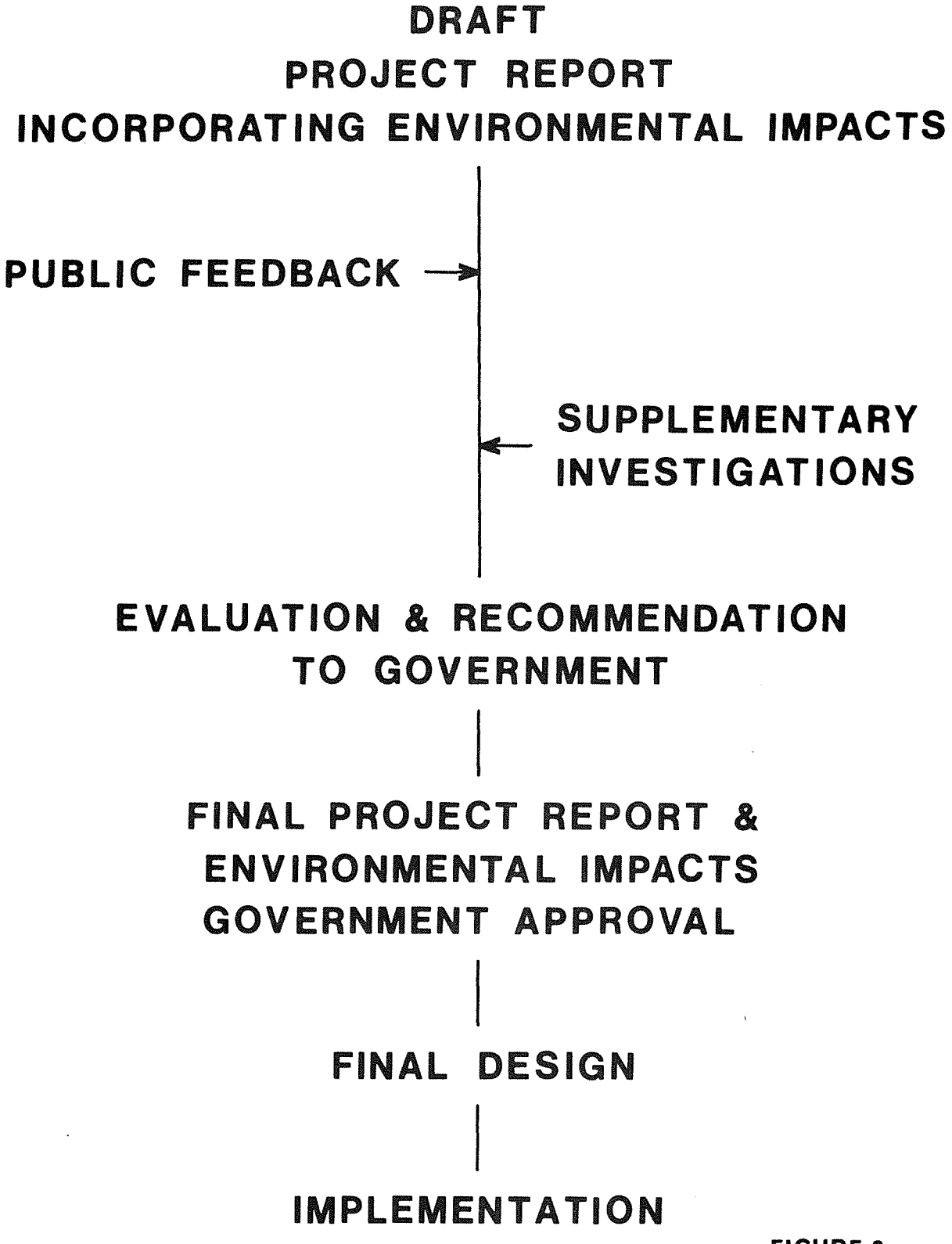


FIGURE 2

too many alternatives will be wasteful of time, money and staff. Just how many alternatives are evaluated needs very careful consideration. Early input from organisations and the public would assist in making this judgement.

(b) Flexibility

The need to consider alternatives, means that early investigations must be broadly based and a flexible approach to the investigation must be maintained. However care must be taken to ensure that too many options are not kept open for too long. This type of indecision can lead to confusion within the investigation process. Decisions must be made as and when required with the high cost decisions being kept open as long as possible.

(c) Time Scale

The evaluation of projects on an engineering economic, environmental, and social basis and the use of public participation requires a much longer investigation phase. The time will vary from project to project, however on the average an additional two years should be allowed if a major environmental assessment is required.

(d) Cost of the Study

An investigation process which requires the evaluation of many factors, consideration of alternatives and communication with the public will obviously cost much more. It is still too early to put a cost against this. It is important that costs are not obscured and that the public are made fully aware of the true cost of the investigation. Hopefully the extra cost of the investigation will enable a more thorough evaluation of all factors before a decision is made.

(e) Multi-disciplinary Approach

The proponent of the project will require assistance and information from a wide range of different disciplines. Much of this information is available in Government departments. The provision of this information throws a heavy and sudden load on these departments. The same situation arises when a consultant requires information for a study. If the present trend continues, Government departments will need to consider how they can provide a service to the proponent departments and organisations.

(f) Communication with the Public

Effective communication with the public requires the direct involvement of the investigation team of the proponent organisation. However, to minimise the commitment of senior project staff and to increase the effectiveness of the process, the investigation team must be adequately backed up with the support from a well staffed and trained public relations office. Radio, television and newspapers are effective means of communication, however there is a tendency for the media to look for sensation and not be quite as interested in publishing factual objective information. There is a tendency for the media to polarise the situation, whereas the proponent organisation conscientiously following these processes wants to keep a completely open mind on the study.

(g) Staff

Communication with the public requires a greater proportion of senior staff allocated to the project. Staff must have a broad appreciation of the investigation and be able to convey information and ideas accurately and authoritively.

(h) External Factors

At public meetings questions have been asked on the much broader issues. Is development of the region necessary or desirable? What would happen if it did not take place? The provision of water being only one factor in the overall development.

(i) Reports

By adopting this approach to the investigation process the preparation of reports become a major task. If reports are to be made available for public scrutiny and easily understood they will take longer to prepare. Careful thought is necessary on the number and scope of the reports to be issued otherwise the preparation of reports become a major part of the investigation phase.

CONCLUSION

It will be some time before the decision stage is reached but hopefully when a recommendation is made to Government all the major factors including public input will have been fully evaluated and the final decision more representative of the community needs.

The investigation of projects on a multi-objective basis poses many challenging problems. On the other hand if the public are kept informed as the investigation proceeds and they are given the opportunity to comment at the appropriate time, many of the problems will be resolved during the planning process making the preparation of an impact statement that much easier.

ENVIRONMENTAL ASSESSMENT WORKSHOP

ASSESSMENT FROM USER VIEWPOINT (GOVERNMENT SECTOR)

Mr. G. Hackett
Urban Planning Engineer
Main Roads Department
Western Australia

Thursday 22 July 1976

INTRODUCTION

The Main Roads Department is involved in all facets of road building in W.A. This ranges from the erection of a STOP sign in a Perth suburb to the construction of the Eyre Highway over the Nullabor. Current (1975/6) annual expenditure by the Department on road construction is $46½m, and a further $43½m is administered by the Department either to local authorities and other authorities or to cover the administrative expenses of the Department, a total budget of just over $90m.
In 1975/76 a total of 2 882 separate job authorities were issued by the Department relating to approximately 1 300 separate projects, 249 of which were major construction items carried out by M.R.D. These projects are administered by eleven divisions covering the whole State plus a further five sections in Head Office managing such items as major contracts, plant, traffic signals, etc.

As can be imagined with an organisation of this size and complexity, responsibilities in many areas are delegated down through the system to the Divisions and Section's heads who are then responsible for a geographic area or particular sphere of operations. No one person or group can be fully aware of all the details involved in all the Department's projects. A further complication that relates specifically to the Main Roads Department is our source of funds; last year approximately 70% of our expenditure on construction was from Commonwealth sources and only 30% State revenue. This means that we are not only required to satisfy any State legislation but also are required to satisfy the Commonwealth Environmental legislation in relation to the expenditure of Commonwealth funds. Both the complexity of our operations and the need to satisfy these Acts has required the Department to formalise a system that can identify projects of environmental concern. Within the Perth urban area this is not difficult but throughout the State it does present problems.

METHOD OF ASSESSMENT

There are two methods that can be used to identify projects of environmental concern:

(a) Request the Division Heads to make an assessment.
(b) Request detailed information from Divisions and assessments made by one person or group in Head Office.

The Main Roads Department has chosen to request the Divisions to make their own assessment for the following reasons:

(a) They have a better awareness of the total effect of a project.
(b) Environmental management is seen to be the responsibility of all persons concerned with a project.
(c) It requires less documentation.

It does however have the problem of assuring a uniform approach and assessment.

CATEGORIES OF ENVIRONMENTAL IMPACT

To assist field engineers in making these assessments the Department has chosen to adopt four categories of environmental impact -

'A' Nil or minor effect
'B' Effects to which solutions are available in design of or construction
'C' Effects to which solutions are not readily apparent
'D' Projects with major environmental effects.

A more detailed description of these categories is listed in Appendix A. Once projects are categorised in this manner it is assumed that all 'A' and 'B' projects are in-house projects and only 'C' and 'D' require the attention of the Department of Conservation and Environment. The Main Roads Department therefore has a sieving process that can identify projects requiring further review or investigation.

The problem that now exists is to find a method whereby different people can make similar or uniform assessments for different projects. To assist the Divisions in this area the Department has produced an assessment form that is in effect a modified check-list and all that is required by the field officers is to tick the appropriate boxes. A copy of the form is attached as Appendix B. Column 1 is the check list of main environmental areas that are affected by normal road proposals. The column has spaces to enable any other items to be listed as appropriate. Columns 2 to 4 relate to the projects and enable the officer to indicate the level of impact. Columns 5 to 7 are similar but relate to the source of materials for the job (e.g. gravel pits). Column 8 enables officers to indicate if expert advice has been obtained and Columns 9 and 10 indicate if solutions are readily available or if further studies are required. Having completed the main part of this form, the officer is in a better position to make his assessment of environmental category as indicated at the bottom of the form. The field officer's assessment is reviewed by the Divisional Engineer and Head Office before final programming is completed. (Appendix C).

For the current (1976/77) Works Programme 254 individual projects were assessed resulting in the following:

Environmental category	A	B	C	D
Projects	214	30	1	9

From the whole work programme only 10 projects were required to be cleared with the Department of Conservation and Environment.

In addition to this form the Main Roads Department is gradually building up a central record of information to enable it to check projects as well as advising Divisions of problems likely to arise. Examples of this information are:

Plans of reserves, quarantine areas, National Trust buildings, etc.

Case histories and examples of solutions applied to specific problems.

Directory of contacts etc. with other departments

From this process the Department is able to identify projects requiring further study and concentrate our small recourses on these few projects. Normally these projects are ones that have already had a large involvement of other authorities, including the Department of Conservation and Environment and the method of reporting has already been determined. It is possible that in future years projects will be identified that will require further study and the process to be adopted will be determined at that time. As a guide, the National Association of Australian State Road Authorities has produced guidelines for environmental studies for road proposals and if any other authority is interested, copies could be available from the Main Roads Department.

CONCLUSION

The problems associated with this procedure are common to any system where a central Head Office requests a busy branch to fill in a new form or supply new information. From the field point of view there is a natural reluctance to the ever increasing demand for new forms to be completed. No matter how sympathetic the field officer is, he has no additional staff and this requirement is only one more imposition that delays his *"getting on with the job"*. As well as this reaction, there is

also the uncertainty and lack of understanding associated with this topic. It is difficult to provide clear direction and therefore full appreciation of the objectives of the system can be misunderstood. The Department is endeavouring to overcome this problem by training sessions and general education within the organisation. A start has been made and we are working towards the day when environmental objectives are automatically considered alongside the more quantifiable objectives of engineering and economics.

APPENDIX A

ENVIRONMENTAL ASSESSMENT

PROJECT CATEGORY

CATEGORY A — Projects of minor environmental significance.

Examples: Re-sealing, Resheeting, Reconstruction with no significant change in profile or alignment, i.e. projects that maintain existing environmental conditions.

CATEGORY B — Projects of potential environmental significance but to which solutions could be clearly provided.

Examples: Reconstruction with improvements to profile and alignment. Problems identified and solutions can be provided by design and construction techniques.

CATEGORY C — Projects of potential environmental significance but to which solutions are not able to be clearly identified or where expert knowledge or opinion is required.

Examples: New work involving relocation but within an established route corridor. Will require special study beyond normal road design considerations to determine solutions.

CATEGORY D — Projects of obvious environmental significance.

Examples: Major relocations, new routes through sensitive (social or physical) areas. Normally projects of this type will be initiated in Head Office and the form of investigation will be part of the planning function.

APPENDIX B

M.R.D.1197

ENVIRONMENTAL ASSESSMENT

DIVISION

SECTION

PROJECT

ROAD :

TO

CLASS

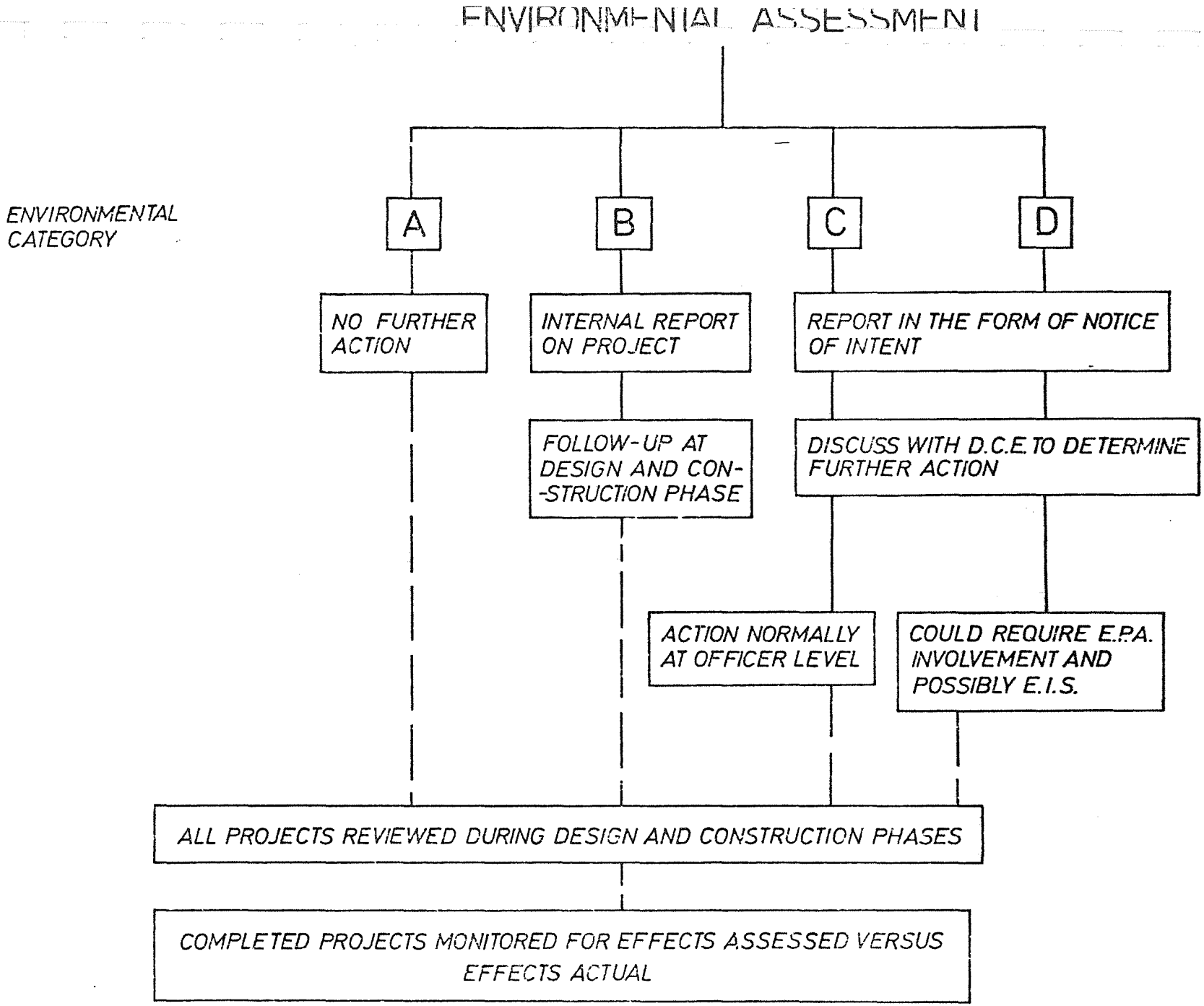
YEAR

	ENVIRONMENTAL AREA	IMPACT LEVEL – PROJECT: Nil	Minor	Major	IMPACT LEVEL – MATERIALS: Nil	Minor	Major	EXPERT OPINION HAS BEEN SOUGHT FROM :-	SOLUTION: Design	Requires Study	REMARKS
	1	2	3	4	5	6	7	8	9	10	
EARTH	Unique Features										
	Materials Reserves										
	Structural Stability										
	Erosion Potential										
	Salinity										
WATER	Surface										
	Subsurface										
	Siltation										
	Wetlands										
	Contamination										
ATMOSPHERE	Adverse Climate										
	Dust										
FLORA	Natural Flora										
	Introduced Flora										
	Unique Species										
	Unwanted Species										
FAUNA	Native Fauna										
	Endangered Species										
	Animal Barriers										
LAND USE	Primary Industry										
	Reserves										
	Special Purpose										
RECREATION											
CULTURAL	Natural Features										
	Historical Sites										
	Aboriginal Sites										
SOCIOLOGICAL	Land Ownership										
	Comfort & Safety										
	Employment										
	Cultural Pattern										
	Special Purpose										
	Economic Effect										

PROJECT HAS AN ENVIRONMENTAL CATEGORY OF -

A		No further report required
B		Statement attached / being prepared by Division
C	}	Notice of intent attached
D	}	being prepared by H.O./Division

OFFICER MAKING ASSESSMENT ..... DIVISIONAL ENGINEER .....


ENVIRONMENTAL ASSESSMENT
ENVIRONMENTAL CATEGORY
A
B
C
D
NO FURTHER ACTION
INTERNAL REPORT ON PROJECT
REPORT IN THE FORM OF NOTICE OF INTENT
FOLLOW-UP AT DESIGN AND CON--STRUCTION PHASE
DISCUSS WITH D.C.E. TO DETERMINE FURTHER ACTION
ACTION NORMALLY AT OFFICER LEVEL
COULD REQUIRE E.P.A. INVOLVEMENT AND POSSIBLY E.I.S.
ALL PROJECTS REVIEWED DURING DESIGN AND CONSTRUCTION PHASES
COMPLETED PROJECTS MONITORED FOR EFFECTS ASSESSED VERSUS EFFECTS ACTUAL

ENVIRONMENTAL ASSESSMENT WORKSHOP

ASSESSMENT FROM A USER VIEWPOINT (PRIVATE SECTOR)

Mr. L.C. Brodie-Hall
Vice - President
The Chamber of Mines of Western Australia (Inc.)

Thursday 22 July 1976

INTRODUCTION

The mining industry recognises the need for environmental protection and although there have been odd cases of neglect over the past century, I believe the industry generally has behaved in a responsible manner.

Early examples of the positive attitude adopted by the mining industry are:

(a) At Broken Hill during the mid 1930's when the mining companies established a green belt around Broken Hill to combat the dust nuisance caused by earlier pastoralists.

(b) In Central Victoria in the 1940's where a major gold dredging operation successfully rehabilitated and even enhanced a large area of grazing land.

It is important to recognise the different localities in which mining operations take place and adopt environmental standards appropriate to the location. For example, much greater care and attention is warranted in bauxite mining in the near city forested, water catchment areas of the Darling Ranges than is needed or justified at the Telfer gold mine in the Great Sandy Desert.

THE MINING INDUSTRY AND THE GOVERNMENT

There is a paradox for the politicians in that they are forced to appease public demand for good environmental standards yet they are also forced to support industry for the economic well-being of the State. There is often a conflict between economic advantages and environmental consequences of which a number of examples may be seen, including the Kwinana industrial area, the Pacminex and Alwest bauxite/alumina refining proposals, the

Jumbo steel mill and the Eneabba Mineral Sands operations. To varying degrees there are environmental problems with these projects but then, on the other hand, they offer an opportunity for the development of the State's natural resources and appreciable employment opportunities.

Legislation and regulation of the mining industry is to be expected and is accepted. Historically, administration and control of the mining industry has been through the Department of Mines and over its many years of existence it has effectively regulated the industry and at the same time it has an appreciation of the objectives and problems of the mining industry.

In more recent times, however, major developmental projects require discussion and negotiation with a great number of Government departments because of the complexities and the greater involvement of mining projects in infrastructure, community, transport, communication etc. Most of the more recent projects have been of large scale involving very large capital investment and it has been customary to enter into formal Agreements with the State Government which are ratified by Act of Parliament. Under these circumstances and at the request of the Governments, negotiations for these Agreements have been conducted through the Department of Industrial Development (DID).

A more recent requirement, which is invariably included in the final agreement between industry and Government, is that the industry must undertake an environmental review of the proposed development and state its programme for subsequent management and control of the environment. Since this requirement is part of the Agreement, it becomes the responsibility of the Department of Industrial Development although there exists a Department of Conservation and Environment whose principal responsibility is specialised in the area of environment.

The dilemma in which the industry finds itself is that historically it deals with the Mines Department, under the terms of the new Agreement it deals with the Department of Industrial Development, and the nature of the problem suggests that it should deal with the Department of Conservation and Environment.

The problem is further compounded by the degree of specialisation within Government Departments. While the DID may be the co-ordinator, direct negotiation is required on environmental matters between the individual company and the:

*Public Works Department - Water Supply, Sewage and Drainage
*Department of Agriculture - soil conservation and flora
*Department of Fisheries and Wildlife - flora and fauna
*Department of Public Health - atmospheric conditions, noise, working environments
*W.A. Wildlife Authority - if the operation is in a flora and fauna reserve
*Forests Department - if in a Forest Reserve

In addition, of course, there are the other Government departments with whom negotiations are undertaken on matters that are not environmentally orientated. To further complicate the issue, the industry representatives must negotiate with one or more individuals in each department, some of whom may have conflicting views with each other or the supervisor. There may also be conflict between Government departments.

Although many mining companies have environmental officers within their organisations, they are not always experts in every aspect of environmental concern, hence the companies invariably engage consultants in particular fields to assist and advise them on their negotiations with particular Government departments.

The consultants who are engaged in assisting the industry are experts in one field but rarely appreciate the problems of the mining industry and, quite often do not appreciate that the objective of the Company is to extract the minerals and process them in a business-like way and in order to continue to do so it is essential that it be done profitably.

This attitude of considering the environmental topic paramount is also evident within certain Government departments and particularly in the attitudes of some public servants. It is obvious that many public servants consider the most important aspect of a project is the impact it will have on the physical environment, whereas there are other factors which should also be taken into account. I can assure you that companies are conscious of their environmental responsibilities though these must be kept in the proper perspective and the overall impact of the operation on the economy and the employment scene must also be taken into account.

As the Chamber of Mines representative, I have been asked to present examples of negotiations with the Government and yet at the same time I am obliged to protect the innocent. What I am presenting are in reality the actual experiences of un-identified companies.

THE EXPERIENCE OF MINERAL SAND MINING COMPANIES

In September 1974 the State Government suggested that the five companies in the Eneabba and Jurien Bay area should collaborate to do an *"environmental review"*. The stated purpose of this review was to serve as a starting basis for an examination of the existing environment and an estimation of the likely effects of a mining operation.

Out of this study, an individual company management programme was to be prepared - *"based on the parameters as they are known at*

*the present time"** With experience gained from rehabilitation operations it was expected this programme would change. *"For this reason, proposals are required every three years to take account of changing social values and latest knowledge."**

A similar collective approach by the companies was suggested to problems of transport, water supply and management, common port materials handling facilities and the town development of Eneabba.

The then Labour Federal Government had made it quite plain that, when seeking approval for export of the various heavy minerals, the precise source from which the mineral was to be obtained should be stated together with full information concerning the environmental considerations and safeguards.

The State Government believed it could manage its own environment and was not prepared to *"....put itself in a position where State sponsored developments are questioned."** The State considered several options for the preparation of the review but thought the collective company approach the most suitable.

A State Government prepared document, at the companies' cost, could be attacked by critics as being partial if it found that the effects of mining were minimal.

In retrospect this course may have saved the companies a lot of anguish!

The five companies concerned (Black Sands, Jennings, Allied Eneabba, Western Titanium, Ilmenite Ltd.) requested that the DID supply the guidelines for the review and a list of approved

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* From a Department of Industrial Development Circular.

consultants. These were supplied in October 1974 and the companies asked the Chamber of Mines to act as co-ordinator between themselves, DID and the consultants.

After calling for quotes from interested consultants, W.D. Scott & Company Pty. Limited were selected and a copy of their proposal handed to the DID. On receiving no adverse comment from the DID, W.D. Scott & Co. were commissioned to start the study in November 1974.

At once a basic problem, the lack of background information about Eneabba became obvious. Geographic influences have been periferal, following the better soils to the east and north. By even the mid 1960's the Eneabba area was still a *"frontier"*area of marginal grain and stock farms with small coastal fishing villages, all indifferently linked by sandy or gravel tracks.

There was only scant meteorological data available, very little was known of the soils and sub-surface geology, and the fauna and flora hardly recorded! A botanist from the State Herberium did a limited survey in 1975 for inclusion in the W.D. Scott report.

The completed report was submitted to the Minister for Industrial Development in July 1975. The report was then circulated through the various Government departments.

On 21 January 1976 the Chamber of Mines was advised by the Minister for Industrial Development that the guidelines given to the companies had *"....been closely adhered to"*. However, there was criticism of the report in that *"....some areas received very little discussion in their inter-relationships with the several phases of the mining operations."*

To assist the companies re-appraise the report in terms of their own operations the comments of the various Government departments were attached.

After five months delay on behalf of the State the suggestions of the concerned departments were:-

(a) The Environmental Protection Authority - 8 lines
(b) The Departments of Agriculture and Fisheries & Wildlife - 26 lines.

The foolscap page of advice was sent to the five companies involved as a basis for each company to work out their individual management programme.

From here on it is best to follow the vicissitudes of one company.

With the above slender document as a guide, the company prepared a management programme of four pages using the Scott report as the major submission.

This was submitted in August 1975 and the letter of reply received in November 1975. This letter indicated the Scott report was unacceptable as a base document although later correspondence stated the DID guidelines "....*had been closely adhered to*".

Also rejected was a suggestion, based on a study by Muresk College, that a Class "C" Reserve become farmland. The consultants' report suggested that the land would be more productive as such and the major cost of clearing etc had been met during mining operations.

The company then requested, and was granted, permission from DID to have informal meetings with the officers concerned. Thirteen people, from all departments, were at the first "*informal*" meeting.

As this meeting was not productive, the company then had weekly meetings with specific departments until June 1976.

The principal disagreement concerned the rehabilitation of the Flora Reserve 31030, and it is worthwhile looking at this single issue as an example of the mining industry's problems.

The Scott report recommended that the boundary of the Reserve be shifted so as to include adjacent vacant Crown land. Mining will disturb 550 acres of 12,000 acres, a mere 4.2% of the total, so a small boundary shift, and there does not appear to be any botanical reasons against it, would keep the original Reserve area and still allow mining.

The company commissioned a botanical survey of their leases after turning down a suggestion that they should, at company expense, survey the whole 12,000 acres.

The company problems were compounded by having these formal meetings with different officers, each with their own ideas and no coherent departmental line. The company was pressured to give their objectives, e.g. the percentage return of flora, without being able to run pilot plots to test regeneration results.

Despite repeated requests, the Departments involved (Fisheries & Wildlife and Agriculture (Herbarium)) would give neither the scientific reasons for their objections nor would they produce guidelines for the company to follow.

At the last meeting with the DID, only one department was represented, yet the company was still asked to state its objectives. In the end, the company estimated that the management programme had required 10% of the total effort for the water supply, 5% for incidentals and 85% for the flora.

After those melancholy experiences with environmental reviews and their related reports, the mining industry is faced with the dilemma of having not only two Governments to deal with but a multiplicity of departments within each and uncertainty as to which department to deal with?

The Mines Department - by tradition?

The Department of Industrial Development by appointment?

The Department of Conservation and Environment- by its existence?

In the past mining companies have long worked under regulations governing the conduct of their operations. One of the most sensible statements in a mining company's management programme would be:

> *"The company will, to the fullest reasonable practical extent, progressively rehabilitate the area disturbed by the mining operation, and use practical and effective methods of revegetation to achieve a floral system that will comply with the reasonable requirements of the Fisheries and Wildlife Department."*

This can only be done with the active co-operation of the civil service.

* Were the guidelines given to the Eneabba companies by the DID contributed to and approved by all the departments concerned?
* Individual departments must decide on a common policy when negotiating with a company.
* It is highly undesirable that a company deals with a different envoy of the department each meeting, each bearing a different, often conflicting message.
* Departments reviewing a company proposal for management must produce scientific reasons for turning down the proposal. Also they must produce an alternative programme for the company.

The Eneabba Sand Miners have a cause for complaint. However, it appears that the complaint has been caused by ineptitude on the part of the Department of Industrial Development rather than the Department of Conservation and Environment (DCE) in the first place.

Problems associated with Eneabba Sand Mines include:

(a) Guidelines provided by the DID enabled consultants to produce a report which was subsequently *"unacceptable as a base document"* to the DCE. Do the DID consult DCE in all cases when determining a set of guidelines for particular projects?
(b) Management programme advice from departments was not constructive - not one department specified exactly what was wanted.
(c) Departmental *"experts"* had *"fixation"* on flora - yet gave no scientific reasons for their requirements. (There appears to be no realisation by departmental officers that miners are part of the public that they are meant to serve - yet there seems to be an over-riding theme that miners are bad and must pay. This is an incongruous attitude if the environmental effect of farming is evaluated against that of miners.)
(d) Rotation of departmental *"experts"* voicing their own rather than departmental policy.

EXPERIENCES OF A COMPANY PLANNING A MINING DEVELOPMENT

The only problems encountered by the company so far have been relatively minor. They include:

(a) Some uncertainty about which department to deal with directly (DID or DCE) - later resolved that DID is the appropriate department.

(b) (i) Confusion regarding State-Commonwealth relations and State environmental requirements in the light of Commonwealth environmental requirements, i.e. do Commonwealth requirements (EIS) override State?

(ii) Are State requirements of management programme and regular review an additional requirement to that of Commonwealth Environmental Impact Statement?

The W.A. Government states that the EPA should co-ordinate preparation and development of EIS required by the Commonwealth. But what of State and Commonwealth rivalries - is there any guarantee that a project will not be either used as a pawn or caught as the meat in a sandwich?

(c) Uncertainty regarding requirements of environmental assessment. There is no definition of State requirements.

We believe the State does not want to define requirements at this time preferring to treat each new project on its own merit.

CONCLUSION AND RECOMMENDATIONS

I would like to emphasise that the Mining Industry is not opposed to legislation for the protection of the environment. The industry is a part of the community and its desire is to develop the mineral resources of the State to the mutual advantage of the company, its employees, the public generally and the State as a whole. In doing this, the Industry has no desire to desecrate the environment and cause discomfort and displeasure to the community. All it seeks is fair and reasonable treatment

and opportunity to carry on its business without unjustifiable interference. It seeks a commonsense approach to the resolution of the problems in which there are conflicts between various parts of the community.

In an effort to achieve this mutual understanding and improve the effectiveness and the state of the relationships between the Industry and the Government, I would recommend the following:

1. That all major developmental projects have a single point contact with the Government through the Department of Industrial Development.

2. That the DID set up ad hoc committees composed of representatives of the principal Government departments likely to be involved with the project and a representative of the industry or business concerned.

3. Members of the ad hoc committees should be of sufficiently high status that allows decisions to be made without referral back through the Government hierarchy.

4. The committee should comprise the same members and each member should be committed to providing departmental policy rather than personal opinion.

5. The committee should be responsible for evaluation of the final document and authorisation of approval.

6. The committee should meet regularly to review the progress of the environmental assessment studies and recommend amendment if necessary to avoid wasted effort.

7. The Government should publish a set of guidelines of environmental requirements for the benefit of potential developers.

8. The Government departments and public servants should

recognise the confidentiality of information being supplied and discussed.

9. Every effort should be made to avoid undue delays in the progress of developing an Agreement and reaching approval for a project.

10. All persons concerned should think objectively of the broad aspects and terms and be fair and reasonable in their determinations and requests.

11. Every effort should be made by both parties to abolish the *"them"* and *"us"* attitude with a view to achieving mutual understanding of each others problems.

SUMMARY NOTE

INTRODUCTION

The Summary and Integration session on Friday 23 July, 1976 was led by a panel consisting of the following persons:

Dr B.J. O'Brien (Chairman) - Director of Conservation and Environment
Mr P.J. Browne-Cooper - Chief Environmental Officer (Evaluation) Department of Conservation and Environment
Mr G. Harry - Industrial Engineer, Vickers Hoskin Pty. Ltd.
Mr S. Hohnen - Principal Assistant - Development, Department of Industrial Development
Mr J.H. Lord - Director of the Geological Survey, Department of Mines
Mr C.V. Malcolm - Senior Research Officer, Soils Division, Department of Agriculture
Mr G. Ralph - Executive Assistant to the Executive Director, Western Mining Corporation

No formal record was taken but a number of salient points emerged from the discussion. These were on two broad themes:

(a) State Government/Commonwealth Government/Industry Interaction; and
(b) Role of public participation in decision making on environmental matters.

GOVERNMENTS - INDUSTRY INTERACTION

There was a consensus that all forms of interactions between Governments, within Governments and between Governments and Industry could be streamlined. There was a feeling amongst industry representatives that Government departments did not appear to fully appreciate that delays were costly and could in some cases determine the overall viability of a project. They felt that the State should respond appropriately to the magnitude of new, large projects. On the other hand it was pointed out that Government departments were confined by political policies, staffing constraints and other problems. It was evident that there was a

need to discourage a "them" and "us" feeling in interaction. Three distinguishable (although related) proposals emerged as possible ways to streamline interactions:

(a) that a small "task force" of senior Government and industry persons be set up as an ad hoc steering committee for large projects, and be of sufficient seniority to make decisions at meetings without continual referral.

(b) that the Government appoint a single point "contact engineer" to be responsible for all Government interactions and to have deadlines to work within.

(c) that appropriate bodies such as the Departments of Conservation and Environment, Industrial Development and Mines, the Chamber of Mines and the Confederation of Western Australian Manufacturers discuss, at a senior level, the problems of interaction and decision making and prepare guidelines setting out the best methods of referral and liaison.

In terms of Commonwealth - State interaction, delegates agreed that although it was a matter to be resolved by the respective Governments, it needed to be done quickly and then clear guidelines then be given as to appropriate interactional procedures to go through to satisfy all statutory environmental obligations.

PUBLIC PARTICIPATION ROLE IN ENVIRONMENTAL DECISION MAKING

Although it was recognised that the Workshop was not designed primarily to discuss this particular issue, there was concern expressed as to the proper role of public participation in decision making on environmental matters. It was pointed out that public participation tends to slow down the process of decision making especially at late planning stages. Lack of public participation may lead to the exclusion of important local knowledge and to "green bans", "black bans", etc.: the environment is for people and people are for the environment and their wishes must be respected. The most acceptable answer appeared to be inclusion

of environmental with engineering and economic factors at the earliest planning stages and to plan for progressive public involvement as early as practicable to diffuse potentially disruptive polarized confrontations. It was generally recognised that public participation in decision making was still in an early state in Western Australia and involvement needed to be adapted for each specific project.

CONCLUSION

The Workshop provided a useful forum for senior State and Commonwealth Government and Industry officers to exchange problems and ideas on environmental assessment. The result was a more sympathetic understanding of each others difficulties which reinforced the feeling that the "them" and "us" approach needed altering to one of mutual cooperation in solving common problems. In the period of time which elapsed between the end of the Workshop and the printing of these Proceedings, progress has been made towards delineating a State - Commonwealth 'Memorandum of Understanding", which while not formalised, is in an advanced stage of preparation.

The Premier, Sir Charles Court announced on 25 July 1976 that Cabinet had approved a policy which stated that the Environmental Protection Authority will coordinate decision making on environmental policies, management and control in the State for the Western Australian Government. It acknowledged that the Commonwealth Government has interest in major environmental matters of national importance but emphasised that "the Western Australian Government has the responsibility and authority to make final, conclusive decisions as to the environmental acceptability and control of any development or proposed development in the State by Government departments or by private enterprise"*.

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* Press release, Premier's Department, 25 July, 1976.

On a State level, comment had been sought separately from nominated delegates to the Workshop on the 'Provisional Procedures for Environmental Assessment of New Projects and Proposals in Western Australia' (presented at the Workshop by Mr Peter Browne-Cooper of the Department of Conservation and Environment on Monday, 19th July, 1976). It is planned to revise the provisional procedures following this input and then to circulate the document generally within the State for further comment. It is not planned to gazette the final document as statutory under the Environmental Protection Act 1971-75 at this stage.

ATTACHMENT 1

ENVIRONMENTAL ASSESSMENT WORKSHOP

PROGRAMME

DAY	SESSION	TIME	TOPIC	SPEAKER
MONDAY - 19 July 1976	Statutory Responsibility and Decision-making State and Commonwealth Level	9.00 - 9.10	REGISTRATION	
		9.15 - 9.30	OPENING ADDRESS	Hon. Premier, Sir Charles Court
		9.30 - 10.45	INTRODUCTION	Dr B.J. O'Brien, Department of Conservation and Environment
			WESTERN AUSTRALIAN LEGISLATION	Mr G. Delaney, Crown Law Department
			WESTERN AUSTRALIAN LEGISLATION DECISION MAKING PROCESS	Mr P. Browne-Cooper, Department of Conservation and Environment
		10.45 - 11.15	BREAK	BREAK
		11.15 - 12.30	LEGISLATION AND DECISION-MAKING PROCESS BY THE COMMONWEALTH	Mr H. Higgs, Director of Envt., Dept. of Environment, Housing & Community Development
			DISCUSSION	
TUESDAY - 20 July 1976	Practical "Machinery" of Referrals at the Administrative Level	9.30 - 10.45	STATE-COMMONWEALTH INTERACTION	Dr B.J. O'Brien (DCE) Dept. of Environment, Housing & Community Development Rep.
		10.45 - 11.15	BREAK	BREAK
		11.15 - 12.30	STATE AGREEMENT ACTS	Dr D. Kelly, Department of Industrial Development
WEDNESDAY - 21 July 1976	The Assessment Process Itself	9.30 - 10.45	THE METHODOLOGY OF ASSESSMENT	Dr P. Newman, Murdoch University
		10.45 - 11.15	BREAK	BREAK
		11.15 - 12.30	EXAMPLES OF DEPT. OF CONSERVATION AND ENVIRONMENT INVOLVEMENT	Mr P. Browne-Cooper) Department Mr D. Viol) of Conser- Mr R. Nunn) vation and Mr C. Sanders) Environment
THURSDAY - 22 July 1976	Assessment from a User Viewpoint	9.30 - 10.45	GOVERNMENT SECTOR	Mr K. Webster, Public Works Department Mr G. Hackett, Main Roads Dept.
		10.45 - 11.15	BREAK	BREAK
		11.15 - 12.30	PRIVATE SECTOR	Mr. L.C.Brodie-Hall, representing Chamber of Mines
FRIDAY - 23 July 1976	Summary, Integration and Future Actions	9.30 - 10.45	PANEL DISCUSSION	Chairman - Dr B.J. O'Brien *Panel - to be appointed
		10.45 - 11.15	BREAK	BREAK
		11.15 - Close	SUMMARY AND INTEGRATION	Dr B.J. O'Brien

* But to include speakers as appropriate.

ENVIRONMENTAL ASSESSMENT WORKSHOP

NOMINATED DELEGATES

BRODIE-HALL, Mr. L.C.	Chamber of Mines
BROWNE-COOPER, Mr. P.J.	Department of Conservation and Environment
BUCHANAN, Mr. F.J.	Commonwealth Department of Construction
CALDWELL, Mr. M.	Metropolitan Water Supply Sewerage and Drainage Board
CARR, Dr. I.D.	Town Planning Department
CASTON, Mr. J.	Commonwealth Department of Transport
CHAMBERLAIN, Mr. R.	Westrail
CLARKE, Mr. J.	Mt. Newman Mining Co. Pty. Ltd.
COLLINS, Mr. D.	Town Planning Department
DELANEY, Mr. G.	Crown Law Department
FIELD, Dr. R.	Department of Conservation and Environment
FRAPPLE, Mr. P.	Jennings Mining
GATES, Mr. R.	Commonwealth Department of Transport
GRAHAM, Mr. J.S.	Community Recreation Council of WA
GRAHAM, Mr. L.	Town Planning Department
GREEN, Dr. J.W.	Department of Agriculture
HACKETT, Mr. G.	Main Roads Department
HAMILTON, Dr. B.H.	Department of Conservation and Environment
HAMMOND, Mr. P.	Education Department
HARRY, Mr. G.	Vickers Hoskin
HENDERSON, Mr. W.G.	Department of Lands and Surveys
HENLEY, Mr. G.	Public Health Department
HIDE, Mr. K.	Department of Conservation and Environment
HIGGS, Mr. H.	Department of Environment, Housing and Community Development
HILLER, Mr. R.	Town Planning Department

HOHNEN, Mr. S.	Department of Industrial Development
HOPKINS, Dr. E.	Forests Department
HUCKSON, Mr. E.J.	B.P. Refinery (Kwinana) Pty. Ltd.
HYLAND, Mr. L.G.	Cockburn Cement
JONES, Mr. H.	Mt. Newman Mining Co. Pty. Ltd.
KELLY, Dr. D.	Department of Industrial Development
KENNEDY, Mr. R.	Commonwealth Department of Construction
KNOX, Mr. J.	Director-General of Transport
LORD, Mr. J.H.	Department of Mines
LUDLOW, Mr. G.	State Energy Commission
MacDONALD, Mr. R.J.	Metropolitan (Perth) Passenger Transport Trust
MALCOLM, Mr. C.V.	Department of Agriculture
MALONE, Mr. F.J.	Director of Manufacturing Industry
MAXWELL, Mr. K.G.	Telecom Australia
MOFFLIN, Mr. R.	Main Roads Department
MURRAY, Mr. C.	Department of Conservation and Environment
NEWMAN, Dr. P.	Murdoch University
NUNN, Mr. R.M.	Department of Conservation and Environment
O'BRIEN, Dr. B.J.	Department of Conservation and Environment
O'CALLOHAN, Mr. E.P.	Readymix Group
O'HALLORAN, Mr. B.L.	Department of Lands and Surveys
PAPARO, Mr. V.	Department of Conservation and Environment
PARKER, Mr. I.	Department of Conservation and Environment
PARKHURST, Mr. N.	Office of the Director-General of Transport
PORTER, Mr. C.F.	Department of Conservation and Environment
POWER, Mr. W.	Department of Industrial Development
PRINCE, Dr. R.	Department of Fisheries & Wildlife

PRIOR, Mr. R.	Department of Environment, Housing and Community Development
RALPH, Mr. G.	Western Mining Corporation
RIGGERT, Dr. T.	Department of Fisheries & Wildlife
ROTHWELL, Mr. P.J.	State Housing Commission
SADLER, Mr. B.	Public Works Department
SANDERS, Mr. B.	Metropolitan Water Supply Sewerage and Drainage Board
SANDERS, Mr. C.C.	Department of Conservation and Environment
SCOTT, Mr. A.N.	Commonwealth Bureau of Meteorology
SHUGG, Mr. H.	Department of Fisheries & Wildlife
SIPPE, Mr. R.A.D.	Department of Conservation and Environment
SKERTCHLY, Dr. A.	R.H. Doig Executive Development Centre
SOUTHERN, Mr. R.L.	Commonwealth Bureau of Meteorology
STRAUSS, Mrs. R.	Community Recreation Council of WA
STATHAM, Mr. F.W.	Commonwealth Department of Construction
TAYLOR, Mr. R.	State Housing Commission
TERRY, Mr. T.	Main Roads Department
VIOL, Mr. D.H.	Department of Conservation and Environment
WATLING, Mr. E.J.	W.A. Department of Tourism
WATSON, Mr. J.	Department of Local Government
WEBSTER, Mr. K.	Public Works Department
WHITE, Mr. B.	Forests Department
WHITE, Mr. G.	Alcoa of Australia Ltd.
WOOD, Mr. J.	Hammersley Iron Pty. Ltd.