



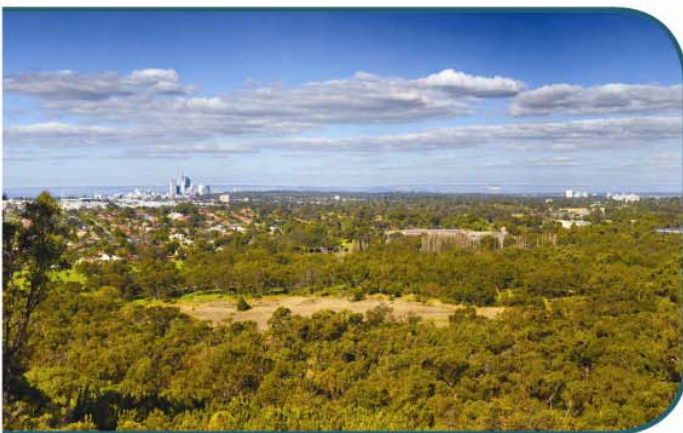
Environmental Protection Authority

Environmental Assessment Guidelines



No. 4

**Towards
Outcome-based
Conditions**



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Draft Environmental Assessment Guideline No. 4 Towards Outcome-based Conditions

1. INTRODUCTION AND BACKGROUND

Environmental Assessment Guidelines are developed by the Environmental Protection Authority (EPA) to provide advice to proponents, consultants and the public generally about specific procedures, methodologies and the minimum requirements for environmental management which the EPA would expect to be met by proposals or schemes it considers during the environmental impact assessment (EIA) process. The generic process for developing Environmental Assessment Guidelines is set out in Appendix 1.

This Environmental Assessment Guideline specifically addresses the development of outcome-based conditions and sets out:

- (a) the method for the development of outcome-based conditions which is to be followed when preparing documentation relevant to the EIA process (with the exception of Section 48A assessments); and
- (b) issues to be considered as part of the development of the condition to ensure all aspects of the intended outcome of the proposal, once implemented, will be delivered by the condition.

Outcome-based conditions are defined for this Guideline as those conditions that are recommended in an EPA Report or set in a Ministerial Statement that may impose:

- a specific environmental outcome to be achieved (explicit condition) – for example, the avoidance of particularly significant vegetation or habitat, or the progressive rehabilitation of an area; or
- an environmental performance standard that is to be met (performance-based condition) – such as standards that set out the limits or criteria (such as an emission limit) but do not describe how such limits or standards will be met.

Outcome-based conditions will be highly specific to each proposal. They will describe the required environmental outcome (or acceptable level of impact) as it relates to the environmental issue (factor) and include instructions on how the achievement of the outcome is to be demonstrated.

2. OBJECTIVES AND USE

The **objectives** of this Guideline are to:

- outline a methodology for the composition of outcome-based conditions;
- identify issues which should be considered when composing outcome-based conditions; and
- present examples of outcome-based conditions.

This Guideline is to be **used** by:

- Proponents: to provide information for consideration as part of the EIA process regarding key requirements of conditions including the setting of baselines and monitoring. This is to facilitate early consideration of the information which the EPA needs to clearly define the desired outcome. If insufficient information is provided as part of the EIA process to enable the clear, unambiguous definition of the outcome and its measurement, it will be more difficult for the EPA to make clear recommendations with unambiguous outcomes; and
- Environmental Officers of the Office of the EPA (OEPA): when developing recommended environmental conditions as input to the EPA's assessment of a proposal.

This Guideline documents the current state of knowledge regarding the development of outcome-based conditions. It is intended to be a dynamic document and it will be revised and updated to include other key issues relating to the development of outcome-based conditions as they may arise. The EPA acknowledges the adaptive learning process which will apply to the development and drafting of outcome based conditions, so that environmental outcomes are continually improved.

The key tools in this Guideline are the:

- four-step process to be followed when drafting outcome-based environmental conditions;
- issues which need to be considered when drafting outcome-based environmental conditions, including validity and enforceability; and
- example of an outcome-based environmental condition (Appendix 2) which demonstrates how the process can be applied. This condition is an example of a performance-based condition and has been taken from a recent EPA report. Other good examples of outcome-based conditions will be made available on the EPA website as they are published.

3. POLICY AND LEGISLATIVE CONTEXT

3.1 Legislation

The EPA Report contains recommended environmental conditions which are considered by the Minister and used as the basis for consultation with the decision-making authorities under section 45 of the *Environmental Protection Act 1986*.

There is an opportunity for any party to appeal the EPA's assessment report, which may include an appeal on the recommended conditions contained in the report. The Minister is required to obtain the agreement of relevant decision-making authorities on the conditions and procedures, if any, that are to apply to the proposal. The outcomes of any appeals on the EPA's assessment report and any consultation with decision-making authorities may result in changes to the EPA's recommended conditions.

The Minister issues the "Statement that a Proposal may be Implemented (pursuant to the provisions of the *Environmental Protection Act 1986*)". The environmental conditions presented in the Ministerial Statement are legally binding, subject to a final right of appeal by the proponent.

3.2 EPA Review of the EIA Process

In February 2008 the EPA initiated a review of the State's EIA process with the general aim of enhancing the quality, timeliness and certainty of the EPA's advice to Government on development proposals. The EPA reported its key findings and recommendations to the Minister in *Review of the EIA Process in WA* and a key outcome of the review was to use outcome focused environmental conditions that are clear, relevant, reasonable and auditable (EPA, p.i, 2009).

Section 6 of the *Review of the EIA Process in WA* discusses outcome-based conditions. The EPA supports the use of outcome-based conditions, rather than prescriptive conditions where the intended outcome can be clearly defined and measured. The EPA noted, however, that sometimes there is uncertainty and it is difficult to predict the environmental outcome of a proposal. Under those circumstances, additional management measures may be required and it may be appropriate to prescribe them in the conditions.

Environmental Management Programmes provide a framework for the proposed environmental management measures. These should be developed during the assessment of a proposal to allow the EPA to develop confidence that proposed management measures will protect the environment. In the case of a Public Environmental Review, the Programme will be publicly available for comment.

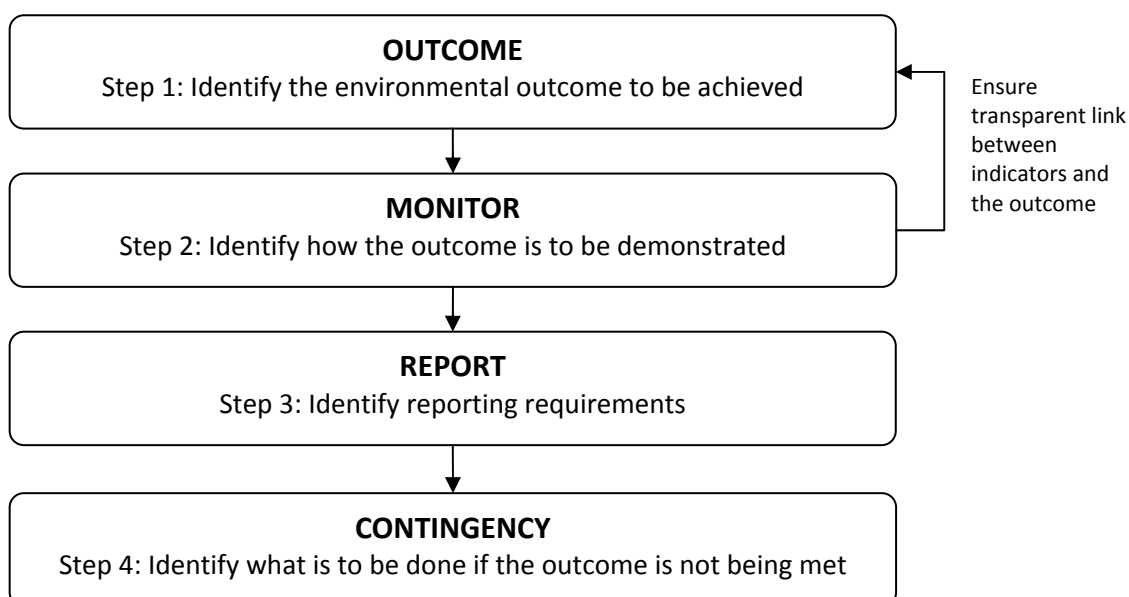
Environmental Management Plans will likely still be required by proponents to detail the implementation of the proposal, however these Plans will not be required to be submitted for individual approval.

The use of outcome-based conditions may deliver the following benefits:

- clarity and accountability as to the environmental outcome that is to be achieved by the proponent;
- environmental improvements which achieve better outcomes by providing flexibility for the proponent as to how the outcome may be achieved;
- improved evaluation of project performance in response to defined goals, supported by clearer linkages between indicators and outcomes; and
- greater transparency about the outcome to be achieved, rather than requiring it to be determined via an Environmental Management Plan, which may be perceived to be a 'secondary approval'. (EPA, 2009)

4. METHODOLOGY

The development of outcome-based conditions should be undertaken via a four step process as follows.



4.1 Step 1: Identify the environmental outcome to be achieved by the proposal in relation to the environmental factor

This step is the most important part of the condition as it is the **statement of what is to be achieved**.

The **environmental outcome** is the proposal-specific interpretation of the EPA's environmental objective, defining the acceptable level of change to the environment as a result of the proposal. The description of the environmental outcome should use statements of realistic and measurable intentions that are specific, achievable, clearly stated, and time-related.

Defining the outcome is important as it outlines why a particular action is necessary, linking it to the achievement of that outcome. This will give proponents clear direction in terms of what is expected and ensure that environmental outcomes are actually achieved, rather than requiring activities, such as the preparation of a management plan, with no clear reason for that activity.

There should rarely be a need to prescribe how the outcome is to be achieved. The proponent can determine the most effective (and often innovative) method of achieving the objective. Outcome-based conditions do not preclude the proponent from developing an environmental management plan, as a proponent may choose to prepare and implement a management plan to ensure the stated objective is achieved, together with all the requirements of the conditions.

Defining the outcome

Many previous conditions in Ministerial Statements issued over the past two decades have required the preparation and implementation of a management plan. Some of these conditions also stated the objectives of the management plan.

It is now recommended that, instead of requiring a management plan to demonstrate that the proposal meets the stated objectives, the objectives of the management plan should be reworded as an outcome. The proponent can then decide how best to achieve and demonstrate the required outcome.

Types of conditions

Explicit condition

Outcomes should be clearly defined. For example, an explicit condition outcome could be to clear no more than a certain amount of vegetation within a certain area; that rehabilitation is completed to a nominated standard within a given timeframe; or that mine dewatering will not result in groundwater drawdown of more than a certain amount within a defined area.

Performance-based condition

Other outcomes may require a particular level of performance to be met. These outcomes are generally described in terms of standards or criteria. A performance-based condition outcome would be for the water quality of ground or surface waters leaving the proposal site to not exceed a given standard.

Where a performance-based outcome is required, the desired level of performance will need to be established as part of the environmental impact assessment process. This will include the identification of the desired outcome, supported by appropriate levels of protection or performance to be achieved; indicators to be measured; and criteria to be met (guidelines, triggers and standards). Where available, the condition should refer to a published and accepted standard of performance, such as ANZECC criteria.

Where the proposal requires a Works Approval or Licence to be issued under Part V of the EP Act, the condition should not reiterate details that will be managed in the Works Approval or Licence.

Issues to consider

The outcome must be able to be measured (or demonstrated) within a stated **timeframe**. Timeframes should also be supported by a reference point, such as “within five years of commencement of operations”.

The **location** or area to which the condition is to apply must also be defined. Spatially defined outcomes provide greater certainty, particularly where areas of impact and/or no impact have been determined as part of the EIA process. Outcomes can be spatially defined via reference to a **figure** of appropriate scale or via a **schedule** which contains coordinates, or a combination of both. It is recommended that coordinates be incorporated wherever possible.

4.2 Step 2: Identify how the outcome is to be demonstrated

Environmental conditions are legally binding under the *Environmental Protection Act 1986*. Thus, there needs to be a clear way of demonstrating whether or not the requirements of the condition are being met. The most appropriate method is via **monitoring**.

The reason for undertaking the monitoring and what it needs to demonstrate must be clear. For example, “*The proponent shall monitor xxx within the disturbance footprint [defined in Schedule 1] to identify any significant change in abundance or condition ...*”. It is then the responsibility of the proponent to design the monitoring program so that it is able to support an evaluation of the level of change or significance in the environmental factor. It is also important that the monitoring is able to distinguish between impacts that result from the proposal and those which may occur as a result of other factors. Monitoring of both proposal (impact) and natural (reference) sites is therefore likely to be required. Monitoring across the impact gradient may also be of assistance when interpreting data.

Issues to consider

In most instances, a **baseline** will be required so that the allowable levels of change (impact) can be measured. Appropriate baselines should be established as part of the EIA documentation. Where this has not been established as part of the assessment process, possibly where insufficient reference information had been gathered, it will need to be included as a requirement in the condition. It must be noted that an appropriate period of time would then be required prior to a particular proposal activity commencing to establish the baseline.

The choice of **measure**, such as “abundance” or “condition” is an important element. There must be a direct relationship between the measure (or indicator) and the outcome. Preference should be given to the identification of well defined measures which are not open to interpretation or do not involve a subjective assessment. Often a simple measure, such as canopy cover or abundance, which has a basic means of measurement or a published, technical methodology, will provide the most representative assessment.

It is important to define the **degree of change** which is acceptable or unacceptable. It may be appropriate in some instances to require the identification of any statistically significant change (at a specified probability level) in the appropriate measure, where the level of statistical significance is justifiable or has been determined as part of the EIA and is considered to adequately reflect an environmentally significant degree of change. Consideration of significance should always be guided by environmental criteria.

Where the outcome is performance-based, it is possible that the monitoring requirements will need to be outlined in a **schedule** to the Ministerial Statement, as the monitoring frameworks and/or protocol will need to stipulate the desired levels of performance to be achieved; the indicators to be measured (including locations); and the various criteria to be met with reference to guidelines, trigger values and standards.

The condition should include the **interval** of monitoring, including timing (e.g. seasonal) where this is critical, as well as the duration of monitoring. This must be relevant to the life of the proposal and the extent of the responsibility of the proponent. The condition needs to reflect the life of the proposal or impact, as defined by the proposal description contained in the condition statement, and require action accordingly.

Where other elements of the monitoring program have already been agreed, such as monitoring locations or parameters, these should be incorporated into the condition. It is also recommended that monitoring be undertaken *“to the requirements of the Chief Executive Officer of the Office of the Environmental Protection Authority”* to ensure that the proposed program is adequate.

Establishing baselines and criteria

The consideration of likely environmental conditions which might be required for the proposal implementation should commence early in the environmental impact assessment process so that baselines can be established and standards identified as part of the assessment information.

4.3 Step 3: Identify reporting requirements

The condition must stipulate the **reporting** requirements regarding the monitoring, with reference to the particular condition number.

It is recommended that the reporting of the monitoring and whether it meets the stated outcome be done according to the standard compliance reporting condition included in the Ministerial Statement and via the proponent's Compliance Assessment Plan. The Compliance Assessment Report, submitted annually, will then document the actions taken by the Proponent and the outcome of those actions.

However, where additional reporting is required, such as where the interval of reporting is less than annually or if the reporting authority is other than the CEO of the OEPA, this will need to be stipulated in the condition. For example,

Rehabilitation activities shall continue as necessary until such time as the requirements of condition A-1 are met, and are demonstrated by annual inspections and reports, to the requirements of the CEO, on advice of the Department of Mines and Petroleum.

4.4 Step 4: Identify what is to be done if the outcome is not being met

The condition must include instructions on the actions required if the outcome is not being met. This should include the required action and timing of that action, and would likely be a tiered response, such as to carry out a preliminary management response; carry out a secondary management response; stop operations; criteria for re-starting operations; and action to remediate or mitigate impacts.

Where performance criteria and trigger values have already been established, these can be incorporated into the condition or via a schedule to the Ministerial Statement, with clear instructions on required responses. For example,

If any level 1 management trigger criterion prescribed in schedule X is exceeded at any monitoring site within any impact zone referred to in schedule X, the proponent shall notify the CEO within 12 hours following detection of the exceedance, and provide details of the actions being taken to mitigate impacts, together with an assessment of risk to the environment subsequent to implementation of the new management actions.

If any level 2 management trigger criterion prescribed in schedule X at any monitoring site within any impact zone referred to in schedule X is exceeded, the proponent shall immediately suspend all activities that contributed to the exceedance, until xx re-start criterion is met.

It is desirable to require the proponent to identify the likely actions to be taken to mitigate impacts. The requirement to identify these contingency measures before implementing the proposal should then be incorporated into Step 2, as part of the proposed monitoring.

Where the criteria are not able to be determined prior to commencement of the proposal, reference can be made to a statistically significant difference (at a specified level of probability), to be demonstrated by the proponent. For example:

In the event that the monitoring undertaken in accordance with condition X-X shows a statistically significant decline (at a probability level of xx%) in the abundance or health of declared rare flora or priority flora species [or particular assemblage or species], the proponent shall ...

5. FINDINGS

This draft Guideline provides an example outcome-based condition in Appendix 2, from a recent EPA Report.

The preliminary draft of this Guideline circulated to stakeholders was different however, as five examples for the most common environmental factors were presented. The major difficulty identified with model conditions for environmental factors was that a generic example could not provide a meaningful model condition, as each condition needs to respond to the specific elements of the proposal, including its biogeographic location and timing. Additionally, at the generic level, the five examples were relatively similar – the main difference being between the explicit and performance-based types.

To address the requirement of providing model outcome-based conditions that are representative of particular environmental factors, it is proposed to collate example conditions from the most recently published EPA Reports and provide them on the EPA website. It is anticipated that examples of outcome-based conditions could be continually updated to collate the best examples for most environmental factors.

Based on conditions currently in development, examples could be provided in the near future for:

- Flora and Vegetation
- Fauna Troglifauna/Stygofauna/Short Range Endemics
- Ground and Surface Water Quality
- Marine Water Quality – single point discharge
- Marine Water Quality – dredging
- Mine Closure and Rehabilitation – hard rock mines
- Mine Closure and Rehabilitation – mineral sand mining

6. OTHER CONSIDERATIONS

Conditions must be valid and enforceable, which means that they must:

- reasonably relate to the proposal;
- be for the purposes of achieving the objective of the *Environmental Protection Act 1986* and relevant government policy;
- be reasonable;
- be final and certain;
- be unambiguous and clear; and
- be placed only on the proponent.

Conditions should not be imposed where legislation exists to ensure an outcome, such as requiring approval for the removal of any flora or fauna protected under the *Wildlife Conservation Act 1955*.

Consideration must also be given to the language and terminology which is used when drafting conditions. The use of descriptive words, such as “substantial”, “minimise”, “reduce”, “approximately” and “major”, should be avoided. The acceptable level of change should be quantified where possible, such as to “reduce by at least ten percent”, or allow “no increase greater than five percent”. Words such as “ensure” and “support” should not be used.

7. DEFINITIONS

“baseline data” is data which records the existing elements, characteristics and trends in an area to provide a measure against which progress can be assessed.

“CEO” is the Chief Executive Officer of the Office of the Environmental Protection Authority, meeting particular functions of the Chief Executive Officer under the *Environmental Protection Act 1986*.

“environmental factor” means a part or an aspect of the environment ¹

“Environmental Management Plan” is a document used to describe specific detail of management actions, schedules, resources and responsibilities for achieving environmental objectives and outcomes with respect to a particular site or environmental factor. Some proposals may require the preparation and implementation of a number of environmental management plans, to address a range of potential environmental impacts. Together, a group of plans may constitute an Environmental Management Programme. ¹

“Environmental Management Programme” is a document that provides the

¹ Reference: adapted from Environmental Protection Authority Guidance Statement No.33 - Environmental Guidance for Planning and Development (2008)

framework to outline the management measures to be used in the implementation of a proposal, which may include multiple Environmental Management Plans.

“environmental objective” is the overarching goal identified by the Environmental Protection Authority in its report to the Minister as being relevant to each environmental factor.²

“environmental outcome” is the proposal-specific interpretation of the environmental objective about the acceptable level of change to the environment as a result of the proposal. The description of the environmental outcome should use statements of realistic and measurable intentions, that are specific, achievable, clearly stated, and time-related.

“indicator” as it is used in this Guideline generally means a unit of measure that describes the status or effect of a particular program or action.³

“Minister” means the Minister for Environment

“Ministerial Statement” is the Statement issued under section 45(5) of the *Environmental Protection Act 1986*

“monitoring” is the periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, plants and animals.³

“OEPA” refers to the Office of the Environmental Protection Authority

“statistically significant” is a mathematical measure of difference between groups. The difference is said to be statistically significant (for a defined probability level) if it is greater than what might be expected to happen by chance alone.

8. REFERENCES

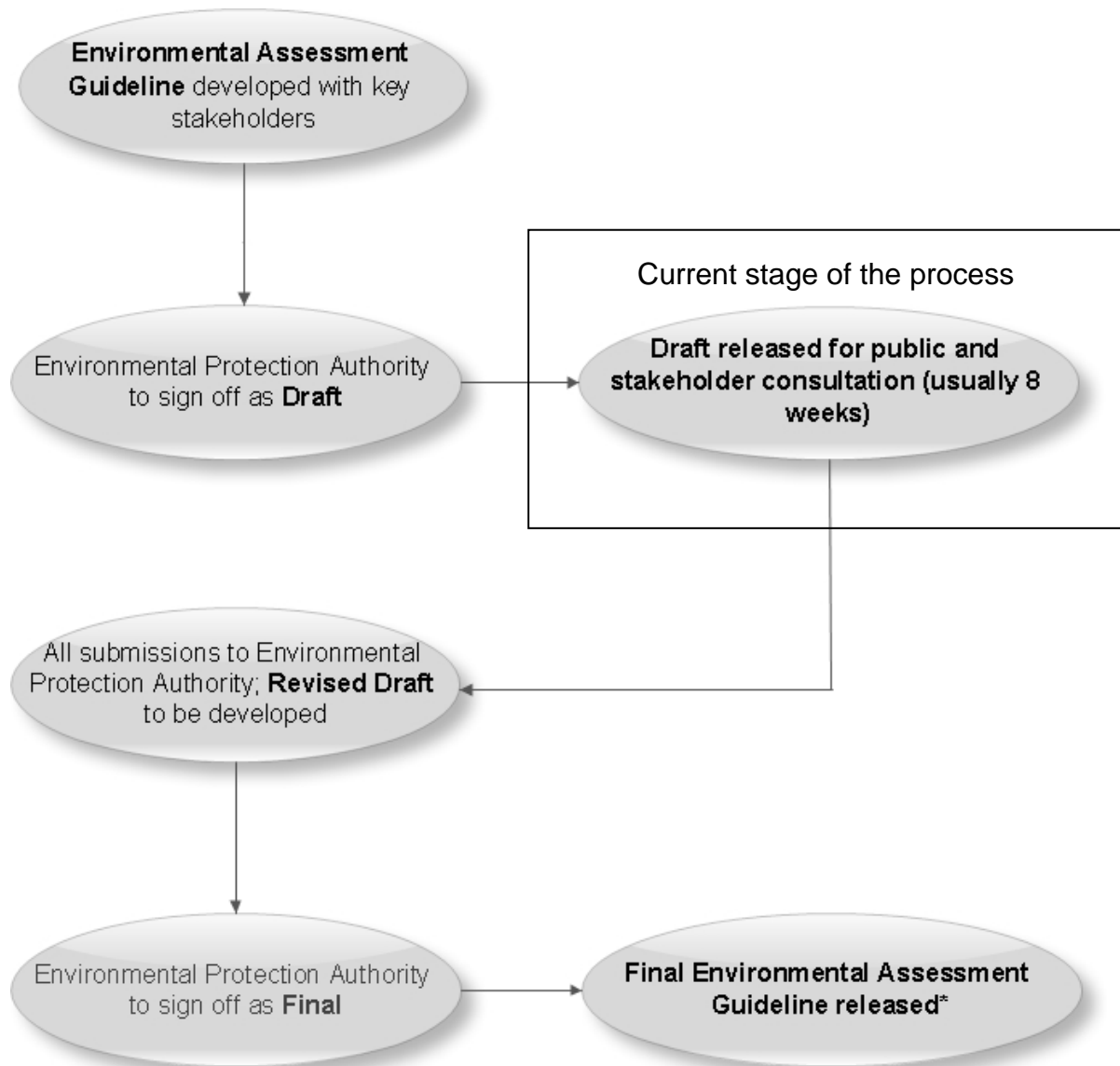
EPA (2009) *Review of the Environmental Impact Assessment Process in Western Australia*, Environmental Protection Authority, 30 March 2009

2 Reference: adapted from AS ISO 14050-1999: Environmental management - Vocabulary

3 Reference: adapted from Department of Environmental Protection - Perth Air Quality Management Plan (2000)

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Appendix 1: Generic Flow Diagram for the Environmental Assessment Guideline Process



* The Environmental Protection Authority may update the Guideline as necessary.

Appendix 2: Example Outcome-based Condition – from EPA recommended condition, Report 1342

The following condition is an excerpt from Report 1342 of the Environmental Protection Authority, Roy Hill 1 Iron Ore Mining Project Stage 1. It has been modified to reflect the creation of the Office of the EPA, as indicated by “+”.

The proposal is to:

- mine iron ore from the Stage 1 project area on the southern slopes of the Chichester Range; and
- develop associated mining infrastructure for the project (ie ROM pads, waste dumps, waste fines storage facilities, evaporation pond etc), realignment of Marble Bar Road, construction of an Airfield, rail loop and conveyor, and access roads.

8 Surface Water and Groundwater Quality

8-1 The proponent shall ensure that run-off and seepage from the Waste Rock Dump, Waste Fines Storage Facilities and Evaporation Pond do not cause the quality of surface water or groundwater within or leaving the proposal area to exceed ANZECC/ARMCANZ* default criteria for a slightly to moderately disturbed ecosystem, taking into consideration natural background water quality, so that existing and potential uses, including ecosystem maintenance, are protected.

* Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, Australian Water Quality Guidelines for Fresh and Marine Waters and its updates.

8-2 The proponent shall monitor the quality of any run-off and or seepage from the Waste Rock Dump, Waste Fines Storage Facilities and Evaporation Pond entering surface water and groundwater on or in proximity to the proposal area to ensure that requirements of condition 8-1 are met. This monitoring is to be carried out using methods consistent with Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, Australian Guidelines for Water Quality Monitoring and Reporting (and its updates) and to the satisfaction of the Chief Executive Officer of the Office of the Environmental Protection Authority⁺.

8-3 The proponent shall commence the water quality monitoring required by 8-2 before ground disturbing activities in order to collect baseline data.

8-4 The proponent shall submit annually the results of monitoring required by condition 8-2 to the Chief Executive Officer of the Office of the Environmental Protection Authority⁺.

8-5 In the event that monitoring required by condition 8-2 indicates that the requirements of conditions 8-1 are not being met:

1. the proponent shall report such findings to the Chief Executive Officer of the Office of the Environmental Protection Authority⁺ within 21 days of the decline in water quality standards being identified;
 2. the proponent shall provide evidence which allows determination of the cause of the decline in water quality standards;
 3. if determined by the Chief Executive Officer of the Office of the Environmental Protection Authority⁺ to be a result of activities undertaken in implementing the proposal, the proponent shall submit actions to be taken to remediate the decline in water quality standards within 21 days of the determination being made to the Chief Executive Officer of the Office of the Environmental Protection Authority⁺; and
 4. the proponent shall implement actions to remediate the decline in water quality standards upon approval of the Chief Executive Officer of the Office of the Environmental Protection Authority⁺ and shall continue to implement such actions until such time the Chief Executive Officer of the Office of the Environmental Protection Authority⁺ determines that the remedial actions may cease.
- 8-6 The proponent shall make the monitoring reports required by condition 8-2 publicly available in a manner approved by the Chief Executive Officer of the Office of the Environmental Protection Authority⁺.