Environmental Impact Assessment Practitioners Training Course 13-14 February 2024

Table List – Day 1 – 13 February

Table 1	Table 2	Table 3	Table 4
Kate Morrison	Ashlee Barrowcliff	Megan Jones	Lauren Kupsch
Sheldon Chambers	Kirk Rumball	Haydn Davies	Pamela Simpson
Camila Bedulli do Carmo	Helen Shaughnessy	Amanda Thomas	Nathan Sumner
Samuel Luckas	Rochelle Lupton	Stefen Humphries	Matthew Germs
Kat Partridge	Cally Koopman	Lauren Munks	Shona Wharton
Cindy Beckley	Linda Dalgliesh	Nicole Dakin	Jason Paterson
Table 5	**Table6**	**Table 7**	**Table 8**
Viki Cramer	Clare Whyte	Robyn Chesney	Debbie Gleeson
Ben Miles	Erin Cameron	Stacey Meredith	Catherine Rea
Shirley Dawe	Hannah Sumner	Rowan Inglis	Sarah Jupp
Sophia Gia Brandao Pinto	Dominic Flynn	Hannah Raphael	Andrew Wiltshire
Brandon Ovens	Brooke Campbell	Pierre Bouvais	Shona James
Kieran Birch	Rachel Bell	Felicity Keet	Jacob Boxall
	Table 9	**Table 10**	
	Minh Vo	Jack Robinson	
	Lindsay Shelton	Kane Jackson	
	Ryan Cook	Tracy de Vetter	
	Yoanna Seesaha	Samantha Mickan	
	Sujan Henk	Toni Munro	
	Jade Pitman	Christine Athanassiou	

eca Environmental Consultants Association

Government of Western Australia Department of Water and Environmental Regulation

integral sustainability www.integral-sustainability.net

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Welcome from the presenters

- This course is brought to you by:

eca environmental consultants association

Government of Western Australia Department of Water and Environmental Regulation

  - long-running "EIA Practitioner Training Course" [20 offerings 2006 – 2023]
  - arising from MOU between DWER/ECA Nov 2018 (originally *Partnering Agreement* between EPA Service Unit [EPASU] and ECA)
- Prepared by **Angus Morrison-Saunders** and **Jenny Pope** (a long-term member of ECA!) of *Integral Sustainability*

integral sustainability

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about the presenters: ***Angus Morrison-Saunders*** *...*

Academic roles:

- Professor, Environmental Management, Edith Cowan University, Australia
- Extraordinary Professor in Environmental Sciences and Management, North West University, South Africa
- Fellow of the University of Cambridge Institute for Sustainability Leadership, UK

Course Director for IAIA, *Foundations of Impact Assessment* training course; and

Director, Integral Sustainability (EIA training)

a.morrison-saunders@ecu.edu.au

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about the presenters: ***Jenny Pope****...*

Academic roles:

- Professor of Sustainability in Mining, Murdoch University
- External Member – Centre for People, Place & Planet, Edith Cowan University
- Extraordinary Professor in Environmental Sciences and Management, North West University, South Africa
- Fellow of the University of Cambridge Institute for Sustainability Leadership, UK

Director, Integral Sustainability

Former EPA member (Nov 2018 – Nov 2023)

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Training Course Objectives

1. Becoming familiar with environmental impact assessment (EIA) under Part IV of the *EPAct 1986* including:
   - EIA Administrative Procedures & Procedures Manual 2021
   - Framework for environmental considerations in EIA
   - Other guidance materials
2. Understanding what constitutes:
   - High quality documents (by proponents)
   - High quality assessment (by EPAS)
3. The ultimate delivery of:
   - Good environmental outcomes through Part IV consistent with DWER best practice regulatory principles

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Course structure (i)

Day 1

1. 9.00–10.30: The Big Picture of EIA – internationally and in WA

   tea break

2. 11.00–12.30: The fundamentals

   lunch

3. 1.30–3.00: Pre-referral, referral, decision on whether to assess

   tea break

4. 3.30–5.00: Scoping and Environmental Review Document

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Course structure (ii)

Day 2

5. 9.00–10.30: EPA assessment report, condition setting and EMPs

   tea break

6. 11.00–12.30: Panel discussion

   lunch

7. 1.30–3.00: Appeals, Approval Decision and Changing Proposals/Conditions

   tea break

8. 3.30–5.00: Compliance, future directions for EIA in WA and reflections on practice

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About the PowerPoint slides

- basic design (but detailed content!)
  - for reproduction as a reference resource (copies will be made available to you)
- reproduce actual legislative/guidance content verbatim
  - *[Note: we avoid repetition (1 example only is given – many guidance docs contain same EIA procedure components]*
- some international perspectives
- provide reference sources
- group discussions/learning activities interspersed with Part IV content

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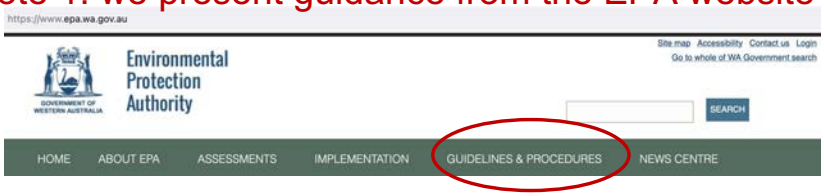
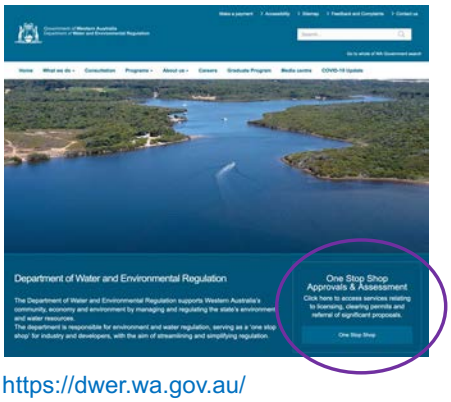
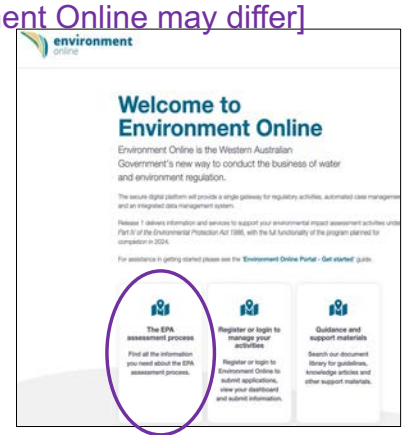
Note 1: we present guidance from the EPA website only



[Guides/Forms/Templates in Environment Online may differ]



https://dwer.wa.gov.au/



https://environmentonline.dwer.wa.gov.au/

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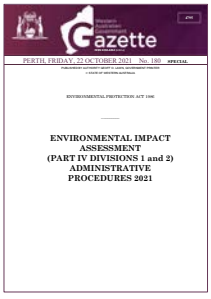
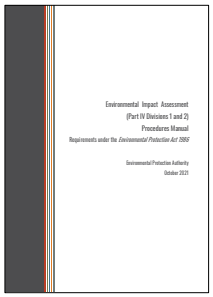
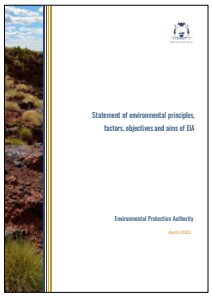
Note 2: Current EIA procedures/guidance (only)

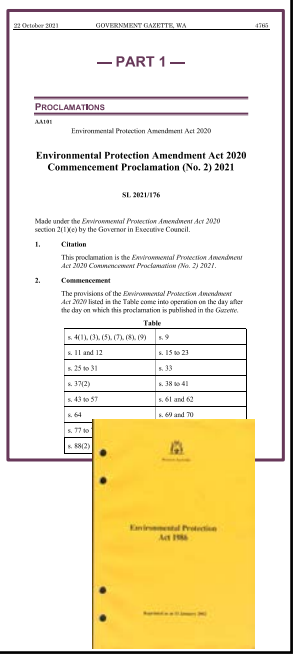
- *EPAct* was amended in 2020
- EIA Admin Procedures and guidance suite published Oct/Nov 2021



[some guidance materials were updated in 2023]







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Covering cross-cutting topics in this training course

Session	Topic
2. The fundamentals	Understanding baselines Significance Mitigation hierarchy
3. Pre-referral, referral and decision on whether to assess	Alternatives Proposal Content Document
4. Scoping and Environmental Review Document	Offsets Cumulative impact assessment Holistic impact assessment
5. EPA assessment report, Condition setting and EMPs	Environmental outcomes Other Decision-Making Authorities Adaptive management
6. Panel discussion	
7. Appeals, Approval Decision and Changing Proposals/Conditions	Stakeholder engagement Changing proposals and conditions (at all stages)
8. Compliance, future directions for EIA in WA and reflections on practice	

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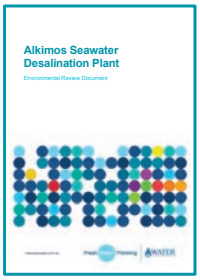
Training course approach

- international/national benchmarking
- whole-of-proposal perspective
  - from *pre-referral* >>> *implementation*
  - by applying case study examples
    - *Alkimos Seawater Desalination Plant*

    Note: our aim here is to seek ***best practice*!
- reflections and table discussions (interactive)
- networking (proponents, consultants, regulators…)



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On best practice…

We must recognise that:

- context for EIA matters
  - every assessment is unique
  - proponent circumstances vary
- the knowledge base and socio-political expectations is ever-changing
- what we did last year may no longer be 'best practice' now

Good and best practice changes over time, and unless a project continues to innovate, what was once good or best practice can very soon become dated. [Vanclay et al., 2015, p62]

Vanclay F, A-M Esteves, I Aucamp, D Franks (2015) *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects*, IAIA: https://www.iaia.org/uploads/pdf/SIA_Guidance_Document_IAIA.pdf

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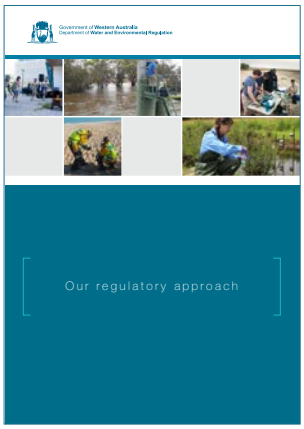
DWER regulatory principles



DWER (2020) *Our Regulatory Approach*, p10, available: https://www.wa.gov.au/system/files/2020-11/DWER_Our_regulatory_approach.pdf

Our principles of better regulatory practice

Our activities are guided by a set of better regulatory practice principles. These clearly outline what you can expect from us:

01 Risk based

The department makes regulatory decisions proportionate to the level of risk posed to public health, the environment and water resources with consideration of cumulative impacts.

Department resources are targeted to the greatest risks to public health, the environment and water resources.

02 Evidence based

The department applies an evidence-based approach based on the best available information, including sound science, to inform regulatory decision-making.

03 Transparent

The department:

- consults with stakeholders in relation to proposed regulatory policies and plans
- provides clear publicly available, reliable and relevant information on regulatory processes and requirements
- is informed by the public when considering regulatory decision-making
- applies the rules of procedural fairness to all regulatory functions.

04 Collaborative

The department works collaboratively with other regulators to share information, avoid unnecessary regulatory duplication, and support whole-of-government outcomes.

05 Consistent

The department's regulatory actions are consistent with legislation and within statutory powers.

06 Responsive and effective

The department responds in an effective and timely manner.

You will see these principles reflected throughout our regulatory policies and guidance and some principles will be the subject of further specific guidance.

We are currently reviewing our assessment and decision-making processes across our regulatory deliveries to build a clearer understanding of how we consider impacts on the environment and water resources. This will enable us to transition to a more outcomes-based impact-assessment approach, focused on better practice environmental management.

10 Department of Water and Environmental Regulation

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The EPA (2019) on best practice EIA…

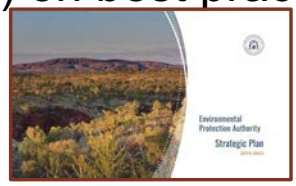
Strategies

1

Improving the assessment and management of cumulative impacts

We will accomplish this by:

- Identifying best practice approaches to the assessment and management of cumulative impacts with a focus on:
  - landscape scale and regional assessments
  - mechanisms for flexibility and conditioning.



https://www.epa.wa.gov.au/sites/default/files/EPA Strategic Plan 2019-2022.pdf

4

Improving the soundness, robustness and transparency of advice through our assessments

We will accomplish this by:

- Being a leader in EIA innovation through
  - keeping up to date with advances in impact assessment frameworks and techniques
  - actively collaborating with other jurisdictions in Australia and internationally
  - trialling of new processes.
- Informing and promoting EIA innovation through the State's streamlining initiative.
- Collaborating with industry, consultants, non-government organisations and the broader community through:
  - identifying where the EIA process can be improved
  - reviewing the trial of new approaches to EIA
  - investigating the potential and mechanisms for EIA accreditation
  - continuing to review and develop environmental guidance.

Measuring our progress

innovation has improved the effectiveness and efficiency of environmental impact assessment in Western Australia and remains in step with international best practice.

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The EPA (2023) strategic plan continues this…

https://www.epa.wa.gov.au/sites/default/files/EPA%20Strategic%20Plan%202023-2026_0.pdf

Our goals & strategies

1

Lead the ongoing enhancement of environmental impact assessment practices to deliver environmental protection outcomes

- We will develop guidance that improves cumulative and holistic environmental impact assessment to deliver regional environmental protection outcomes
- We will evaluate the success of environmental impact assessment processes in predicting, and approval conditions in achieving, expected environmental protection outcomes
- We will facilitate meaningful public consultation processes in EIA and ensure that consultation outcomes inform EIA decision-making to achieve environmental protection outcomes

2

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*Definition of **best practice** in WA*

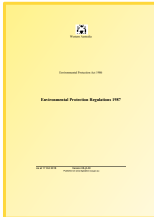
(EPAct 1986, Environmental Protection Regulations 1987)

Part 3 — Control of pollution generally

4. Terms used; amounts of units for fees

(1) In this Part, unless the contrary intention appears —

best practice criteria means criteria specified by the Chief Executive Officer that require the ***establishment and implementation*** of —



(a) an ***environmental policy***; and

(b) ***environmental performance objectives***; and

(c) ***continual improvement*** programmes; and

(d) ***environmental management and audit plans***; and

(e) ***other measures*** that the Chief Executive Officer considers ***necessary for good environmental performance and management***;

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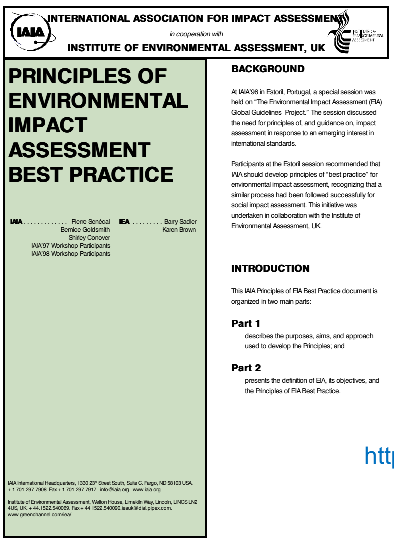
International Association for Impact Assessment – best practice EIA principles



INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSMENT

in cooperation with

INSTITUTE OF ENVIRONMENTAL ASSESSMENT, UK

PRINCIPLES OF ENVIRONMENTAL IMPACT ASSESSMENT BEST PRACTICE

IAIA .... Pierre Senécal, Bernice Goldsmith, Shirley Conover, IAIA'97 Workshop Participants, IAIA'98 Workshop Participants

IEA .... Barry Sadler, Karen Brown

IAIA International Headquarters, 1330 23rd Street South, Suite C. Fargo, ND 58103 USA. + 1 701.297.7908. Fax + 1 701.297.7917. info@iaia.org www.iaia.org

Institute of Environmental Assessment, Welton House, Limekiln Way, Lincoln, LINCS LN2 4US, UK. + 44.1522.540069. Fax + 44 1522.540090.ieauk@dial.pipex.com. www.greenchannel.com/iea/

BACKGROUND

At IAIA'96 in Estoril, Portugal, a special session was held on "The Environmental Impact Assessment (EIA) Global Guidelines Project." The session discussed the need for principles of, and guidance on, impact assessment in response to an emerging interest in international standards.

Participants at the Estoril session recommended that IAIA should develop principles of "best practice" for environmental impact assessment, recognizing that a similar process had been followed successfully for social impact assessment. This initiative was undertaken in collaboration with the Institute of Environmental Assessment, UK.

INTRODUCTION

This IAIA Principles of EIA Best Practice document is organized in two main parts:

Part 1
describes the purposes, aims, and approach used to develop the Principles; and

Part 2
presents the definition of EIA, its objectives, and the Principles of EIA Best Practice.

[International perspective]

Have you considered joining IAIA?

[e.g. access to EIA resources (journal, best practice series & more) and international network of practitioners; annual conference]

http://www.iaia.org/uploads/pdf/principlesEA_1.pdf

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1. The big picture of EIA – internationally and WA

1.1 What is EIA and why do it?

- **International perspectives**
- Environmental protection / improving…
- Key principles for EIA practice

1.2 EIA in WA overview

- *Environmental Protection Act 1986* and the EPA
- EIA process stages

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[International perspective]

Global significance of EIA

Rio Declaration on Environment and Development 1992

Principle 17: *EIA, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority*.

http://www.unesco.org/education/pdf/RIO_E.PDF

the EIA norm has become a ***general principle of law*** recognized by civilized nations and thus a part of the ***public international environmental law*** (Yang, 2019, p569)

Yang, T (2019) The Emergence of the Environmental Impact Assessment Duty as a Global Legal Norm and General Principle of Law, *Hastings Law Journal*, **70**(2), 525–572

…we can conclude that EIA is now universally required in all countries. (Bond et al 2020, p2)

Bond A, J Pope, M Fundingsland, A Morrison-Saunders, F Retief & M Hauptfleisch (2020) Explaining the political nature of environmental impact assessment (EIA): A neo-Gramscian perspective, *Journal of Cleaner Production*, **24**: 118694, 1–10

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[International perspective]

The first EIA process comes from the US under the ***National Environmental Policy Act*** *1969*

Environmental Impact Statements (EIS) were ***invented in response*** to the ***anticipated*** administrative ***indifference or outright hostility*** toward the environmental council and the environmental policy statement. (Dreyfus and Ingram, 1976, p251)

EIA as an "**action forcing mechanism**".
(Andrews, 1976, p311)

Andrews, R.N.L. (1976), 'Agency Responses to NEPA: A Comparison and Implications', *Natural Resources Journal,* **16**, 301–322.
Dreyfus, D. and H. Ingram (1976), 'The National Environmental Policy Act: A view of intent and practice', *Natural Resources Journal*, **16**, 243–262.

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[International perspective]

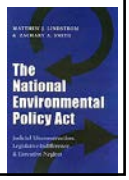
The EIA action forcing mechanism

National Environmental Policy Act (NEPA) *1969*, US

All agencies of the Federal Government **shall** [s102(2)(c)]:
Include *in every recommendation or report on proposals for legislation and other major Federal actions* ***significantly affecting*** *the quality of the human environment,* ***a detailed statement*** *by the responsible official on-*

(i) The ***environmental impact*** *of the proposed action,*
(ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) Alternatives to the proposed action,
(iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

- i.e. Environmental impact statement (EIS)



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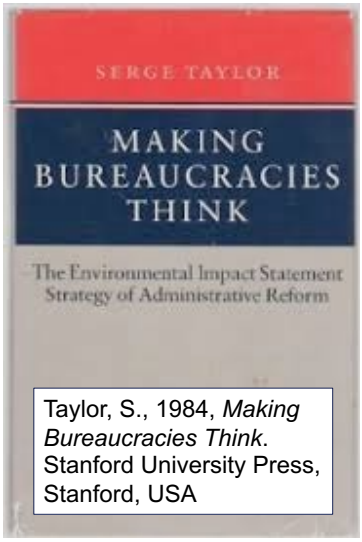
[International perspective]

EIA forces organisations to think about the environment (promotes behaviour change)



Taylor, S., 1984, *Making Bureaucracies Think*. Stanford University Press, Stanford, USA

The reasoning behind the EIS requirement was simple …

Now officials would be required to "***look before they leap***". And the hope was that …they would be able to ***make better*** (i.e., more scientific and rational) ***decisions*** that would minimize environmental damage. (Amy1990, p60)

Amy D (1990). Decision Techniques for Environmental Policy: A Critique, in: Paehlke R and D Torgerson (eds) *Managing Leviathan: Environmental Politics and the Administrative State*, London: Belhaven Press, pp59-79

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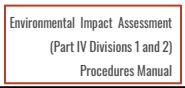
EIA definition – WA

*environmental impact assessment (EIA) is an orderly and systematic process to **evaluate a proposal** (including its **alternatives**) and its **effects on the environment**, as well as to consider the **mitigation and management** of those effects.*

*The process extends from the proposal's **initial concept** through **implementation** to completion and, where appropriate, **decommissioning**.*

EIA Procedures Manual 2021, p7



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1. The big picture of EIA – internationally and WA

1.1 What is EIA and why do it?

- International perspectives
- **Environmental protection / improving…**
- Key principles for EIA practice

1.2 EIA in WA overview

- *Environmental Protection Act 1986* and the EPA
- EIA process stages

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EPAct 1986 – the Long Title

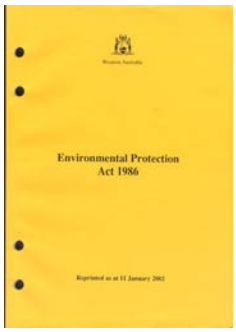
An Act to provide

for an Environmental Protection Authority,

for the ***prevention, control and abatement of pollution and environmental harm***,

for the ***conservation, preservation, protection, enhancement and management of the environment*** and

for matters incidental to or connected with the foregoing



[Long title amended by No. 54 of 2003 s. 27.]

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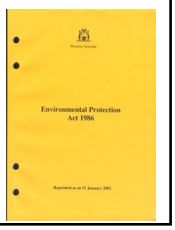
EPAct 1986 – s15

15 . Objectives of Authority

It is the objective of the Authority to use its best endeavours —

(a) to ***protect the environment***; and

(b) to ***prevent, control and abate pollution and environmental harm***.



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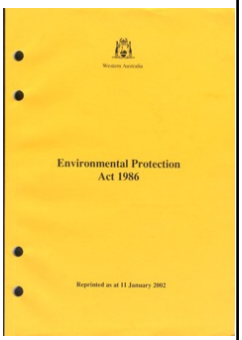
EPAct 1986 – s15 & s3

15 . Objectives of Authority

It is the objective of the Authority to use its best endeavours —

(a) to ***protect*** the environment; and

(b) to pr ent, control and abate pollution and envi mental harm.



3. Terms used in this Act

(1) In this Act, unless the contrary intention appears —

…

protection, in relation to the environment, includes ***conservation, preservation, enhancement and management*** thereof;

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[repeat slide]

EPAct 1986 – the Long Title

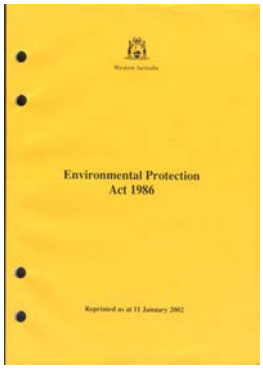
An Act to provide

for an Environmental Protection Authority,

for the prevention, control and abatement of pollution and environmental harm,

for the ***conservation, preservation, protection, enhancement and management of the environment*** and

for matters incidental to or connected with the foregoing



[let's consider the notion of enhancement or improvement of the environment some more…]

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[international perspective]

EIA and the need for positive environmental change

Minimization of negative effects is not enough; ***assessment requirements must encourage positive steps towards greater community and ecological sustainability****, towards a future that is more viable, pleasant and secure.*
(Gibson, 2006, p172)

Sustainability assessment: basic components of a practical approach

Robert B Gibson

Gibson R 2006 Sustainability assessment: basic components of a practical approach, *IAPA*, **24**(3): 170-182

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EIA and no net loss concept
(AMS thoughts)

Minimisation of negative effects …
= residual adverse impact (i.e. loss)

No net loss concept –

- ongoing loss of environmental resource is not acceptable (not sustainable) in the long-term.
- EIA should seek to ***maintain baseline environmental quality or enhance it***.
  - e.g. role of offsets here

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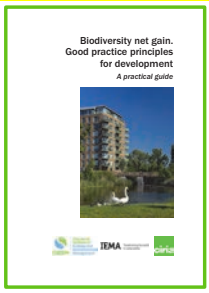
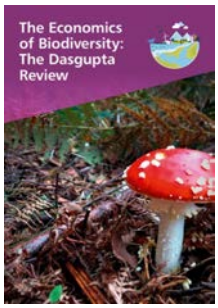
[International perspective]

Net gain & Nature positive



https://cieem.net/wp-content/uploads/2019/02/C776a-Biodiversity-net-gain.-Good-practice-principles-for-development.-A-practical-guide-web.pdf



IUCN – International Union for the Conservation of Nature, (2023), *Nature Positive for Business*, https://portals.iucn.org/library/sites/library/files/documents/2023-023-En.pdf

Dasgupta, P. (2021), *The Economics of Biodiversity: The Dasgupta Review*. (London: HM Treasury)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957291/Dasgupta_Review_-_Full_Report.pdf

Sanchez, LE., Souza, BA., Siqueira-Gay, J., Valetich, R. and Rosa, JCS. (2022) *Pathways to achieve net positive impact on biodiversity and ecosystem services in mining*. São Paulo: Fundação para o Desenvolvimento Tecnológico da Engenharia
https://www.researchgate.net/profile/Luis-Sanchez-73/publication/361429255_Pathways_to_achieve_net_positive_impact_on_biodiversity_and_ecosystem_services_in_mining/links/62b10dd71010dc02cc4f14a1/Pathways-to-achieve-net-positive-impact-on-biodiversity-and-ecosystem-services-in-mining.pdf?origin=publication_detail

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Net gain – Australia (i)

Australia's natural environment and iconic places are in an overall state of decline *and are under increasing threat… The current environmental trajectory is unsustainable.* (Samuel, 2020, pviii)

Despite its purpose, the ***EPBC Act does not facilitate the maintenance or restoration of the environment****. The current settings cannot halt the trajectory of environmental decline, let alone reverse it.*

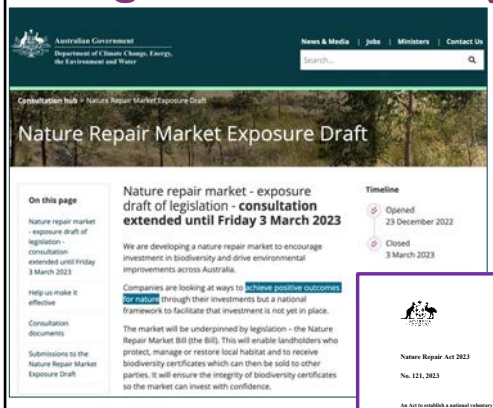
…

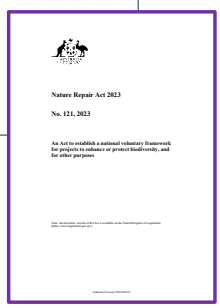
Many of the reforms to the EPBC Act recommended by the Review will deliver greater environmental protections in the future – including National Environmental Standards that ***enable MNES to be protected, maintained and enhanced****.*
(Samuel, 2020, p17)

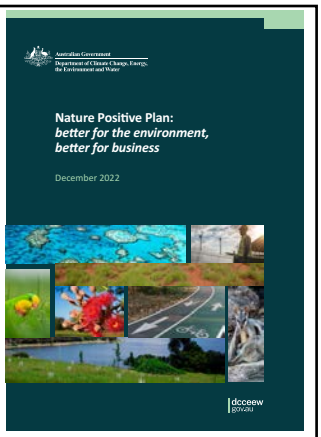
Samuel G, (2020) *Independent Review of the EPBC Act – Final Report October 2020*, https://epbcactreview.environment.gov.au/resources/final-report

33

Net gain – Australia (ii)







https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf

https://www.dcceew.gov.au/environment/environmental-markets/nature-repair-market#daff-page-main
https://www.legislation.gov.au/C2023A00121/asmade/2023-12-14/text/original/pdf

34

Net gain – WA

Policy outcomes

In implementing this policy, the State Government seeks to achieve the following native vegetation outcomes:

Outcome 1
Enable all sectors to contribute to a ***net gain*** and ***landscape-scale*** conservation and restoration.

- ✓ Conserve biodiversity
- ✓ Sequester carbon
- ✓ Build the restoration economy and create jobs

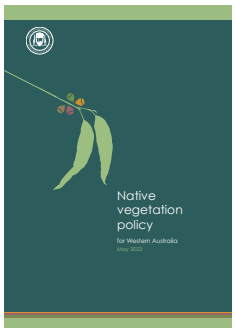
Outcome 2
Business certainty through regulatory clarity, efficiency and coordination.

Outcome 3
Strong, accessible evidence-base for policy-making, decisions and transparency.

See also **Appendix 1: Exploring net gain and landscape-scale conservation** on page 17, which includes definitions of relevant terms and explores how they will be achieved and measured for a given part of the state.

Net gain: For this policy, net gain means that improvements in the extent and/or condition of native vegetation exceed the losses – at *landscape-scale*. It takes into account the sum total of stakeholder actions that influence it, whether these are regulated, voluntary or otherwise. This policy does not introduce net gain as a required outcome at the scale of individual proposals.

Landscape-scale: A scale that permits understanding and management of ecological processes across space, jurisdiction and time, with a focus on ecological corridors, resilience, connectivity and global change (including climate change).



https://www.wa.gov.au/system/files/2022-07/Native-vegetation-policy-for-Western-Australia.pdf

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Environmental Protection and Enhancement – EPA of WA

Our goals & strategies

1 Lead the ongoing enhancement of environmental impact assessment practices to deliver environmental protection outcomes

2 Provide independent strategic advice that improves environmental protection and policy

- We will publish strategic advice and guidance on emerging industries (such as hydrogen, critical minerals and renewable energy projects) to enable the environmental benefits of these industries to be realised in a way that is consistent with the EPA's objectives
- We will provide advice and advocacy across government and to the public and industry on key emerging environmental issues to ensure environmental protection
- We will publish an EPA position on the application of offsets at regional scales to ensure inter-generational environmental protection and enhancement

https://www.epa.wa.gov.au/sites/default/files/EPA%20Strategic%20Plan%202023-2026_0.pdf

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A positive view of environmental protection from the beginning… (net gain is not new!)

"The environmental protection authority will also be responsible for the co-ordination of all activities as are necessary to ***protect, restore, or improve the environment*** in the State. This is a very real and positive approach which will actually ***seek to improve and not merely protect the environment*** in ways that the authority regards as necessary and practicable".

Legislative Assembly: ***Thursday 23 September, 1971***
ENVIRONMENTAL PROTECTION BILL
Second Reading
Premier/Minister for Environment – J.T. Tonkin:
[Hansard, p1738]

Legislative Assembly
Thursday, the 23rd September, 1971

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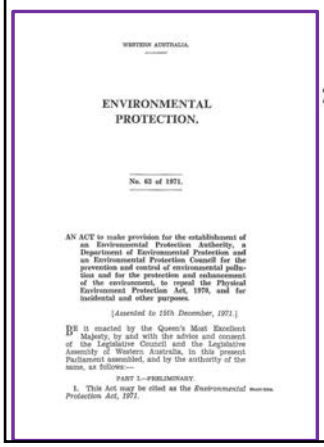
EPAct 1971



ENVIRONMENTAL PROTECTION.

No. 63 of 1971.

AN ACT to make provision for the establishment of an Environmental Protection Authority, a Department of Environmental Protection and an Environmental Protection Council for the prevention and control of environmental pollution and for the protection and enhancement of the environment, to repeal the Physical Environment Protection Act, 1970, and for incidental and other purposes.

[Assented to 15th December, 1971.]

BE it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and the Legislative Assembly of Western Australia, in this present Parliament assembled, and by the authority of the same, as follows:—

PART I.—PRELIMINARY.

1. This Act may be cited as the *Environmental Protection Act, 1971*.

1971.] *Environmental Protection.* [No. 63.

PART III.—ENVIRONMENTAL PROTECTION POLICY.

Duty of Authority.

28. It is the duty of the Authority to use its best endeavours—

(a) to enhance the quality of the environment; and

(b) to control and wherever practicable to prevent any act or omission which causes, or is capable of causing, pollution.

Functions of Authority.

29. The functions of the Authority are—

(a) to consider and initiate the means of enhancing the quality of the environment and the means of preventing, controlling, abating or mitigating pollution;

(b) to carry out investigations into the problems of environmental protection;

(c) to obtain the advice of persons having

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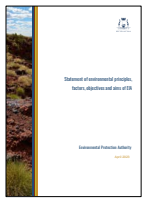
Aims of EIA in WA (i) – **EPA**

[emphasising enhancement]

4 Aims of EIA



EPA

In conducting EIA, the EPA aims to:

1. fulfil the object of, and apply the principles of, the Act
2. provide independent, timely and sound advice about the environmental impacts of a proposal to enable the Government to make an informed decision in relation to the implementation of the proposal
3. provide opportunities for public participation, and input from decision-making authorities and other relevant government agencies in the assessment of the environmental impacts of a proposal before decisions are made
4. ensure that proponents take primary responsibility for the protection of the environment relatingto their proposals, detailed in the aims of EIA for the proponent outlined below
5. promote adaptive environmental management, positive environmental outcomes and continuous improvement through learning and knowledge gained through the EIA process andproject implementation
6. promote education and awareness of environmental issues.

[EPA 2023, Statement of env principles…, p4]

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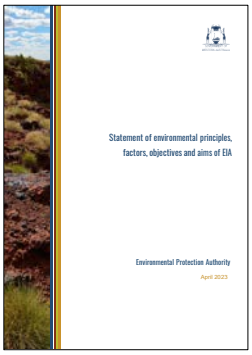
Aims of EIA in WA (ii) - **proponent**

The proponent

The EPA expects that proponents should aim to:

1. consult with all stakeholders, including the EPA, other decision-making authorities and relevant government agencies and the relevant community as early as possible in the planning of their proposal, during the environmental review and assessment of their proposal, and, where necessary, during the life of the proposal
2. ensure that members of the wider public are provided with sufficient information relevant to the EIA of a proposal to make informed comment before the completion of the EPA's assessment report
3. use best practicable measures, and genuine evaluation of options or alternatives, in locating, planning, and designing their proposal, to mitigate potential adverse environmental impacts and to facilitate positive environmental outcomes and a continuous improvement approach to environmental management
4. identify the relevant environmental factors and environmental values likely to be impacted and the Proposal elements likely to cause impacts and have cumulative effects in the early stages of planning for their proposal
5. identify the specific environmental outcomes of the proposal and demonstrate that the unavoidable impacts will meet the EPA objectives for environmental factors
6. consider the following, during project planning and discussions with the EPA, regarding the form,content, and timing of their environmental review:
   a) the activities, investigations (and consequent authorisations) required to undertake the environmental review
   b) the efficacy of the investigations to produce sound scientific baseline data about the receiving environment
   c) the cumulative impacts of the proposal
   d) holistic impacts
   e) the documentation and reporting of investigations; and the likely timeframes in which tocomplete the environmental review
   f) use of best endeavours to meet assessment timelines.
7. identify in their environmental review, subject to the EPA's guidance:
   a) best practicable measures to protect, enhance, avoid, where possible, and otherwise abate, minimise, rehabilitate,monitor and manage impacts on the environment
   b) responsible corporate environmental policies, strategies, and management practices, whichdemonstrate how the proposal can be implemented to meet the EPA's environmental objectives for environmental factors.

[emphasising enhancement, best practice and training topics focus]



[EPA 2023, Statement of env principles…, pp4-5]

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1. The big picture of EIA – internationally and WA

1.1 What is EIA and why do it?

- International perspectives
- Environmental protection / improving…
- **Key principles for EIA practice**

1.2 EIA in WA overview

- *Environmental Protection Act 1986* and the EPA
- EIA process stages

41

Ecologically sustainable development principles underpin EIA in WA

"The Bill …provides a complete suite of tools to ensure the environment is protected. The Bill represents a key part of the Government's commitment to ***ecologically sustainable development*** and delivers on commitments for – …
incorporating sustainability principles into the Environmental Protection Act"

Legislative Assembly - ***Thursday, 27 June 2002***
ENVIRONMENTAL PROTECTION AMENDMENT BILL 2002
Introduction and First Reading
Minister for Environment – Dr Judy Edwards:
[Hansard, p12302a]

42

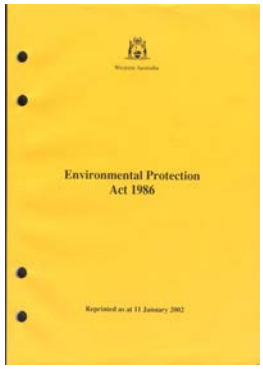
EPAct 1986 – s4A

4A . Object and principles of Act

The ***object of this Act is to protect the environment of the State***, ***having regard to the following principles***:

- the precautionary principle...
- the principle of intergenerational equity...
- the principle of the conservation of biological diversity and ecological integrity...
- principles relating to improved valuation, pricing and incentive mechanisms...
- the principle of waste minimisation...

[Section 4A amended by No. 54 of 2003]

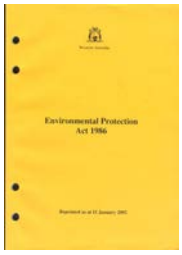


43

EPAct 1986 – s4A

4A . Object and principles of Act …

2. *The principle of intergenerational equity*



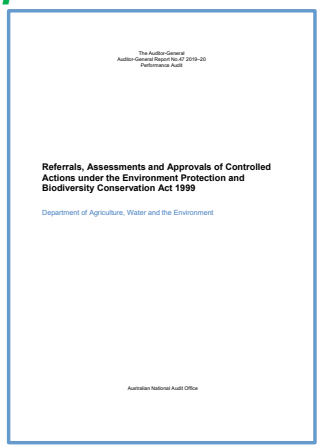
The present generation should ensure that the **health, diversity and productivity of the environment is maintained or enhanced** for the benefit of **future generations**.

44

EIA effort should be commensurate with environmental risk

The department's [i.e. Cth level – EPBC Act] ***regulatory approach is not proportionate to environmental risk.***

[Auditor General 2020, (Audit Snapshot) p6]


The Auditor-General
Auditor-General Report No.47 2019–20
Performance Audit

Referrals, Assessments and Approvals of Controlled Actions under the Environment Protection and Biodiversity Conservation Act 1999

Department of Agriculture, Water and the Environment

Australian National Audit Office

Auditor General, (2020) *Referrals, Assessments and Approvals of Controlled Actions under the Environment Protection and Biodiversity Conservation Act 1999:Department of Agriculture, Water and the Environment*, Auditor-General Report No.47 2019–20 Performance Audit, Canberra: Australian National Audit Office, Commonwealth of Australia, https://www.anao.gov.au/sites/default/files/Auditor-General_Report_2019-2020_47.pdf

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Regulatory principles (DWER, 2020)

01 Risk based

The department makes regulatory decisions proportionate to the level of risk posed to public health, the environment and water resources with consideration of cumulative impacts.

Department resources are targeted to the greatest risks to public health, the environment and water resources.

02 Evidence based

The department applies an evidence-based approach based on the best available information, including sound science, to inform regulatory decision-making.

03 Transparent

The department:

- consults with stakeholders in relation to proposed regulatory policies and plans
- provides clear publicly available, reliable and relevant information on regulatory processes and requirements
- is informed by the public when considering regulatory decision-making
- applies the rules of procedural fairness to all regulatory functions.

04 Collaborative

The department works collaboratively with other regulators to share information, avoid unnecessary regulatory duplication, and support whole-of-government outcomes.

05 Consistent

The department's regulatory actions are consistent with legislation and within statutory powers.

06 Responsive and effective

The department responds in an effective and timely manner.

[in EIA, **scoping** focuses on what matters most (key env. factors)]


Our regulatory approach

DWER (2020) *Our Regulatory Approach*, available: https://www.wa.gov.au/sites/default/files/2020-11DWER_Our_regulatory_approach.pdf

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1. The big picture of EIA – internationally and WA

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1.2 EIA in WA overview

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- EIA process stages

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EPAct 1986 – s8 Independent EPA

8. Independence of Authority and Chair

Subject to this Act, neither of the following is subject to the direction of the Minister —

(a) the Authority;

(b) the Chair.

[Section 8 amended by No. 40 of 2020 s. 7.]

EPAct 1986 – the Long Title

An Act to provide

for an Environmental Protection Authority,

for the prevention, control and abatement of pollution and environmental harm,

for the conservation, preservation, protection, enhancement and management of the environment and

for matters incidental to or connected with the foregoing

[Long title amended by No. 54 of 2003 s. 27.]

[repeat slide]

39. Authority to keep records of referred proposals

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EPAct 1986 – s15

[repeat slide]

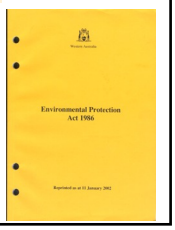
15 . Objectives of Authority

It is the objective of the Authority to use its best endeavours —

(a) to ***protect the environment***; and

(b) to ***prevent, control and abate pollution and environmental harm***.

So, where does EIA fit in with this…?



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EPAct 1986 – s16

16 . Functions of Authority

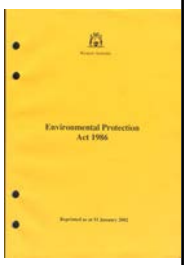
The functions of the Authority are —

(a) to **conduct environmental impact assessments**;

...

(q)…

+ s124C(1) to facilitate bilateral agreements



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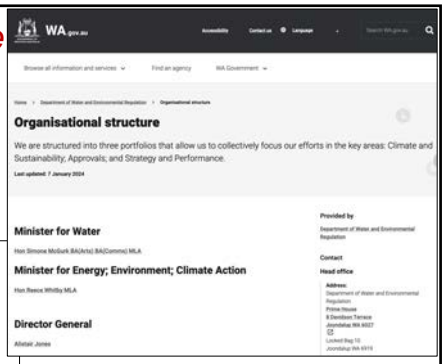
DWER organisational structure

https://www.wa.gov.au/organisation/department-of-water-and-environmental-regulation/organisational-structure
[1 Feb 2024]



Deputy Director General – Climate and Sustainability

Emily Briggs

Leads the development of Western Australia's long term integrated vision and strategy for a sustainable future – climate action, water security, nature positive and circular economy.

Provides guidance to decision makers, sets parameters for policy setting for the long term and ensures the department is prioritising its responsibilities to First Nations Australians, while positioning itself to respond to future emerging issues.

Deputy Director General – Approvals

Chris Shaw

Leads the development of a world class approvals system that is customer and outcomes focused, risk-based, digital and efficient.

Provides confidence to all Western Australians, including First Nations Australians, that the state's water and environmental resources are being protected and sustained into the future through transparent, integrated and inclusive impact assessment and assurance practices underpinned by the best available science and policies.

Deputy Director General – Strategy and Performance

Dennis O'Reilly

Leads the development of the department's multi-year business strategy in partnership with the other portfolios and embeds our strategy in annual business plans that drive improvement.

Creates the business systems, policies, processes, and insights that help the department and each portfolio prioritise, make better decisions, and improve performance.

Bodies supported by the department

- Warren Donnelly Water Advisory Committee
- Geographe Catchment Council
- Carnarvon Water Allocation Advisory Committee
- Environmental Protection Authority
- Waste Authority
- Cockburn Sound Management Council
- Air Quality Coordinating Committee
- Contaminated Sites Committee
- Office of the Appeals Convenor
- Keep Australia Beautiful Council WA

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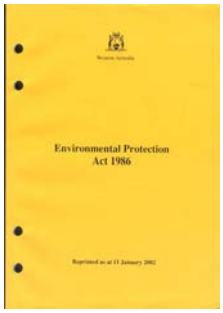
EIA applies to proposals likely to have significant [adverse] environmental effects

EPAct – s37B, Definition of ***significant proposal***

37B. Terms used
(1) In this Division –
…
"***significant proposal***" means a proposal likely, if implemented, to have a ***significant effect on the environment*** *and includes a significant amendment of an approved proposal*;
…
[Section 37B amended by No. 40 of 2020 s. 15.]



[our focus for most of the training course but we will highlight other types of EIA]

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'Significant amendment' definition [*EPAct* – s3]

3. Terms used in this Act

"***significant*** amendment, of an approved proposal, means —

(a) a proposal that —

(i) is or includes the ***amendment of an approved proposal***; ***and***

(ii) is ***likely***, if implemented, ***to have a significant effect on*** the environment;

or

(b) a proposed ***amendment to implementation conditions*** relating to an approved proposal if implementation of the proposal under the amended implementation conditions is ***likely to have a significant detrimental effect*** on the environment in ***addition to, or different from***, the effect the proposal has in its implementation under the ***existing implementation conditions***

[Section 3 amended by No. 40 of 2020 s. 4.]

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EPAct 1986 – s3: Definition of ***environment***

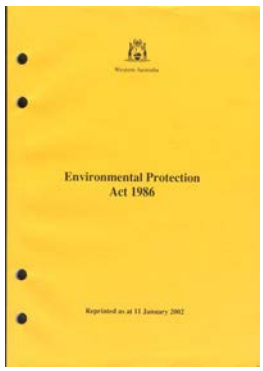
3. Terms used in this Act

(1) In this Act, unless the contrary intention appears —

"*environment*" , subject to subsection (2), means living things, their physical, biological and social surroundings, and interactions between all of these;

(2) In the case of humans, the reference to social surroundings in the definition of environment in subsection (1) is a reference to aesthetic, cultural, economic and other social surroundings to the extent to which they directly affect or are affected by physical or biological surroundings.

[Section 3 amended by No. 40 of 2020 s. 4.]



(*EPAct* s3)

[interesting Parliamentary debates on env defn 1970, 1971, 1986…]

54

About social surroundings (i)

Impacts

Development activities that have the potential to impact social surroundings include, but are not limited to:

- activities that disturbs the ground in a way that may impact cultural associations and heritage (Aboriginal, natural and historical)
- activities that may impact the amenity of social surroundings, such as:
  - developments that generate noise or vibration in proximity to sensitive premises
  - activities that generate dust, including earth moving, processing, transport, stockpiling or loading of materials
  - industrial activities that generate dust or odour
  - rural activities such as piggeries or poultry farms, and treatment facilities such as wastewater treatment plants that generate odour
- activities that may impact aesthetic values, such as:
  - large scale quarry or mining activities on landscapes of significant aesthetic value
  - major tourism or other developments in or adjacent to natural areas with significant aesthetic values.

Aboriginal cultural heritage

Natural and historical heritage

Amenity

Cumulative emissions

Predicting the impacts of noise, dust and odour

Separating industry and sensitive land uses

EPA (2023) *Social Surroundings Environmental Factor Guidelines*
https://www.epa.wa.gov.au/policies-guidance/environmental-factor-guideline-social-surroundings

55

About social surroundings (ii)

Economic

While the EP Act defines social surroundings to include a person's economic surroundings, this does not mean that a proposal's economic benefits, such as job creation or revenue generation, can be considered as part of EIA under Part IV of the EP Act. Rather, the EPA may assess the impacts of a proposal on the economic surroundings of a proposal, that is, economic impacts related to the physical area involved in a proposal. For example, this could include the economic impacts on farmers who own farmland adjacent to a proposed coal mine, which may be affected by impacts on water supply caused by the proposal.

While EIA of impacts to economic surroundings is not common, the EPA will consider significant economic impacts resulting from any significant impact of a proposal or scheme on the physical or biological surroundings.

EPA (2023), p3
https://www.epa.wa.gov.au/policies-guidance/environmental-factor-guideline-social-surroundings

[In a nutshell – there must be a biophysical environmental change that causes adverse social impact…
(further explanation on next slide)]

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About social surroundings (iii)

2.2 Environmental considerations

The EPA's objective for the social surroundings environmental factor is, "*To protect social surroundings from significant harm*".

In order for the EPA to assess whether this objective is likely to be met and whether a proposal is likely to have a significant impact or effect on ACH values, the EPA may have regard to matters for Consideration of Significance, as specified in the EPA's Statement of environmental principles, factors, objectives and aims of EIA.

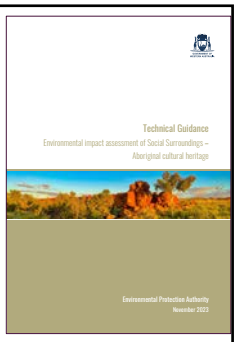
When considering the likely effects of a proposal on ACH, the EPA will give consideration to the following:

1. The extent to which impacts to ACH values are directly[3] affected by impacts to physical or biological surroundings.
2. The extent to which the harm to ACH is significant, by taking into account the nature of the ACH, and the extent of impacts to it.
3. The extent to which the AH Act 1972 processes can mitigate impacts to ACH which are significant, and whether the EPA's objective for the social surroundings environmental factor is likely to be met for the proposal. The EPA considers that in many cases, the AH Act 1972 processes that apply to potential damage or alteration of Aboriginal sites may meet the EPA objectives for those sites, where those processes are likely to require avoidance or minimisation of harm. This will be evaluated on a case-by-case basis.
4. The places where, and impacts to, ACH that may be affected by a proposal. This includes places where ACH is likely to be significantly impacted through impacts to physical or biological surroundings. These places may be outside Aboriginal sites or consent areas to which the AH Act 1972 applies, and may inlcude off-site places. Aboriginal sites and other ACH places may also be subjected to impact types that the AH Act 1972 does not apply to. See section 4 of this Guidance for examples of places where, and impacts to, ACH which may be affected by proposal impacts to physical or biological surroundings.

[2] Section 6 of the *Aboriginal Cultural Heritage Act 2021* Management Code (now repealed).

[3] See *Coastal Waters Alliance of WA* v EPA (1996) 90 LGERA 136 for examples of the type of effects to social surroundings which are not direct.

Technical Guidance – Environmental impact assessment of Social Surroundings – ACH 3



EPA (2023) *Technical Guidance EIA of Social Surroundings – Aboriginal Cultural Heritage*, p3 https://www.epa.wa.gov.au/policies-guidance/environmental-factor-guideline-social-surroundings

More on ACH tomorrow!

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Legal interpretation of 'environment'

Yeelirrie court case 2018 – Chief Justice Martin

the ***EPA is precluded from taking into account the broader economic, cultural, social or political considerations*** which might justify a decision to allow the proposal to be implemented irrespective of its environmental consequences.

Conservation Council of Western Australia (Inc) -V- The Hon Stephen Dawson MLC [2018] WASC 34 s86 (p30)

[but the Minister **can** in approval decision]

original key court case – *Coastal Waters Alliance of WA Inc. v EPA* 90 LGERA 136.


[2018] WASC 34

JURISDICTION : SUPREME COURT OF WESTERN AUSTRALIA IN CIVIL

CITATION : CONSERVATION COUNCIL OF WESTERN AUSTRALIA (INC) -v- THE HON STEPHEN DAWSON MLC [2018] WASC 34

CORAM : MARTIN CJ

HEARD : 16 NOVEMBER 2017

DELIVERED : 8 FEBRUARY 2018

FILE NOS : CIV 2009 of 2017

BETWEEN : CONSERVATION COUNCIL OF WESTERN AUSTRALIA (INC)
First Applicant

SHIRLEY WONYARING
ELIZABETH WONYARING
VICKY ABDULLAH
Second Applicants

AND

THE HON STEPHEN DAWSON MLC
First Respondent

CAMECO AUSTRALIA PTY LTD
Second Respondent

Catchwords:
Environment and planning – Environmental impact assessment – Proposal to mine uranium ore

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role of Minister (s45 of EPAct)

6

The Weekend West
November 25-26, 2017

Mine on ancient range blocked

Daniel Mercer

Plans by one of WA's richest men to mine iron ore in an ancient outback range have been ruled environmentally unacceptable by the State Environment Minister.

Stephen Dawson said last night he had sided with the State's environment watchdog to reject a proposed iron ore mine in the Helena-Aurora Range in the Yilgarn, 500km north-east of Perth.

The proposal is being pursued by Chris Ellison's Perth company Mineral Resources.

After the Environmental Protection Authority in June concluded the mine should not be allowed to go ahead because of the "irreversible impacts" it would have on the range, MinRes appealed.

But Mr Dawson backed the positions of the EPA and the Appeals Convenor, saying they were supported by "the available evidence on environmental impacts".

"After carefully considering the concerns raised, I have found that the EPA's assessment was rigorous and comprehensive," Mr Dawson said yesterday.

"I agree with the conclusions of the Appeals Convenor and the reasoning behind those conclusions and have dismissed the appeals accordingly.

"This is not a final decision from Government.

"I will now consult with my ministerial colleagues to ensure the social, economic and environmental aspects of this proposal are considered."

In a statement, MinRes said it had received the Minister's report and was considering its position. The company claims the project will save 425 jobs and create another 1000 indirectly, while saying the mine would only affect 5 per cent of the range.

Mr Dawson's decision comes after the EPA controversially tried to reject the Helena-Aurora mine proposal at the first opportunity, only to be instructed by then environment minister Albert Jacob to carry out a full assessment.

But in a widely expected decision, the EPA earlier this year recommended the mine not go ahead on the grounds that the three-billion-year-old range is one of the oldest and most ecologically sensitive landforms in the world.

The Wilderness Society WA applauded the decision.

59

1. The big picture of EIA – internationally and WA

1.1 What is EIA and why do it?

- International perspectives
- Environmental protection / improving…
- Key principles for EIA practice

1.2 EIA in WA overview

- *Environmental Protection Act 1986* and the EPA
- **EIA process stages**

60

EIA process stages (i) (from EPA website)

STAGE 1 - Referral of a proposal to the EPA +

STAGE 2: EPA to decide whether to assess a referred proposal +

STAGE 3: Assessment of proposals +

STAGE 4: EPA report on the assessment of a proposal +

STAGE 5: Implementation of proposals +

our training topics work through the 5 stages

https://www.epa.wa.gov.au/pages/step-step-through-proposal-assessment-process

61

EIA process stages (ii)

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual October 2021, p65

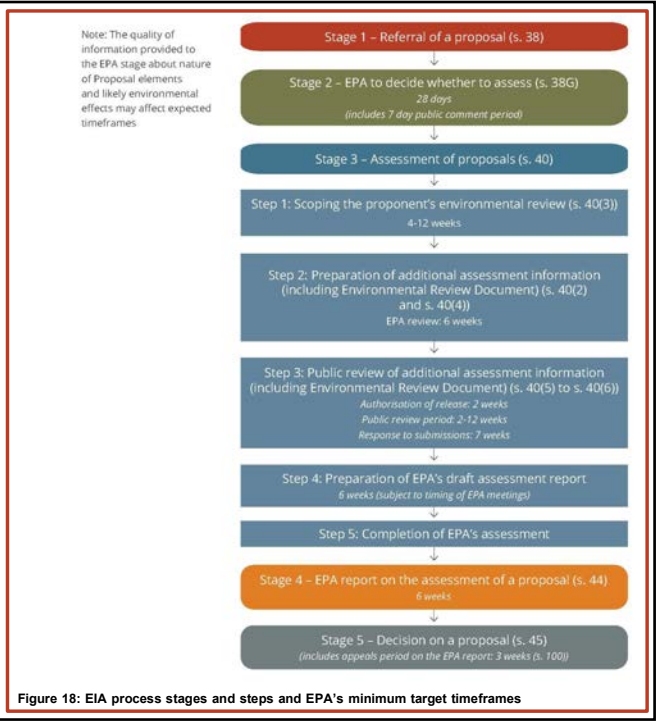


Figure 18: EIA process stages and steps and EPA's minimum target timeframes

62

Types of proposals assessed in WA

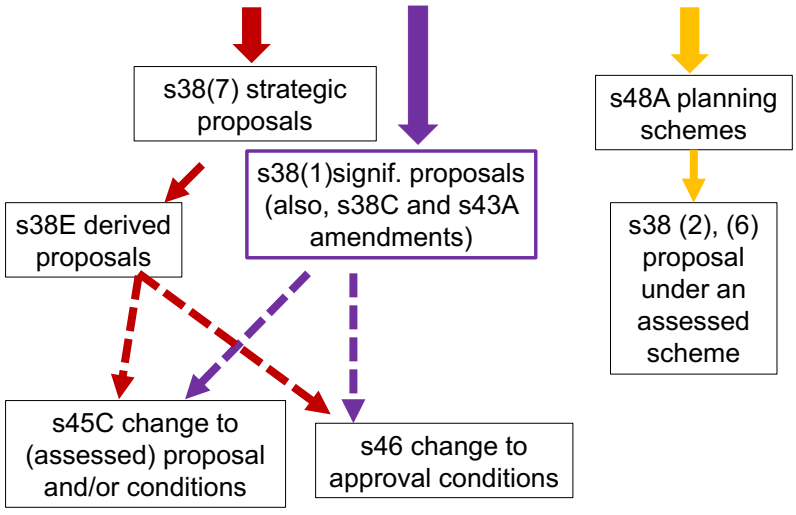
The *EPAct* 1986 contains various particular EIA processes:

- s38(1) significant proposals (including significant amendments)
- Amendments to proposals:
  - s38C amendment to a referred proposal
  - s43A change to proposals during assessment
  - s45C amendments to assessed proposals and conditions
  - (also s46 change to approval conditions)
- s38(7) strategic proposals
  - s38E derived proposals identified in an assessed strategic proposal
- s48A assessment of (planning) schemes
  - s38(2&6) proposal under an assessed scheme (i.e. subdivision and development)

63

Formal levels of assessment

There are a quite a few specific EIA pathways…



64

But EIA **is** EIA!

Types of proposals assessed in WA

The *EPAct* 1986 contains various particular EIA processes:

- s38(1) significant proposals
- Amendments to proposals:
  - s38C amendment to a referred proposal
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  - s38E derived proposals identified in an assessed strategic proposal
- s48A assessment of (planning) schemes
  - s38(2 & 6) proposal under an assessed scheme (i.e. subdivision and development)

The same process/thinking applies for all processes*! [i.e. covered in this course]

(*there are minor differences in administrative arrangements…)

65

2. The fundamentals

2.1 EPA's framework for environmental considerations in EIA

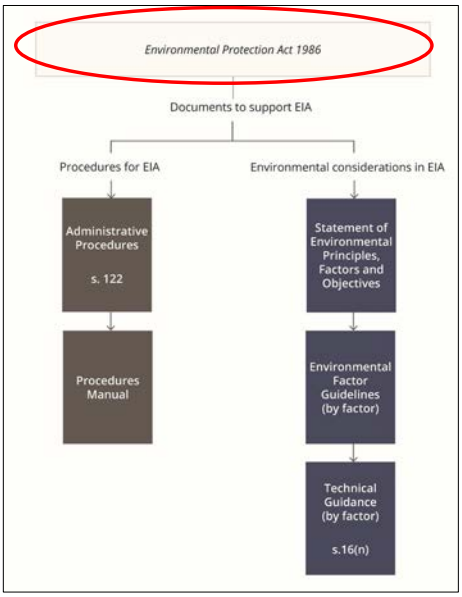
2.2 Assessment process overview

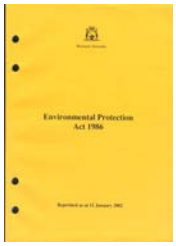
2.3 Value of strategic approaches

Featuring:
- **Understanding baseline**
- **Mitigation hierarchy**
- **Significance determination**

1

EPA's framework for EIA in WA





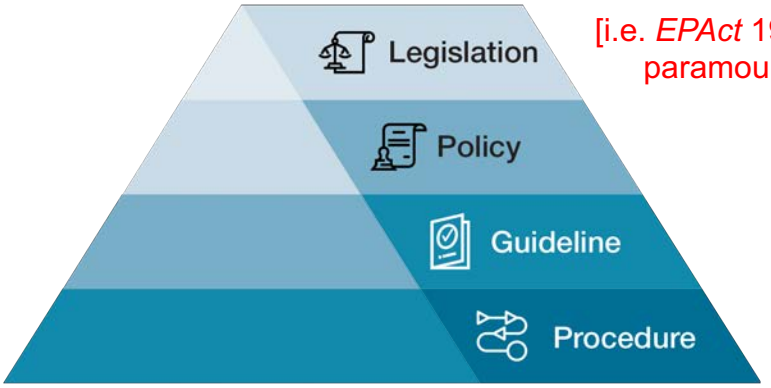
Everything stems from the EPAct 1986

(as amended November 2020)

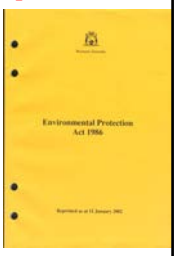
http://www.epa.wa.gov.au/framework-assessment-procedures-eia

2

Policy framework (DWER website)



[i.e. *EPAct* 1986 is paramount]



https://dwer.wa.gov.au/policy-framework

The Review Team recommended that the ***EPA should develop and adopt a simplified policy framework that is arranged in a hierarchical manner, with the objectives and principles of the EP Act at its apex*** (Quinlan, 2016, pxii)

http://www.parliament.wa.gov.au/publications/tabledpapers.nsf/displaypaper/3914172a7f942b9bcdc67d8548257fb6004fc949/$file/4172.pdf

3

EPAct 1986 – s122

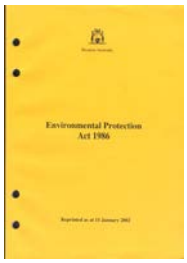
122. Administrative procedures

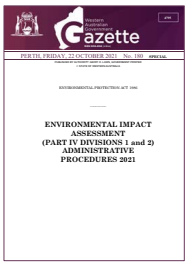
(1) The Authority may from time to time —

(a) draw up administrative procedures for the purposes of this Act and in particular for the purpose of **establishing the principles and practices of environmental impact assessment**;

(b) amend or revoke administrative procedures drawn up under this section; and

(c) publish in the *Gazette* any administrative procedures drawn up under this section and any amendment or revocation of those administrative procedures.

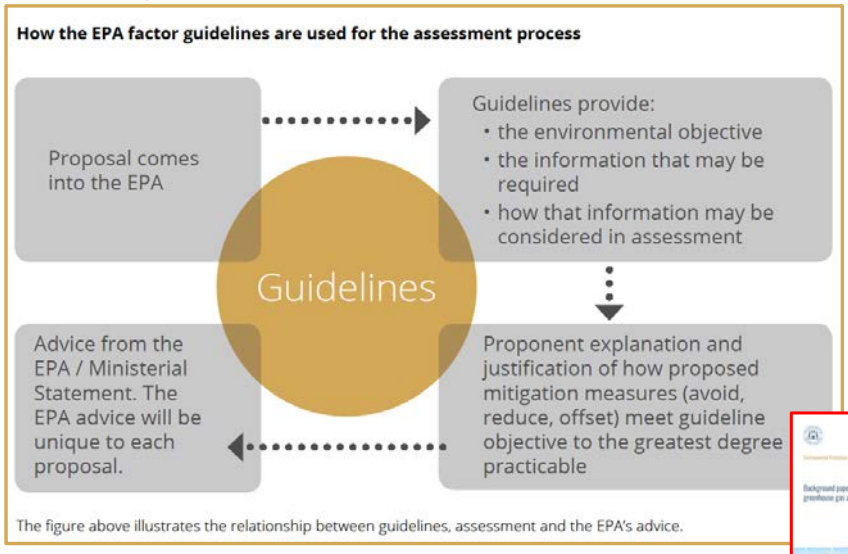




[*Admin Proc 2021*]

4

How guidelines are used in EIA (EPA, 2019, p5)

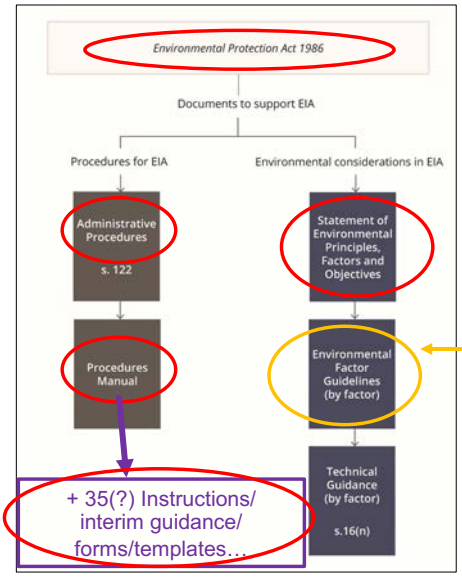


EPA [June] 2019 *Background paper on greenhouse gas assessment guidance*
http://www.epa.wa.gov.au/sites/default/files/EPA GGAGC Background paper.PDF

[Note: this document is no longer publicly available]

5

EPA's framework for EIA in WA
focus for the training course



+

WA Environmental Offsets Policy (2011)

WA Environmental Offsets Guidelines (2014)

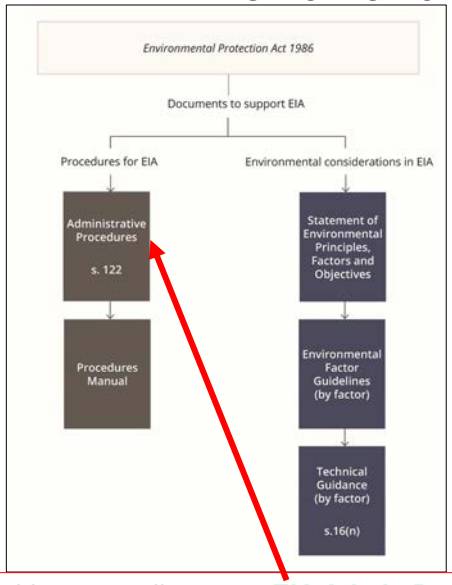
[1 activity examines the 8 factor guides for Alkimos]

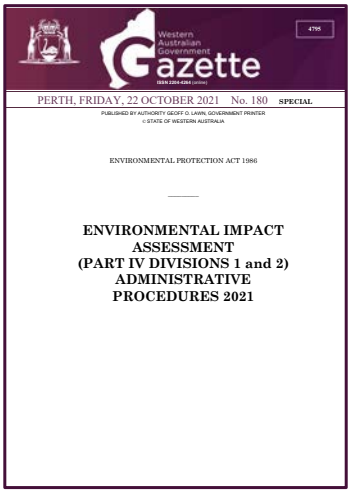
[Note: always use **online** documents to stay current]

http://www.epa.wa.gov.au/framework-assessment-procedures-eia

6

EPA's framework for EIA in WA




Western Australian Government Gazette

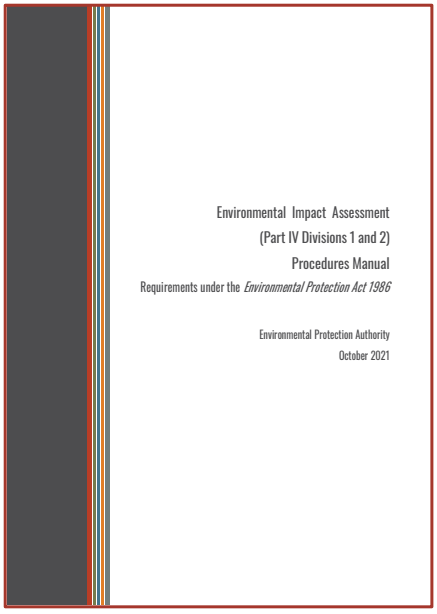
PERTH, FRIDAY, 22 OCTOBER 2021 No. 180 SPECIAL

ENVIRONMENTAL PROTECTION ACT 1986

ENVIRONMENTAL IMPACT ASSESSMENT (PART IV DIVISIONS 1 and 2) ADMINISTRATIVE PROCEDURES 2021

- this course discusses ***EIA Admin Proc 2021*** – some active projects are subject to previous admin proc (2002, 2010, 2012, 2016)
  - ***specific details vary, but overall EIA practice & principles are similar***

7


Environmental Impact Assessment
(Part IV Divisions 1 and 2)
Procedures Manual
Requirements under the *Environmental Protection Act 1986*

Environmental Protection Authority
October 2021

EIA Procedures Manual is a key document

[The Manual adopts identical section numbering (structure) as *Admin Proc 2021*]

https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EIA (Part IV Divisions 1 and 2) Procedures Manual_0.pdf

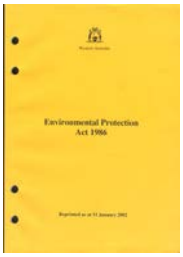
https://www.epa.wa.gov.au/procedures-manual

8

Key environmental factors concept [*EPAct 1986*, s44]

44. Report by Authority

(1) If the Authority assesses a proposal, it must prepare a report on the outcome of its assessment of the proposal and give that report (the **"assessment report"**) to the Minister.



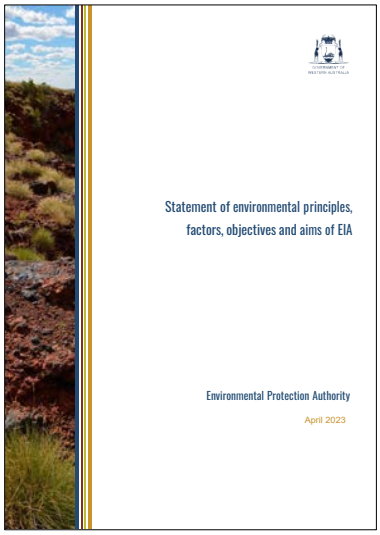
(2) The ***assessment report must set out*** – (*EPAct* s44)

(a) what the Authority considers to be the ***key environmental factors*** identified in the course of the assessment ...

[Section 44 amended by No. 40 of 2020 s. 27.]

9

"Environment" in EIA = *Factors* (i)



1. Purpose

The purpose of this Statement is to communicate how, for the purposes of environmental impact assessment, the Environmental Protection Authority (EPA):

…

- uses environmental factors and objectives to organise and systemise EIA and reporting

…

(EPA, 2023, p2)

https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Statement of environmental principles, factors, objectives and aims of EIA.pdf

https://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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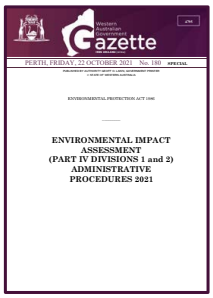
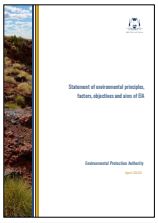
"Environment" in EIA = *Factors* (ii)

Environmental factors
Features or characteristics of the environment that ***may be impacted or affected by, or are otherwise relevant to the assessment of, a proposal*** that the ***EPA uses as an organising principle for environmental impact assessment***. For guidance on these see the EPA's *Statement of environmental principles, factors, objectives and aims of EIA*

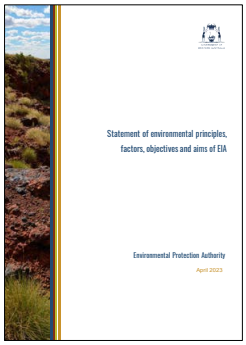

Western Australian Gazette
PERTH, FRIDAY, 22 OCTOBER 2021 No. 180 SPECIAL
ENVIRONMENTAL IMPACT ASSESSMENT (PART IV DIVISIONS 1 and 2) ADMINISTRATIVE PROCEDURES 2021


Statement of environmental principles, factors, objectives and aims of EIA
Environmental Protection Authority

[Admin Proc 2021, p4818]

11

"Environment" in EIA = *Factors* (ii)


Statement of environmental principles, factors, objectives and aims of EIA
Environmental Protection Authority
April 2023

5. Environmental factors and objectives
Environmental factors (defined in the EPA's Administrative Procedures) **are factors that the EPA uses as an organising principle for EIA**, **comprising a number of environmental values**. They provide a ***systematic approach to organising environmental information for the purpose of EIA*** and a structure for the assessment report.

[values are a sub-set of factors]

The EPA has 14 environmental factors, organised into five themes: Sea, Land, Water, Air and People. (EPA, 2023, p6)

https://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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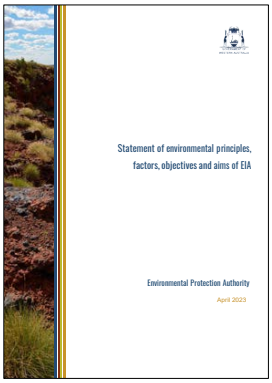
Table 1: EPA environmental factors and objectives

Theme	Factor	Objective
Sea	Benthic communities and habitats	To protect benthic communities and habitats so that biological diversity and ecological integrity are maintained.
	Coastal processes	To maintain the geophysical processes that shape coastal morphology so that the environmental values of the coast are protected.
	Marine environmental quality	To maintain the quality of water, sediment and biota so that environmental values are protected.
	Marine fauna	To protect marine fauna so that biological diversity and ecological integrity are maintained.
Land	Flora and vegetation	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.
	Landforms	To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected.
	Subterranean fauna	To protect subterranean fauna so that biological diversity and ecological integrity are maintained.
	Terrestrial environmental quality	To maintain the quality of land and soils so that environmental values are protected.
	Terrestrial fauna	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.
Water	Inland waters	To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.
Air	Air quality	To maintain air quality and minimise emissions so that environmental values are protected.
	Greenhouse gas emissions	To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.
People	Social surroundings	To protect social surroundings from significant harm.
	Human health	To protect human health from significant harm.

EPA, 2023, p7

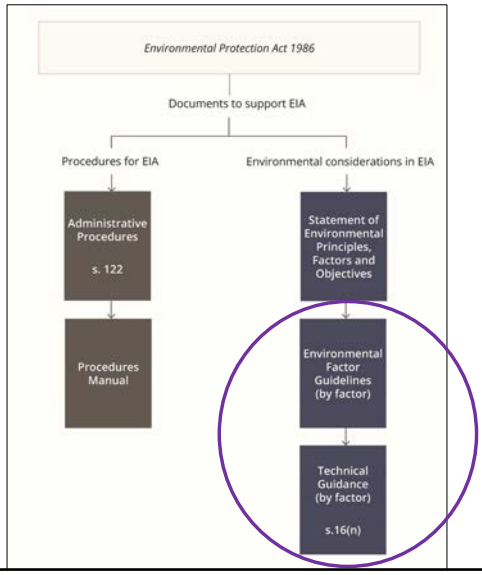


13

EPA's framework for EIA in WA

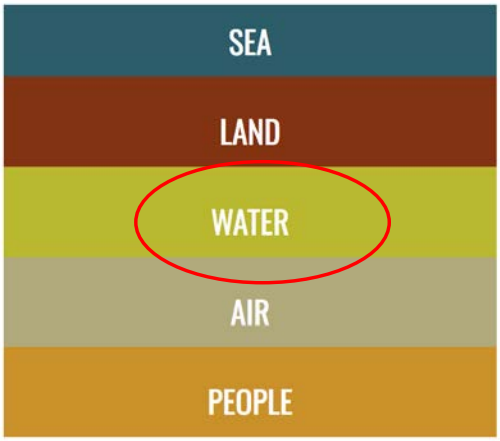
See EPA website for detailed factor guidelines

(not the focus of this course)



14

Click on an Environmental Factor below to display a list of relevant factor guidelines and technical guidance



https://www.epa.wa.gov.au/policies-guidance/water

15

Factor guidelines and technical guidance: Water

South-west Western Australia has experienced a progressively drying climate over the past 35 years. The drying climate highlights the value of our water-related environments, including extensive groundwater aquifers which support numerous groundwater-dependent ecosystems such as wetlands, as well as many estuaries and rivers which are important environmental and recreational assets.

The EPA considers the key 'water' factor of inland waters when providing advice and recommendations to the Minister for Environment. This factor amalgamates the two previous factors of hydrological processes and inland waters environmental quality, to recognise the overlap in considerations for these factors and reflecting contemporary practice in EIA.

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Key Document

- Statement of Environmental Principles, Factors and Objectives

Factor Guidelines Water

Inland Waters

Objective - to maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

- Environmental Factor Guideline - Inland Waters

http://epa.wa.gov.au/policies-guidance/water

16

Click on an Environmental Factor below to display a list of relevant factor guidelines and technical guidance

https://www.epa.wa.gov.au/policies-guidance/land

17

Factor Guidelines

Flora and Vegetation

Objective - to protect flora and vegetation so that biological diversity and ecological integrity are maintained.

- Environmental Factor Guideline - Flora and Vegetation

Terrestrial Fauna

Objective - to protect terrestrial fauna so that biological diversity and ecological integrity are maintained.

- Environmental Factor Guideline - Terrestrial Fauna

Subterranean Fauna

Objective - to protect subterranean fauna so that biological diversity and ecological integrity are maintained.

- Environmental Factor Guideline - Subterranean Fauna

Landforms

Objective - to maintain the variety and integrity of significant physical landforms so that environmental values are protected.

- Environmental Factor Guideline - Landforms

Terrestrial Environmental Quality

Objective - to maintain the quality of land and soils so that environmental values are protected.

- Environmental Factor Guideline - Terrestrial Environmental Quality

Technical guidance: Land

Flora and Vegetation

- Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment

Subterranean Fauna

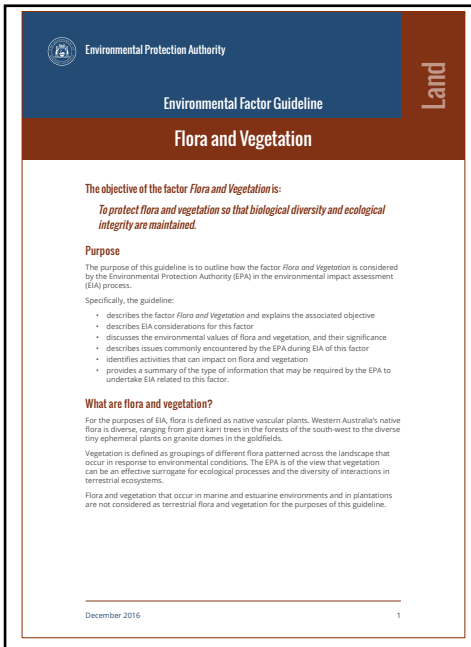
- Technical Guidance - Subterranean fauna surveys for environmental impact assessment

Terrestrial Fauna

- Technical Guidance - Sampling of short range endemic invertebrate fauna
- Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment

http://epa.wa.gov.au/policies-guidance/land

18



Environmental Protection Authority

Environmental Factor Guideline

Land

Flora and Vegetation

The objective of the factor *Flora and Vegetation* is:

To protect flora and vegetation so that biological diversity and ecological integrity are maintained.

Purpose

The purpose of this guideline is to outline how the factor *Flora and Vegetation* is considered by the Environmental Protection Authority (EPA) in the environmental impact assessment (EIA) process.

Specifically, the guideline:

- describes the factor *Flora and Vegetation* and explains the associated objective
- describes EIA considerations for this factor
- discusses the environmental values of flora and vegetation, and their significance
- describes issues commonly encountered by the EPA during EIA of this factor
- identifies activities that can impact on flora and vegetation
- provides a summary of the type of information that may be required by the EPA to undertake EIA related to this factor.

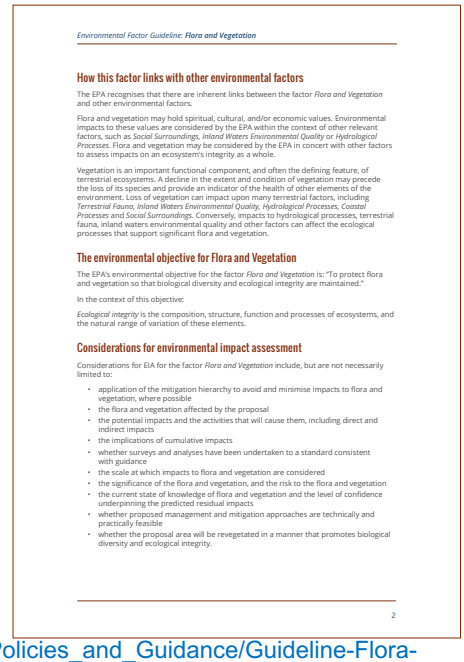
What are flora and vegetation?

For the purposes of EIA, flora is defined as native vascular plants. Western Australia's native flora is diverse, ranging from giant karri trees in the forests of the south-west to the diverse tiny ephemeral plants on granite domes in the goldfields.

Vegetation is defined as groupings of different flora patterned across the landscape that occur in response to environmental conditions. The EPA is of the view that vegetation can be an effective surrogate for ecological processes and the diversity of interactions in terrestrial ecosystems.

Flora and vegetation that occur in marine and estuarine environments and in plantations are not considered as terrestrial flora and vegetation for the purposes of this guideline.

December 2016 1



Environmental Factor Guideline: Flora and Vegetation

How this factor links with other environmental factors

The EPA recognises that there are inherent links between the factor *Flora and Vegetation* and other environmental factors.

Flora and vegetation may hold spiritual, cultural, and/or economic values. Environmental impacts to these values are considered by the EPA within the context of other relevant factors, such as *Social Surroundings*, *Inland Waters Environmental Quality* or *Hydrological Processes*. Flora and vegetation may be considered by the EPA in concert with other factors to assess impacts on an ecosystem's integrity as a whole.

Vegetation is an important functional component, and often the defining feature, of terrestrial ecosystems. A decline in the extent and condition of vegetation may precede the loss of its species and provide an indicator of the health of other elements of the environment. Loss of vegetation can impact upon many terrestrial factors, including *Terrestrial Fauna*, *Inland Waters Environmental Quality*, *Hydrological Processes*, *Coastal Processes* and *Social Surroundings*. Conversely, impacts to hydrological processes, terrestrial fauna, inland waters environmental quality and other factors can affect the ecological processes that support significant flora and vegetation.

The environmental objective for Flora and Vegetation

The EPA's environmental objective for the factor *Flora and Vegetation* is: "To protect flora and vegetation so that biological diversity and ecological integrity are maintained."

In the context of this objective:

Ecological integrity is the composition, structure, function and processes of ecosystems, and the natural range of variation of these elements.

Considerations for environmental impact assessment

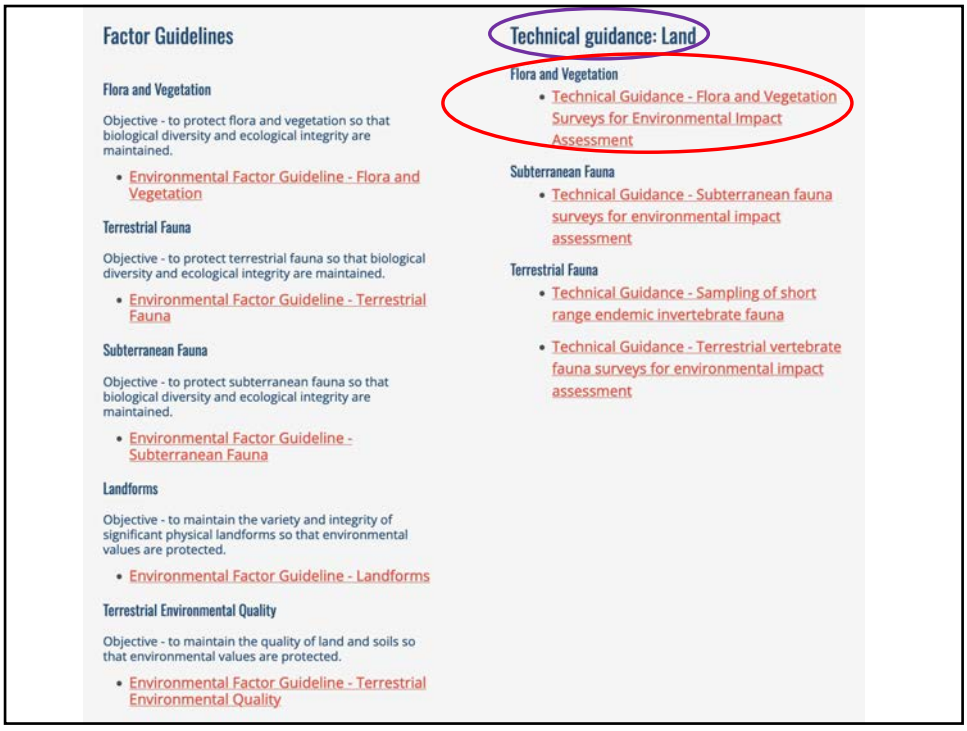
Considerations for EIA for the factor *Flora and Vegetation* include, but are not necessarily limited to:

- application of the mitigation hierarchy to avoid and minimise impacts to flora and vegetation, where possible
- the flora and vegetation affected by the proposal
- the potential impacts and the activities that will cause them, including direct and indirect impacts
- the implications of cumulative impacts
- whether surveys and analyses have been undertaken to a standard consistent with guidance
- the scale at which impacts to flora and vegetation are considered
- the significance of the flora and vegetation, and the risk to the flora and vegetation
- the current state of knowledge of flora and vegetation and the level of confidence underpinning the predicted residual impacts
- whether proposed management and mitigation approaches are technically and practically feasible
- whether the proposal area will be revegetated in a manner that promotes biological diversity and ecological integrity.

2

http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Guideline-Flora-Vegetation-131216_4.pdf [6 pages]

19



Factor Guidelines

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- Environmental Factor Guideline - Flora and Vegetation

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Terrestrial Fauna

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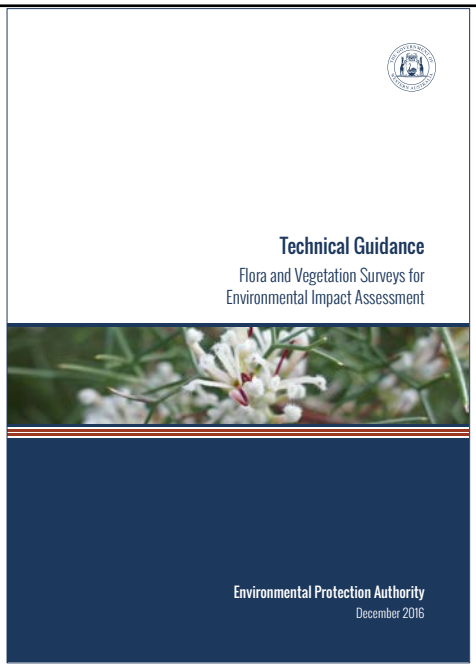

http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA Technical Guidance – Flora and Vegetation survey_Dec13.pdf [42 pages]

21

2. The fundamentals

2.1 EPA's framework for environmental considerations in EIA

2.2 Assessment process overview

2.3 Value of strategic approaches

22

EIA process stages (ii)

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual October 2021, p65

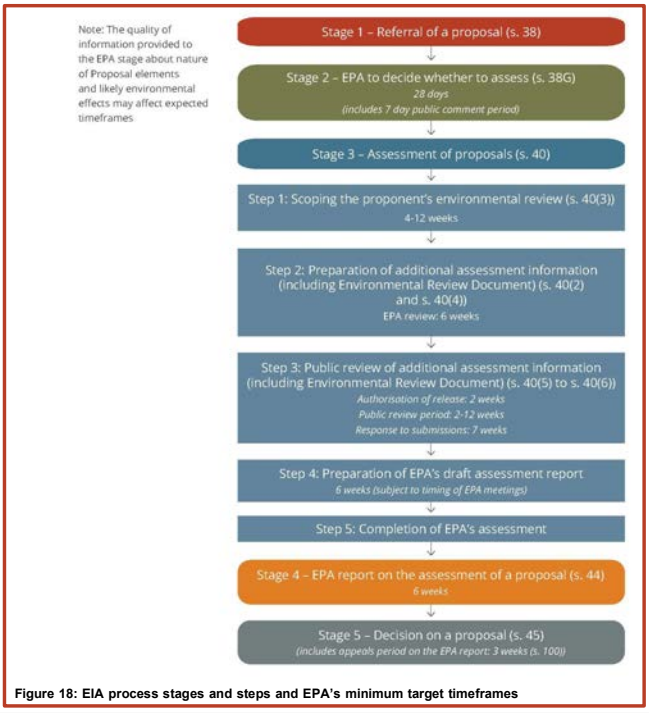

Figure 18: EIA process stages and steps and EPA's minimum target timeframes

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EIA in WA (to protect environment)

Key **Environmental Factor & Objective**

Understand environment
(baseline studies – local & regional context)

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Baseline studies are extremely important…

[i.e. basis for determining significance of impacts in a 'local and regional context' (e.g. *Instructions: How to Prepare an ERD*)]

Technical guidance: Land

Flora and Vegetation
- Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment

Subterranean Fauna
- Technical Guidance - Subterranean fauna surveys for environmental impact assessment

Terrestrial Fauna
- Technical Guidance - Sampling of short range endemic invertebrate fauna
- Technical Guidance - Terrestrial vertebrate fauna surveys for environmental impact assessment

EPA technical guides outline expectations & minimum standards for environmental surveys…

http://epa.wa.gov.au/policies-guidance/land

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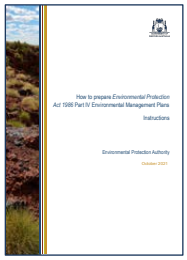
About baseline – definitions

[note: expectation for baseline studies in relation to EMPs]

Baseline studies

The environmental studies undertaken prior to an area being subject to pressures or effects from a development or proposal activities occurring.

Baseline studies should be undertaken at both the impact site and the reference site ***prior to potential impacts***.



Baseline condition

The ***environmental conditions prior to being subject to pressures from a development*** or operation of concern.

This may include natural environmental conditions that are largely un-impacted by human influences or the state of the environment just prior to influences and effects of development.

Instructions: How to prepare an EMP, Definitions: p16

https://www.epa.wa.gov.au/forms-templates/instructions-part-iv-environmental-management-plans

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Capturing baseline data – **IBSA & IMSA**

For each terrestrial biodiversity survey report, proponents should submit an Index of Biodiversity Surveys for Assessment (IBSA) data package via the online submissions portal – following the instructions and form for IBSA data packages. Similarly, when proponents submit a marine survey report, it must be accompanied by an Index of Marine Surveys for Assessment (IMSA) data package as part of the supporting documentation, following the instructions and form for IMSA data packages.

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Instructions - IBSA Data Packages.pdf

EIA Procedures Manual 2021 s1.4.1

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

(EPA Referral Instructions and Forms https://www.epa.wa.gov.au/templates-and-forms)

Supporting documents	
Provide a list of the supporting documents	
Has the referrer provided survey information according to the *Instructions and Form: IBSA Data Packages* and/or the *Instructions and form: IMSA Data Packages*	☐ Yes ☐ No

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/EPA Instructions for IMSA data packages.pdf

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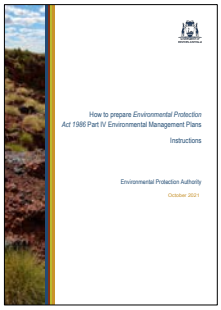
About IBSA & IMSA

IBSA and IMSA are mechanisms where ***terrestrial biodiversity survey and marine survey information collected for environmental impact assessment*** under the Environmental Protection Act 1986 will be captured and integrated into a consolidated, indexed and ***publicly available repository***.



IBSA and IMSA are administered by DWER on behalf of itself, the EPA and DMIRS.

EPA (2020) *Instructions: How to prepare EPAct 1986 Part IV Environmental Management Plans, p15*

https://www.epa.wa.gov.au/forms-templates/instructions-part-iv-environmental-management-plans

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Instructions for IMSA…

Environmental Protection Authority

Instructions for the preparation of data packages for the Index of Marine Surveys for Assessments (IMSA)

Instructions: IMSA data packages

Purpose of these instructions

To assist proponents in preparing data packages for the Index of Marine Surveys for Assessments (IMSA). The Environmental Protection Authority (EPA) and Department of Water and Environmental Regulation (DWER) require IMSA data packages to support assessment processes under the *Environmental Protection Act 1986* (EP Act).

Whenever a marine survey report is provided as part of the environmental impact assessment (EIA) process, the report and associated raw data must be provided electronically as part of an IMSA data package.

The EPA has issued a series of three technical guidance documents to ensure that adequate marine information is obtained and used in the EIA process. To determine what marine surveys need to be undertaken refer to the relevant EPA technical guidance:

- Technical Guidance - Protection of Benthic Communities and Habitats
- Technical Guidance - Protecting the Quality of Western Australia's Marine Environment
- Technical Guidance - Environmental Impact Assessment of Marine Dredging Proposals.

Each technical guidance document contains a section that describes the kind of information that is required to be submitted as part of the EIA process, as well as a reference to this document - *Instructions for the preparation of data packages for the Index of Marine Surveys for Assessments*.

These instructions outline the data requirements and submission process for IMSA data packages, and the options that Intellectual Property (IP) owners (that is owners of any intellectual property rights in the material) have regarding the public availability of IMSA data.

Note that these instructions and the accompanying electronic templates and forms will be updated as the IMSA data standards are refined – particularly during the first year of IMSA's operation. Users should consult the EPA website to ensure they have the most recent versions of these documents prior to using them.

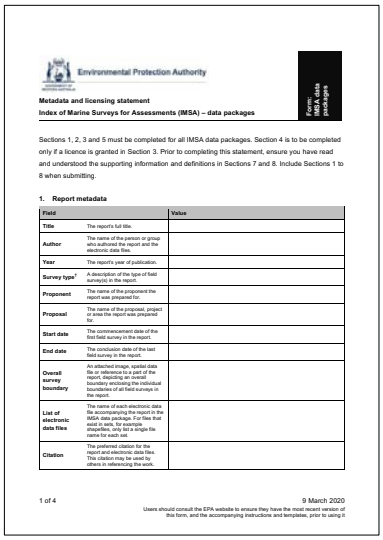
IMSA data packages

Marine data packages are to be submitted to IMSA accompanied by the relevant marine survey report and bundled as part of an IMSA data package. IMSA data packages are only required for marine surveys that have not been previously captured in IMSA. This includes all new generated survey reports and data as well as previous survey reports and data (if available) included in desktop studies.

A single environmental review document (ERD) or other documentation provided to the EPA may be accompanied by one or more IMSA data package. Each IMSA data package should be associated with a single marine survey report (often included as an appendix to the ERD). Where a single marine survey report documents multiple field surveys, the data from the different surveys should be contained in multiple files in the single IMSA data package for that report.

1 23 November 2021

Users should consult the EPA website to ensure they have the most recent versions of these instructions, and the accompanying templates and forms, prior to using them



Environmental Protection Authority

Metadata and licensing statement
Index of Marine Surveys for Assessments (IMSA) – data packages

Form: IMSA data packages

Sections 1, 2, 3 and 5 must be completed for all IMSA data packages. Section 4 is to be completed only if a licence is granted in Section 3. Prior to completing this statement, ensure you have read and understood the supporting information and definitions in Sections 7 and 8. Include Sections 1 to 8 when submitting.

1. Report metadata

Field		Value
Title	The report's full title.	
Author	The name of the person or group who authored the report and the electronic data files.	
Year	The report's year of publication.	
Survey type[1]	A description of the type of field survey(s) in the report.	
Proponent	The name of the proponent the report was prepared for.	
Proposal	The name of the proposal, project or area the report was prepared for.	
Start date	The commencement date of the first field survey in the report.	
End date	The conclusion date of the last field survey in the report.	
Overall survey boundary	An attached image, spatial data file or shapefile, as part of the report, depicting an overall boundary enclosing the individual boundaries of all field surveys in the report.	
List of electronic data files	The name of each electronic data file accompanying the report in the IMSA data package. For files that exist in sets, for example shapefiles, only list a single file name for each set.	
Citation	The preferred citation for the report and electronic data files. This citation may be used by others in referencing the work.	

1 of 4 9 March 2020

Users should consult the EPA website to ensure they have the most recent version of this form, and the accompanying instructions and templates, prior to using it

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Form - IMSA Data Package - Metadata and Licensing Statement.docx

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/EPA Instructions for IMSA data packages.pdf

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EIA in WA
(to protect environment)

Key **Environmental Factor & Objective**

Understand environment
(baseline studies – local & regional context)

Understand development proposal
(project design, alternatives, proposal content)

Predict impacts
(potential environmental impact & ***significance***)

[note: details of these are addressed later on in training course]

[it is beyond the scope of this course to address techniques for making impact predictions]

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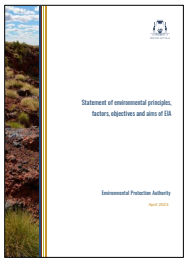
6 Consideration of significance

The EPA usually considers significance when deciding whether to assess proposals and schemes. The EPA also usually considers significance at most other stages in EIA. The terms 'significance', 'significant impact' and 'significant effect' are not defined in the Act. Therefore, the ordinary or everyday meanings of these terms apply. When considering these terms, the EPA may have regard to, and expects the proponent to have regard to, various matters, including:

1. the object and principles of the Act
2. values, sensitivity and quality of the environment which is likely to be impacted
3. all stages and components of the proposal (such as any infrastructure required for the proposal to be practicably implemented, or a proposal life cycle)
4. extent (intensity, duration, magnitude, and geographic footprint) of the likely impacts
5. resilience of the environment to cope with the impacts or change (including considering pressures such as climate change)
6. consequence of the application of the mitigation hierarchy to the proposal
7. consequence of the likely impacts (or change), including off-site impacts (such as impacts on a wetland from chemicals discharged into upstream river systems) and indirect impacts (such as reduced fish harvest due to decreased water quality)
8. likely environmental outcomes, and whether these are consistent with the EPA environmental factor objectives
9. cumulative effects, taking into account cumulative environmental impacts - the successive, incremental and interactive impacts on the environment of a proposal with one or more past, present and reasonably foreseeable future activities
10. holistic impacts – connections and interactions between impacts, and the overall impact of the proposal on the environment as a whole
11. level of confidence in the prediction of residual impacts and the success of proposed mitigation Further guidance on the mitigation hierarchy is in the following section
12. public interest about the likely effect of the proposal or scheme, if implemented, on the environment, and relevant public information.

The application of the significance test is on a case-by-case basis.



EPA 2023, p8
http://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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EIA in WA
(to protect environment)

Key **Environmental Factor & Objective**

Understand environment
(baseline studies – local & regional context)

Understand development proposal
(project design, alternatives, proposal content)

Predict impacts
(potential environmental impact & significance)

Apply mitigation hierarchy
(enhance, avoid, minimise, rehabilitate, offset)

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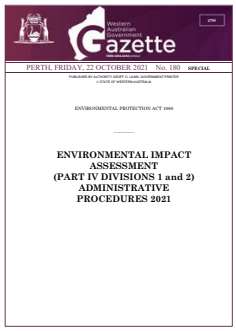
Mitigation hierarchy

Strategies to reduce the impacts of a proposal on the environment

For guidance on the mitigation hierarchy, see the EPA's *Statement of environmental principles, factors, objectives and aims of EIA*

[Admin Proc 2021, p4818]


Western Australian Government Gazette

PERTH, FRIDAY, 22 OCTOBER 2021 No. 180 SPECIAL

ENVIRONMENTAL PROTECTION ACT 1986

ENVIRONMENTAL IMPACT ASSESSMENT (PART IV DIVISIONS 1 and 2) ADMINISTRATIVE PROCEDURES 2021

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[International perspective]

The mitigation hierarchy – (US, 1978)

"Mitigation" includes:
(a) ***Avoiding*** the impact altogether by not taking a certain action or parts of an action.
(b) ***Minimizing*** impacts by limiting the degree or magnitude of the action and its implementation.
(c) ***Rectifying*** the impact by repairing, rehabilitating, or restoring the affected environment.
(d) ***Reducing*** or eliminating the impact over time by preservation and maintenance operations during the life of the action.
(e) ***Compensating*** for the impact by replacing or providing substitute resources or environments.
(CEQ, 1978, s1508.200)

Council on Environmental Quality Executive Office of the President (1978) *Regulations For Implementing The Procedural Provisions Of The National Environmental Policy Act*, Reprint 40 CFR Parts 1500-1508 (2005), http://energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf

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7 Mitigation hierarchy

The mitigation hierarchy is a sequence of actions to help reduce adverse environmental impacts. The EPA applies two mitigation hierarchies, one specifically for greenhouse gas emissions and one for all other factors, referred to as the environmental factor mitigation hierarchy. These are listed below in order of preference (avoidance most preferred mitigation and offsets as the least preferred option).

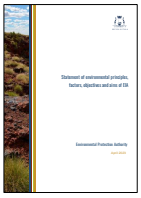
Environmental factors

1. Avoid – avoid the adverse environmental impact altogether. This may include reducing the footprint or changing the location of the footprint to avoid areas with high environmental values.
2. Minimise – limit the degree or magnitude of the adverse impact. This may include reducing the footprint or carefully selecting technologies, processes (such as re-use of waste products) and management measures (such as bunding or dust and noise control measures) to reduce the impact.
3. Rehabilitate – repair, rehabilitate or restore the impacted site as soon as possible. Adequate rehabilitation information is integral to the mitigation hierarchy to ensure early identification of knowledge gaps and risk as well as development of criteria and research to meet objectives.
4. Offset – undertake a measure or measures to provide a compensatory environmental benefit or reduction in environmental impact to counterbalance significant adverse environmental impacts from implementation of a proposal. The measure(s) are taken after all reasonable mitigation measures have been applied and a significant environmental risk or impact remains. Offsets are not appropriate for all proposals and will be determined on a proposal-by-proposal basis.

Note: mitigation may be limited to avoid and minimise for some environmental factors, where rehabilitation options are not available.

Greenhouse gas emissions factor

1. Avoid – avoid emissions through best-practice design.
2. Reduce – reduce emissions over the project life.
3. Offset – offset some or all residual emissions.



EPA 2023, pp8-9
http://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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Mitigation hierarchy explanation – WA (ii)

There are four steps in the mitigation hierarchy – Avoid, Minimise, Rehabilitate and Offset …

In developing a project, proponents/applicants must apply this hierarchy to ***reduce its potential impacts on the environment***.

Reducing the environmental impact of a project benefits both the proponent or applicant and the environment by ***reducing the likelihood that an offset may be required*** and also the magnitude of any offset that is required.

(Govt of WA, 2014, p7)

Govt of WA 2014, *WA Environmental Offsets Guidelines*, August 2014
http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA Environmental Offsets Guideline August 2014.pdf

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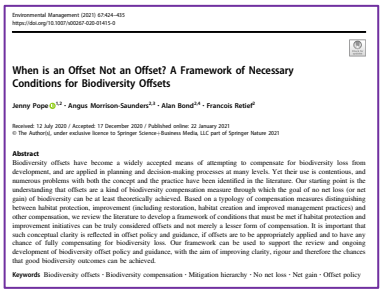
[International perspective]

Offsets explanation (i)

…by definition, offsets seek to compensate for impacts on the development site ***in <u>another</u> place that is <u>outside the development envelope</u>*** and therefore ***there can be no real confusion between offsets and the other steps in the mitigation hierarchy***.
(Pope et al., 2021, p425)

[In a nutshell – mitigation takes place at the development site and offsets occur elsewhere…]



Environmental Management (2021) 67:424–435
https://doi.org/10.1007/s00267-020-01415-0

When is an Offset Not an Offset? A Framework of Necessary Conditions for Biodiversity Offsets

Jenny Pope[1,2] · Angus Morrison-Saunders[2,3] · Alan Bond[3,4] · Francois Retief[5]

Received: 12 July 2020 / Accepted: 17 December 2020 / Published online: 22 January 2021
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Abstract
Biodiversity offsets have become a widely accepted means of attempting to compensate for biodiversity loss from development, and are applied in planning and decision-making processes at many levels. Yet their use is contentious, and numerous problems with both the concept and the practice have been identified in the literature. Our starting point is the understanding that offsets are a kind of biodiversity compensation measure through which the goal of no net loss (or net gain) of biodiversity can be at least theoretically achieved. Based on a typology of compensation measures distinguishing between habitat protection, improvement (including restoration, habitat creation and improved management practices) and other compensation, we review the literature to develop a framework of conditions that must be met if habitat protection and improvement initiatives can be truly considered offsets and not merely a lesser form of compensation. It is important that such conceptual clarity is reflected in offset policy and guidance, if offsets are to be appropriately applied and to have any chance of fully compensating for biodiversity loss. Our framework can be used to support the review and ongoing development of biodiversity offset policy and guidance, with the aim of improving clarity, rigour and therefore the chances that good biodiversity outcomes can be achieved.

Keywords Biodiversity offsets · Biodiversity compensation · Mitigation hierarchy · No net loss · Net gain · Offset policy

Pope J, A Morrison-Saunders, A Bond and F Retief (2021) When is an Offset Not an Offset? A Framework of Necessary Conditions for Biodiversity Offsets, *Environmental Management*; **67**: 424–435. https://doi.org/10.1007/s00267-020-01415-0

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Offsets explanation (ii) [AMS viewpoint]

When there are offsets, 2 different assessment processes are needed:

<u>Development Site</u> – apply mitigation hierarchy and significance test. *Will there be a significant residual impact?*

Note: offsets also addressed later topics (ERD and conditioning)

[If yes, an offset may be necessary]

<u>Offset Site</u> – assess size and environmental quality of offset measure outcomes relative to residual impact at development site. *Will no net loss (or a net gain) be accomplished?*

[Offsets policy is intended to be revised (soon?) – hopefully, any new version will explain things better]

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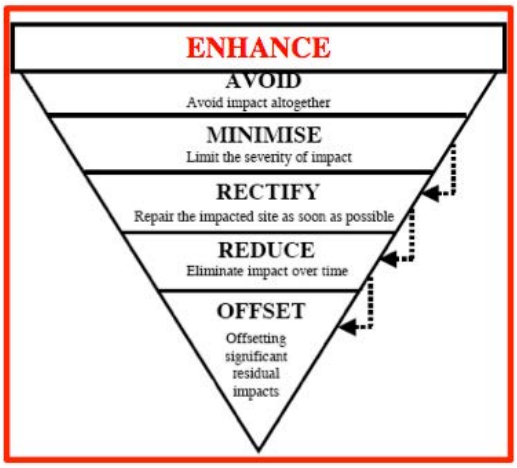
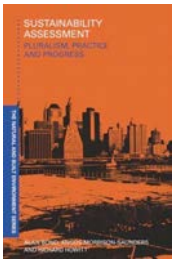
A new mitigation hierarchy (?) – ***putting enhancement on top*** as ultimate goal for EIA…

(Bond et al., 2013, p242)





Bond A, A Morrison-Saunders and G Stoeglehner (2013) Designing an effective sustainability assessment process, in: Bond A, A Morrison-Saunders & R Howitt (eds) *Sustainability Assessment Pluralism, Practice & Progress*, Routledge, Ch15, pp 231-244.

[international perspective]

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EPAct 1986 – s15 & s3

[repeat slide]

15 . Objectives of Authority

It is the objective of the Authority to use its best endeavours —

(a) to protect the environment; and

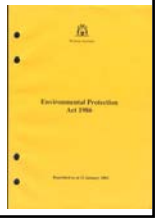
(b) to prevent, control and abate pollution and environmental harm.

3. Terms used in this Act

(1) In this Act, unless the contrary intention appears —

…

protection, in relation to the environment, includes ***conservation, preservation, enhancement and management*** thereof;



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Example: Mitigation hierarchy ***and enhancement***

(South West Yarragadee EIA, WA – Strategen 2006)

Mitigation

Mitigation refers to a sequence of considerations designed to help manage adverse impacts, which includes (in order of preference):

- avoidance – avoiding the adverse impact all together.
- minimisation – limiting the degree or magnitude of the adverse impact
- rectification – repairing, rehabilitating or restoring the impacted site as soon as possible
- reduction – gradually eliminating the adverse impact over time by preservation and maintenance operations during the life of the action
- offsets – undertaking such activities that counterbalance an adverse, residual impact.

Avoidance, minimisation, rectification and reduction are categorised as direct mitigation actions (Table 8.2).

Enhancement

An enhancement is an action that increases the positive benefits or outcomes.

Strategen 2006, *South West Yarragadee water supply development: sustainability evaluation/environmental review & management programme. Volume 1 introduction, sustainability overview, methodology & conclusions*. Strategen: Perth, WA; p8-5 http://www.epa.wa.gov.au/sites/default/files/PER_documentation/A1552_R1245_ERMP_Vol1%20Final.pdf [accessed 15Aug2020]

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Example of mitigations and enhancement (Strategen 2006)

Table 8.2 Mitigations and enhancement

Action	Mitigation/enhancement actions
Direct mitigation actions	• Wellfield configuration to maximise avoidance of impact in sensitive areas • Comprehensive monitoring of all potentially impacted assets • Identification and investigation of potential contingency options, including water trading and development of surface water sources
Offsetting actions	• Addition of specific land and with high quality vegetation to CALM estate to offset impact on Poison Gully and other affected areas of vegetation • Support the management of threatening processes (feral animals, weeds, dieback) in the region • South West Yarragadee Sustainability Initiative (see Chapter 7 Section 4.1.1)
Enhancement actions	• Wellfield configured to maximise the regional water availability • Provision of investigation information and aquifer model to assist assessment of private licence applications • Diversion of water from scheme to regional public water supply needs as required • Local employment preferences in construction contracts in accordance with Water Corporation contract and employment policy and practice • Conduct South West Public Water Supply Future Planning Study (see Chapter 8 Section 3.2.6) • Employment of Indigenous people in monitoring programs in accordance with the Water Corporation Involvement and Indigenous Employment Opportunities Policy
Contingency actions	• Commitment to modify pumping regime in the event of unforeseen unacceptable significant adverse impacts that cannot be reasonably mitigated • Commitment to supplementation of flow in St John Brook to mitigate any significant unexpected pumping impacts on surface flow • Commitment to supplementation of flow in the Blackwood River to mitigate any significant unexpected pumping impacts on surface flow

Strategen 2006, *South West Yarragadee water supply development: sustainability evaluation/environmental review & management programme. Vol. 1 introduction, sustainability overview, methodology & conclusions*. Strategen, prepared for Water Corporation, Perth, WA; p8-5

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Offsets are intended to provide environmental benefits… (i.e. potential mechanism for enhancement)

"Proponents/applicants should demonstrate how a proposed offset ***counterbalances*** the significant residual impact of its project and ***how it will deliver long term environmental benefits***" (Govt of WA, 2014, p14).

[recall discussion of Net Gains in Topic 1]

Govt of WA 2014,WA Environmental Offsets Guidelines August 2014, p14
http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA Environmental Offsets Guideline August 2014.pdf

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Former EIA mitigation sequence & offsets (WA)

[Note: WA Offsets Policy + Guideline replaces this draft EAG (diagram no longer in use)]

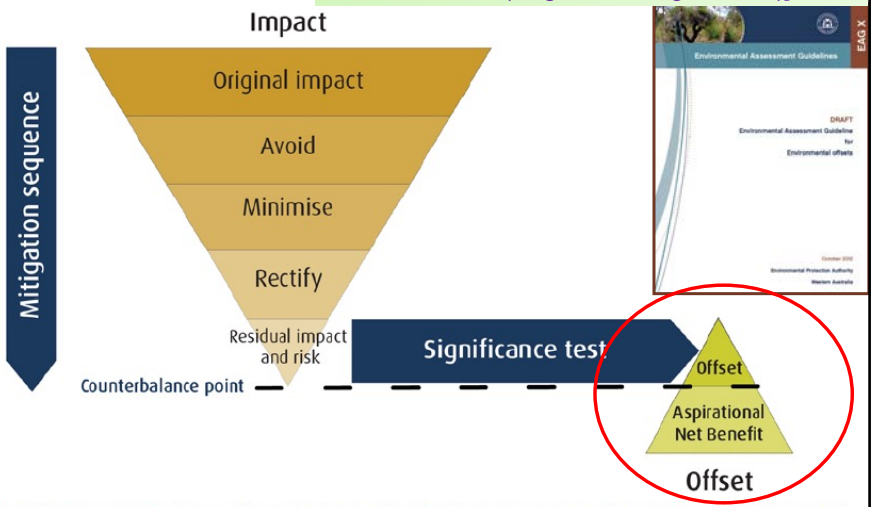

Figure 1: Mitigation hierarchy - with each level of mitigation, the proposal's environmental impact is reduced. Offsets counterbalance the significant residual loss or risk with an environmental gain elsewhere.

EPA 2012 *Draft EAG for Environmental Offsets*, EPA, Perth, WA, October 2012, p6

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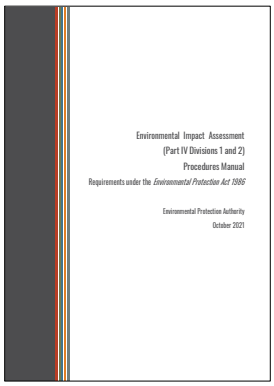
The mitigation hierarchy is applied to proposals at every step of the EIA process

by proponents and EPA alike



[as outlined in Procedures Manual 2021]
e,g.

- Pre-referral (s1.1.1)
- Referral (s1.4.1)
- Environmental Review Document (s3.1.2)
- EPA assessment report (s3.1.4 & 4.2)
- amending proposals (s5.5.1)

[also conditions in Ministerial Statements]

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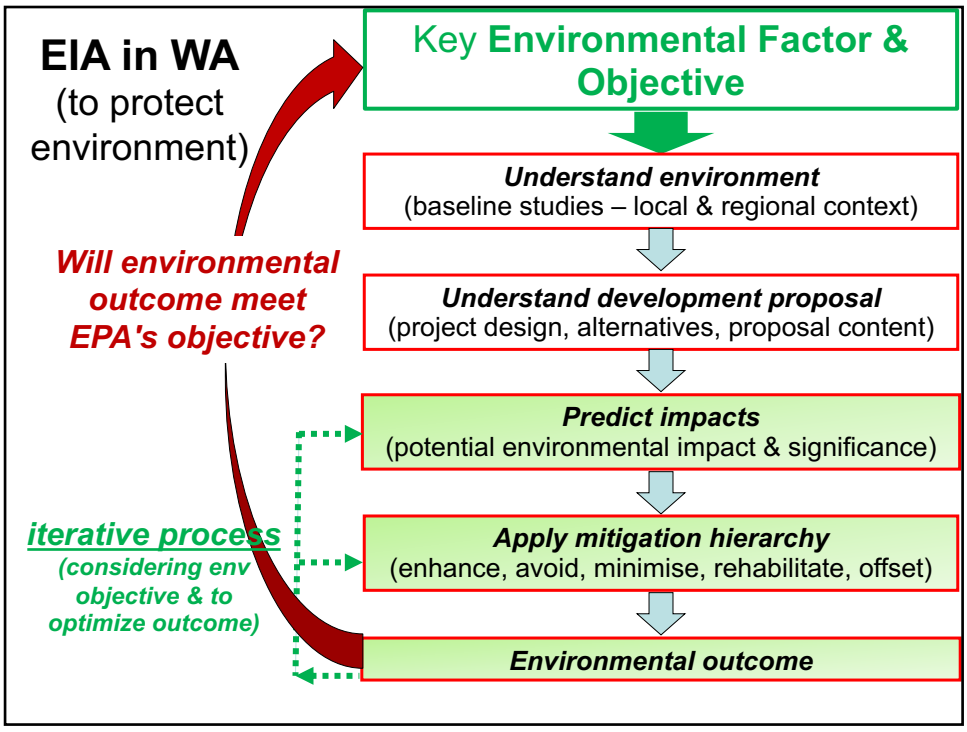

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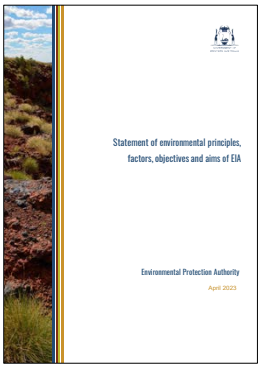
Meeting EPA objectives – significance test



5. Environmental factors and objectives

…

The EPA has identified an environmental objective for each environmental factor.

It will have regard to these objectives ***when determining whether the environmental impact of a proposal or scheme may be significant***, and at most other stages of EIA.

The environmental objectives are aimed towards ***ensuring the objects and principles of the Act are achieved***.

EPA 2023, p6

http://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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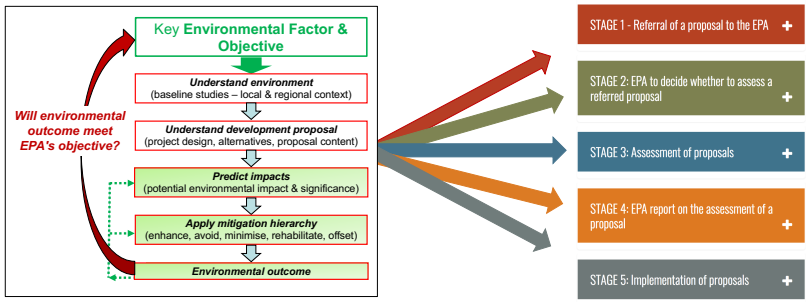
This approach is applied to <u>every</u> stage (& step) of the EIA process in WA

[as will be detailed in training topics coming]



- increasing detail/clarity is required with progressive stages of EIA

+ other key considerations… (in slides to come)

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2. The fundamentals

2.1 EPA's framework for environmental considerations in EIA

2.2 Assessment process overview

2.3 Value of strategic approaches

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Evolution of EIA – towards more strategic approaches

- project based EIA is very reactive
  - Process responds to proponent's agenda (EIA starts after *their decision* to go ahead with a proposal)
  - EPA responds to proposals as they come in
  - Opportunities for public/stakeholder involvement also reactive
- Argument that more proactive, strategic approach needed

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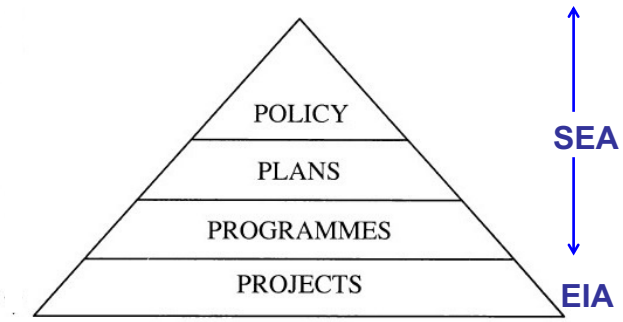
[International perspective]

The concept of strategic environmental assessment (SEA)



EPBC Act 1999 (Cth) language is 'strategic assessments'
EPAct 1986 language is 'strategic proposal'
International language is strategic environmental assessment (SEA)

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Types of proposals assessed in WA

[Repeat slide]

The *EPAct* 1986 contains various particular EIA processes:

- s38(1) significant proposals (including significant amendments)
- Amendments to proposals:
  - s38C amendment to a referred proposal
  - s43A change to proposals during assessment
  - s45C amendments to assessed proposals and conditions
  - (also s46 change to approval conditions)
- s38(7) strategic proposals
  - s38E derived proposals identified in an assessed strategic proposal
- s48A assessment of (planning) schemes
  - s38(2&6) proposal under an assessed scheme (i.e. subdivision and development)

[SEA – strategic environmental assessment (internationally)]

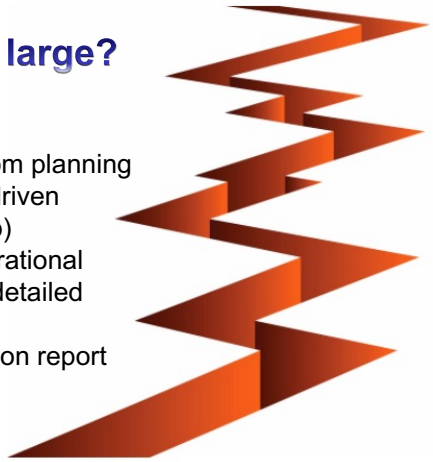
52

[International perspective]

The nature of strategic assessment

EIA writ large?

- Reactive
- Distinct from planning
- Baseline-driven (bottom up)
- Technical-rational
- Requires detailed data
- Emphasis on report



Something else?

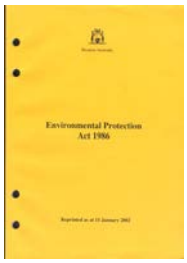
- Strategic
- Integrated with planning
- Objectives-led (top down)
- Communicative
- Requires high level information
- Emphasis on process

Sheate, W. R., Dagg, S., Richardson, J., Aschemenn, R., Palerm, J., & Steen, U. (2001). *SEA and the integration of the environmental into strategic decision-making* Vol. 1 Main Report. London: Imperial College Consultants ICON.

53

Types of strategic assessment in WA

- Assessment of strategic proposals (s38(3)), e.g.
  - Browse LNG Precinct at James Price Point
  - BHP Pilbara Expansion
- Strategic advice (s16e) [also 16(i) and 16(j)]
- Assessment of planning schemes (s48A)



54

Strategic and derived proposals (i)

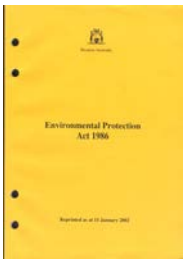
37B. Terms used in this Division

(2) A proposal is a ***strategic proposal*** if and to the extent to which it identifies —

(a) a ***future proposal*** that will be a significant proposal; or

(b) future proposals likely, if implemented in combination with each other, to have a significant effect on the environment.

[Section 37B inserted by No. 54 of 2003 s. 5.]



EPAct s37B(2)

55

Strategic and derived proposals (ii)

38E. Proposals derived from assessed strategic proposals

(4) …the Authority must declare the referred proposal to be a ***derived proposal*** if it considers that –

(a) the referred proposal was identified in the [assessed] strategic proposal; and

(b) …it was agreed or decided that the referred proposal could be implemented, or ***could be implemented*** subject to conditions and procedures agreed or decided under section 45.

[topic addressed further later]

…

(7) If the Authority declares the referred proposal to be a derived proposal, it cannot decide to assess the proposal except for the purposes of conducting an inquiry under section 46(4).

EPAct s38E (4) & (7), 2020 [formerly s39B(3) & (6)]

56

Influencing planning/design stages…

"In its judgment relating to the environmental assessment of the Burrup draft land use management plan in 1995, the Supreme Court made it clear that the EPA can assess only under part IV of the Act a proposal which is likely, if implemented, to have a significant effect on the environment.

This ***excludes the EPA from*** getting involved in the assessment under part IV of ***early, conceptual strategic planning***. However, ***it is precisely at the early conceptual planning stage that it is most beneficial to build the proper protection of the environment*** into the upfront strategic design of a project."

Legislative Assembly - ***Thursday, 27 June 2002***
ENVIRONMENTAL PROTECTION AMENDMENT BILL 2002
Introduction and First Reading
Minister for Environment – Dr Judy Edwards:
[Hansard, p12302a]

[Led to EPAct Amendments of 2003 regarding strategic proposals]

57

Water Corporation – strategic proposal Southern Source Integration Assets:

100km of 1400mm pipes (water/wastewater)

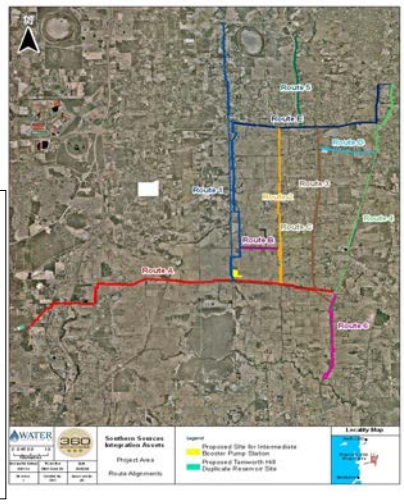
- Footprint 15m to 60m width (100m surveyed)
- 6 Bush Forever sites (4/1038ha)

Expansion of Tamworth reservoir

- Within Bush Forever site (4.5ha)

Booster pump station (<0.3ha)

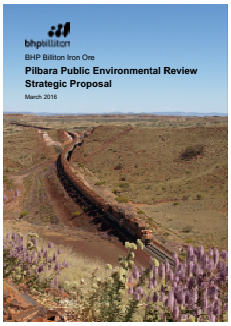
50 year approval given



https://www.epa.wa.gov.au/proposals/southern-source-integration-assets-pipeline-corridor

58

Strategic proposal for 50 years of iron ore mining by BHP in Pilbara



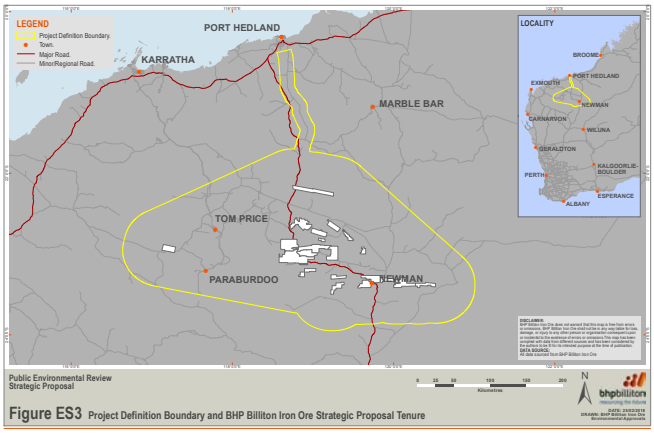


Figure ES3 Project Definition Boundary and BHP Billiton Iron Ore Strategic Proposal Tenure

BHP Billiton Iron Ore has defined a Project Definition Boundary for the Strategic Proposal (Figure ES3) that identifies the area within which activities covered by the scope of the Strategic Proposal will be undertaken. The total area of the Project Definition Boundary is 7,650,074 ha.

authorised clearing = 98,500 ha

http://www.epa.wa.gov.au/proposals/bhp-billiton-iron-ore-pilbara-strategic-proposal

59

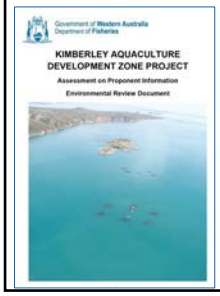
Dept of Fisheries – strategic proposal Kimberley Aquaculture Development Zone

STATEMENT THAT A FUTURE PROPOSAL(S) IDENTIFIED IN A STRATEGIC PROPOSAL MAY BE IMPLEMENTED
(Sections 40B and 45 of the *Environmental Protection Act 1986*)

Kimberley Aquaculture Development Zone

Strategic Proposal: A 2,000 hectare aquaculture development zone located within Cone Bay, as defined by spatial coordinates provided in Table 2 of Schedule 1, as represented in Figure 1 and described in Table 1 of Schedule 1 (Kimberley Aquaculture Development Zone) with a maximum production capacity of 20,000 tonnes per annum of marine finfish of a species that occurs naturally within the Pilbara and Kimberley Region.

Proponent: Minister for Fisheries



3 derived proposals approved


Figure 1: Boundaries of the Kimberley Aquaculture Development Zone

https://www.epa.wa.gov.au/proposals/kimberley-aquaculture-development-zone

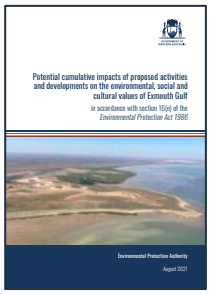
60

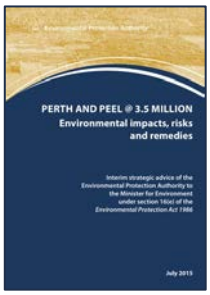
Informal advice – *EPAct* s16 (functions of EPA)

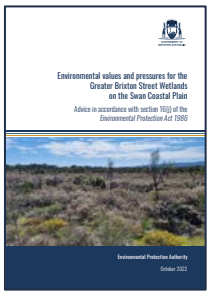
(e) ***to advise the Minister*** on environmental matters generally and ***on any matter*** which the Minister may refer to it for advice, including the environmental protection aspects of any proposal or scheme, and on the evaluation of information relating thereto;…….

(i) to provide advice ***on environmental matters to members of the public***; and

(j) to publish ***reports on environmental matters generally***







61

Value of informal EIA… (i)

Impact Assessment and Project Appraisal, 2015
Vol. 33, No. 4, 265–277, http://dx.doi.org/10.1080/14615517.2015.1080032

Taylor & Francis
Taylor & Francis Group

Determining the value and influence of informal strategic advice for environmental impact assessment: Western Australian perspectives

Lara Martin[a] and Angus Morrison-Saunders[a,b]*

[a]*Murdoch University, Australia;* [b]*North West University, South Africa*

(*Received 26 June 2015; accepted 31 July 2015*)

Formal processes for environmental impact assessment (EIA) have been established throughout the world and dominate research and practice papers. In Western Australia informal strategic advice, which sits outside of the legally binding project-based EIA, is used to inform the pre-project stages of development. Through interviews with 29 practitioners who have been involved in the formulation or use of this advice, this research investigated the value and influence of informal non-binding strategic advice. Strategic advice was considered valuable in providing upfront early guidance although practitioners would prefer greater certainty and clarity on what is acceptable. Identified limitations in its use included the cost, time and resources required in providing advice; currency and shelf life; uptake; and issues with implementing non-enforceable recommendations. Provision of clear objectives, improvements in the timing and relevance of advice and making more use of advice during EIA were identified as positive ways forward. Overall results recognise the value of informal strategic advice as a means to complement formal EIA and as a useful tool to assist with making better informed decisions earlier in the assessment process.

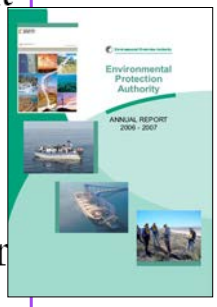
Keywords: environmental impact assessment; informal assessment; strategic advice; voluntary; non-binding; legislation; Western Australia

Martin L & A Morrison-Saunders (2015), Determining the value and influence of informal strategic advice for environmental impact assessment: Western Australian perspectives, *Impact Assessment and Project Appraisal*, **33**(4): 265-277.

62

Intended focus for s48A assessments of planning schemes in WA

When assessing a scheme or amendment at the region scheme stage, the EPA would normally focus on 'higher level' environmental issues such as protection of regionally significant environmental features. The level of detail required for environmental assessment normally increases for local planning schemes, structure planning and subdivision.



[similar benefits/processes intended for assessment of strategic proposals – s38(7)]

EPA Annual Report 2006-2007, p36

63

Value of informal EIA… (ii)

EPA may give advice even if schemes are not assessed….

[EPA publications: 2016]

Review of the effectiveness of advice for planning schemes and scheme amendments that are not assessed under section 48A of the Environmental Protection Act 1986

This report outlines the methodology and key findings of an evaluation into the effectiveness of advice issued under section 48A of the *Environmental Protection Act 1986* (EP Act).

http://www.epa.wa.gov.au/evaluation-reports

[accessed 11 Feb 2023]

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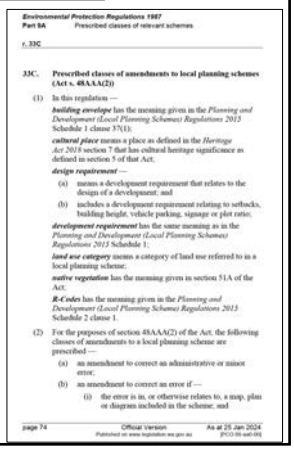
Update on assessment of planning schemes

- Previously, the *Planning & Development Act* 2005 required that all planning schemes are referred to the EPA, but most were not assessed
- 2020 amendments to the *P&D Act* introduced consequential amendments to *EP Act* (s48AAA), enabling regs to be developed to prescribe classes of schemes that do not need to be referred
- Amendments have been made to the *Environmental Protection Regulations (1987)* to address this (Reg 33C)


Environmental Protection Regulations 1987


Environmental Protection Regulations 1987
Part 9A Prescribed classes of relevant schemes
r. 33C

33C. Prescribed classes of amendments to local planning schemes (Act s. 48AAA(2))

(1) In this regulation —

building envelope has the meaning given in the *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 1 clause 37(1);

cultural place means a place as defined in the *Heritage Act 2018* section 7 that has cultural heritage significance as defined in section 5 of that Act;

design requirement —

(a) means a development requirement that relates to the design of a development; and

(b) includes a development requirement relating to setbacks, building height, vehicle parking, signage or plot ratio;

development requirement has the same meaning as in the *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 1;

land use category means a category of land use referred to in a local planning scheme;

native vegetation has the meaning given in section 51A of the Act;

R-Codes has the meaning given in the *Planning and Development (Local Planning Schemes) Regulations 2015* Schedule 2 clause 1.

(2) For the purposes of section 48AAA(2) of the Act, the following classes of amendments to a local planning scheme are prescribed —

(a) an amendment to correct an administrative or minor error;

(b) an amendment to correct an error if —

(i) the error is in, or otherwise relates to, a map, plan or diagram included in the scheme; and

page 74 Official Version As at 25 Jan 2024

https://www.legislation.wa.gov.au/legislation/prod/filestore.nsf/FileURL/mrdoc_46827.pdf/$FILE/Environmental Protection Regulations 1987 – [08-aa0-00].pdf?OpenElement

65

Potential value of strategic forms of assessment

- Consideration of environmental issues earlier (policy or planning stage)
- More effective consideration of cumulative impacts
- Consideration of a full range of alternatives
- Reduce (or avoid?) need for project level EIA
- Potential delivery of more sustainable outcomes

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3. Pre-referral, Referral and Decision of whether to assess

Featuring:
- **Alternatives consideration**
- **Proposal Content Document**

1

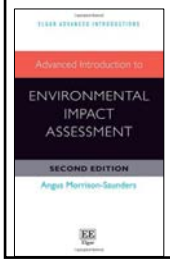
In simple terms, **EIA means**

"Think before you act"

(think about the environmental impacts and consequences)

- a normal part of environmental professions…

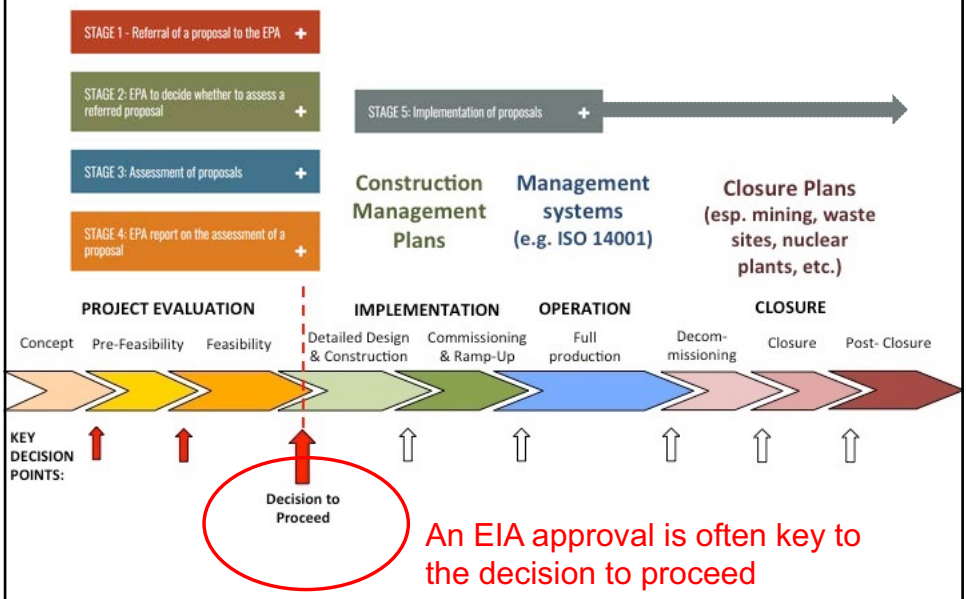
i.e. EIA also takes place ***outside*** legal provisions



Morrison-Saunders A (2018) *Advanced Introduction to EIA*, Cheltenham: Edward Elgar, (p3) https://www.e-elgar.com/shop/gbp/advanced-introduction-to-environmental-impact-assessment-9781803922157.html

2

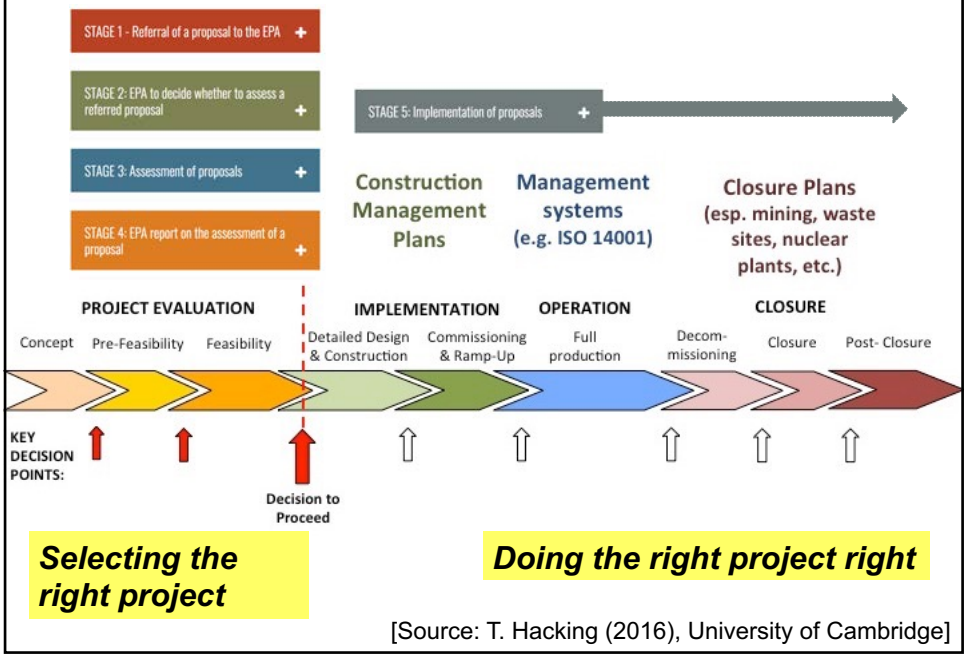
Project life-cycle and key decision-making points



[Source: T. Hacking (2016), University of Cambridge]

3

Project life-cycle and key decision-making points



[Source: T. Hacking (2016), University of Cambridge]

4

[International perspective]

EIA as a design tool

[ideally EIA would have] '…***direct involvement in the environmental design*** and management of projects' (McDonald and Brown, 1995, p484)

The aim of [E]IA is to ***optimize positive and minimize residual negative effects***. Mitigation measures to reduce the magnitude of negative impacts must be adopted where it is not possible to avoid impacts ***through appropriate design*** (Partidário, 2012).

[opportunities to encourage strategic assessment, alternatives that will avoid adverse impacts (e.g. location, technologies)]

McDonald, GT and AL Brown (1995) Going beyond Environmental Impact Assessment: Environmental input to planning and design, *EIA Review*, **15**(6), 483–495
Partidário M. (2012), 'Impact Assessment', *Fastips No. 1*, Fargo: International Association for Impact Assessment, http://www.iaia.org/uploads/pdf/Fastips_1 Impact Assessment.pdf

5

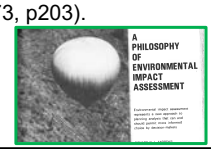
Philosophy of EIA: planning, design, alternatives consideration

[International perspective]

EIA:

- should 'be treated as a form of ***planning analysis***, aimed at developing information to ***clarify tradeoffs among alternative[s]*** …rather than simply at documenting the possible effects of a chosen course of action' (Andrews 1973, p198).
- 'should result in "***a new thought process***" for ***casting up and evaluating the consequences of alternative courses of action***' (Flamm 1973, p202).
- 'must be an ongoing process, from the ***initial definition of a planning or engineering problem*** through the entire course of …***studying, and deciding among alternative courses of action***. ***If impact assessment is not integral to this*** process***, it is at worst a paperwork problem and at best an expensive subsidy for consultants***' (Andrews 1973, p203).

Andrews, R. N. (1973), A philosophy of EIA, *Journal of Soil and Water Conservation*, **28**, 197–203.
Flamm, B. (1973), A philosophy of EIA: toward choice among alternatives, *Journal of soil and water conservation*, **28**, 201–204.



6

Alternatives to be considered at every stage, starting with referral

Proposal alternatives: To the extent reasonably practicable, describe any feasible alternatives to the proposal, including a comparative description of the environmental impacts of each alternative, and sufficient detail to make it clear why any alternative is preferred to another.

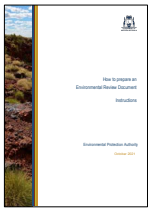
Instructions: Referral, p3

2. Proposal alternatives

To the extent reasonably practicable, describe any feasible alternatives to the proposal, including a comparative description of the environmental impacts of each alternative, and sufficient detail to make it clear why any alternative is preferred to another.

When describing alternatives, consider:

- whether this proposal is needed
- other technologies or options
- location options
- whether there are proposal alternatives which are likely to have a reduced environmental impact
- why any alternatives were not feasible
- a comparative description of the likely environmental impacts of any feasible alternate proposals, including compared to the proposal being assessed.



Instructions: how to prepare an ERD, p3

7

[International perspective] [repeat slide]

The first EIA legislation and process: *National Environmental Policy Act* (NEPA) *1969*, US

All agencies of the Federal Government shall [s102(2)(c)]:

Include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on-

(i) The environmental impact of the proposed action,

(ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) Alternatives to the proposed action,

(iv) The relationship between local short-term uses of man's [sic] environment and the maintenance and enhancement of long-term productivity, and

(v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

i.e. Environmental impact statement (EIS)

8

Hierarchy of alternatives

[International perspective]

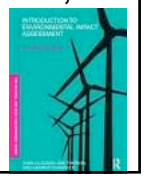
no action – environmental conditions without project

location – a function of planning (e.g. industrial zoning?), environment (e.g. mineral deposit, wind for turbines), engineering (e.g. gradient for road)

scale of development – e.g. size of landfill or no. of wind turbines can be scaled up/down, but nuclear power plant can't easily be scaled down and you must build an entire pipeline or bridge

processes & equipment – e.g. wind power vs coal

layouts and designs – e.g. design for visual impact, position noisy equipment behind other buildings/bunds

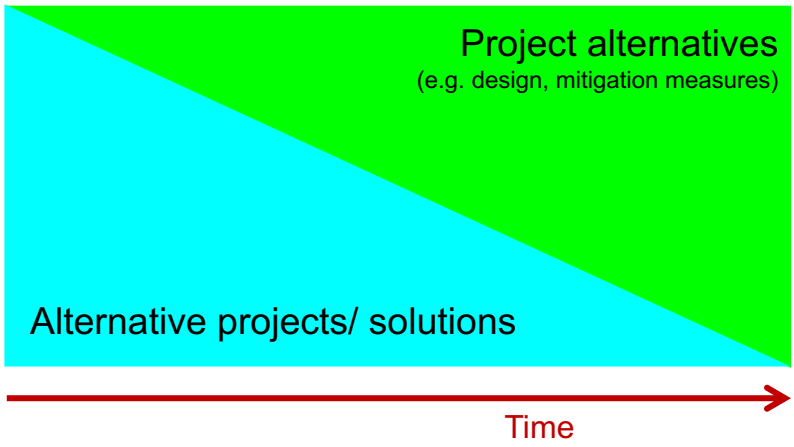


Glasson J, R Therivel & A Chadwick 2012 *Introduction to EIA*, 4th edition, Routledge, (p91).

9

The Opportunity - 'Front End Loading'

Changing priorities for decision-making



[Source: T. Hacking, University of Cambridge]

10

[International perspective]

Alternatives must be realistic and reasonable

(Glasson et al 2012, p94)

*The **types of alternatives that can realistically be considered by a given developer will also vary**. A mineral extraction company that has put a deposit on a parcel of land in the hope of extracting sand and gravel from it will not consider the option of using it for wind power generation: 'reasonable' in such a case would be other sites for sand and gravel extraction, or other scales or processes.*

*Essentially, alternatives should allow the competent authority to **understand why this project, and not some other, is being proposed in this location** and not some other.*

Glasson J, R Therivel & A Chadwick 2012 *Introduction to Environmental Impact Assessment*, 4th edition, Routledge, 392pp.

11

[International perspective]

Considering alternatives (properly) is essential for sustainable development

- alternatives are central to maximising sustainability outcomes
- choosing the best option rather than simply justification of proposal
  - easier because comparing performance outcomes

What is the best way to…?

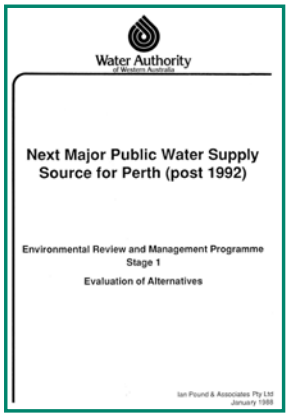
(versus)

Is this development proposal acceptable?

Gibson R (2013): Avoiding sustainability trade-offs in environmental assessment, *Impact Assessment and Project Appraisal*, **31**:1, 2-12

12

Example: *North Dandalup Dam EIA 1988* (consideration of option alternatives)


Water Authority of Western Australia

Next Major Public Water Supply Source for Perth (post 1992)

Environmental Review and Management Programme
Stage 1
Evaluation of Alternatives

Ian Pound & Associates Pty Ltd
January 1988

(Ian Pound & Associates 1988, p12 & 37)

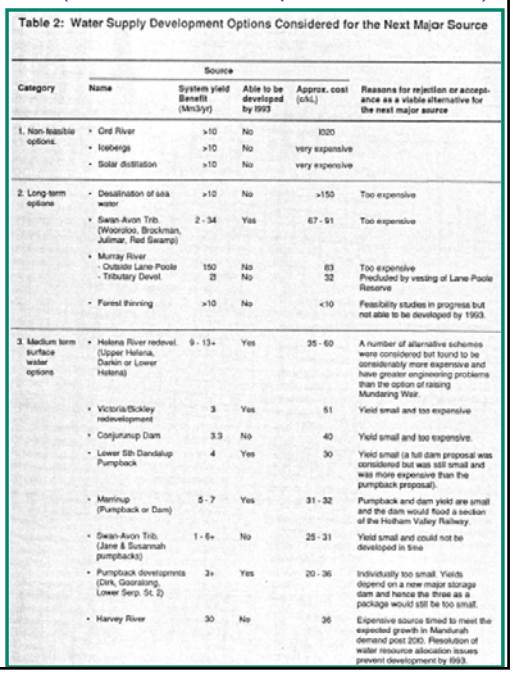


Table 2: Water Supply Development Options Considered for the Next Major Source

Category	Name	System yield Benefit (Mm³/yr)	Able to be developed by 1993	Approx. cost (c/kL)	Reasons for rejection or acceptance as a viable alternative for the next major source
1. Non-feasible options.	• Ord River	>10	No	1020	
	• Icebergs	>10	No	very expensive	
	• Solar distillation	>10	No	very expensive	
2. Long-term options	• Desalination of sea water	>10	No	>150	Too expensive
	• Swan-Avon Trib. (Woorooloo, Brockman, Jullimar, Red Swamp)	2 - 34	Yes	67 - 91	Too expensive
	• Murray River - Outside Lane Poole - Tributary Devel.	150 [illegible]	No No	83 32	Too expensive Precluded by vesting of Lane Poole Reserve
	• Forest thinning	>10	No	<10	Feasibility studies in progress but not able to be developed by 1993.
3. Medium term surface water options	• Helena River redevel. (Upper Helena, Darkin or Lower Helena)	9 - 13+	Yes	35 - 60	A number of alternative schemes were considered but found to be considerably more expensive and have greater engineering problems than the option of raising Mundaring Weir.
	• Victoria/Bickley redevelopment	3	Yes	51	Yield small and too expensive
	• Conjurunup Dam	3.3	No	40	Yield small and too expensive.
	• Lower Sth Dandalup Pumpback	4	Yes	30	Yield small (a full dam proposal was considered but was still small and was more expensive than the pumpback proposal).
	• Marrinup (Pumpback or Dam)	5 - 7	Yes	31 - 32	Pumpback and dam yield are small and the dam would flood a section of the Hotham Valley Railway.
	• Swan-Avon Trib. (Jane & Susannah pumpbacks)	1 - 6+	No	25 - 31	Yield small and could not be developed in time
	• Pumpback developments (Dirk, Georaling, Lower Serp. St. 2)	3+	Yes	20 - 36	Individually too small. Yields depend on a new major storage dam and hence the three as a package would still be too small.
	• Harvey River	30	No	36	Expensive source timed to meet the expected growth in Mandurah demand post 200. Resolution of water resource allocation issues prevent development by 1993.

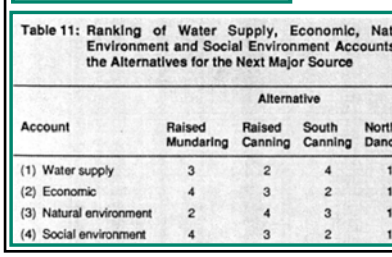


Table 11: Ranking of Water Supply, Economic, Natural Environment and Social Environment Accounts for the Alternatives for the Next Major Source

Account	Alternative			
	Raised Mundaring	Raised Canning	South Canning	North Dandalup
(1) Water supply	3	2	4	1
(2) Economic	4	3	2	1
(3) Natural environment	2	4	3	1
(4) Social environment	4	3	2	1

13

Example: *Bunbury Outer Ring Road Southern Section Alignment Selection Report* 2019 (consideration of location/route alternatives)

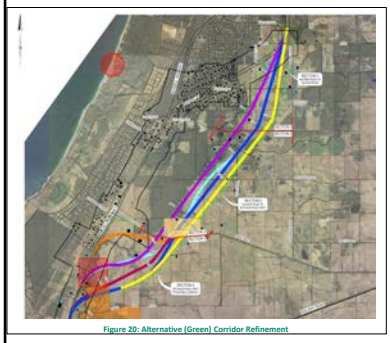
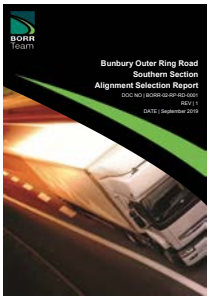


Figure 20: Alternative (Green) Corridor Refinement



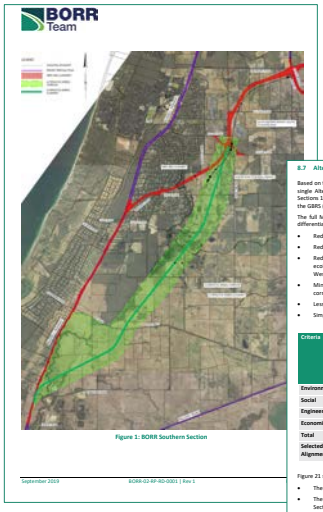


Figure 1: BORR Southern Section

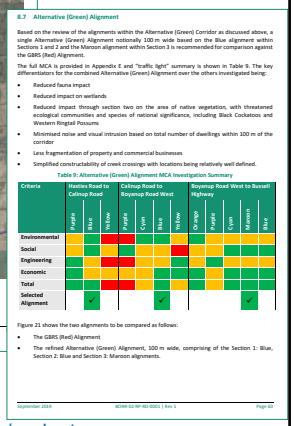

8.7 Alternative (Green) Alignment

Table 9: Alternative (Green) Alignment MCA Investigation Summary

[BORR Team, 2019, p4, 56 & 60]
https://www.mainroads.wa.gov.au/globalassets/projects-initiatives/projects/regional/bunbury-outer-ring-road/borr-south-alignment-selection-report-sep-19.pdf

14

Pre-referral process (i)

…where a proposal is likely to have a significant impact on the environment, or where there is any uncertainty, the EPA encourages proponents to have ***pre-referral discussions with the EPA*** and to ***consult*** with decision-making authorities and other relevant ***government agencies and stakeholders as early as possible***.

This provides an opportunity for proponents to discuss ***how they intend to apply the mitigation hierarchy, to reduce the impacts*** of a proposal on the environment, and the likely ***environmental outcomes*** of the proposal.

Admin Proc 2021, s1.1

15

Pre-referral process (ii)

…the EPA encourages proponents to request a pre-referral meeting with the DWER to discuss the proposal. This may be to:

- identify possible preliminary key environmental factors
- recommend stakeholder consultation
- explore proposal ***alternatives***
- identify potential environmental impacts, including those on Matters of National Environmental Significance
- identify ***holistic impacts***
- identify ***cumulative environmental impacts***
- discuss application of the ***mitigation hierarchy***
- undertake preliminary consideration of the ***significance*** of environmental effects
- consider the environmental ***outcomes*** and the EPA's objectives for environmental factors
- discuss potential ***assessment pathways*** for the proposal, including possible level of assessment requirements (see section 2.3.1) if the EPA is likely to assess the proposal
- put forward the aims of EIA.

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Proc Manual (2021), s1.1.1

16

Pre-referral process (iii)

Where a proponent aims to provide sufficient information with the referral to enable the EPA to set Referral information as the level of assessment… the proponent *may:*

- prepare one or more supplementary reports as supporting documentation for the referral …following the requirements of an Environmental Review Document (ERD)…
- ask the EPA to review the draft supplementary report before referral.

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Proc Manual (2021), s1.1.1

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3. Pre-referral, **Referral** and Decision on whether to assess

18

EPAct 1986 – s38

38. Referral of proposals

(1) The ***proponent*** of a significant proposal, ***or any other person, may refer*** the proposal to the Authority.

(2) …proponent of a proposal under an assessed scheme can refer…

(3) ...Minister may refer [if ***public concern***]...

(4) ...DMA ***must*** refer [a significant proposal]...

(7) … proponent of a strategic proposal may refer...

[Section 38 amended by No. 40 of 2020, s 15.]

(*EPAct* s38)

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EPAct 1986 – s38A

38A. Calling in a proposal

(1) If a proposal has not been referred to the Authority under section 38, the ***Authority must require the proponent or a decision-making authority to refer*** the proposal to the Authority ***if*** the Authority considers that the proposal is —

(a) ***a significant proposal***; or

(b) a proposal of a prescribed class.

(*EPAct* s38A)

…

(3) A proponent or decision-making authority that is required under subsection (1) to refer a proposal to the Authority must do so within the period specified in the requirement

[Section 38A inserted by No. 40 of 2020, s 15.]

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Referral of strategic proposals

Process is voluntary; unlike process for 'significant proposals' [because DMAs must refer these – 38(4)]

– 'the **proponent** of a strategic proposal ***may refer*** the proposal' to EPA (s38(7) of *EPAct*)

Incentive for proponents is that a 'derived proposal' may not require s38(1) project EIA later on

21

EPAct 1986 – s38E

38E. Proposals derived from assessed strategic proposal

(1) A referred proposal may be dealt with under this section if —

(a) there has been an assessment under this Division (the ***strategic assessment***) of a strategic proposal; and

(b) a Ministerial statement has been published in relation to the strategic proposal.

…

(4) …the ***Authority must declare the referred proposal to be a derived proposal if*** it considers that —

(a) the ***referred proposal was identified in the strategic proposal***; and

(b) in the implementation agreement or decision…***it was agreed …that the referred proposal could be implemented***, …subject to conditions and procedures agreed or decided ***under section 45***.

[Section 38E inserted by No. 40 of 2020, s 15.]

(*EPAct* s38E)

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Referral of ***derived proposals***

A proponent *may* request that a future proposal be declared as a derived proposal where:

- there has been a strategic assessment of a strategic proposal and a Ministerial statement has been issued in relation to a strategic proposal, and
- the future proposal is identified in that Ministerial Statement. (EIA Proc Manual (2021), s2.5)

Examples of potential derived proposals include:

- an industrial development identified within an industrial precinct assessed as a strategic proposal
- a plan of subdivision identified in a structure plan assessed as a strategic proposal
- options for alignments of future infrastructure
- a fish farm identified in a plan for an aquaculture development zone assessed as a strategic proposal.

23

EPAct 1986 – s38B

38B. Requirements as to referrals

(1) A ***referral*** to the Authority ***must be in writing***.

(2) A ***proposal cannot be referred to the Authority more than once*** unless —

(a) [referral was withdrawn under s38D]

(b) [referral declared as withdrawn – s38F(4)]

(c) [assessment terminated under s40A]

(d) [Ministerial statement withdrawn under s47A]

[Section 38B inserted by No. 40 of 2020, s 15.]

(*EPAct* s38A)

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Cost recovery

Division 2A — Payments relating to proposals

48AA. Fees and charges for referral and assessment of proposals

(1) Without limiting section 123(1) and (2), regulations may be made under section 123(1) prescribing, or providing for the determination of, ***fees or charges that are payable by proponents*** in prescribed circumstances in relation to the ***referral, assessment and implementation of proposals*** under Division 1 or 2.

(2) Moneys paid as fees and charges under subsection (1) are to be ***used for the purpose of defraying the costs incurred by the Department*** in receiving and assessing proposals and monitoring the implementation of proposals.

[Section 48AA inserted by No. 40 of 2020 s. 34.]

(*EPAct* s48AA)

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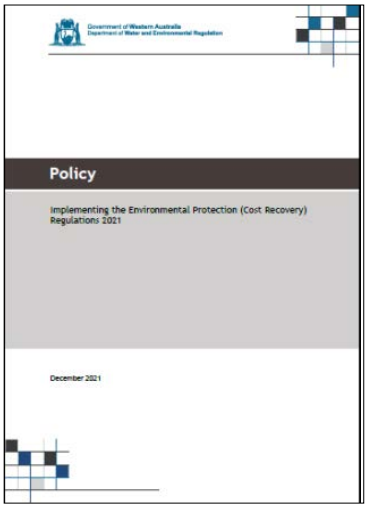
Cost recovery



Environmental Protection (Cost Recovery) Regulations 2021

- commenced Jan 2022
- Fees payable at each stage of EIA process
- Complexity fee based upon (Appendix A):
  - Type of proposal
  - Number of environmental factors
  - Number of submissions
  - Offsets
  - Footprint etc

https://www.wa.gov.au/system/files/2021-12/Policy – Implementing the Cost Recovery Regulations.pdf

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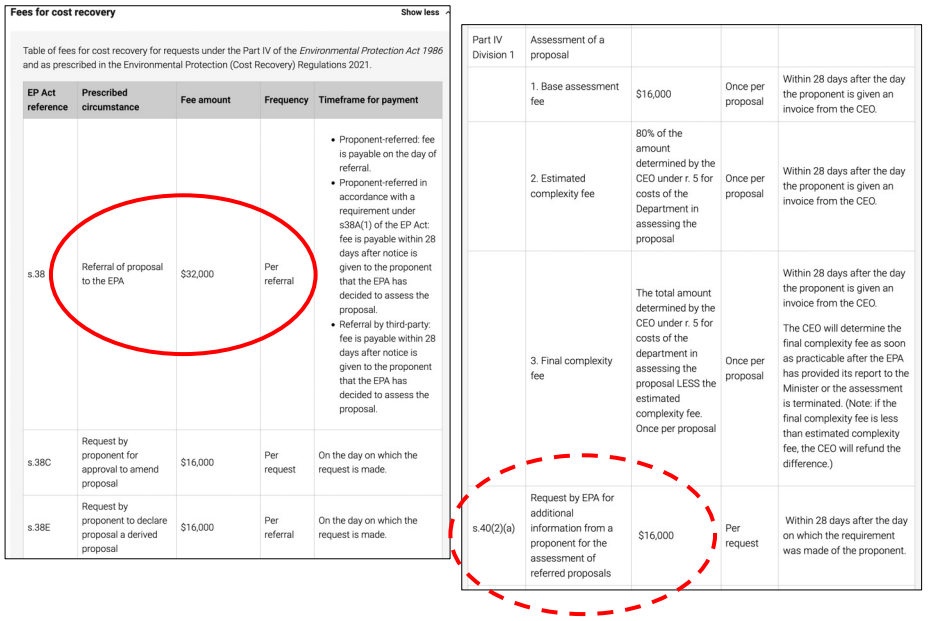

Fees for cost recovery Show less

Table of fees for cost recovery for requests under the Part IV of the *Environmental Protection Act 1986* and as prescribed in the Environmental Protection (Cost Recovery) Regulations 2021.

EP Act reference	Prescribed circumstance	Fee amount	Frequency	Timeframe for payment
s.38	Referral of proposal to the EPA	$32,000	Per referral	• Proponent-referred: fee is payable on the day of referral. • Proponent-referred in accordance with a requirement under s38A(1) of the EP Act: fee is payable within 28 days after notice is given to the proponent that the EPA has decided to assess the proposal. • Referral by third-party: fee is payable within 28 days after notice is given to the proponent that the EPA has decided to assess the proposal.
s.38C	Request by proponent for approval to amend proposal	$16,000	Per request	On the day on which the request is made.
s.38E	Request by proponent to declare proposal a derived proposal	$16,000	Per referral	On the day on which the request is made.

Part IV Division 1	Assessment of a proposal			
	1. Base assessment fee	$16,000	Once per proposal	Within 28 days after the day the proponent is given an invoice from the CEO.
	2. Estimated complexity fee	80% of the amount determined by the CEO under r. 5 for costs of the Department in assessing the proposal	Once per proposal	Within 28 days after the day the proponent is given an invoice from the CEO.
	3. Final complexity fee	The total amount determined by the CEO under r. 5 for costs of the department in assessing the proposal LESS the estimated complexity fee. Once per proposal	Once per proposal	Within 28 days after the day the proponent is given an invoice from the CEO. The CEO will determine the final complexity fee as soon as practicable after the EPA has provided its report to the Minister or the assessment is terminated. (Note: if the final complexity fee is less than estimated complexity fee, the CEO will refund the difference.)
s.40(2)(a)	Request by EPA for additional information from a proponent for the assessment of referred proposals	$16,000	Per request	Within 28 days after the day on which the requirement was made of the proponent.

https://www.wa.gov.au/service/environment/environment-information-services/cost-recovery-part-iv-environmental-protection-act?as=json

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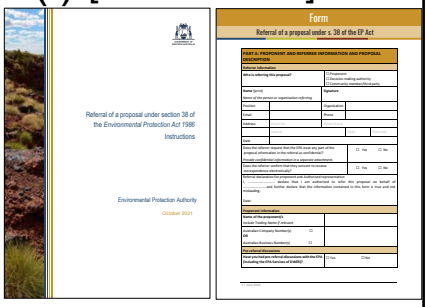
Referral of proposals (i) [EPA website]

The EPA requires a referral [on the s38 Referral Form or straight into Environment Online]
(EIA Proc Manual (2021), s1.4)



Referral of a proposal under section 38 of the *Environmental Protection Act 1986*
Instructions

Environmental Protection Authority
October 2021

Form
Referral of a proposal under s. 38 of the EP Act

Instructions for the referral of a Proposal to the Environmental Protection Authority under Section 38 of the Environmental Protection Act 1986

The purpose of the Instructions is to assist referrers to provide the necessary information with their Referral form.

The referrer of a proposal should provide the information in the form provided to the EPA to enable them to determine whether the proposal is a valid referral and whether or not to assess it.

Published: 29 October 2021

Download: Instructions - Referral of a proposal under s38.pdf (PDF, 445.92 KB)
Form - Referral of a proposal under s38.docx (DOCX, 57.42 KB)

Referral form covers all types of proposals, including *significant amendments (s40AA)*

Note: Environment Online uses **application**

[Referral form asks for details of any pre-referral meetings with EPA Services staff]

(EPA Referral Instructions and Form https://www.epa.wa.gov.au/forms-templates/s38-referral-instructions-and-form)

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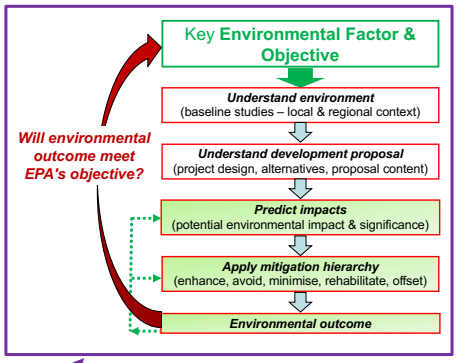
Referral of proposals (ii) – **assessment of impacts**

PART B: ASSESSMENT OF ENVIRONMENTAL IMPACTS	
Environmental factors	
What are the likely significant environmental factors for this proposal?	☐ Benthic Communities and Habitat ☐ Coastal Processes ☐ Marine Environmental Quality ☐ Marine Fauna ☐ Flora and Vegetation ☐ Landforms ☐ Subterranean Fauna ☐ Terrestrial Environmental Quality ☐ Terrestrial Fauna ☐ Inland Waters ☐ Air Quality ☐ Greenhouse Gas Emissions ☐ Social Surroundings ☐ Human Health
*For **each** of the environmental factors identified above, complete the following table, or provide the information in a supplementary report*	

Potential environmental impacts – for each environmental factor		
1	**EPA policy and guidance**	
2	**Receiving environment**	
3	**Likely environmental impacts**	
4	**Application of the mitigation hierarchy, including other statutory decision-making processes**	
5	**Assessment and significance of residual impacts**	
6	**Likely environmental outcomes**	
Holistic impact assessment		
Outline the holistic impact assessment for the Proposal.		
Cumulative environmental impact assessment		
Outline the relevant cumulative environmental impacts of the Proposal (based on scoping).		
Consultation		
Outline the stakeholder identification and consultation process, and outcomes of consultation on the Proposal and its likely environmental effects.		
Supporting documents		
Provide a list of the supporting documents		
Has the referrer provided survey information according to the *Instructions and Form: IBSA Data Packages* and/or the *Instructions and form: IMSA Data Packages*		☐ Yes ☐ No
Conclusion		
Do you consider the proposal may have a significant effect on the environment?		

Referral form includes basic EIA process components…



Form
Referral of a proposal under s. 38 of the EP Act

[Referral form, June 2023, pp2-3]

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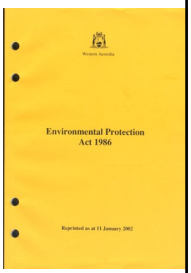
Proponent nomination (i)

38H. Nomination of person responsible for proposal

…

(2) Except when the responsibility for a proposal is imposed on a public authority under another written law, ***the Authority must nominate a person as being responsible for the proposal***.

[Section 38H inserted by No. 40 of 2020, s 15.]



[details need to be checked carefully (e.g. exact spelling, ASIC database)]

(*EPAct* s38H)

Admin Proc 2021
2.7 Nomination of proponent

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Proponent nomination (ii)

- change of nominated proponent enabled by s38I
  - can be invoked any time during EIA process
- Proponent nomination is important legally
  - nominated proponent will be party to whom approval conditions will be applied (compliance and enforcement)

Admin Proc 2021
2.8 Change of proponent

1.2 The proponent

API manages the Australian Premium Iron Joint Venture on behalf of joint venture participants Aquila Resources Ltd and American Metals and Coal International Inc (AMCI).

The proponent for the Proposal is:

API Management Pty Ltd
Level 1, Aquila Centre
1 Preston Street
COMO WA 6152
ABN: 66 112 677 595

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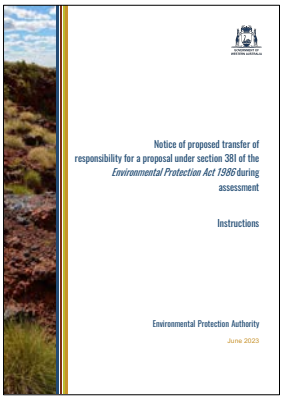
Instructions and form for change of proponent

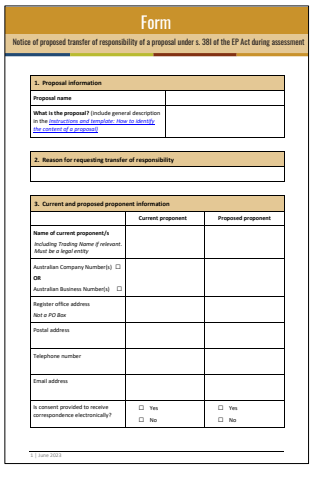


Notice of proposed transfer of responsibility for a proposal under section 38I of the *Environmental Protection Act 1986* during assessment

Instructions

Environmental Protection Authority

June 2023



Form

Notice of proposed transfer of responsibility of a proposal under s. 38I of the EP Act during assessment

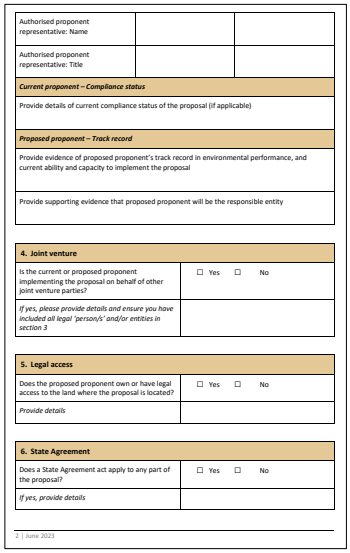
1. Proposal information

Proposal name	
What is the proposal? (include general description in the *Instructions and template: How to identify the content of a proposal*)	

2. Reason for requesting transfer of responsibility

3. Current and proposed proponent information

	Current proponent	Proposed proponent
Name of current proponent/s *Including Trading Name if relevant. Must be a legal entity*		
Australian Company Number(s) ☐ OR Australian Business Number(s) ☐		
Register office address *Not a PO Box*		
Postal address		
Telephone number		
Email address		
Is consent provided to receive correspondence electronically?	☐ Yes ☐ No	☐ Yes ☐ No



Authorised proponent representative: Name		
Authorised proponent representative: Title		

Current proponent – Compliance status

Provide details of current compliance status of the proposal (if applicable)

Proposed proponent – Track record

Provide evidence of proponent's track record in environmental performance, and current ability and capacity to implement the proposal

Provide supporting evidence that proposed proponent will be the responsible entity

4. Joint venture

Is the current or proposed proponent implementing the proposal on behalf of other joint venture parties?	☐ Yes ☐ No
If yes, please provide details and ensure you have included all legal 'person/s' and/or entities in section 3	

5. Legal access

Does the proposed proponent own or have legal access to the land where the proposal is located?	☐ Yes ☐ No
Provide details	

6. State Agreement

Does a State Agreement act apply to any part of the proposal?	☐ Yes ☐ No
If yes, provide details	

2 | June 2023

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/s. 38I – Instructions for EPA - 02.06.2023.pdf

32

Amending a referred proposal (s. 38C)

At any time before the EPA decides whether or not to assess a referred proposal, the proponent may, by written notice, request that the EPA approve of the proposal being amended (s. 38C(1)).

The EPA may, at its discretion, approve or refuse the request (s. 38C(2)).

If the EPA approves the amendment, the amended proposal is taken to have been referred under s. 38 (s. 38C(3)).

[More on this later]

(*Admin Proc 2021*, s1.5)

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Referral information requirements

*For **assessment on referral information**, proposal content and environmental outcomes must be well understood*

- *Any supplementary info to follow EPA guidance for ERDs, EMPs, outcomes-based conditions…*

The EPA expects the proposal content and likely environmental outcomes to be well understood and articulated for those seeking an assessment based on referral information. The additional time and processes associated with a Public Environmental Review (PER) (when compared with an assessment on referral information) provide more flexibility for proponents that may not have a full understanding of the proposed environmental effects of a proposal. Those expecting a PER may seek to make amendments to the proposal during assessment (see section 3.9) and provide more detailed assessment of the environmental effects of the proposal in their ERD.

When proponents submit supplementary report/s with their referral forms, the EPA encourages them to follow the relevant guidance (section 3.1.2), including:

- Instructions and template: How to prepare an Environmental Review Document.
- Instructions and template: How to prepare Part IV environmental management plans.
- Interim guidance: Environmental outcomes and outcomes-based conditions.
- Department of Mines, Industry Regulation and Safety's (DMIRS) *Statutory guideline for mine closure plans* and *Mine closure plan guidance – how to prepare in accordance with the statutory guidelines* (for mining proposals).

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Procedures Manual 2021 s1.4.1

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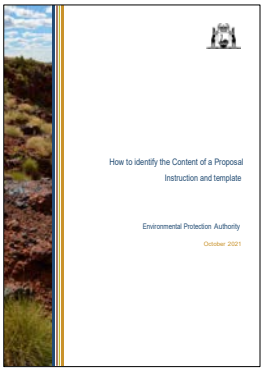
Identifying the **Content of a Proposal**

Recent requirement: Proponents responsible for defining proposal and maintaining Proposal Content Document



There are two components to the Proposal Content Document that must be completed by the proponent, the (i) ***general proposal description*** and the (ii) proposal elements. … ***Proposal elements*** are components of, or activities associated with, and aspects of, a proposal which ***may have, or are relevant to, a potential significant effect on the environment*** from the proposal.

Key Point

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Instruction- How to identify the content of a proposal.pdf

Instruction and Template: How to identify the Content of a Proposal, p2

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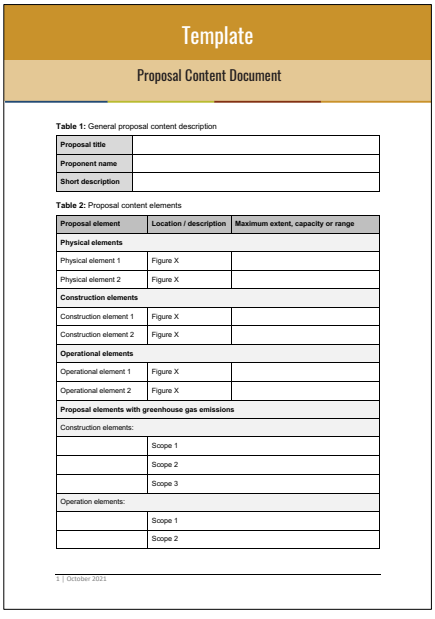


Template

Proposal Content Document

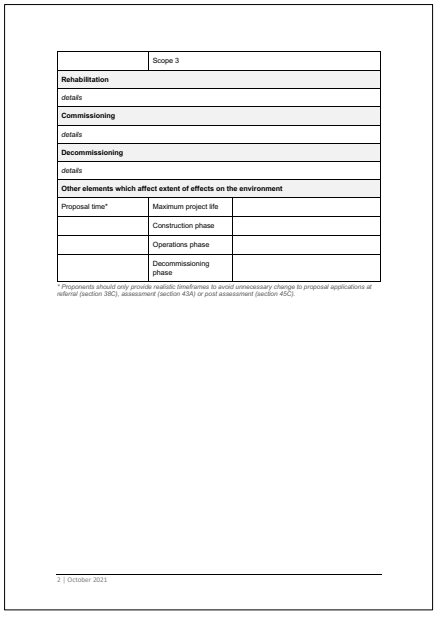
Table 1: General proposal content description

Proposal title	
Proponent name	
Short description	

Table 2: Proposal content elements

Proposal element	**Location / description**	**Maximum extent, capacity or range**
Physical elements		
Physical element 1	Figure X	
Physical element 2	Figure X	
Construction elements		
Construction element 1	Figure X	
Construction element 2	Figure X	
Operational elements		
Operational element 1	Figure X	
Operational element 2	Figure X	
Proposal elements with greenhouse gas emissions		
Construction elements:		
	Scope 1	
	Scope 2	
	Scope 3	
Operation elements:		
	Scope 1	
	Scope 2	

1 | October 2021



	Scope 3	
Rehabilitation		
details		
Commissioning		
details		
Decommissioning		
details		
Other elements which affect extent of effects on the environment		
Proposal time*	Maximum project life	
	Construction phase	
	Operations phase	
	Decommissioning phase	

** Proponents should only provide realistic timeframes to avoid unnecessary change to proposal applications at referral (section 38C), assessment (section 43A) or post assessment (section 45C).*

2 | October 2021

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template- Proposal Content Document .docx

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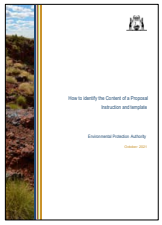
Proposal content elements

includes:

- physical elements
- construction elements
- operational elements (incl. scope 1, 2 & 3 GHG emissions)
- maximum extent/capacity
- matters regulated by another DMA

Spatial Data

- development envelopes (maximum area within which proposal footprint will be located)
- footprint (location of physical proposal elements)



https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Instruction - How to identify the content of a proposal.pdf

Instruction and Template: How to identify the Content of a Proposal, pp2-5

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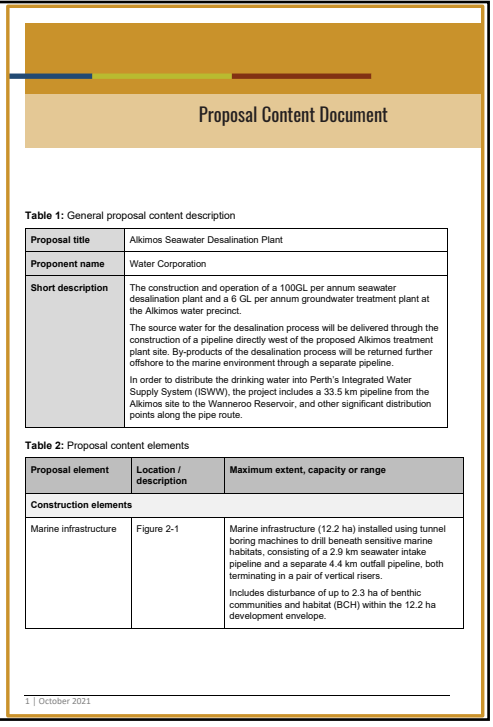
Example: Alkimos PCD (1)

[3 page document]

Note: The PCD online under 'Stage 3: Assessment' is from October 2021 but this was further revised in the s43A of March 2023

https://www.epa.wa.gov.au/proposals/alkimos-seawater-desalination-plant

https://www.epa.wa.gov.au/sites/default/files/PER_documentation2/Alkimos SDP – Proposal Content Document_20-9-22.pdf



Proposal Content Document

Table 1: General proposal content description

Proposal title	Alkimos Seawater Desalination Plant
Proponent name	Water Corporation
Short description	The construction and operation of a 100GL per annum seawater desalination plant and a 6 GL per annum groundwater treatment plant at the Alkimos water precinct. The source water for the desalination process will be delivered through the construction of a pipeline directly west of the proposed Alkimos treatment plant site. By-products of the desalination process will be returned further offshore to the marine environment through a separate pipeline. In order to distribute the drinking water into Perth's Integrated Water Supply System (ISWW), the project includes a 33.5 km pipeline from the Alkimos site to the Wanneroo Reservoir, and other significant distribution points along the pipe route.

Table 2: Proposal content elements

Proposal element	Location / description	Maximum extent, capacity or range
Construction elements		
Marine infrastructure	Figure 2-1	Marine infrastructure (12.2 ha) installed using tunnel boring machines to drill beneath sensitive marine habitats, consisting of a 2.9 km seawater intake pipeline and a separate 4.4 km outfall pipeline, both terminating in a pair of vertical risers. Includes disturbance of up to 2.3 ha of benthic communities and habitat (BCH) within the 12.2 ha development envelope.

1 | October 2021

38

Example: Alkimos PCD (2)

Water treatment facility	Alkimos Water precinct See Figure 2-2	The water treatment facility development envelope (up to 29 ha) includes and is not limited to the following infrastructure: • Seawater Desalination Plant (SDP) infrastructure (Site earthworks and western berm construction, marine tunnel boring machine launch pit, water treatment buildings and water storage tanks. • the Groundwater Treatment Plant (GWTP) infrastructure, and • access roads and support buildings. Construction includes disturbance of up to 24.15 ha of native vegetation within the 29 ha development envelope.
Integration pipeline	Alkimos water precinct to Wanneroo Reservoir See Figure 2-2	The pipeline development envelope (99.3 ha) consists of a 30 m wide pipeline corridor that will contain the 33.5 km long 1400 mm diameter pipeline running from the water treatment precinct to the Wanneroo Reservoir and into the IWSS, with a spur pipeline to the Carabooda Tank. Construction of the pipeline includes disturbance of up to 20.38 ha of native vegetation within the 16 m wide disturbance footprint corridor (impact footprint). Existing cleared areas along the pipe route will be used for construction laydown and site offices to avoid further impact.
Operational elements		
Seawater intake	2.9 km offshore (Figure 2-5)	Two approximately 8.5m diameter screened intake 360 ML/d (at 50 GL/a) up to 720 ML/d (at 100 GL/a) Maximum velocity 0.15 m/sec
SDP Outfall	4.4 km offshore (Figure 2-6)	Two approximately 7m diameter rosette diffuser 210 ML/d (at 50 GL/a) up to 420 ML/d (at 100 GL/a) with a maximum salinity of 75,200 mg/L
Drinking water production	Within Alkimos water precinct	Seawater desalination: - 100 GL/a (4 x 25 GL/a stages or 1 x 50GL/a + 2 x 25GL/a) Groundwater treatment: - 6 GL/a (excluding abstraction)

2 | October 2021

Proposal elements with greenhouse gas emissions		
Construction elements:		
Scope 1	Land clearing: 13,784.7 t CO2 -e (total between 2023 – 2027) Plant and equipment: 18,962 t CO2 -e (total between 2023 – 2026)	
Scope 2	Tunnel Construction: 3,468 t CO2 -e (total between 2023 – 2027)	
Operation elements:		
Scope 1	Operational commissioning: 635 t CO2 -e (for 1 year of commissioning) Operations: 421 t CO2 -e per annum (2028 onwards)	
Scope 2	Operational commissioning: 40,040 t CO2 -e (for 1 year of commissioning) Operations (treatment): 133,251 t CO2 -e per annum (2028 onwards) Operations (clearwater pumping): 35,645 t CO2 -e per annum (2028 onwards)	
Scope 3	Purchased goods: 9,365 t CO2 -e per annum (2028 onwards) Indirect fuel and electricity emissions not reported in scope 1 and 2. (losses in the transmission system): 5,250 t CO2 -e per annum (2028 onwards)	
Water Corporation proposes to achieve **net zero** Scope 1 & 2 greenhouse gas emissions for construction and operations of the project.		
Rehabilitation		
A berm to the west of the Alkimos water precinct will be stabilised to prevent wind erosion and revegetated with native vegetation. All cleared land outside the required 6m wide maintenance corridor along the terrestrial pipeline to the Wanneroo Reservoir will be revegetated with native vegetation following completion of the pipeline.		
Commissioning		
Seawater Desalination Plant (SDP) Operational commissioning of the SDP is expected to occur for up to 12 months. During commissioning, water will be sourced through the seawater intake and discharged through the outfall. *Pipeline* Once constructed, the 1400mm pipeline will be pressure tested in sections and disinfected. Water will be sourced from potable supply and neutralised prior to discharge to the terrestrial environment.		
Other elements which affect extent of effects on the environment		
Proposal time*	Construction phase	2023 – 2028
	Operations phase	2028 onwards
	Decommissioning phase	n/a

3 | October 2021

[pp2–3]

https://www.epa.wa.gov.au/sites/default/files/PER_documentation2/Alkimos SDP – Proposal Content Document_20-9-22.pdf

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PCD in Alkimos s43A (change to proposal, March 2023) – 1

Environmental Protection Authority

Environmental Protection Act 1986

Section 43A

NOTICE OF DECISION TO CONSENT TO AMEND A REFERRED PROPOSAL DURING ASSESSMENT

PERSON TO WHOM THIS NOTICE IS GIVEN

(a) Water Corporation (ABN: 28 003 434 917)
629 Newcastle Street
LEEDERVILLE WA 6007

PROPOSAL TO WHICH THIS NOTICE RELATES:

Alkimos Seawater Desalination Plant
Assessment No. 2210

Pursuant to s. 43A of the *Environmental Protection Act 1986* (EP Act), the Environmental Protection Authority gives approval to the assessment of the proposal being completed in respect of the proposal as amended in accordance with the proponent's request:

- Amend the location of the marine infrastructure and reduce the marine development envelope by 0.75 hectares.
- Amend the configuration of the water treatment facility and increase the development envelope by 2.75 hectares.
- Amend the alignment of the integration pipeline and reduce the development envelope by 0.9 hectares.

The amended proposal content document and figures are attached.

EFFECT OF THIS NOTICE:

1. The assessment of the proposal is to be completed in respect of the proposal as amended in accordance with the decision set out in this notice.
2. The proposal as amended in accordance with this notice is taken to have been referred to the EPA under s. 38 of the EP Act.

Prime House, 8 Davidson Terrace Joondalup, Western Australia 6027
Postal Address: Locked Bag 10, Joondalup DC, Western Australia 6919
Telephone: (08) 6364 7000 | Facsimile: (08) 6364 7001 | Email: info.epa@dwer.wa.gov.au
www.epa.wa.gov.au

RIGHTS OF APPEAL:

There are no rights of appeal under the EP Act in respect of this decision.

[Signed 7 March 2023]

Prof. Matthew Tonts
Delegate of the Environmental Protection Authority
CHAIR

7 March 2023

Attachment 1- Amended proposal content document and figure/s showing the amended referred proposal

https://www.epa.wa.gov.au/sites/default/files/S43A/CMS17602 - S43A Notice - 070323.pdf

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PCD in Alkimos s43A (change to proposal, March 2023) – 2

Table 1: General proposal content description

Proposal title	Alkimos Seawater Desalination Plant
Proponent name	Water Corporation
Short description	The construction and operation of a 100 GL per annum seawater desalination plant (SDP) and a 4.9 GL per annum groundwater treatment plant (GWTP) at the Alkimos water precinct. The source water for the desalination process will be delivered through the construction of a pipeline directly west of the proposed SDP. By-products of the desalination process will be returned further offshore to the marine environment through a separate pipeline. In order to distribute the drinking water into Perth's Integrated Water Supply Scheme (IWSS), the project includes a 32.93 km pipeline from the Alkimos site to the Wanneroo Reservoir, and other significant distribution points along the pipe route (Figure 1A).

Table 2: Proposal content elements

Proposal element	Location / description	Maximum extent, capacity or range
Construction elements		
Total DE		**141.6 ha, including marine infrastructure DE of 11.45 ha and terrestrial DE of 130.15 ha**
Marine infrastructure	Figure 2A	Marine DE of **11.45 ha** including subsurface tunnelling to Plant Site boundary to the vertical riser disturbance footprint, comprising: • **3.06 ha** tunnel footprint ○ **2.6 km** seawater intake pipeline length ○ **4.5km** outlet pipeline length • **8.39 ha** vertical risers (intake and outfall) disturbance footprint. Disturbance of up to **4.09 ha** of vegetated benthic communities and habitats (BCH) within the Marine DE.
Water treatment facility	Alkimos Water precinct Figure 3A	The water treatment facility DE of up to **31.75 ha** including, and not limited to the following infrastructure: • Seawater Desalination Plant (SDP) infrastructure (Site earthworks and western berm construction, marine tunnel boring machine launch pit, water treatment buildings and water storage tanks. • the Groundwater Treatment Plant (GWTP) infrastructure, and • access roads and support buildings. Construction includes disturbance of up to **26.89 ha** of native vegetation.

Proposal element	Location / description	Maximum extent, capacity or range
Integration pipeline	Alkimos water precinct to Wanneroo Reservoir See Figure 4A-Figure 10A	The Pipeline DE from the Plant Site boundary to the Wanneroo Reservoir, into the IWSS, with a spur pipeline to the Carabooda Tank. The Pipeline DE comprises of the following attributes: • Pipeline DE area of **98.4 ha** • Pipeline DE corridor width of **30 m** • Pipeline DE Length of **32.93 km** • Pipeline Disturbance Footprint area of **52.15 ha** • Pipeline Disturbance Footprint Corridor width of 16 m • Pipeline diameter of **1600 mm** disturbance of up to **24.28 ha** of native vegetation within the 16 m wide disturbance footprint corridor.
Operational elements		
Seawater intake	**2.6 km** from intake Pump Station	Two approximately 8.5m diameter screened intake 360 ML/d (at 50 GL/a) up to 720 ML/d (at 100 GL/a) Maximum velocity 0.15 m/sec
SDP Outlet	**4.5 km** from outfall tank	Two approximately 7m diameter rosette diffuser 210 ML/d (at 50 GL/a) up to 420 ML/d (at 100 GL/a) with a maximum salinity of 75,200 mg/L
Drinking water production	Within Alkimos water precinct	Seawater desalination: - 100 GL/a ultimate drinking water production capacity (Stage 1 – 50 GL/a in 2 x 25 GL/a treatment trains. Stage 2 – 50 GL/a in 2 x 25 GL/a treatment trains) Groundwater treatment: - 4.9 GL/a (excluding abstraction)
Proposal elements with greenhouse gas emissions		
Construction elements:		
Scope 1		Land clearing: 13,784.7 t CO2 -e (between 2023 – 2027) Plant and equipment: 18,962 t CO2 -e (between 2023 – 2025)
Scope 2		Tunnel Construction: 3,468 t CO2 -e (2023 – 2027)
Operation elements:		

https://www.epa.wa.gov.au/sites/default/files/S43A/CMS17602 - S43A Notice - 070323.pdf

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PCD in Alkimos s43A (change to proposal, March 2023) – 3

Proposal element	Location / description	Maximum extent, capacity or range
Scope 1 (100GL Plant)	Operational commissioning: 635 t CO2 -e (2027-2028) Operations: 421 t CO2 -e (2028 onwards)	
Scope 2 (100GL Plant)	Operational commissioning: 40,040 t CO2 -e (2027-2028) Operations (treatment): 133,251 t CO2 -e (2028 onwards) Operations (clearwater pumping): 35,645 t CO2 -e (2028 onwards)	
Water Corporation proposes to achieve **net zero** Scope 1 & 2 greenhouse gas emissions for construction and operations of the project.		
Rehabilitation		
A berm to the west of the Alkimos water precinct will be stabilised to prevent wind erosion and revegetated with native vegetation. All cleared land outside the required 5m wide maintenance corridor along the terrestrial pipeline to the Wanneroo Reservoir will be revegetated with native vegetation following completion of the pipeline.		
Commissioning		
Seawater Desalination Plant (SDP) Operational commissioning of the SDP is expected to occur for up to 12 months. During commissioning, water will be sourced through the seawater intake and discharged through the outfall.		
Pipeline Once constructed, the pipeline will be pressure tested in sections and disinfected. Water will be sourced from potable supply and neutralised prior to discharge to the terrestrial environment.		
Other elements which affect extent of effects on the environment		
Proposal time	Estimated Construction phase (subject to State water source requirements)	Stage 1 – 2023-2028 (first 50 GL capacity plant and proposal infrastructure) Stage 2 – 2029-2032 (second 50 GL capacity plant and integration works)
	Operations phase	2028 onwards
	Decommissioning phase	Decommissioning of original facility by 2128.

Figure 1A: The Proposal DE Overview

https://www.epa.wa.gov.au/sites/default/files/S43A/CMS17602 - S43A Notice - 070323.pdf

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PCD in Alkimos s43A (change to proposal, March 2023) – 4


Figure 2A: The Proposal DE – Incl Marine Infrastructure

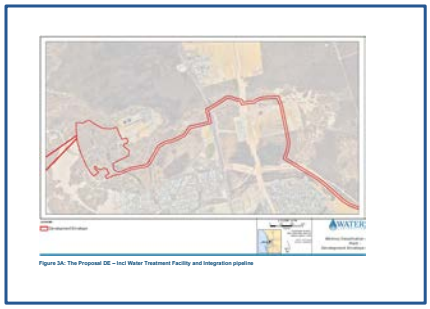
Figure 3A: The Proposal DE – Incl Water Treatment Facility and Integration pipeline


Figure 4A: The Proposal DE – Incl Integration pipeline

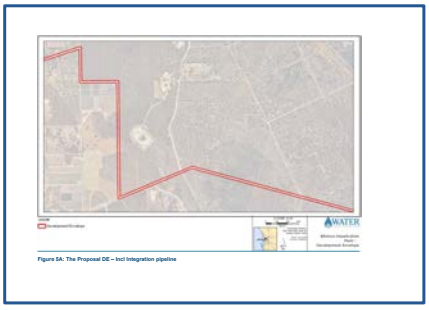
Figure 5A: The Proposal DE – Incl Integration pipeline

[+ further diagrams for rest of pipeline development envelope…]

https://www.epa.wa.gov.au/sites/default/files/S43A/CMS17602 - S43A Notice - 070323.pdf

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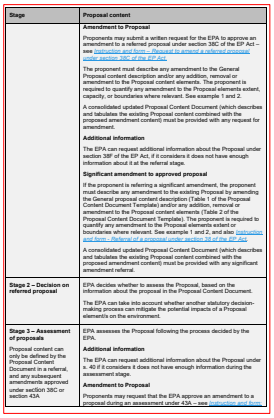
Proposal content requirements must be provided at <u>every</u> step of the EIA process

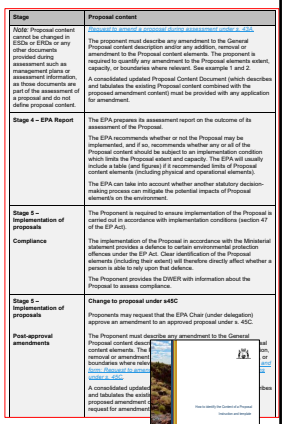
Proponents should define their project, not EPA, and keep it up to date (with s43A towards end of assessment process to tidy things up). Avoids scope slippage between referral & ERD.

4. Proposal content requirements at each stage of assessment

Table 1: The requirements for and use of the General Proposal Content Description and table of Proposal Content Elements during each stage of the EIA process.

Stage	Proposal content
Stage 1 – Referral of proposal Proposal content at this stage is defined by the Proposal Content Document included in a referral, as amended by any approval under s. 38C *Note:* Proposal content cannot be identified in other information provided at or during the referral stage.	**New referral** Proponent to provide a Proposal Content Document: 1. general proposal content description (see example 1 and 2, Table 1) 2. table of Proposal content elements (see example 1 and 2, Table 2), including: • description of Proposal elements • maximum (or range of) extent and capacity • development envelope (where relevant) • footprint (including footprint flexibility, if proposed) • spatial data for the above • all stages of the Proposal including likely timeframes for each stage including construction phase, operation phase and maximum life of the proposal.





https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Instruction- How to identify the content of a proposal.pdf

Instruction and Template: How to identify the Content of a Proposal, pp6-9

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Proposal splitting

- In most cases, proposals should not be split (e.g. if an access road is essential to a mining proposal then the road should be part of the proposal)
  - Splitting puts Minister in a difficult position because approved proposals need to be able to be implemented (i.e. not be dependent upon another proposal)
- 'environment-centred approach' used by EPA generally avoids 'EIA avoidance'…
  - GHG emission levels (development-centred approach) poses some risk

> Generally, GHG emissions from a proposal will be assessed where they exceed 100,000 tonnes of scope 1 emissions each year measured in CO_2-e. This is currently the same as the threshold criteria for designation of a large facility under the Australian Government's Safeguard Mechanism.

[EPA (2020) EF Guideline: GHG emissions, p4]

https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EFG - GHG Emissions - 16.04.2020.pdf

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Avoiding EIA – 'salami slicing' (project splitting)…

[international perspective]

Proponent breaks down a large-scale project into several smaller undertakings

- each of which falls below *screening threshold* tests
  - e.g. specified in EU Directive for EIA
- especially in development-centred screening approach

to avoid triggering an EIA requirement

(e.g. Enríquez-de-Salamanca, 2016)

Enríquez-de-Salamanca, Á. (2016). Project splitting in environmental impact assessment. *Impact Assessment and Project Appraisal,* **34**(2), 152-159.

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Interaction with Cth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC)

Commonwealth Government approvals	
Does the proposal involve an action that may be or is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)?	☐ Yes ☐ No
Has the proposed action been referred? If yes, when was it referred and what is the reference number (EPBC No.)?	☐ Yes ☐ No Date: _____ EPBC No.: _____
If referred, has a decision been made on whether the proposed action is a controlled action? If 'yes', check the appropriate box and provide the decision in an attachment.	☐ Yes ☐ No ☐ Decision – controlled action ☐ Decision – not a controlled action
If the proposal is determined to be a controlled action, do you request that this proposal be assessed under a Bilateral Agreement or as an accredited assessment?	☐ Yes - Bilateral ☐ No ☐ Yes - Accredited
Is approval required from other Commonwealth Government/s for any part of the proposal? *If yes, describe.*	☐ Yes ☐ No Approval:

(EPA Referral Instructions and Form (EPA Referral Form, p5)
https://www.epa.wa.gov.au/forms-templates/s38-referral-instructions-and-form)

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Accredited assessments under EPBC Act (Cth)

- Bilateral Agreement under s45 of *EPBC Act* 1999 between WA and Cth:
  - Assessment bilateral
  - Operated from 1 January 2015 until implementation of Quinlan Review (Nov 2016)
  - Accredited the WA EPA's PER and API processes
- Currently, assessments can be accredited on a case-by-case basis [e.g. Alkimos]
- Negotiations of approval bilateral agreements with Cth stalled under previous government

The proposal was determined under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to be a controlled action and to be assessed by the EPA under an accredited process.

[EPA assessment report, p1 of Summary]

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The matters of national environmental significance (MNES) – *EPBC* Act 1999

- EIA under EPBC is triggered only by activities likely to have significant impact on a matter of **national environmental significance**
  - World Heritage properties
  - national heritage
  - Ramsar wetlands of international importance
  - nationally threatened species & ecological communities
  - migratory species
  - Cwlth marine areas (outside 3nm from shore)
  - the Great Barrier Reef Marine Park
  - nuclear actions (including uranium mining)
  - a water resource, in relation to coal seam gas development and large coal mining development

- if a project triggers >1 MNES, then a decision in relation to each matter should be given (e.g. for approval)

http://www.environment.gov.au/epbc/about

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Public comment on referrals

Before making a decision on whether or not to assess a proposal, the EPA *will* publish referral information on the EPA website for public comment for a period of seven days.

The EPA *may* increase the length of the public comment period on a case-by-case basis.
(*Admin Proc 2021*, s1.5)

Providing opportunities for public participation is an integral part of environmental impact assessment and developing sound environmental protection policies in Western Australia. The EPA publishes all documents open for public comment on its consultation hub at https://consultation.epa.wa.gov.au and prefers submissions to be made through the hub.

http://www.epa.wa.gov.au/stakeholder-engagement

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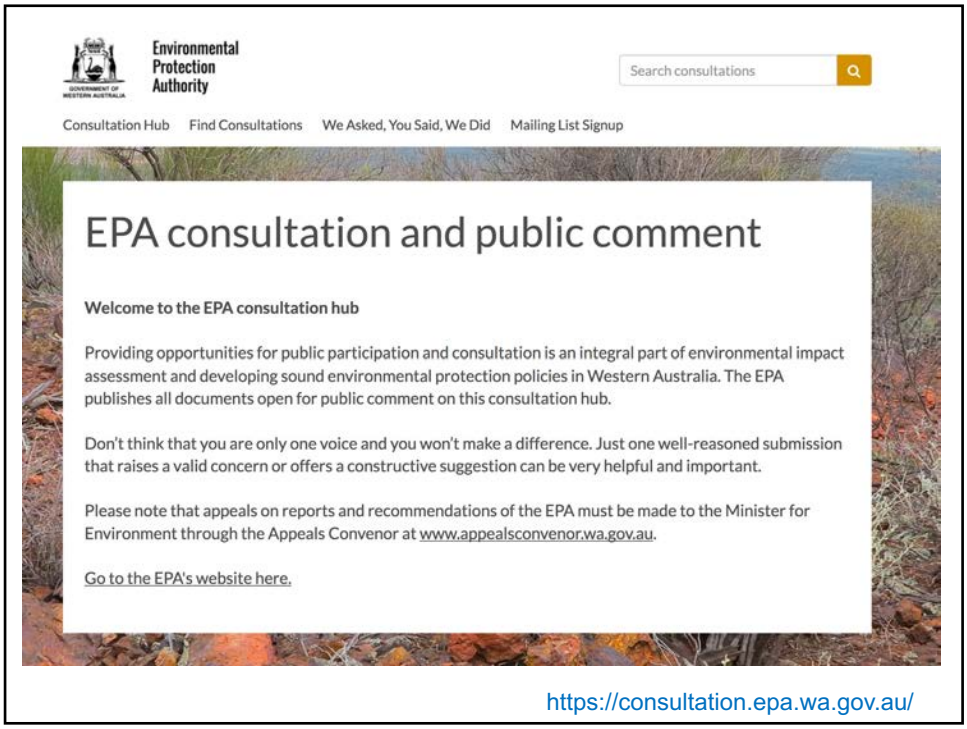
Environmental Protection Authority
Search consultations
Consultation Hub
Find Consultations
We Asked, You Said, We Did
Mailing List Signup
EPA consultation and public comment
Welcome to the EPA consultation hub
Providing opportunities for public participation and consultation is an integral part of environmental impact assessment and developing sound environmental protection policies in Western Australia. The EPA publishes all documents open for public comment on this consultation hub.
Don't think that you are only one voice and you won't make a difference. Just one well-reasoned submission that raises a valid concern or offers a constructive suggestion can be very helpful and important.
Please note that appeals on reports and recommendations of the EPA must be made to the Minister for Environment through the Appeals Convenor at www.appealsconvenor.wa.gov.au.
Go to the EPA's website here.
https://consultation.epa.wa.gov.au/

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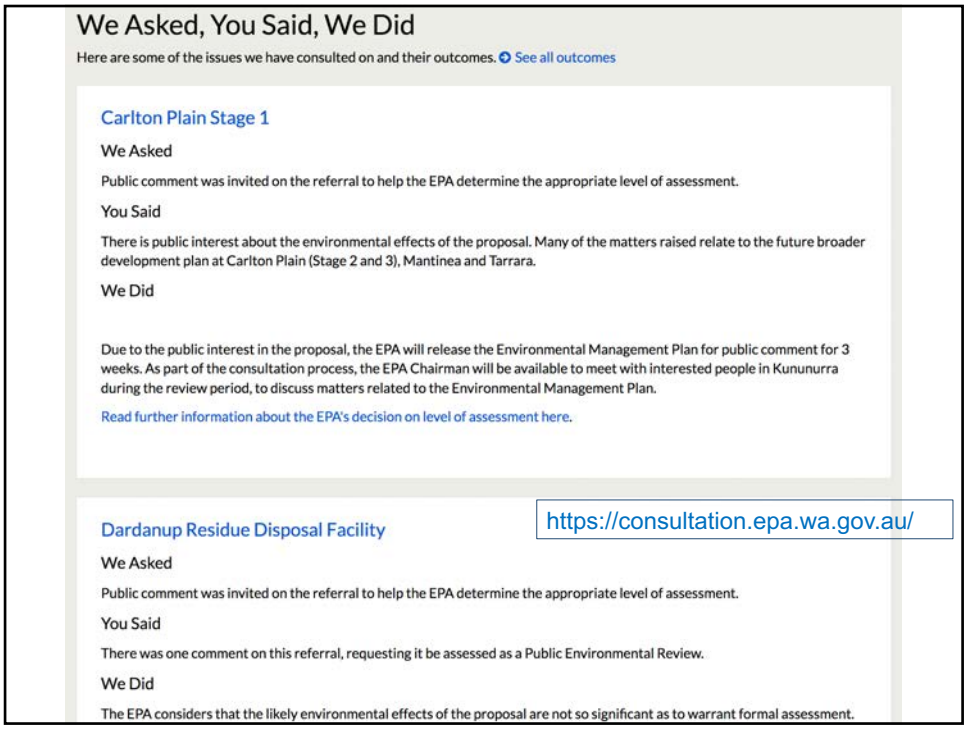
We Asked, You Said, We Did
Here are some of the issues we have consulted on and their outcomes. See all outcomes
Carlton Plain Stage 1
We Asked
Public comment was invited on the referral to help the EPA determine the appropriate level of assessment.
You Said
There is public interest about the environmental effects of the proposal. Many of the matters raised relate to the future broader development plan at Carlton Plain (Stage 2 and 3), Mantinea and Tarrara.
We Did
Due to the public interest in the proposal, the EPA will release the Environmental Management Plan for public comment for 3 weeks. As part of the consultation process, the EPA Chairman will be available to meet with interested people in Kununurra during the review period, to discuss matters related to the Environmental Management Plan.
Read further information about the EPA's decision on level of assessment here.
https://consultation.epa.wa.gov.au/
Dardanup Residue Disposal Facility
We Asked
Public comment was invited on the referral to help the EPA determine the appropriate level of assessment.
You Said
There was one comment on this referral, requesting it be assessed as a Public Environmental Review.
We Did
The EPA considers that the likely environmental effects of the proposal are not so significant as to warrant formal assessment.

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3. Pre-referral, Referral and **Decision on whether to assess**

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EPAct 1986 – s38G [proposals]

38G. Authority must decide* whether to assess a referred proposal

(1) The Authority must, within 28 days after the referral of a proposal —

(a) decide whether or not to assess the referred proposal

...

(7) If the Authority ***decides not to assess a proposal, it may nevertheless give advice*** and make recommendations on the environmental aspects of the proposal to the proponent or any other relevant person or authority.

[Section 38G inserted by No. 40 of 2020, s 15.]

[*this (& equivalent for Schemes in s48A) is the only formal 'decision' that the EPA makes – its role is to give independent advice to government]

(*EPAct* s38G)

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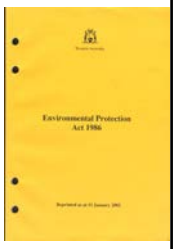
EPAct 1986 – s38A

38A. Request for further information

(1) This subsection applies if the Authority considers that it does not have enough information about a referred proposal to enable it to decide —

(a) whether or not to assess the proposal; …



(2) …***the Authority may***, by written notice (a ***requisition***), ***request any person to provide it with additional information about the proposal*** before the end of a period specified in the notice (the ***compliance period***).

[Section 38A inserted by No. 40 of 2020, s 15.]

(Previously delegated to ED EPAS, now to EPA Chair)

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EPA (2019) on needing more information…

Referred proposals and schemes

During 2018–19 the EPA received the referral of 43 significant development proposals and 161 schemes.

The EPA may not necessarily make a determination on whether to assess a referred proposal or scheme in the same year that it is referred. Only when the EPA has sufficient information about a referred proposal or scheme, including the environmental impacts and management of those impacts, can it make a determination on whether formal assessment is required and if so, the level of assessment.

EPA Annual Report 2018-19, p8
https://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA Annual report.pdf

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About 'Not assessed' decisions

- to arrive at a 'not assessed' decision, the ***EPA must assess the proposal anyway*** and conclude that no further attention is needed (i.e. no env factors will be significantly adversely impacted)

- s100(1) of *EPAct* 1986 provides for any person who disagrees with the EPA decision not to assess to lodge an appeal with the Minister
  [appeals are addressed further in a later topic]

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EPA Annual Report 2021-22, p4 & 6
https://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA Annual Report 2021-2022.pdf

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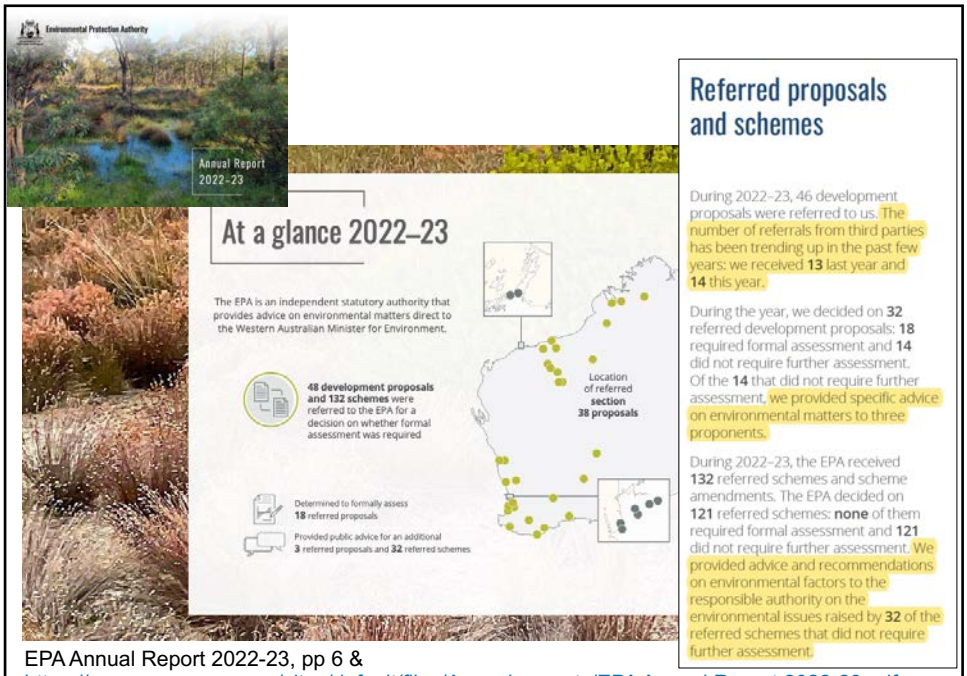

EPA Annual Report 2022-23, pp 6 &
https://www.epa.wa.gov.au/sites/default/files/Annual_reports/EPA Annual Report 2022-23.pdf

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Value of informal EIA (public advice)…

The key findings of the evaluation were:

- ***Public advice is an effective method*** for advising proponents and DMAs on how to protect the environment and meet the EPA's objectives;
- In each proposal examined, the proponents and DMAs ***applied the recommendations*** of the public advice

(EPA 2016, p3)

http://www.epa.wa.gov.au/sites/default/files/Publications/s38 Public Evaluation Report-121016.pdf

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Environmental review provisions *EPAct* 1986 – s40(2-3)

40. Assessment of proposals referred

…

(2) The Authority may, for the purposes of assessing a proposal –

(a) require any person to provide it with such information as is specified ...

(b) require the proponent to ***undertake an environmental review*** and to report thereon to the Authority; ...

(*EPAct* s40)

(3) ... the Authority ***shall determine the form, content, timing and procedure*** of any environmental review required to be undertaken and publish an indicative outline of the timing of the environmental review.

[more on ERD provisions later…]

[Section 40 amended by No. 40 of 2020, s 18.]

[note: s40 is key to scoping - we return to this later]

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Public review provisions *EPAct* 1986 – s40(4) & (5)

40. Assessment of proposals referred

(4) ... the Authority may cause the following to be published —

…

(b) any report made in compliance with a requirement made under subsection (2)(b).

(5) When publishing information or a report under subsection (4) the Authority may —

(*EPAct* s40)

(a) declare the information or ***report to be available for public review***; and

(b) specify the ***period*** within which, the extent to which and the ***manner in which public authorities or persons may make submissions*** to the Authority in respect of the information or report.

[more on stakeholder engagement later…]

[Section 40 amended by No. 40 of 2020, s 18.]

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Level of assessment decision (i)

When deciding whether to assess a proposal, the ***EPA will consider its significance*** and may also consider other matters. For guidance on how the EPA determines 'significance', see the EPA's *Statement of environmental principles, factors, objectives and aims of EIA*.

The EPA may also consider ***whether there are other statutory decision-making processes that can mitigate*** the proposal's impacts on the environment (s. 38G(4)). …

In addition to considering information submitted with the referral, the ***EPA may carry out its own investigations and inquiries*** before deciding whether to assess a proposal. …

The EPA may use any relevant ***information obtained from public comments*** to consider the proposal's likely impacts on the environment, and to ***gauge the level of public interest*** about the likely effect of the proposal, if implemented, on the environment.

If the proposal may impact on Matters of National Environmental Significance … the EPA ***may ask the Commonwealth to provide advice*** on the adequacy of referral documentation, in parallel with the public comment period.

(EIA Procedures Manual (2021), s2.2-2.2.1, pp 20-21)

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

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Level of assessment decision (ii)

When deciding the level of assessment and the requirements for the proponent, the EPA may have regard to matters … such as:

- the ***nature of the proposal*** and ***number and complexity of preliminary key environmental factors*** relevant to the proposal
- ***whether any environmental impacts*** likely to arise from the proposal ***are well understood*** and there is an established condition-setting framework available to mitigate those impacts
- the ***level of public interest*** in the likely effect of the proposal, if implemented, on the environment.

The EPA records the level of assessment (as required by s. 39(b)) by:

- referring to the ***type of information the proponent is required to provide*** for its assessment
- outlining ***whether any of the additional assessment information is required to be made available for public review***, and
- specifying the section/s of the EP Act that any requirements relate to.

(EIA Procedures Manual (2021), s2.3.1, p21)

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

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Level of assessment decision options (i)

The EPA will usually set one of the levels of assessment below:

Referral Information (s. 38, and where applicable s. 38C, s. 38F and/or s. 39G(3)(c)): where the EPA determines that it has enough information to assess the proposal from the referral information obtained under s. 38 (and where applicable, information provided as part of an amended proposal under s. 38C, from a request/s for further information under s. 38F, and/or from the EPA's investigations and inquiries under s. 39G(3)(c)).

Referral Information (with additional information) (s.40(2)(a)): where the EPA determines that it needs information in addition to the information it has from the referral information. Any additional information will be required by a separate notice under s. 40 (2) (a) and can include information about the results of additional targeted consultation.

Referral Information (with or without additional information) with public review (s.40(2)(a) and s.40 (5)): where the EPA determines that the information it has from the referral information (and additional information where relevant) should be made available for public review. Any additional information will be required by a separate notice under s. 40 (2) (a).

Environmental review – No Public Review (s. 40(2)(b)) – where the EPA determines that an environmental review is required under s. 40(2)(b), but the report on the environmental review (Environmental Review Document) will not be made public.

Public Environmental Review (s. 40(2)(b) and s. 40(5)) – where the EPA determines that an environmental review is required under s. 40(2)(b) and the Environmental Review Document is to be made available for public review under s. 40(5).

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

(EIA Procedures Manual (2021), s2.3.1, p22)

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Level of assessment decision options (ii)

The EPA *may* also include other information with the level of assessment (in the record required by s. 39(b)), as the EPA has a discretion under s. 40 of the EP Act to determine the information which it requires for its assessment.

Example – other descriptor of level of assessment:

If a proposal has a technical issue relating to one preliminary key environmental factor, the EPA may decide that it needs additional information for its assessment, rather than the proponent undertaking an environmental review. The additional information required is a technical report and an independent peer review of that technical report. The EPA may also determine that the technical report and peer review should be made available for public review. For this example, the level of assessment would be:

Technical report and peer review of technical report – public review required (s. 40(2)(a) and s. 40(5)).

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

(EIA Procedures Manual (2021), s2.3.1, p22)

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The level of assessment decision in Chair's determination on referral for Alkimos

2. Decision on whether to assess this proposal

Chair's Determination: Assess - Public Environmental Review

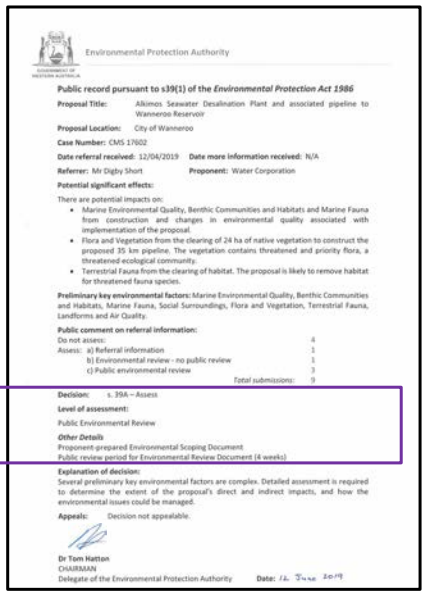
Extract of determination:

Alkimos Seawater Desalination Plant and associated pipeline to Wanneroo Reservoir (PDF, 495.3 KB)

Preliminary Environmental Factors:

Air Quality, Social Surroundings, Benthic Communities and Habitats, Marine Environmental Quality, Marine Fauna, Flora and Vegetation, Landforms, Terrestrial Fauna

Date published: Monday, 17 June, 2019



Environmental Protection Authority

Public record pursuant to s39(1) of the *Environmental Protection Act 1986*

Proposal Title: Alkimos Seawater Desalination Plant and associated pipeline to Wanneroo Reservoir

Proposal Location: City of Wanneroo

Case Number: CMS 17602

Date referral received: 12/04/2019 **Date more information received:** N/A

Referrer: Mr Digby Short **Proponent:** Water Corporation

Potential significant effects:

There are potential impacts on:

- Marine Environmental Quality, Benthic Communities and Habitats and Marine Fauna from construction and changes in environmental quality associated with implementation of the proposal.
- Flora and Vegetation from the clearing of 24 ha of native vegetation to construct the proposed 35 km pipeline. The vegetation contains threatened and priority flora, a threatened ecological community.
- Terrestrial Fauna from the clearing of habitat. The proposal is likely to remove habitat for threatened fauna species.

Preliminary key environmental factors: Marine Environmental Quality, Benthic Communities and Habitats, Marine Fauna, Social Surroundings, Flora and Vegetation, Terrestrial Fauna, Landforms and Air Quality.

Public comment on referral information:

Do not assess: 4
Assess: a) Referral information 1
b) Environmental review - no public review 1
c) Public environmental review 3
Total submissions: 9

Decision: s. 39A – Assess

Level of assessment:

Public Environmental Review

Other Details

Proponent-prepared Environmental Scoping Document
Public review period for Environmental Review Document (4 weeks)

Explanation of decision:

Several preliminary key environmental factors are complex. Detailed assessment is required to determine the extent of the proposal's direct and indirect impacts, and how the environmental issues could be managed.

Appeals: Decision not appealable.

Dr Tom Hatton
CHAIRMAN
Delegate of the Environmental Protection Authority **Date:** 12 June 2019

https://www.epa.wa.gov.au/proposals/alkimos-seawater-desalination-plant

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Proposal cannot proceed until EIA process is completed (s41 *EPAct*) (i)

Once decision is made to assess a proposal, a DMA is prevented from issuing an approval decision (s41) and it is an offence for anyone to do anything to implement the proposal (s41A)

- until authorisation by Minister under s45 (ie following EIA process)

But, s41(4) permits a DMA to:
cause or allow the doing of minor or preliminary work to which the Authority has consented under section 41A(3) [2010 amendment to *EPAct*]

Admin Proc 2021
3.4 Decision-making authority not to approve proposal until certain events occur
3.4.1 Investigation work that is not part of the proposal

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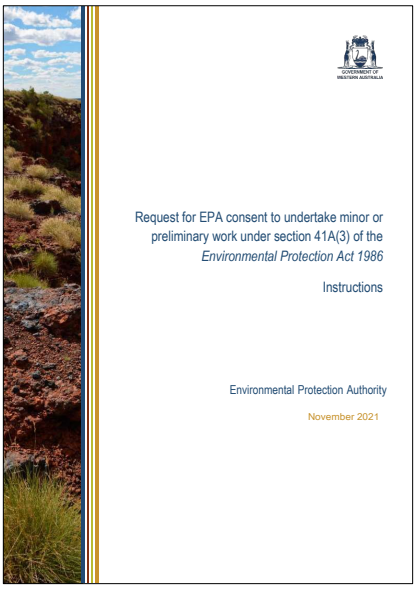
Minor & preliminary work (i)

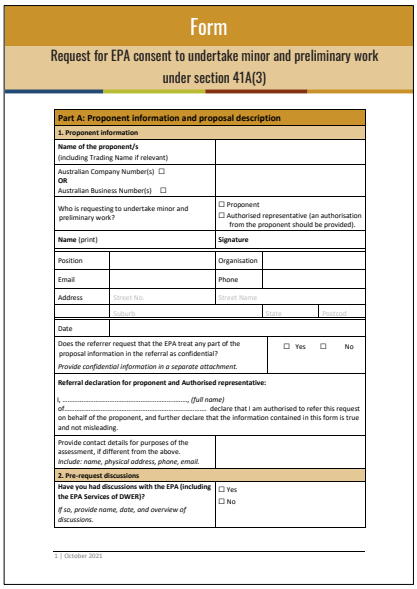


Request for EPA consent to undertake minor or preliminary work under section 41A(3) of the *Environmental Protection Act 1986*

Instructions

Environmental Protection Authority

November 2021



Form

Request for EPA consent to undertake minor and preliminary work under section 41A(3)

Part A: Proponent information and proposal description			
1. Proponent information			
Name of the proponent/s (including Trading Name if relevant)			
Australian Company Number(s) ☐ **OR** Australian Business Number(s) ☐			
Who is requesting to undertake minor and preliminary work?		☐ Proponent ☐ Authorised representative (an authorisation from the proponent should be provided).	
Name (print)		**Signature**	
Position		Organisation	
Email		Phone	
Address	Street No.	Street Name	
	Suburb	State	Postcod
Date			
Does the referrer request that the EPA treat any part of the proposal information in the referral as confidential? *Provide confidential information in a separate attachment.*		☐ Yes ☐ No	
Referral declaration for proponent and Authorised representative: I, ..., *(full name)* of..... declare that I am authorised to refer this request on behalf of the proponent, and further declare that the information contained in this form is true and not misleading.			
Provide contact details for purposes of the assessment, if different from the above. *Include: name, physical address, phone, email.*			
2. Pre-request discussions			
Have you had discussions with the EPA (including the EPA Services of DWER)? *If so, provide name, date, and overview of discussions.*		☐ Yes ☐ No	

1 | October 2021

https://www.epa.wa.gov.au/forms-templates/instructions-request-undertake-minor-or-preliminary-work

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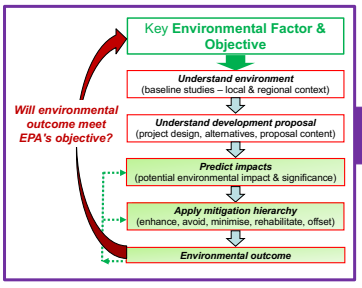
Minor & preliminary work (ii)

[= normal EIA process…]



3. Proposal information	
Title of the proposal	
Proposal description	
Proposal content document	
Location of the proposed works	
Have you provided electronic spatial data, maps, and figures in the appropriate format of the proposed works in relation to the referred proposal boundaries?	☐ Yes ☐ No

Part B: Information regarding minor and preliminary works	
1. Reason for and content of the request	
Details of the proposed work	
How is the work associated with the implementation of the proposal?	
Explanation of why the work should be considered minor or preliminary	
Future decisions	
2. Assessment of environmental impacts	
Environmental impacts	
Environmental justification for the work	
Describe any decommissioning or rehabilitation	
Can the works be reversed?	
3. Decision-making authorities and their approvals	
List the DMAs and associated approval, licence or permit required	
4. Consultation	
Consultation undertaken	
Outcomes of consultation	
5. Supporting documents	
IBSA / IMSA details	

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Instructions and checklist - Minor or preliminary work.pdf

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There was a s41A(3) for Alkimos – 1

Minor or preliminary work under s. 41A(3)

s. 41A(3) notice:

CMS17602 - S41A(3) Notice - 200921.pdf (PDF, 967.42 KB)

Date of approval s. 41A(3): Monday, 20 September, 2021

https://www.epa.wa.gov.au/proposals/alkimos-seawater-desalination-plant

Environmental Protection Authority

Environmental Protection Act 1986

Section 41A(3)

NOTICE OF DECISION TO CONSENT TO MINOR OR PRELIMINARY WORKS

PERSON TO WHOM THIS NOTICE IS GIVEN:

(a) Mr Digby Short
Manager Environment
Water Corporation (ABN: 28 003 434 917)
PO Box 100
LEEDERVILLE WA 6007

(b) Relevant Decision-Making Authorities, see Attachment 1

PROPOSAL TO WHICH THIS NOTICE RELATES:

Alkimos Seawater Desalination Plant
Assessment No. 2210

Pursuant to section 41A(3) of the *Environmental Protection Act 1986* (EP Act), the Environmental Protection Authority consents to the proponent undertaking the minor or preliminary works detailed in Schedule 1.

EFFECT OF THIS NOTICE:

1. The prohibition provided by sections 41(2), 41(3) and 41A(1) of the EP Act do not apply to implementing the minor or preliminary works consented to in this Notice.
2. It is an offence under s41A(1) of the EP Act, with a maximum penalty of $125,000 for a body corporate and $62,500 for an individual, to do anything to implement the proposal other than the minor or preliminary works consented to in this Notice.
3. Relevant decision-making authorities may make decisions that would cause or allow the doing of the minor or preliminary works listed in Schedule 1 of this Notice.

Prime House, 8 Davidson Terrace Joondalup, Western Australia 6027.
Postal Address: Locked Bag 10, Joondalup DC, Western Australia 6919.
Telephone: (08) 6364 7000 | Facsimile: (08) 6364 7001 | Email: info.epa@dwer.wa.gov.au

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There was a s41A(3) for Alkimos – 2

Schedule 1

Authorised Minor or Preliminary Implementation Work (s)

Authorised Work(s)	Location	Authorised extent
The following works are authorised in their entirety: 1. Installation of water pipeline up to 292 metres long within Ministerial Statement 1100 development envelope. 2. Installation of water pipeline up to 2.4 kilometres long within the Romeo Road upgrade development envelope. 3. No clearing of native vegetation. up until such time as the later of one of the following occurs: a. notice issued under s 45(8) of the EP Act; or b. statement issued under s45(5) of the EP Act is final (that is, after period in which to lodge an appeal under s 100(3) has expired, or appeal decision under s109(3), in respect of an appeal lodged under s 100(3), is published).	Figure 1	Within the Intersecting Pipeline Installation boundaries shown on Figure 1. Coordinates for Figure 1 are held by Department of Water and Environmental Regulation.

Figure 1 Location of the Minor or Preliminary Works

Attachment 1

Relevant Decision Making Authorities

Minister for Environment
Minister for Transport and Planning
Minister for Lands
Chief Executive Officer, Department of Water and Environmental Regulation
Chief Executive Officer, City of Wanneroo
Chief Dangerous Goods Officer, Department of Mines, Industry, Regulation and Safety

https://www.epa.wa.gov.au/proposals/alkimos-seawater-desalination-plant

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4. Scoping, Environmental Review Document

4.1 Scoping

4.2 Environmental Review Document

- Offsets
- Cumulative impact assessment
- Holistic impact assessment

Featuring:
- **Offsets**
- **Cumulative impact assessment**
- **Holistic impact assessment**

1

[International perspective]

Scoping starts early…

- commences in pre-referral/referral stages of EIA & continues for duration of process

International scoping definition:
(Kennedy & Ross, 1992, p476):

an EIA activity in which a process is followed to ***identify the attributes of the environment for which there is concern (public and scientific)*** *and a plan is provided that* ***enables the EIA to be focused*** *on these attributes.*

Kennedy, A J and W A Ross (1992), An Approach to Integrate Impact Scoping with Environmental Impact Assessment, *Environmental Management*, **16**(4) 475-484

2

Scoping occurs throughout EIA process (ongoing process of revision/refinement)

Scoping in WA EIA process

- ***pre-referral and referral*** (e.g. proponent identifies preliminary key factors)
- ***draft ESD*** (env scoping document) – where applicable
- ***final ESD*** after public review – where applicable
- ***EPA report*** – determination of final key factors >>> recommended approval conditions
- ***appeals*** disagreeing with EPA report may change conditions
- Ministerial Statement – conditions identify matters to be managed by EPA/DWER (not other DMAs)
- implementation and ongoing management of project and impacts (e.g. EMPs, audit & compliance)

3

recap on legal provisions…

Environmental review provisions *EPAct* 1986 – s40(2-3)

40. Assessment of proposals referred

…

(2) The Authority may, for the purposes of assessing a proposal –

(a) require any person to provide it with such information as is specified ...

(b) require the proponent to ***undertake an environmental review*** and to report thereon to the Authority; ...

(3) ... the Authority ***shall determine the form, content, timing and procedure*** of any environmental review required to be undertaken and publish an indicative outline of the timing of the environmental review.

[Section 40 amended by No. 40 of 2020, s 18.]

(*EPAct* s40)

[more on ERD provisions later…]

ERD

scoping

public review

- proponent must comply (legally binding provisions)

[summarised in *Admin Proc 2021*, s3.1]

Public review provisions *EPAct* 1986 – s40(4) & (5)

40. Assessment of proposals referred

(4) ... the Authority may cause the following to be published —

…

(b) any report made in compliance with a requirement made under subsection (2)(b).

(5) When publishing information or a report under subsection (4) the Authority may —

(a) declare the information or ***report to be available for public review***; and

(b) specify the ***period*** within which, the extent to which and the ***manner in which public authorities or persons may make submissions*** to the Authority in respect of the information or report.

[Section 40 amended by No. 40 of 2020, s 18.]

(*EPAct* s40)

[more on stakeholder engagement later…]

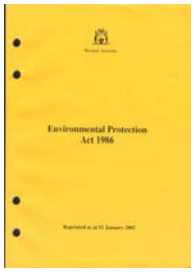
4

EPAct 1986 – s40(2a)

EPA investigation provisions

40. Assessment of proposals referred

(2a) As well as taking one or more of the courses of action set out in subsection (2)(a) to (c), the ***Authority may make such other investigations and inquiries as it thinks fit***.



(*EPAct* s40)

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Five key steps for assessment of proposals

1. Scoping the proponent's environmental review.
2. Preparation of additional assessment information (including an ERD).
3. Public review of additional assessment information (including an ERD).
4. Preparation of the EPA's draft assessment report.
5. Completion of the EPA's assessment

Steps 4 and 5 are required for each assessment. Whether or not steps 1 to 3 are required for assessment of a proposal is decided for each proposal on a case by case basis.

The EPA *will* specify which steps are required for the assessment of a proposal in the public record of the level of assessment (required by s. 39(b) [also in writing to the proponent]

Admin Proc 2021, s3.1

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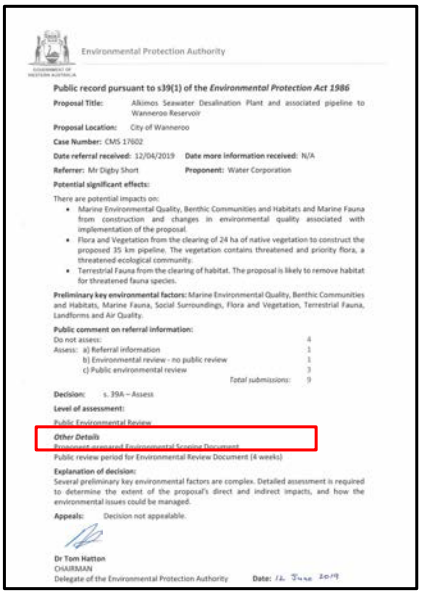
The decision on **scoping (ESD)** is revealed in the Chair's determination on referral too



Environmental Protection Authority

Public record pursuant to s39(1) of the *Environmental Protection Act 1986*

Proposal Title: Alkimos Seawater Desalination Plant and associated pipeline to Wanneroo Reservoir

Proposal Location: City of Wanneroo

Case Number: CMS 17602

Date referral received: 12/04/2019 **Date more information received:** N/A

Referrer: Mr Digby Short **Proponent:** Water Corporation

Potential significant effects:

There are potential impacts on:

- Marine Environmental Quality, Benthic Communities and Habitats and Marine Fauna from construction and changes in environmental quality associated with implementation of the proposal.
- Flora and Vegetation from the clearing of 24 ha of native vegetation to construct the proposed 35 km pipeline. The vegetation contains threatened and priority flora, a threatened ecological community.
- Terrestrial Fauna from the clearing of habitat. The proposal is likely to remove habitat for threatened fauna species.

Preliminary key environmental factors: Marine Environmental Quality, Benthic Communities and Habitats, Marine Fauna, Social Surroundings, Flora and Vegetation, Terrestrial Fauna, Landforms and Air Quality.

Public comment on referral information:

Do not assess: 4

Assess: a) Referral information 1

b) Environmental review - no public review 1

c) Public environmental review 3

Total submissions: 9

Decision: s. 39A – Assess

Level of assessment:

Public Environmental Review

Other Details

Proponent-prepared Environmental Scoping Document

Public review period for Environmental Review Document (4 weeks)

Explanation of decision:

Several preliminary key environmental factors are complex. Detailed assessment is required to determine the extent of the proposal's direct and indirect impacts, and how the environmental issues could be managed.

Appeals: Decision not appealable.

Dr Tom Hatton
CHAIRMAN
Delegate of the Environmental Protection Authority **Date:** 12 June 2019

Example: Alkimos

The ***Chair*** (under delegation from the EPA) ***will specify the requirement for an ESD***, and **whether it is to be prepared by the EPA or the proponent**, ***when it publishes the s. 39 record on the level of assessment***

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Procedures Manual 2021, s3.1.1

https://www.epa.wa.gov.au/proposals/alkimos-seawater-desalination-plant

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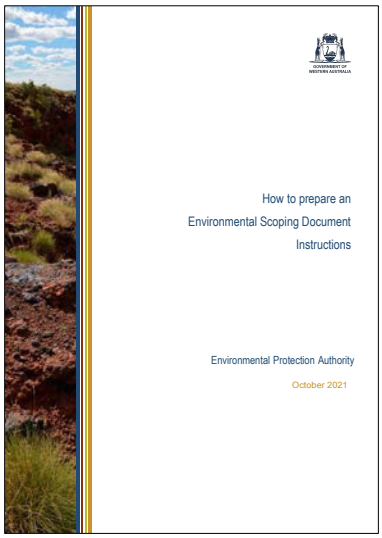
Scoping provisions in *Procedures Manual* (i)

3.1.1.1 Content of the Environmental Scoping Document

The EPA uses the ESD template for the preparation of an ESD. For ***ESDs being prepared by the proponent***, the ***EPA requires them to follow the*** *Instruction and template: Proponent-prepared Environmental Scoping Document* for their ESD.



How to prepare an Environmental Scoping Document Instructions

Environmental Protection Authority

October 2021

EIA Procedures Manual 2021, s3.1.1.1

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

https://www.epa.wa.gov.au/forms-templates/instructions-how-prepare-environmental-scoping-document

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[for Schemes, scoping is by EPA] *EPAct* 1986 – s48C(1a)

48C. Powers of Authority in relation to assessment of schemes referred to it

(1) The Authority may, for the purpose of assessing under this Division a scheme referred to it under the relevant scheme Act —

(a) require the responsible authority, if it wishes that scheme to proceed, to undertake an environmental review of that scheme and report on it to the Authority, and ***issue to the responsible authority instructions concerning the scope and content of that environmental review***;

(*EPAct* s4bC(1a))

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Scoping provisions in *Procedures Manual* (ii)

3.1.1.1 Content of the Environmental Scoping Document

…

An ESD must include the following information:

1. Introduction

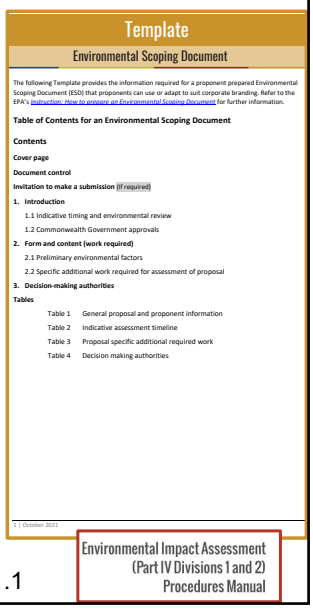
- Form, content, indicative timing and procedure of the environmental review.

2. Required Work

- Any work required for the assessment which was not completed as part of the referral process.
- Any work specific to the proposal required to be included in the ERD.
- That all work in the Instruction and template: How to prepare an Environmental Review Document (which applies for all ERDs) is required.

3. Decision-making authorities

- Outline of decision-making authorities, and decision-making processes that can mitigate the specific potential impacts of the proposal on the environment.


Template

Environmental Scoping Document

The following Template provides the information required for a proponent prepared Environmental Scoping Document (ESD) that proponents can use or adapt to suit corporate branding. Refer to the EPA's Instruction: How to prepare an Environmental Scoping Document for further information.

Table of Contents for an Environmental Scoping Document

Contents

Cover page

Document control

Invitation to make a submission [if required]

1. Introduction

1.1 Indicative timing and environmental review

1.2 Commonwealth Government approvals

2. Form and content (work required)

2.1 Preliminary environmental factors

2.2 Specific additional work required for assessment of proposal

3. Decision-making authorities

Tables

Table 1 General proposal and proponent information

Table 2 Indicative assessment timeline

Table 3 Proposal specific additional required work

Table 4 Decision making authorities

3 | October 2021

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Procedures Manual 2021, s3.1.1.1

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Environmental scoping document template

2.1 Preliminary key environmental factors

The ESD must identify the preliminary key environmental factors for the environmental review. These are usually the factors identified in the record of the level of assessment required by section 39(b) (Chair's Determination) when the EPA decides to assess a proposal.

However, there may be changes to these factors as the assessment progresses, including when the EPA approves a proposal amendment during the assessment (under section 43A).

2.2 Specific additional work required for assessment of proposal

The ESD must identify any specific additional work which is particular to the assessment of the proposal which was not completed as part of the referral process and which is not already required to be included in the ERD.

The required work may include:

- specific technical studies and investigations, and provide associated reports and data packages, as they relate to:
  - preliminary key environmental factors
  - proposed offsets package
  - the preparation of an Impact Reconciliation Procedure for proposals located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) – refer to *Instructions on how to prepare an Impact Reconciliation Procedure and Impact Reconciliation Report*
- environmental management plans
- peer review of the scope, methodologies, findings and/or conclusions of surveys and investigations, and/or other information
- stakeholder consultation.

Where cumulative impact assessment is needed to assess cumulative effects in respect of one or more environmental factors, the ESD must identify this as specific additional work which is required for assessment. The ESD must also identify the activities, boundaries and values relevant for the cumulative impact assessment in relation to each factor.

3. Decision-making authorities

State whether the decision-making authorities (DMAs) or decision-making processes are the same as

Instructions: ESD [extracts]

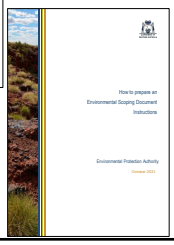
Table 3: Proposal specific additional required work

Preliminary Environmental Factor 1	
Required work	1. Task 1 2. Task 2 3. Task 3
Preliminary Environmental Factor 2	
Required work	1. Task 1 2. Task 2 3. Task 3

Table 4: Decision making authorities and processes

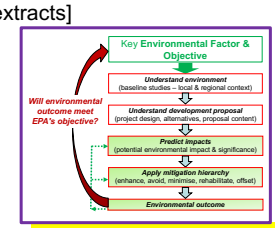
Decision-making authority	Legislation or Agreement regulating the activity	Approval required (and specify which proposal element the approval is related to)	Whether and how statutory decision-making process can mitigate impacts on the environment? (Yes/No and summary of reasons Include a separate line item for each relevant impact, and discuss how the EPA's factor objective will be met)

Template: ESD [extracts]



How to prepare an Environmental Scoping Document Instructions

Environmental Protection Authority



https://www.epa.wa.gov.au/forms-templates/instructions-how-prepare-environmental-scoping-document

[i.e. = elements of normal EIA process]

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Scoping provisions in *Procedures Manual* (iii) - **preparation, public review and approval**

- EPA/proponent to consult/seek advice from stakeholders (DMAs, Cth, public) during ESD preparation
  - amend draft ESD to include inputs
  - EPA approves draft ESD of proponent for public review
- if public review of proponent's draft ESD, then announced on Consultation Hub
  - any person may comment
  - proponent to respond to comments/amend ESD accordingly
- EPA approves final ESD
  - published on EPA website
  - (ESD sent to Cth if bilateral or accredited assessment under EPBC)

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

EIA Procedures Manual 2021, s3.1.1.2–3.1.1.4

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4.1 Scoping

4.2 Environmental Review Document

- Offsets
- Cumulative
- Holistic

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e.g. Alkimos (PER)

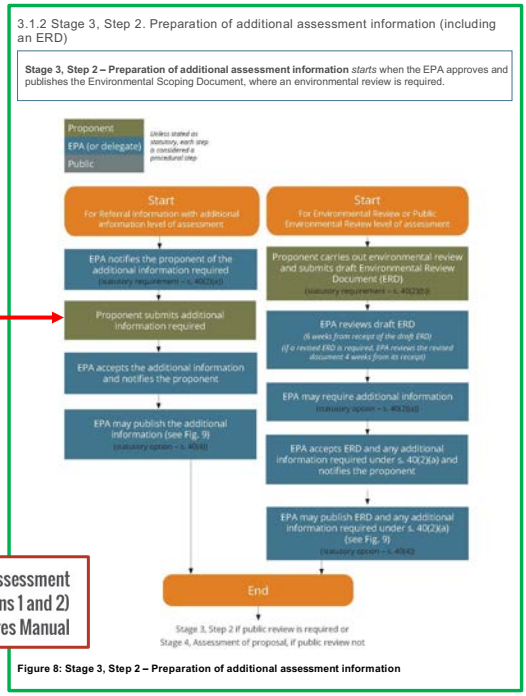
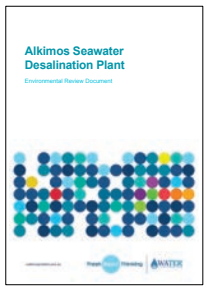
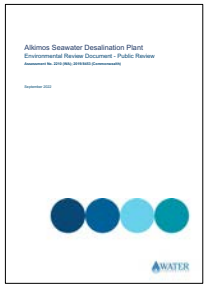


Figure 8: Stage 3, Step 2 – Preparation of additional assessment information

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual



ERD1 – Referral doc (May 2019)



ERD2 – PER (Sept 2022)

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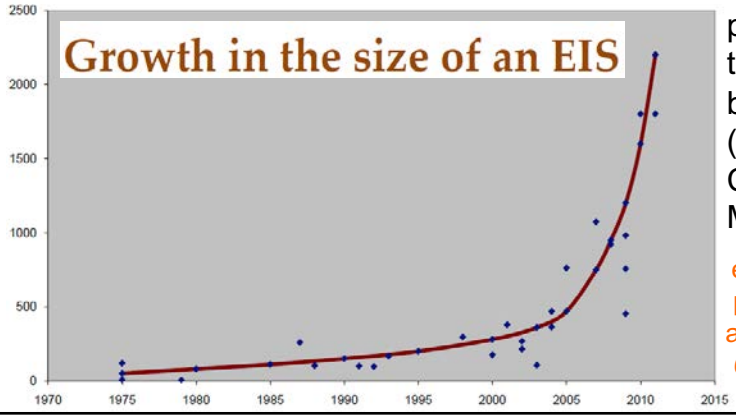
The quality versus quantity challenge

A proponent's ERD should be kept as brief as possible whilst adequately addressing key environ factors

- *quantity does not necessarily equal quality!*



source: presentation to *ECA Forum* by Paul Vogel (former EPA Chair), 9 March 2012

e.g. Browse LNG precinct strategic assessment 2010 ***62 documents – 7,928 pages!***

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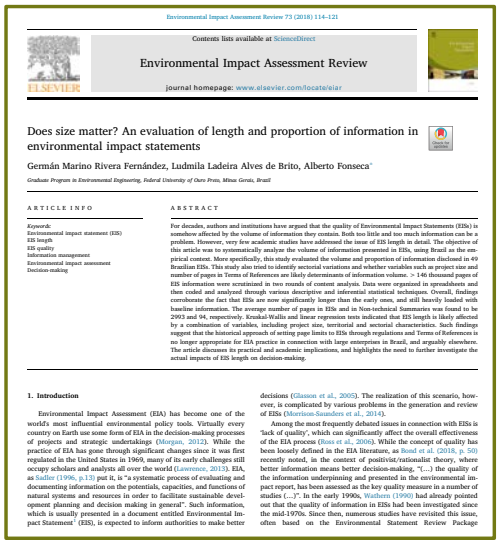
[International perspective]

The size of ERDs is a global issue…



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Does size matter? An evaluation of length and proportion of information in environmental impact statements

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Keywords:
Environmental impact statement (EIS)
EIS length
EIS quality
Information management
Environmental impact assessment
Decision-making

ABSTRACT

For decades, authors and institutions have argued that the quality of Environmental Impact Statements (EISs) is somehow affected by the volume of information they contain. Both too little and too much information can be a problem. However, very few academic studies have addressed the issue of EIS length in detail. The objective of this article was to systematically analyze the volume of information presented in EISs, using Brazil as the empirical context. More specifically, this study evaluated the volume and proportion of information disclosed in 49 Brazilian EISs. This study also tried to identify sectorial variations and whether variables such as project size and number of pages in Terms of References are likely determinants of information volume. > 140 thousand pages of EIS information were scrutinized in two rounds of content analysis. Data were organized in spreadsheets and then coded and analyzed through various descriptive and inferential statistical techniques. Overall, findings corroborate the fact that EISs are now significantly longer than the early ones, and still heavily loaded with baseline information. The average number of pages in EISs and in Non-technical Summaries was found to be 2993 and 94, respectively. Kruskal-Wallis and linear regression tests indicated that EIS length is likely affected by a combination of variables, including project size, territorial and sectorial characteristics. Such findings suggest that the historical approach of setting page limits to EISs through regulations and Terms of References is no longer appropriate for EIA practice in connection with large enterprises in Brazil, and arguably elsewhere. The article discusses its practical and academic implications, and highlights the need to further investigate the actual impacts of EIS length on decision-making.

1. Introduction

Environmental Impact Assessment (EIA) has become one of the world's most influential environmental policy tools. Virtually every country on Earth use some form of EIA in the decision-making processes of projects and strategic undertakings (Morgan, 2012). While the practice of EIA has gone through significant changes since it was first regulated in the United States in 1969, many of its early challenges still occupy scholars and analysts all over the world (Lawrence, 2013). EIA, as Sadler (1996, p.13) put it, is "a systematic process of evaluating and documenting information on the potentials, capacities, and functions of natural systems and resources in order to facilitate sustainable development planning and decision making in general". Such information, which is usually presented in a document entitled Environmental Impact Statement[1] (EIS), is expected to inform authorities to make better decisions (Glasson et al., 2005). The realization of this scenario, however, is complicated by various problems in the generation and review of EISs (Morrison-Saunders et al., 2014).

Among the most frequently debated issues in connection with EISs is "lack of quality", which can significantly affect the overall effectiveness of the EIA process (Ross et al., 2006). While the concept of quality has been loosely defined in the EIA literature, as Bond et al. (2018, p. 50) recently noted, in the context of positivist/rationalist theory, where better information means better decision-making, "(…) the quality of the information underpinning and presented in the environmental impact report, has been assessed as the key quality measure in a number of studies (…)". In the early 1990s, Wathern (1990) had already pointed out that the quality of information in EISs had been investigated since the mid-1970s. Since then, numerous studies have revisited this issue, often based on the Environmental Statement Review Package

"Overall, findings corroborate the fact that ***EISs are now significantly longer than the early ones***, and still heavily loaded with baseline information.

The ***average number of pages in EISs*** and in Non-technical Summaries ***was found to be 2993*** and 94, respectively".

Fernández G, L de Brito & A Fonseca (2018) Does size matter? An evaluation of length and proportion of information in environmental impact statements, *Environmental Impact Assessment Review* **7**: 114–121.

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ERD provisions in *Admin Proc*

3.1.2 Step 2. Preparation of additional assessment information (including an ERD)

Environmental Review Document

Where the EPA requires an environmental review as the additional assessment information under *s.* 40(2)(b) (specified in the level of assessment, in the record required by *s.* 39(1)(b))—

- the proponent *must* carry out an **environmental review** in accordance with the Environmental Scoping Document and
- the proponent *must* prepare and submit an **Environmental Review Document** to the EPA.

Admin Proc 2021, s3.1.2

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Content of a proposal was addressed before

Outcomes-based conditions addressed later

EMP content & preparation is fairly complex – addressed later

Key point for now:

- **EMPs are ideally submitted at referral or as part of ERD**

Procedures Manual 2021, s3.1.2.1

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

3.1.2.1 Preparation and EPA review of the Environmental Review Document

Preparation of the Environmental Review Document

Proponents:

- *Must* conduct the environmental review to, as a minimum, meet the requirements of Instruction and template: How to prepare an Environmental Review Document and the approved ESD (and Schedule 4 of the Environmental Protection and Biodiversity Conservation Regulations 2000, if the EPA is assessing the proposal under an assessment bilateral agreement or as an accredited assessment).
- *Must* include any additional information the EPA has required, including requests for information under s. 40(2)(a).
- *May* include additional information relevant to the environment that would help the EPA prepare its report under s. 44 of the EP Act.
- *Must* assess the proposal as defined by the Instruction and template: How to identify the content of a proposal; the proposal which the EPA decided to assess; and any approved amendments under s. 43A.
- *Should* specify proposed environmental outcomes according to the Interim guidance: Environmental outcomes and outcomes-based conditions.
- *May* prepare environmental management plans as part of the mitigation measures for the key environmental factors. This is where a particular impact may be significant without those measures and is unlikely to be managed by an environmental outcome or limitation on the extent of the proposal. In deciding whether to prepare environmental management plans, proponents should, however, note the EPA's preference for outcomes-based conditions where practical.
- *Must* prepare an environmental management plan/s as part of the environmental review, if required in the ESD.
- *Must* follow the Instruction and template: How to prepare Part IV environmental management plans when preparing environmental management plans.
- *May* be required to follow the DMIRS *Statutory guideline for mine closure plans* and *Mine closure plan guidance – how to prepare in accordance with the statutory guidelines* (for mining proposals) when preparing a mine closure plan.
- *Should* consider offsets as early as possible in the assessment process.
- *Must* follow the relevant offset guidance. If the proposal relates to a significant amendment of an approved proposal, current offsets practice applies. Current guidance is:
  - Biodiversity factors: WA Environmental Offsets Policy and the WA Environmental Offsets Guidelines, and complete the WA Environmental Offsets template and the WA Residual Impacts Significance Model table template
  - *Greenhouse gas emissions factor: State Emissions Policy* and *Environmental factor guideline – Greenhouse gas emissions.*
- *Must* follow the Instruction, templates and form: Preparing impact reconciliation procedures and impact reconciliation reports when preparing impact reconciliation procedures.
- *Must* follow the Instruction: IBSA packages and Instruction: IMSA data packages when preparing the IBSA and IMSA data packages.
  - Must provide an IBSA data package via the IBSA Submissions portal for each terrestrial biodiversity survey report and provide an IMSA data package for each marine survey report.

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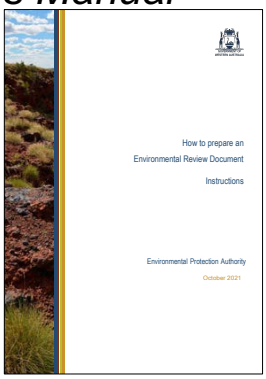
ERD content – *EIA Procedures Manual*

3.1.2.2 Content of the Environmental Review Document

The EPA requires proponents to follow the Instruction and template: How to prepare an Environmental Review Document.

EIA Procedures Manual 2021, s3.1.2.1



Note: there is also a *Template: ERD* download

Rather than reproduce each account of the ERD content requirements from Procedures Manual, Instructions and Template documents, the training materials just focus on substantive content, featuring several key issues…

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

https://www.epa.wa.gov.au/forms-templates/instructions-how-prepare-environmental-review-document

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Template

Environmental Review Document

The following Template outlines the information required for an Environmental Review Document (ERD) that proponents can use or adapt to suit corporate branding. Refer to the EPA's *Instruction: How to prepare an Environmental Review Document* for further information.

Table of Contents for an Environmental Review Document

Contents

Cover page

Document control

Invitation to make a submission *(If required)*

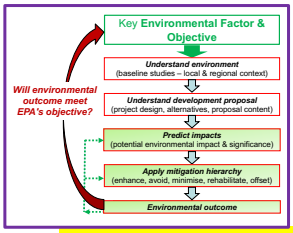
Scoping – required work (Table) (*If required*)

Executive summary

1. **Proposal**
   - 1.1. Proposal content
   - 1.2. Proposal alternatives
   - 1.3. Local and regional context
2. **Legislative context**
   - 2.1. Environmental impact assessment process
   - 2.2. Other approvals and regulation
3. **Stakeholder engagement**
   - 3.1. Key stakeholders
   - 3.2. Stakeholder engagement process
   - 3.3. Stakeholder consultation outcomes
4. **Object and principles of the EP Act**
5. **Environmental factors and objectives**
   - 5.1. EPA environmental factor/s and objective/s
   - 5.2. Relevant policy and guidance
   - 5.3. Receiving environment
   - 5.4. Potential environmental impacts
   - 5.5. Mitigation
   - 5.6. Assessment and significance of residual impact
   - 5.7. Environmental outcomes

ERD content (template)

6. **Other environmental factors or matters**
7. **Offsets**
8. **Matters of National Environmental Significance**
9. **Holistic impact assessment**
10. **Cumulative environmental impact assessment**
11. **Additional information**
    - 11.1. References
    - 11.2. Appendices
    - 11.3. Disclaimers
    - 11.4. Index of Biodiversity Surveys for Assessments (IBSA) and Index of Marine Surveys for Assessments (IMSA)



[i.e. = the normal EIA process]

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template - Environmental Review Document.docx

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ERD contents: ***scoping checklist***

Tables

Scoping Checklist

- Are all of the preliminary environmental factors identified in the record of the level of assessment required by the Chair's determination included in the ERD?
- Have potential impacts on MNES under the relevant preliminary environmental factor included in the ERD?
- Have specific technical studies and investigations been undertaken for each environmental factor, as required?
- Is all of the information from survey data in the required format, and interpreted as required by the most relevant Environmental factor guidelines at the time the ERD is published?
- Have offsets been proposed/investigated or an Impact Reconciliation Procedure been prepared (for proposals within the Pilbara Interim Biogeographic Region)?
- Have environmental outcomes been proposed?
- Is monitoring of environmental outcomes proposed consistent with the EPA's EMP Instructions?
- Have environmental management plans been prepared (where required by the ESD)? Has a justification been provided for inclusion of any objectives based environmental management plans?
- Have peer review of the scope, methodologies, findings and/or conclusions of surveys and investigations, and/or other specific additional information been provided?
- Has stakeholder identification and consultation been undertaken?

Scoping checklist table - required work

Task no.	Required work	Section and page no.
Environmental factor 1		
1	Work required for all factors: 1. Factor objective, 2. relevant policies and guidance, 3. receiving environment, 4. potential environmental impacts, 5. mitigation, 6. assessment and significance of residual impact, 7. environmental outcomes	
2		
3		
Environmental factor 2		
1		
2		
3		
Cumulative impact assessment		
1	Environmental factor 1	
1	Environmental factor 2	
Holistic impact assessment		
1		
Offsets		
1	Environmental factor 1	
	Environmental factor 2	
Stakeholder consultation		
1		
Matters of National Environmental Significance		
1		
Significant amendments (if relevant)		
1		

5 | June 2023

Template
Environmental Review Document

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template - Environmental Review Document.docx

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ERD contents: ***proposal content + greenhouse gas emissions***

Table 1: General proposal content description

Proposal title	
Proponent name	
Short description	

Table 2: Proposal content elements

Proposal element	Location / description	Maximum extent, capacity or range
Physical elements		
Physical element 1	Figure X	
Physical element 2	Figure X	
Construction elements		
Construction element 1	Figure X	
Construction element 2	Figure X	
Operational elements		
Operational element 1	Figure X	
Operational element 2	Figure X	

6 | June 2023

Template
Environmental Review Document

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template - Environmental Review Document.docx

Proposal elements with greenhouse gas emissions		
Construction elements:		
	Scope 1	
	Scope 2	
	Scope 3	
Operation elements:		
	Scope 1	
	Scope 2	
	Scope 3	
Rehabilitation		
details		
Commissioning		
details		
Decommissioning		
details		
Other elements which affect extent of effects on the environment		
Proposal time*	Maximum project life	
	Construction phase	
	Operations phase	
	Decommissioning phase	

** Proponents should only provide realistic timeframes to avoid unnecessary change to proposal applications at referral (section 38C), assessment (section 43A) or post assessment (section 45C).*

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ERD contents: ***impacts, mitigation and environmental outcomes***

Table 3: Summary of potential impacts, proposed mitigation and proposed environmental outcomes

Key environmental factor 1	
Potential impacts	
Mitigation hierarchy	Refer to Statement of environmental principles, factors and objectives, and aims of EIA for appropriate mitigation hierarchy
Residual impacts, including assessment of significance	
Proposed environmental outcomes	
Assessment of offsets (if relevant)	
Key environmental factor 2	
Potential impacts	
Mitigation hierarchy	
Residual impacts, including assessment of significance	
Proposed environmental outcomes	
Assessment of offsets (if relevant)	

Template

Environmental Review Document

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template - Environmental Review Document.docx

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ERD contents: ***other DMAs, consultation, object/principles of EPAct, EPA policy & guidance***

Table 4: Decision making authorities and processes

Decision-making authority	Legislation or Agreement regulating the activity	Approval required (and specify which proposal element the approval is related to)

Table 5: Other statutory decision-making process which can mitigate potential impacts on the environment

Environmental impact	How is the impact regulated by other decision- making process(es)?	Limit(s) of the decision-making process(es) to regulate the impact eg time limits, excluded operations	Likely environmental outcome of decision-making process(es), and consistency with EPA objective	Conditions, enforcement, and review process required by decision-making process(es)	Stakeholder engagement in decision-making process(es)

Table 6: Stakeholder consultation

Stakeholder	Date	Issues /topics raised	Proponent response / outcome

Table 7: Object and principles of the EP Act

Principle	Consideration
1. The precautionary principle	
2. The principle of intergenerational equity	
3. Principles relating to improved valuation, pricing, and incentive mechanisms	
4. The principle of the conservation of biological diversity and ecological integrity	
5. The principle of waste minimisation	
6. Description of how the object of the EP Act has been considered	

Table 8: Policy and guidance

Environmental Factor	EPA policy and guidance EPA and other State or Commonwealth policy or guidance, if relevant	Explain how the EPA policy and guidance has been considered
Key Environmental Factor 1		
Key Environmental Factor 2		

Template

Environmental Review Document

https://www.epa.wa.gov.au/sites/default/files/Forms_and_Templates/Template - Environmental Review Document.docx

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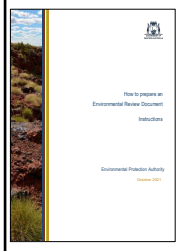
ERD contents: ***mitigation***

[apply mitigation hierarchy
(as explained in earlier session)
- EMPs covered in later session]



Instructions: how to prepare an ERD, pp 6-8

5. Mitigation

Apply the appropriate mitigation hierarchy as defined in the Statement of environmental principles, factors objectives and aims of EIA.

Outline proposed avoidance measures.

Describe any proposed minimisation measures.

- A description of any measures proposed to be implemented to minimise the impacts of the proposal on the environment must be included.
- A description of whether the proposed measures are industry standard and best practice, and the degree of certainty about their effectiveness.
- Note that the EPA's preference is for proposal impacts to be controlled by outcome-based conditions, rather than objectives-based Environmental Management Plans (EMPs) which include mitigation measures by way of management actions and targets.
- Objectives-based EMPs which include management actions to describe minimisation measures should therefore not be part of the ERD unless outcomes-based conditions are not practical, or where a management response matter is novel and so detailed explanation of how the impact will be managed is required. In these cases, the ERD should explain why the objectives-based EMP is being included.
- The EPA will also consider information about minimisation measures in an objectives-based management plan if minimisation measures are required to be contained in a plan by another decision-making authority for other proposal approvals.
- Any EMPs which are included must be prepared in accordance with *the Instruction and template: How to prepare Part IV Environmental Management Plans*

A description of how rehabilitation measures are proposed to be implemented to minimise the impacts of the proposal on the environment, and the likely environmental outcomes of this.

Discuss whether another statutory decision-making process can mitigate the potential environmental impacts of the proposal on the environment. If yes, provide reasons, including how, in relation to the specific potential impacts of the Proposal, and whether the EPA's objectives for relevant environmental factors are likely to be met through the decision-making processes. For further details on the matters the EPA may consider, see the Interim Guidance for taking decision-making processes into account in EIA.

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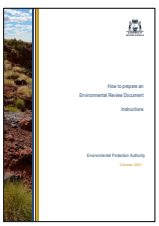
ERD contents: ***environmental outcomes***

[Note: we address environmental outcomes in later session]



Instructions: how to prepare an ERD, pp 7-8

7. Environmental outcomes

Identify the environmental outcomes proposed as a result of the implementation of the proposal. See *Interim Guidance: Outcomes and outcomes-based conditions* for guidance.

Discuss whether the proposed environmental outcomes are consistent with the EPA's objectives for environmental factors.

Discuss whether and how a proposed environmental outcome can be assured by any of the following:

- Another statutory decision-making process which can mitigate the specific potential impacts of the proposal on the environment to be consistent with the EPA's factor objectives
- Limit on the extent of the proposal
- Outcome-based conditions
- Objectives-based environmental management plan conditions (including explanation of why outcome-based conditions are not practical)
- Prescriptive conditions (see the Procedures Manual for detail on the EPA's environmental condition models).

Propose outcome-based condition/s (and other conditions, where relevant) for consideration by the EPA (optional).

Describe the proposed monitoring of any proposed environmental outcomes:

- Describe baseline environmental condition and proposed indicators, response actions, reporting and adaptive management approaches in relation to proposed environmental outcomes.
- This may be included in an outcomes-based Environmental Management Plan. It should include indicators, trigger criteria, threshold criteria, trigger level actions and threshold contingency actions consistent with the: EPA's *Instruction and template: How to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans*
- Where practical, proposed monitoring for specific environmental factors can be provided in the same outcomes-based Environmental Management Plan.

For significant amendments only: Include information about the existing implementation conditions relating to the approved proposal and whether the proponent considers they should be inquired into. This should include consideration of whether the existing implementation conditions are adequate to ensure the proposal's ongoing elements are consistent with the EPA's environmental factor objectives.

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4.1 Scoping

4.2 Environmental Review Document

- **Offsets**

Note: offsets also addressed in condition setting (later topic)

- Cumulative impact assessment
- Holistic impact assessment

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ERD contents: ***assessment of significance and offsets*** (i)

6. Assessment and significance of residual impact

Identify whether there are any residual impacts after application of the avoidance and minimisation elements of the mitigation hierarchy and whether these are significant.

Assess the significance of the impacts (direct, indirect, and cumulative) of the proposal on the environmental factor in a local and regional context. For guidance on what the EPA may have regard to in its consideration of 'significance' refer to the *Statement of environmental principles, factors objectives and aims of EIA*.

Assess impacts in all areas which may be affected by the implementation of the proposal. (If a development envelope has been proposed to provide flexibility as to the location of the ultimate proposal footprint, the assessment must be carried out for environmental impacts in all areas within the relevant development envelope where development may proceed, not just within, for example, any indicative proposal footprint).

Discuss any significant residual impacts that remain and identify if any offsets are proposed. Provide a summary of how the proposed offset will counterbalance the significant residual impact for the relevant factor. Note: Discuss detailed assessment of offsets in section 7).

For significant amendments only: Include information about the combined effects that implementation of the approved proposal and the significant amendment might have on the environment.

Instructions: how to prepare an ERD, pp 7-9

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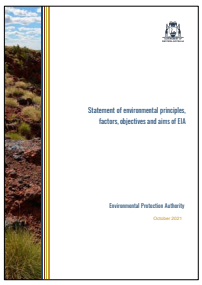
6 Consideration of significance

[repeat slide]

The EPA usually considers significance when deciding whether to assess proposals and schemes. The EPA also usually considers significance at most other stages in EIA. The terms 'significance', 'significant impact' and 'significant effect' are not defined in the Act. Therefore, the ordinary or everyday meanings of these terms apply. When considering these terms, the EPA may have regard to, and expects the proponent to have regard to, various matters, including:

1. the object and principles of the Act
2. values, sensitivity and quality of the environment which is likely to be impacted
3. all stages and components of the proposal (such as any infrastructure required for the proposal to be practicably implemented, or a proposal life cycle)
4. extent (intensity, duration, magnitude, and geographic footprint) of the likely impacts
5. resilience of the environment to cope with the impacts or change (including considering pressures such as climate change)
6. consequence of the application of the mitigation hierarchy to the proposal
7. consequence of the likely impacts (or change), including off-site impacts (such as impacts on a wetland from chemicals discharged into upstream river systems) and indirect impacts (such as reduced fish harvest due to decreased water quality)
8. likely environmental outcomes, and whether these are consistent with the EPA environmental factor objectives
9. cumulative effects, taking into account cumulative environmental impacts - the successive, incremental and interactive impacts on the environment of a proposal with one or more past, present and reasonably foreseeable future activities
10. holistic impacts – connections and interactions between impacts, and the overall impact of the proposal on the environment as a whole
11. level of confidence in the prediction of residual impacts and the success of proposed mitigation Further guidance on the mitigation hierarchy is in the following section
12. public interest about the likely effect of the proposal or scheme, if implemented, on the environment, and relevant public information.

The application of the significance test is on a case-by-case basis.



EPA 2021, p7
http://www.epa.wa.gov.au/statement-environmental-principles-factors-and-objectives

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Four levels of significance for residual impacts

Unacceptable impacts – those impacts which are environmentally unacceptable or where no offset can be applied to reduce the impact…

Significant impacts requiring an offset …

Potentially significant impact which may require an offset – the residual impact may be significant depending on the context …

Impacts which are ***not significant*** – …and therefore do not require an offset.

Govt of WA 2014,WA Environmental Offsets Guidelines August 2014, p9
http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA Environmental Offsets Guideline August 2014.pdf

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ERD contents: ***assessment of significance and offsets*** (ii)

Offsets

Refer to the relevant guidance for further information on offsets:

- *Statement of environmental principles, factors, objectives and aims of EIA*
- Environmental factors: WA Environmental offsets policy and WA environmental offset guidelines.
- Greenhouse Gas Emissions factor: State Emissions Policy and *Environmental Factor Guideline – Greenhouse Gas Emissions*.

Offsets are not appropriate for all proposals. They should usually only be considered as the final step in the mitigation hierarchy, and only for significant residual impacts for environmental factors.

Proponents must provide sufficient evidence about and assess whether (and how) an offset is likely to counter-balance a significant residual impact. Conclusions about this cannot be based on assumptions or conjecture. Identify and quantify the significant residual impacts and proposed offsets, including completing the offset template (an example is in Appendix 1 of the WA Offsets Guidelines) and the residual impact significance model table (an example is on Page 11 of the WA Environmental Offsets Guideline).

Provide details of the proposed offset including but not limited to:

- objectives and outcomes
- description of actions to be undertaken
- specific and measurable success criteria
- timelines and milestones
- monitoring to assess offset implementation
- reporting details and timing
- financial arrangements
- risks and contingency measures
- governance arrangements including responsibilities and legal obligations.

Provide evidence of consultation on offset with relevant stakeholders.

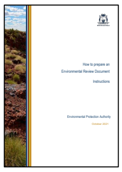
Assess whether and how the proposed offset will counterbalance the significant residual impact.

Demonstrate consideration of the six Principles outlined in the WA Environmental Offsets Policy and WA Environmental Offset Guideline.

Outline how the offset aligns with relevant plans and policies, such as recovery plans.

Evidence that supports the success or viability of the offset (include as an appendix where required).

For proposals within the Pilbara region also provide an Impact Reconciliation Procedure, including the relevant spatial data, prepared in accordance with *Instructions: Preparing Impact Reconciliation Procedures and Impact Reconciliation Reports* (or any subsequent revisions).



Instructions: how to prepare an ERD, pp 7-9

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Offsets principles (WA Env Offsets Policy 2011, pp2–3)

1. only considered after avoidance and mitigation
2. not appropriate for all projects
3. cost-effective, relevant, proportionate to env significance
4. based on sound knowledge
5. adaptive management
6. long term strategic outcomes

Principles for the use of environmental offsets

Offsets are a component in the Western Australian Government's broader approach to the environment. Environmental offsets will be used as a last resort, after due consideration of avoidance and mitigation measures.

In this context, the Western Australia Government's assessment and decision-making processes in relation to the use of environmental offsets are underpinned by these principles.

1 **Environmental offsets will only be considered after avoidance and mitigation options have been pursued.**

Environmental offsets address environmental impacts that remain after on-site avoidance and mitigation measures have been undertaken. Environmental offsets will not be considered in the absence of proposed strategies to avoid and mitigate environmental impacts.

A degree of flexibility will be applied towards the use of environmental offsets. In determining the type of environmental offsets, emphasis will be placed on realising real and sustainable environmental outcomes through a combination of avoidance, mitigation as well as direct and indirect environmental offsets.

Page 2

2 **Environmental offsets are not appropriate for all projects.**

Environmental offsets are not appropriate in all circumstances. The applicability of offsets will be determined on a project-by-project basis. While environment offsets may be appropriate for significant residual environmental impacts, they will not be applied to minor environmental impacts.

3 **Environmental offsets will be cost-effective, as well as relevant and proportionate to the significance of the environmental value being impacted.**

Environmental offsets relate to the environmental value that is being impacted. In some instances it may be necessary to offset a value with a similar, but not identical, value.

Environmental offsets should be proportionate to the significance of the environmental value being impacted with a preference for cost-effective solutions.

4 **Environmental offsets will be based on sound environmental information and knowledge.**

Proposals for the use of environmental offsets should be underpinned by sound information and knowledge. The information should be credible and capable of scrutiny to support transparent and accountable decision-making.

5 **Environmental offsets will be applied within a framework of adaptive management.**

An adaptive management framework should be applied in relation to environmental offsets to take account of the potential risks. The risks associated with environmental offsets include the uncertainty in predicting environmental impacts on biodiversity and managing any time-lag between establishing offsets and generating the anticipated benefits.

Adaptive management should ensure there are mechanisms in place to take account of these risks and other potential unintended consequences which may arise.

6 **Environmental offsets will be focussed on longer term strategic outcomes.**

Page 3

https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WAEnvOffsetsPolicy-270911.pdf

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The EPA (2023) strategic plan – regional offsets

https://www.epa.wa.gov.au/sites/default/files/EPA Strategic Plan 2023-2026_0.pdf

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Offsets, mitigation hierarchy and significance

Figure 2 shows how the mitigation hierarchy applies to reduce the residual impact before its significance is assessed to determine whether or not an offset is required.

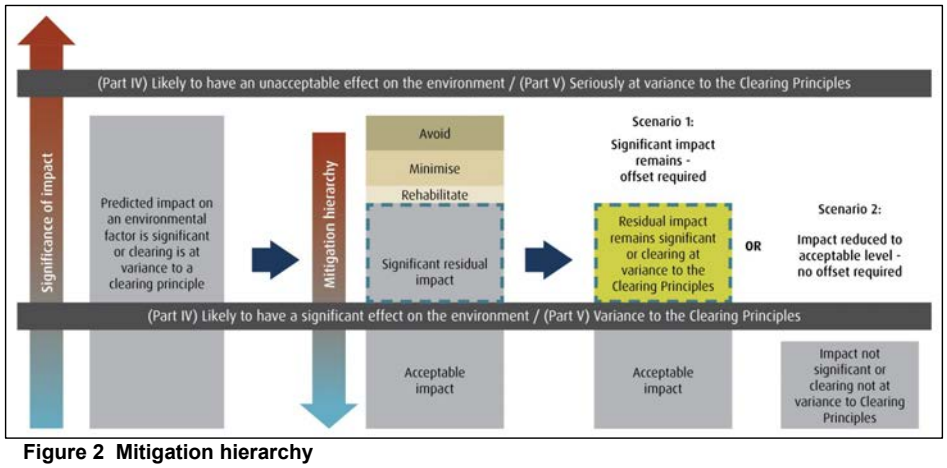

Figure 2 Mitigation hierarchy

Govt of WA 2014, *WA Environmental Offsets Guidelines*, August 2014, p7
http://www.epa.wa.gov.au/policies-guidance/wa-environmental-offsets-policy-2011-and-guidelines

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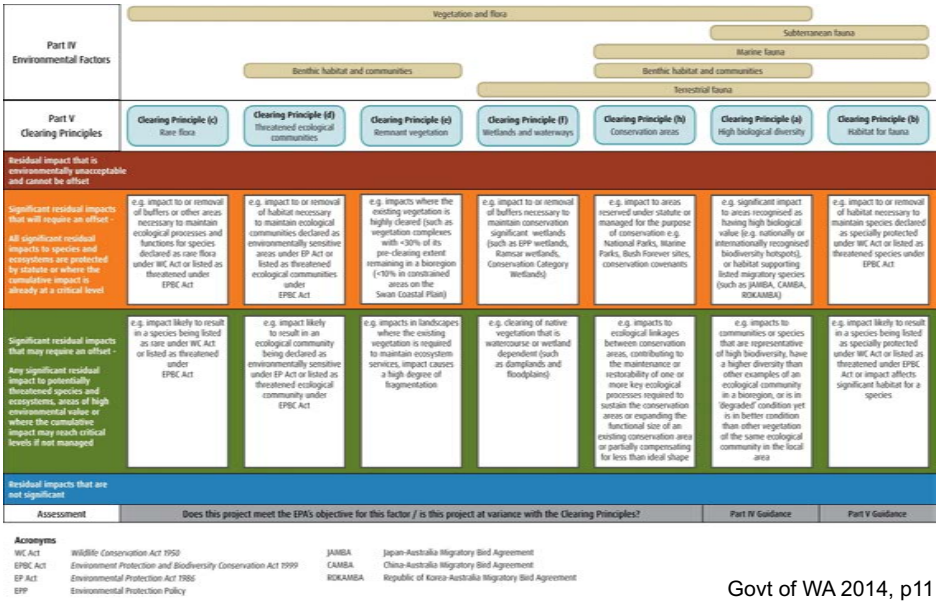
Figure 3 Residual Impact Significance Model

August 2014 | WA Environmental Offsets Guidelines 11



Govt of WA 2014, p11

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Offsets calculation guide


Environmental offsets metric: Quantifying environmental offsets in Western Australia

Department of Water and Environmental Regulation
October 2021

Contents

https://www.wa.gov.au/sites/default/files/2021-10/DWER_Environmental_offsets_metric_Quantifying_environmental_offsets_in_WA.pdf

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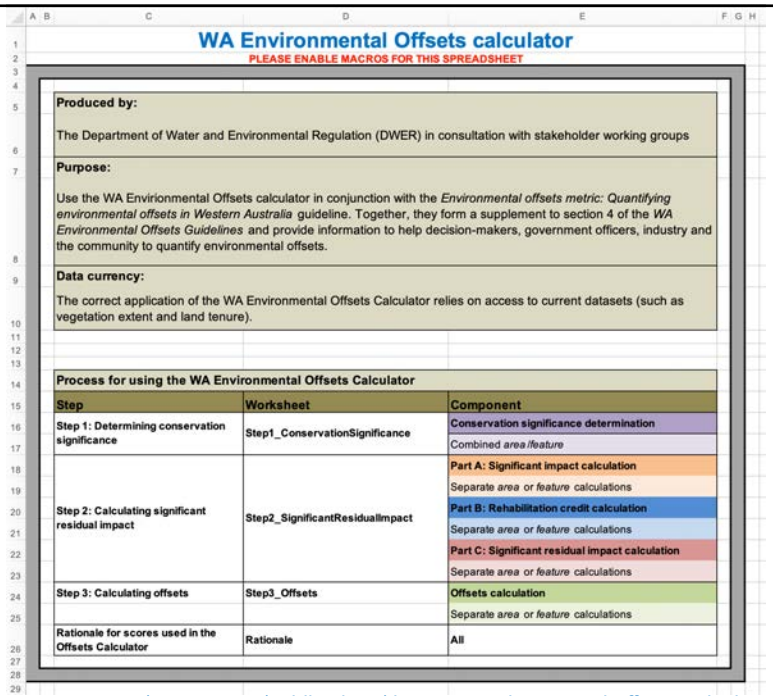

WA Environmental Offsets calculator

PLEASE ENABLE MACROS FOR THIS SPREADSHEET

Produced by:

The Department of Water and Environmental Regulation (DWER) in consultation with stakeholder working groups

Purpose:

Use the WA Envirionmental Offsets calculator in conjunction with the *Environmental offsets metric: Quantifying environmental offsets in Western Australia* guideline. Together, they form a supplement to section 4 of the *WA Environmental Offsets Guidelines* and provide information to help decision-makers, government officers, industry and the community to quantify environmental offsets.

Data currency:

The correct application of the WA Environmental Offsets Calculator relies on access to current datasets (such as vegetation extent and land tenure).

Process for using the WA Environmental Offsets Calculator

Step	Worksheet	Component
Step 1: Determining conservation significance	Step1_ConservationSignificance	Conservation significance determination
		Combined *area* /*feature*
Step 2: Calculating significant residual impact	Step2_SignificantResidualImpact	Part A: Significant impact calculation
		Separate *area* or *feature* calculations
		Part B: Rehabilitation credit calculation
		Separate *area* or *feature* calculations
		Part C: Significant residual impact calculation
		Separate *area* or *feature* calculations
Step 3: Calculating offsets	Step3_Offsets	Offsets calculation
		Separate *area* or *feature* calculations
Rationale for scores used in the Offsets Calculator	Rationale	All

https://www.wa.gov.au/government/publications/dwer-wa-environmental-offsets-calculator

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4.1 Scoping

4.2 Environmental Review Document

- Offsets
- **Cumulative impact assessment**
- Holistic impact assessment

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The EPA (2023) strategic plan on cumulative and holistic impact assessment

https://www.epa.wa.gov.au/sites/default/files/EPA Strategic Plan 2023-2026_0.pdf

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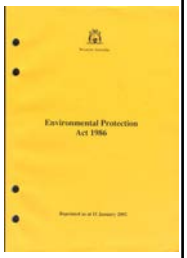
EPAct 1986 – s3

3. Terms used in this Act

…

(1B) A reference in this Act to the effect of a proposal on the environment includes a ***reference to the cumulative effect of impacts of the proposal on the environment***.

[Section 3(1B) inserted by No. 40 of 2020 s.4(7).]



EPAct s3(1B)

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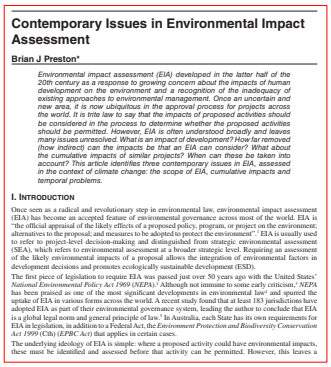
EIA, cumulative impact & significance…

EIA traditionally has struggled to deal with the problem of a ***"death by a thousand cuts", isolating and ignoring individually minor impacts*** that ***cumulatively have a significant impact*** on the environment. (Preston, 2020, p424)



Contemporary Issues in Environmental Impact Assessment

Brian J Preston*

Environmental impact assessment (EIA) developed in the latter half of the 20th century as a response to growing concern about the impacts of human development on the environment and a recognition of the inadequacy of existing approaches to environmental management. Once an uncertain and new area, it is now ubiquitous in the approval process for projects across the world. It is trite law to say that the impacts of proposed activities should be considered in the process to determine whether the proposed activities should be permitted. However, EIA is often understood broadly and leaves many issues unresolved. What is an impact of development? How far removed (how indirect) can the impacts be that an EIA can consider? What about the cumulative impacts of similar projects? When can these be taken into account? This article identifies three contemporary issues in EIA, assessed in the context of climate change: the scope of EIA, cumulative impacts and temporal problems.

I. INTRODUCTION

Once seen as a radical and revolutionary step in environmental law, environmental impact assessment (EIA) has become an accepted feature of environmental governance across most of the world. EIA is "the official appraisal of the likely effects of a proposed policy, program, or project on the environment; alternatives to the proposal; and measures to be adopted to protect the environment".[1] EIA is usually used to refer to project-level decision-making and distinguished from strategic environmental assessment (SEA), which refers to environmental assessment at a broader strategic level. Requiring an assessment of the likely environmental impacts of a proposal allows the integration of environmental factors in development decisions and promotes ecologically sustainable development (ESD).

The first piece of legislation to require EIA was passed just over 50 years ago with the United States' *National Environmental Policy Act 1969* (*NEPA*).[2] Although not immune to some early criticism,[3] NEPA has been praised as one of the most significant developments in environmental law[4] and spurred the uptake of EIA in various forms across the world. A recent study found that at least 183 jurisdictions have adopted EIA as part of their environmental governance system, leading the author to conclude that EIA is a global legal norm and general principle of law.[5] In Australia, each State has its own requirements for EIA in legislation, in addition to a Federal Act, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (*EPBC Act*) that applies in certain cases.

The underlying ideology of EIA is simple: where a proposed activity could have environmental impacts, these must be identified and assessed before that activity can be permitted. However, this leaves a

[International perspective]

Preston B (2020) Contemporary Issues in EIA, *Environmental Planning and Law Journal*, **37**: 423–442

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Cumulative environmental impacts (WA defn)

Cumulative environmental impacts are the ***successive, incremental and interactive impacts*** on the environment of a proposal ***with one or more past, present and reasonably foreseeable future activities***.

The EPA expects (and may provide guidance on) ***scoping*** on the activities, boundaries and environmental values ***relevant to assessment of cumulative environmental impacts*** for relevant environmental factors during:

- the pre-referral stage; and/or
- the environmental scoping stage, for proposals that require an Environmental Review Document.

Note: ***Past activities should be acknowledged in EIA but do not need to be individually assessed if their impact is incorporated by consideration of the receiving environment***.

Note: Reasonably foreseeable future activities are defined below.

EIA Procedures Manual 2021, Definitions: p66

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

https://www.epa.wa.gov.au/forms-templates/instructions-how-prepare-environmental-scoping-document

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[International perspective]

"Cumulative effects assessment, in my view, is merely EIA done right" (Duinker, 1994, p11)

4 broad steps (derived from Blakley, 2021, p7):

- Scoping: Identify valued components (VCs) and stressors, geographic and temporal boundaries
- Retrospective analysis: Identify current status of VCs, trends
- Predictive analysis: Predict the likely state of VCs under future development scenarios and evaluate significance
- Decision-making, monitoring and management

Duinker P.N. 1994. Cumulative effects assessment: What's the big deal? in A. J. Kennedy (ed.), *Cumulative effects assessment in Canada: From concept to practice*. Papers from the Fifteenth Symposium Held by the Alberta Society of Professional Biologists, Alberta Society of Professional Biologists, Edmonton, pp.11–24

Blakley J (2021) Introduction: Foundations, issues and contemporary challenges in cumulative impact assessment, in: Blakley J and D Franks (eds) *Handbook of Cumulative Impact Assessment*, Cheltenham: Edward Elgar, pp2–20.

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[International perspective]

Step 1: Scoping considerations (i)

- Identify valued components (= *preliminary environmental factors*)
  - Not all values scoped into the EIA will be cumulatively impacted
  - Some values may not be significant for the proposal alone but might be significant cumulatively if approaching threshold (Wentworth Group, 2023)
  - Scoping requires some understanding of the current conditions to know which values might be of concern (see Step 2)

Wentworth Group of Concerned Scientists (2023). *Preventing death by a thousand cuts: Addressing cumulative impacts to matters of national environmental significance (MNES) through reforms to the EPBC Act.* https://wentworthgroup.org/2023/10/preventing-death-by-a-thousand-cuts/

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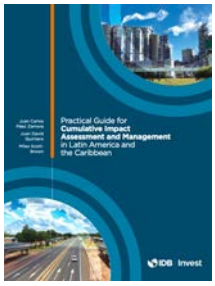
[International perspective]

Step 1: Scoping considerations (ii)

(Zamora, et al., 2022)



- Establish spatial boundaries, considering:
  - geographic range of the value (esp. fauna);
  - project activities (and impact pathways);
  - ecosystem boundaries (e.g. watersheds);
  - political boundaries (e.g. TO Country)
  - **Boundaries may be different for each value**
- Establish temporal boundaries
  - How far back? - relates to baseline/benchmarks for assessment
  - How far forward? - relates to 'reasonably foreseeable'
- Identify reasonably foreseeable future pressures
  - 'Reasonably foreseeable' defined in Procedures Manual

Zamora J, Quintero, J and Scott-Brown M. (2022) *Practical Guide for Cumulative Impact Assessment and Management in Latin America and the Caribbean*, Inter-American Investment Corporation, https://idbinvest.org/en/download/19891

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Reasonably foreseeable future activities (WA defn)

Third party (or proponent) ***activities which are already approved***, are ***in a government approvals process***, or ***are otherwise reasonably likely to proceed***:

- for proposals assessed at the level of environmental review – at the time an Environmental Review Document for a proposal is accepted; or
- for proposals assessed at the level of assessment on referral information – at the time the final referral or required additional information is accepted; and
- ***existing activities that are reasonably expected to be ongoing***

EIA Procedures Manual 2021, Definitions: p68

Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual

https://www.epa.wa.gov.au/forms-templates/instructions-how-prepare-environmental-scoping-document

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[International perspective]

Step 2: Retrospective analysis (baseline) considerations (Therivel & Ross, 2007)

- What is the current state of the environment, which values are of concern, and how did we get here?
- Should include information on current status (against a benchmark if possible), trends, comparison with other locations, impact pathways
- Should provide a narrative not just data Necessary to be able to finalise scoping (which values to include)
- Current conditions ≠ baseline for CIA (or really for EIA in general)

Baseline shift: for individuals, baseline is status of env. that existed at start of their careers. As loss/change of environ resources occurs over time, so too does the "accepted" baseline (McCold & Saulsbury, 1996).

McCold L.N. and J.W. Saulsbury (1996), 'Including Past and Present Impacts in Cumulative Impact Assessments', *Environmental Management*, **20**(5), 767–776.
Therivel, R., & Ross, B. (2007). Cumulative effects assessment: Does scale matter? *Environmental impact assessment review,* **27**(5), 365-385.

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[International perspective]

Step 3: Predictive analysis considerations

- Predict the likely state of values arising from the proposal plus other reasonably foreseeable activities
  - Methods will depend on value and pathways
- Need to predict both total impact and incremental impact of proposal:
  - "Therefore, although the total cumulative effect on a VEC due to many actions must be identified, the CEA must also make clear to what degree the project under review is alone contributing to that total effect. Regulatory reviewers may consider both of these contributions in their deliberation on the project application" (Hegmann et al, 1999, p10).
- Assess significance against an appropriate benchmark

Hegmann, G., Cocklin, C., Creasey, R., Dupuis, S., Kennedy, A., Kingsley, L, W. Ross, W., Spaling, H. and Stalker, D. (1999). *Cumulative effects assessment practitioners guide.* Canadian Environmental Assessment Agency, available: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=5ef313ed3e61f5e4cc8d28f08edefad0a8004ec8

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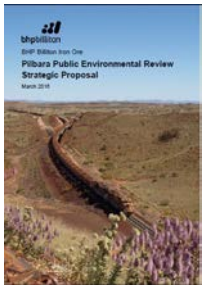
Prediction of cumulative impacts

Techniques for the prediction step will depend on the factor (just like for EIA in general), e.g.:

- Flora and vegetation might be ***additive***
- Air quality might require emissions ***modelling***
- Other factors may require a more ***systemic understanding***, e.g. pressure/state/response analysis or network analysis



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[International perspective]

Assessing significance – what benchmark are we assessing against?

- The current state of the environment?
  - Typical of project-level EIA
  - 'Shifting baseline' problem
- Pre-development conditions
  - Often applied in regional CIA
  - But challenging to back-cast
- A management objective
  - Reflecting that it may not be possible or even desirable to return to an historic baseline
- An ecological threshold/tipping point
  - If it can be determined
- Need for guidance on this (Masden et al, 2010)

[Note: For Alkimos, the Water Corp compared impacts on flora/vege and landforms to pre-European baseline (e.g. see PER)]

Masden, E. A., Fox, A. D., Furness, R. W., Bullman, R., & Haydon, D. T. (2010). Cumulative impact assessments and bird/wind farm interactions: Developing a conceptual framework. *Environmental Impact Assessment Review,* **30**(1), 1-7.

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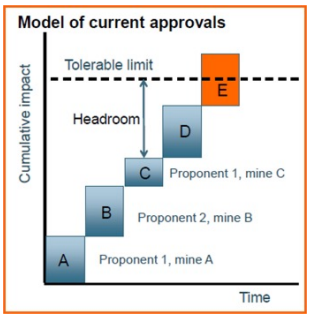
[International perspective]

Step 4: Decision-making, monitoring, management considerations

- Should the proposal be approved if cumulative impacts unacceptable? (Wentworth Group says no) – Equity?
- How to set outcome-based conditions for cumulative impacts
- "Cumulative effects require cumulative solutions" (Therivel & Ross, 2007, p371)
- But proponents can't manage impacts beyond their own projects (Hegmann and Yarranton, 2011)
- Potential to modify conditions on one proposal to make room for another?



Hegmann, G., & Yarranton, G. A. (2011). Alchemy to reason: Effective use of Cumulative Effects Assessment in resource management. *EIA Review,* **31**(5), 484-490.
Therivel, R., & Ross, B. (2007). Cumulative effects assessment: Does scale matter? *EIA review,* **27**(5), 365-385.

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EPA in process of developing guidance...

3. Local and regional context

Discuss how the proposal fits within the region in relation to other developments, the existing environment, and environmental assets such as conservation reserves and RAMSAR wetlands.

Include local and regional context in proposal location figure.

4. Potential environmental impacts

Quantify the potential impacts (direct, indirect and cumulative) on the environmental values (including MNES if relevant) for this factor in a local and regional context, using actual data and predictions.

Include tables and other information showing impacts (in absolute and relative (%) terms) as follows:

- Known extent of the existing environmental value in both a local and regional context
- Direct impact of this proposal to the existing environmental value
- Indirect impact of this proposal to the existing environmental value
- Total of the direct and indirect impact of this proposal to the existing environmental value
- Total (direct and indirect) impact of other proposals to the environmental value
- cumulative environmental effects - (see *Statement of environmental principles, factors and objectives, and aims of EIA*).

Include impacts in all areas which may be affected by the implementation of the proposal; for example, if an indicative footprint has been proposed in order to seek flexibility in locating the proposal footprint during implementation, include consideration of impacts in all areas which may be subject to a final footprint, not just impacts within the indicative footprint.

Provide a map (Template Figure 3) showing the extent of the environmental value (including MNES if relevant) overlaid by the development envelope and the direct and indirect impacts.

Cumulative environmental impact assessment

Provide a cumulative environmental impact assessment of the proposal. Cumulative environmental impacts are the successive, incremental and interactive impacts on the environment of a proposal with one or more past, present and reasonably foreseeable future activities. Refer to the EPA's *Procedures Manual* for further information on reasonably foreseeable future activities.

A summary of cumulative impact assessment can be provided in this section if it has been completed as part of the potential and residual environmental impacts assessment above.

In the meantime, some details come in ERD instructions…

Instructions: how to prepare an ERD, pp 4-6 & 10

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[International perspective]

An alternative to project-by-project (proponent-led) cumulative impact assessment

In recognition of the complexity of pathways and synergistic nature of cumulative effects, it is now acknowledged that cumulative effects assessment (CEA) ***requires a more regionally focused and science-driven approach*** *than what is currently practiced…* (Westbrook & Noble, 2013, p318)

Westbrook C. and B. Noble (2013),
'Science requisites for cumulative effects assessment for wetlands',
Impact Assessment and Project Appraisal, **31** (4), 318–323.

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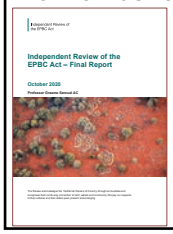
Landscape scale approach to cumulative impact assessment

8.2.2 A greater focus on regional planning

The EPBC Act should be amended to ***enable adaptive regional planning approaches*** that reflect National Environmental Standards. These amendments, together with a commitment to make and implement plans, are necessary to ***support a fundamental shift in focus from project-by-project development transactions***, to effectively planning at the right scale for a sustainable environment and for sustainable future development.

Regional plans would consider cumulative impacts ***and key threats and build environmental resilience*** in a changing climate ***by addressing cumulative risks at the landscape scale***. Managing these threats to matters of national environmental significance (MNES) at the regional scale will have flow-on benefits for more common species and biodiversity more broadly.

(Samuel, 2020, p132)



More on this later

Samuel G, (2020) *Independent Review of the EPBC Act – Final Report October 2020*, https://epbcactreview.environment.gov.au/resources/final-report

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EPA report on Alkimos ("other advice" p91)

7 Other Advice

This assessment, like other assessments in the Perth metropolitan area, highlights the challenges of continuing development on the Swan Coastal Plain, and in particular the challenge to ensure EPA factor objectives can be met for individual proposals when cumulative effects on certain key environmental values are already significant.

Large infrastructure proposals in the Perth metropolitan area are often located in sensitive environments where the cumulative loss of native vegetation and threatened fauna habitat is a key issue. In the absence of a landscape and regional approach to environment protection, the EPA will continue to consider these proposals through case-by-case assessment processes with individual offset requirements.

One example highlighted through this assessment is the incremental effect of proposals on black cockatoo habitat. The declining availability of suitable land that provides high quality habitat for offsets, together with the increasingly fragmented ecosystems of the Swan Coastal Plain, means that the piecemeal acquisition of land as offsets for individual proposals is unlikely to be a sustainable regional strategy for black cockatoos. The EPA has previously advised that there should be greater emphasis on rehabilitation and restoration of degraded areas within close proximity of the impacted area to increase or improve the habitat available for Carnaby's cockatoo.

https://www.epa.wa.gov.au/sites/default/files/EPA_Report/EPA Report 1739 - Alkimos Seawater Desalination Plant – Assessment report_0.pdf

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4.1 Scoping

4.2 Environmental Review Document

- Offsets
- Cumulative impact assessment
- **Holistic impact assessment**

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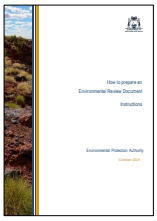
ERD contents: ***holistic impact assessment***

Holistic impact assessment

Where the combination of the environmental effect of two or more environmental factors or values has the potential to result in a significant impact, provide a holistic impact assessment of the proposal on the environment, applying the EPA's principles and the EPA's objectives for environmental factors:

- Outline the connections and interactions between environmental factors or values that in combination have the potential to have a significant effect on the environment.
- Provide a diagram of the links between environmental factors or values.
- Summarise the potential combined environmental effects.
- Summarise any additional mitigation measures proposed to mitigate combined environmental effects.
- Summarise any significant residual combined environmental effects.
- Summarise proposed additional environmental outcomes for the proposal on the environment as a whole, and (optional) any proposed conditions for consideration by the EPA.

Provide a summary of the environmental effect of the proposal on the environment as a whole (as distinct from a summary of the effect for each individual environmental factor or environmental value).



[Note: a holistic impact assessment is **different** from cumulative impact assessment!]

Instructions: how to prepare an ERD, p9

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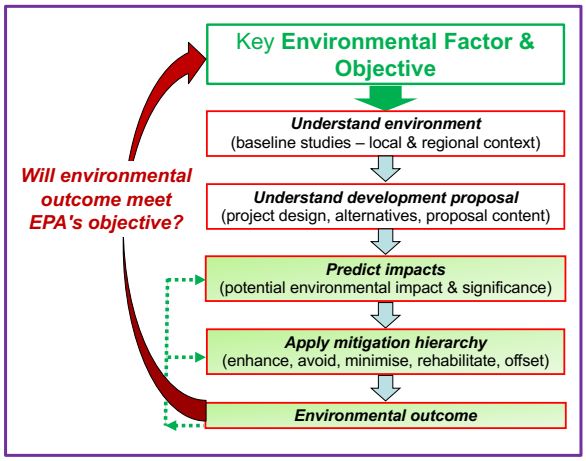
The normal EIA process in WA… (for individual factors)



This is a systematic and rigorous approach for each individual factor, but how should an overall proposal be assessed?

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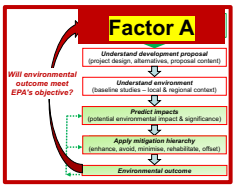
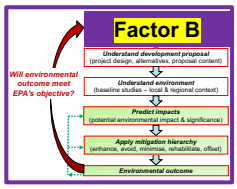
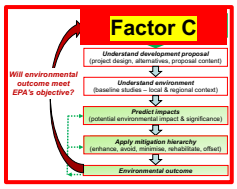
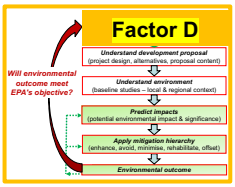
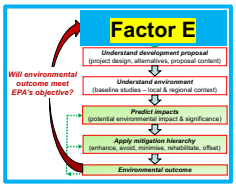
Challenge: How should all of the impacts and all of the factors be brought together?











A potential weakness with the EIA process … in WA is that it risks being reductionist. There is a danger that, ***by breaking each proposal down into discrete parts*** *and assigning environmental objectives to them,* ***it may not adequately represent overall environmental functions.*** (MS & B, 2000, p270)

Morrison-Saunders A & J Bailey (2000) Transparency in EIA Decision-Making: Recent Developments in Western Australia. *Impact Assessment & Project Appraisal*, **18**(4), 260–270

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Collective impacts: using systems thinking in project-level assessment

Alan Ehrlich

Mackenzie Valley Environmental Impact Review Board, Box 938, Yellowknife, Canada

[International perspective]

ABSTRACT

Systems thinking is a way to better assess the collective effects of impacts arising from an individual project. Organizational silos have led to individual project-specific impacts being assessed in isolation, often ignoring the systemic interactions between impacts from the same project. This myopic approach does not properly capture the interrelated collective and systemic impacts of individual developments. This paper explores the problem, looks at addressing it through systems thinking, provides practical examples, and reflects on what this means for impact assessment.

ARTICLE HISTORY

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Accepted 18 October 2021

KEYWORDS

Systems thinking; collective impacts; silos; integration; socio-ecological systems;

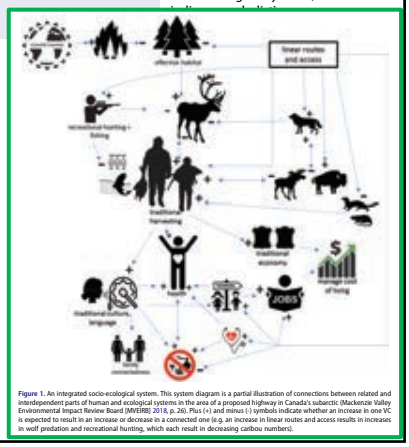

Figure 1. An integrated socio-ecological system. This system diagram is a partial illustration of connections between related and interdependent parts of human and ecological systems in the area of a proposed highway in Canada's subarctic (Mackenzie Valley Environmental Impact Review Board [MVEIRB] 2018, p. 26). Plus (+) and minus (-) symbols indicate whether an increase in one VC is expected to result in an increase or decrease in a connected one (e.g. an increase in linear routes and access results in increases in wolf predation and recreational hunting, which each result in decreasing caribou numbers).

Ehrlich A (2021) Collective impacts: using systems thinking in project-level assessment, *Impact Assessment and Project Appraisal*, **40**(2), 129–145. https://doi.org/10.1080/14615517.2021.1996901

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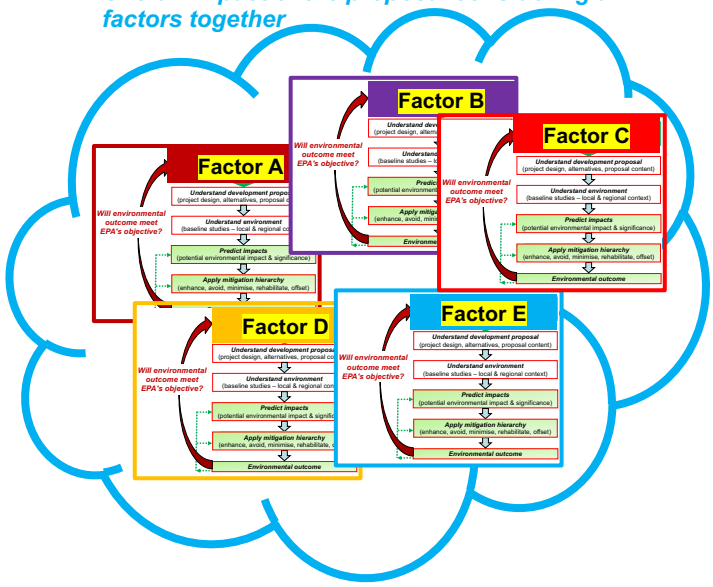
Holistic impact assessment

- *connections & interactions between all impacts*
- *Overall impact of the proposal considering all factors together*



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Example 1 – holistic impact assessment from Alkimos PER (pp 449–453)

16 Holistic impact assessment

As part of the EIA process, Water Corporation have commissioned numerous studies, to understand the marine and terrestrial environments and predicted impacts from the Proposal. The outcomes of these studies have assisted with the refinement of the Proposal, allowing for the application of the EPA's impact mitigation hierarchy (avoid, minimise, manage, monitor, rehabilitate and offset).

The predicted impacts and mitigation, as well as residual impacts for the Proposal have been summarised throughout this ERD for the key environmental factors (Marine Environmental Quality, BCH, Marine Fauna, Landforms, Flora and Vegetation, Terrestrial Fauna, Social Surrounds, Greenhouse Gas Emissions). The connections and interactions between the key environmental factors are also introduced. Interactions and connections are most evident for factors related to the marine (Marine Environmental Quality, Marine Fauna and BCH) and the terrestrial (e.g., Landforms, Flora and Vegetation and Fauna) environments.

Water Corporation have also considered the interactions between the environmental factors and detailed the predicted impacts in line with the EPA's principles and objectives (Table 3-1). These principles and objectives are predominantly associated with maintaining biodiversity, avoiding irreversible damage, where possible and reducing the severity of impacts through mitigation.

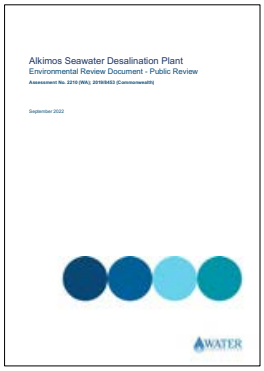
A conceptual model was also developed to demonstrate the interaction between the key environmental factors, predicted impacts and mitigation measures during the construction and operation phases of the Proposal for the marine (Figure 16-1) and terrestrial (Figure 16-2) environment. These figures highlight the scale, connections, and interactions of the components of the Proposal, while delineating where impacts will occur in respect to both spatial and time scales. Only those predicted impacts ranked as moderate or greater have been considered in this section.

The key impacts within the marine environment are associated with direct removal of BCH and changes to water quality. By positioning equipment in sand areas and maintaining an LEPA around the outfall impacts from the proposal are reduced to insignificant/slight.

Most of the key impacts relevant for the terrestrial component of the conceptual design refer to loss of vegetation during clearing. Following application of the mitigation hierarchy a residual impact will occur. Where a residual impact remains, an offset has been proposed (Section 15). The only predicted impacts that remained with a residual impact of moderate or greater following the implementation of mitigation measures were:

- Land disturbance and clearing of vegetation; and
- Land disturbance resulting in loss of fauna habitat and habitat fragmentation.

Cumulative impacts have also been considered by Water Corporation and are primarily associated with WWTP outfall and losses of BCH for the marine environment and surrounding land developments and associated clearing for the terrestrial environment. Marine studies have been undertaken to ensure the Proposal will not magnify current impacts to the area. The WWTP plume and outfall are unlikely to impact dilution and BCH losses will be minimal. Water Corporation will


Alkimos Seawater Desalination Plant
Environmental Review Document - Public Review
Assessment No. 2210 (WA); 2978/8433 [Commonwealth]
September 2022
WATER

aim to follow previously cleared area from other developments to minimise any additional clearing in the area as per the requirements of the precautionary principle.

Where residual impacts remain, environmental management and monitoring plans and associated frameworks (marine and terrestrial) will be developed as required, for the construction and operational phases. Water Corporation will also investigate offsets for loss of significant species/habitats and ecological communities. Water Corporation is also committed to choosing energy-efficient plant equipment in an effort to reduce GHG emissions.

The holistic impacts on the Proposal are considered to be low risk. However, there are some specific, localised high risk impacts due to the clearing required for the Proposal on threatened terrestrial fauna and TECs listed under the EPBC Act, that are considered high risk of having a significant impact from Proposal activities. Water Corporation are proposing to implement offset strategies, to offset these significant residual impacts from the Proposal.

A holistic impact assessment of the Proposal suggests that the environmental risk is acceptable and aligns with the EPA's principles and objectives. The majority of the Proposal impacts are able to be avoided, mitigated, or managed, following the EPA's mitigation hierarchy. In instances where this is not possible, Water Corporation will develop environmental offsets and/or environmental management plans. In addition, ongoing investigations such as geotechnical, dieback and weed surveys will enable refinement of mitigation and management measures in the future.

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Table 16-1: Summary of key environmental factors for the Proposal with predicted impact ratings (pre-mitigation) ranked as moderate or above, indicating mitigation and residual impact rankings

Key Environ. Factor	Interaction	Predicted Impact	Impact Ranking (pre-Mitigation)	Proposal Phase (C or O)	Mitigation (A, Mi, Ma, R, O)	Residual Impact Ranking (post-mitigation)	Offset	Monitoring
MEQ	MF, BCH, SS	Smothering / Physical damage (sedimentation)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MEQ	MF, BCH, SS	Stratification (leading to a potential reduction in dissolved oxygen)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
MEQ	MF, BCH, SS	Stressor effects (increased salinity & temperature)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
MEQ	MF, BCH, SS	Toxicity (Ro maintenance, cleaning and disinfection, shock chlorination)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
BCH	MF, MEQ, SS	Removal of BCH	4 - Major	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
BCH	MF, MEQ, SS	Smothering / Physical damage (sedimentation	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
BCH	MF, MEQ, SS	Stratification (leading to a potential reduction in dissolved oxygen	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
BCH	MF, MEQ, SS	Stressor effects (increased salinity & temperature)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
BCH	MF, MEQ, SS	Toxicity (RO maintenance, cleaning and disinfection, shock chlorination	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
MF	MEQ, BCH, SS	Changes in marine fauna behaviour/hearing damage (noise)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MF	MEQ, BCH, SS	Reduced light and smothering/stressor effects (elevated TSS)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MF	MEQ, BCH, SS	Injury/mortality of marine fauna (collision/entanglement)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MF	MEQ, BCH, SS	Loss of local biodiversity (introduction of IMS)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MF	MEQ, BHC, SS	Toxicity effects on marine fauna (introduction of toxicants)	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
MF	MEQ, SS, BCH	Stressor effects on marine fauna (increased salinity)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
MF	MEQ, SS, BCH	Toxicity effects on marine fauna (introduction of toxicants)	3 - Moderate	O	A, Mi, Ma	1 - Insignificant/slight	NR	COMEMP
L	F, F&V, SS	Loss of landform	3 - Moderate	C	A, Mi, Ma	1 - Insignificant/slight	NR	CMEMP/COMEMP
F&V	F, SS	Land disturbance and clearing of vegetation	5 - Significant	C	A, Mi, Ma, R, O	5 - Significant	Yes	CMEMP/COMEMP
F&V	F	Spread of dieback	3 - Moderate	C, O	A, Mi, Ma	2 - Minor	NR	CMEMP/COMEMP
F	F&V, SS	Land disturbance resulting in loss of fauna habitat and habitat fragmentation	5 - Significant	C	A, Mi, Ma, R, O	5 - Significant	Yes	CMEMP/COMEMP
F		Vehicle collision	3 - Moderate	C, O	A, Mi, Ma	2 - Minor	NR	CMEMP/COMEMP, AWPEMP
SS	F, GHG	Reduced amenity - increased noise and vibration	3 - Moderate	C	A, Mi, Ma, R	2 - Minor	NR	CMEMP/COMEMP
SS	F, F&V, L	Reduced amenity - increased dust	3 - Moderate	C	A, Mi, Ma, R	2 - Minor	NR	CMEMP/COMEMP
SS	F&V, F	Loss and/or damage to Aboriginal heritage values	5 - Significant	C	A, Mi, Ma, R	2 - Minor	NR	CMEMP/COMEMP
SS	GHG	Increased traffic (terrestrial vehicles)	3 - Moderate	C	A, Mi, Ma	2 - Minor	NR	CMEMP/COMEMP
GHG	F&V, MEQ, SS	Scope 2 Emissions	3 - Moderate	O	A, Mi, Ma	2 - Minor	NR	AWPEMP

Table Notes:
1. MEQ = Marine Environmental Quality
2. BCH = Benthic Communities and Habitats
3. MF = Marine Fauna
4. F&V = Flora and Vegetation
5. Fauna = Terrestrial Fauna
6. SS = Social Surrounds
7. GHG = Greenhouse Gas

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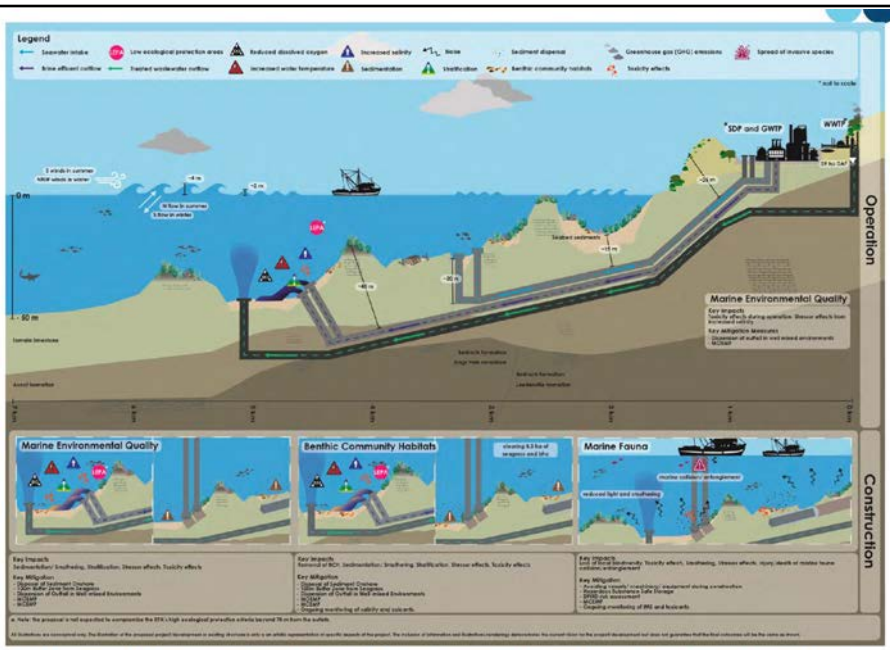

Figure 16-1: Conceptual model of the construction and operation of the marine works and infrastructure required for the Proposal and the interacting impacts on the key environmental factors.

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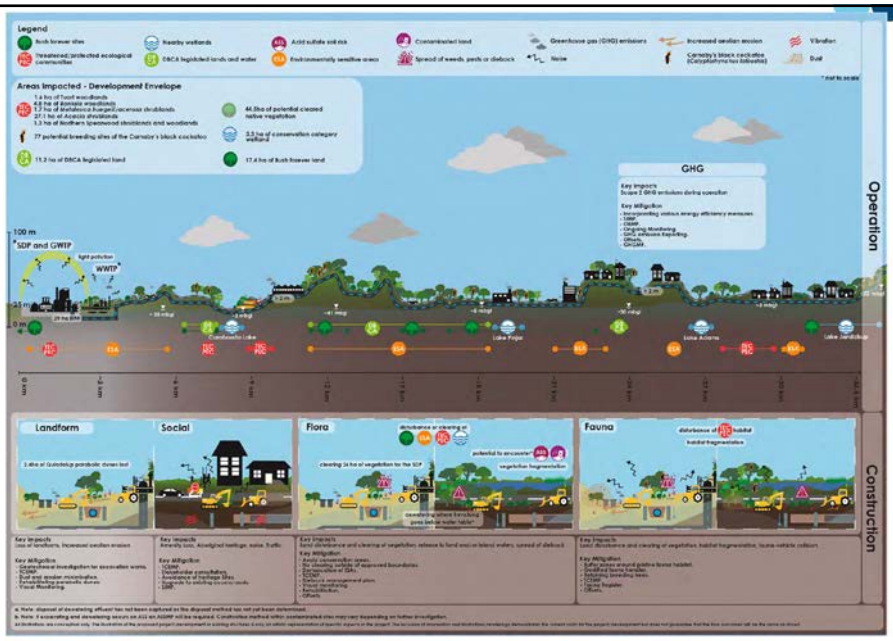

Figure 16-2: Conceptual model of the construction and operation of the Seawater Desalination Plant, Eglinton Groundwater Treatment Plant and Integrated pipeline required for the Proposal and the interacting impacts on the key environmental factors

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Holistic impact assessment from Alkimos EPA Report (pp 77-79)

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors and environmental values individually in the key factor assessments above, given the link between Flora and Vegetation, Terrestrial Fauna, Landforms, and Social Surroundings and between Marine Environmental Quality, Benthic Communities and Habitat and Marine Fauna, the EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole environment.

Figure 5 illustrates the connections and interactions between the key environmental factors and the relevant other environmental factors described in Appendix D, to inform the EPA's holistic assessment.

Figure 5: Intrinsic interactions between environmental factors

Benthic Communities and Habitat – Marine Environmental Quality – Marine Fauna

There is a recognised and established scientific link between impacts to marine environmental quality and the condition of the environment for benthic communities and habitat and marine fauna. Avoiding and minimising significant turbidity, stratification, and sedimentation effects during pipeline construction, and therefore maintaining the quality of marine waters is important in protecting the ecosystem health of environmental factors such as Benthic Communities and Habitat. This in turn supports other environmental values and beneficial uses for marine fauna such as whales, fish species, and invertebrates which rely on good marine water quality and healthy benthic communities and habitat.

The EPA also considers that by limiting the extent and timing of construction activities (installation of inlet and outlet pipelines), and the type of tunnelling

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proposed, the proponent has avoided significant environmental impacts to Marine Fauna and Benthic Communities and Habitats.

The EPA considers that the proposed mitigation and management measures and recommended conditions for impacts to marine environmental quality will also mean the inter-related impacts to the health of other factors of the environment including the values associated with marine fauna and benthic communities and habitat are likely to be consistent with the EPA environmental factor objectives.

Landforms - Flora and Vegetation – Terrestrial Fauna

There is a high level of connectivity between the environmental factors of Flora and Vegetation, Landforms, and Terrestrial Fauna. The flora and vegetation, which includes regionally significant native vegetation, provides stabilisation of the dune formations and habitat for threatened fauna, including Carnaby's cockatoo and forest red-tailed black cockatoo.

The EPA considers that the proposed mitigation and management measures, and recommended conditions to achieve the environmental outcomes, and offsetting of significant residual impacts to flora and vegetation will also mean the inter-related impacts to other environmental factors, including the values associated with Terrestrial Fauna and Landforms, will be consistent with the EPA environmental factor objectives.

Social Surroundings

There is a direct link between Aboriginal culture and the physical or biological aspects of the environment. Access to land, ability to carry out traditional Aboriginal customs and areas of cultural importance may be impacted through impacts to environmental factors of Flora and Vegetation, Terrestrial Fauna, and Landforms.

The EPA considers that the proposed mitigation and management measures and recommended conditions related to flora and vegetation, terrestrial fauna and landforms values will also mean the inter-related impacts to the values of social surroundings will likely be consistent with the EPA environmental factor objectives.

Greenhouse Gas Emissions

There is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will impact on Western Australia's environment and environmental values.

GHG emissions have the potential to impact on all other environmental factors through the effects of climate change.

The EPA considers that the proposed mitigation conditions to regulate GHG emissions will also mean that the impacts to other factors and values of the environment including the values associated with Flora and Vegetation, Marine Environmental Quality and Social Surroundings are likely to be consistent with the EPA environmental factor objectives.

Cumulative impact

This proposal will result in further fragmentation of fauna habitats and conservation significant ecological communities, and these cumulative impacts should be avoided, and assessed when avoidance is not possible.

The EPA has assessed the cumulative effects by considering the impacts of the proposal, and other projects in the local area, including the nearby Yanchep Rail Extension Part 1 and Part 2 projects.

The EPA notes that on a bioregional scale, implementation of this proposal would contribute to cumulative impacts through fauna habitat loss, and conservation significant community loss. However, the impacts are not to a level that would alter the likely environmental outcomes for the species or communities.

Summary of holistic assessment

When the separate environmental factors and values affected by the proposal were considered together in a holistic assessment, the EPA formed the view that the impacts from the proposal would not alter the EPA's views about consistency with the EPA's factor objectives as assessed in section 2.

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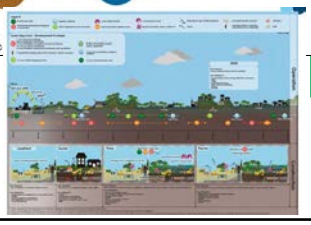
Discussion point

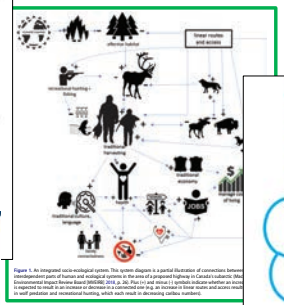
We have seen the current EPA approach (and others). Think about how else holistic impact assessment might be carried out.

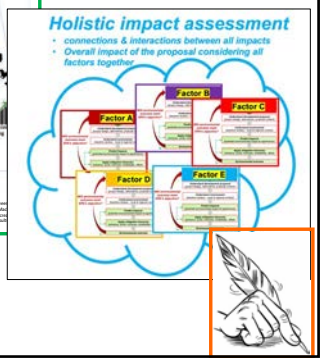
How would <u>you</u> assess the holistic impact of the Alkimos proposal?

Figure 5 illustrates the connections and interactions between the key environmental factors and the relevant other environmental factors described in Appendix D, to inform the EPA's holistic assessment.

Figure 5: Intrinsic







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