



Department of **Water**

Department of **Agriculture and Food**

Department of **Environment and Conservation**

Policy framework for inland drainage

December 2012

Policy Framework for Inland Drainage

Looking after all our water needs

Department of Water
December 2012

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The Government of Western Australia thanks the Wheatbelt Drainage Council members:

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Preface

In February 2007, the Government of Western Australia acknowledged, through a Cabinet direction statement that dryland salinity is complex and needed to be controlled with a range of management options.

Drainage and other engineering options are recognised as important elements of the ‘toolbox’ to manage salinity. However, these need to be undertaken strategically and not merely through relocating salinity and associated poor quality waters downstream. Although drainage and groundwater pumping for salinity control are regulated under the *Soil and Land Conservation Act 1945*, the Act did not clearly define the roles of all the participants of these schemes.

Policies were needed to clearly define the roles and responsibilities of drainage practitioners and other stakeholders in the industry, including regulators, to ensure that community expectations were met. This *Policy Framework for Inland Drainage* was developed to capture current policies and identify gaps. It includes principles for assessing drainage proposals and makes recommendations on how to streamline and integrate the assessment process between Government agencies.

The Wheatbelt Drainage Council (the Council) was established through Cabinet in February 2007 to undertake this work with set terms of reference and reported directly to the then Minister for Water Resources, the now Minister for Water. The Council delivered on their terms of reference in December 2009. During their term the Wheatbelt Drainage Council implemented a public engagement and consultation process consistent with Government guidelines for effective consultation and transparent decision making.

The *Policy Framework for Inland Drainage* was endorsed by the Western Australian Natural Resource Management Ministerial Council (WA NRMCC) which includes the Ministers for Water, Environment, Agriculture and Fisheries. Cabinet noted this endorsement in June 2012. This *Policy Framework for Inland Drainage* is based on the work undertaken by the Wheatbelt Drainage Council.

1 Policy Framework for Inland Drainage

1.1 Structure of the *Policy Framework for Inland Drainage*

A policy framework is defined here as: *a set of principles and long-term goals that form the basis for making rules and guidelines, and give overall direction to Government planning and policy development* (Source: adapted from BusinessDictionary.com).

The *Policy Framework for Inland Drainage* recognises that inland drainage is an option to achieve improved water resource and dryland salinity management outcomes. The framework is designed for those situations where a proponent, having examined their broad options for salinity management, has decided that drainage is an action that needs to be implemented to achieve their water and/or salinity management outcomes.

The policy framework (Sections 1.2 to 1.7) includes the following components:

- The aim of the policy framework
- Objectives for each of the four key areas that must be addressed to achieve the policy aim. These objectives relate to governance, risk management, planning and assessment and operation and maintenance.
- Principles to meet those objectives
- Implementation strategies consistent with the principles within the policy framework

1.2 Aim

To facilitate the use of drainage as an option to manage salinity and waterlogging in inland Western Australia.

This aim is to be achieved by addressing the key areas of governance, risk management, planning and assessment, and operation and maintenance.

1.3 Governance

1.3.1 Objective

To ensure appropriate governance procedures are in place before drainage construction commences.

1.3.2 Principles

1.3.2.1 *Transparency and consistency* – Governance of inland drainage schemes will be consistent with this policy framework and the decision-making process transparent.

1.3.2.2 *Acceptable environmental impacts* – Inland drainage should result in an overall environmental benefit.

- 1.3.2.3 *Sustainable outcome* – Inland drainage should result in a positive outcome, having consideration of all potential public and private, social, environmental and economic benefits and impacts.
- 1.3.2.4 *Adaptive management* – Inland drainage will embrace an adaptive management approach which is supported by effective monitoring and evaluation.
- 1.3.2.5 *Compliance* – Inland drainage shall comply with all relevant standards, legislation and regulations and be consistent with best management practice.
- 1.3.2.6 *Access arrangements* – Appropriate access arrangements to land for drainage construction, operation and maintenance will be established.
- 1.3.2.7 *Decision making including engagement* – Information and views from key stakeholders including landowners/managers will be considered during the decision-making process.
- 1.3.2.8 *Scale* – Different scales of inland drainage may require different approaches.
- 1.3.2.9 *Beneficiary contributes* – Beneficiaries should contribute towards planning, risk management, construction, operation and maintenance of drainage proposals.
- 1.3.2.10 *Public funding* – Where public investment is proposed it will be consistent with government policy.

1.3.3 Strategies

- 1.3.3.1 Clearly define present and future roles, responsibilities and structures for:
- policy development & delivery
 - catchment planning
 - assessment of proposals
 - project planning, implementation & management.

Note: The current roles and responsibilities for inland drainage are found in Table 1 in Appendix 1. The key roles and responsibilities for clarity of governance elements and to deliver the *Policy Framework for Inland Drainage* are found in Table 2 of Appendix 1. The identified roles and responsibilities, which represent key governance arrangements, acknowledge a significant shift in responsibility towards the proponent, particularly for project planning.

- 1.3.3.2 Use best-practice stakeholder engagement throughout the governance processes.
- 1.3.3.3 Where public funding is sought, proponents shall be required to show defensible estimates of costs and benefits. These costs and benefits shall not only be articulated in financial terms, but also in social and environmental terms. Identification of affected parties and beneficiaries shall be required.

1.4 Risk management

1.4.1 Objective

To ensure inland drainage achieves an overall improvement in the management of salinity and waterlogging and minimises adverse impacts on the environment and infrastructure.

1.4.2 Principles

- 1.4.2.1 *Managing Risks* – Risks should be identified, understood and managed. Where risks are not well defined monitoring and adaptive management is a valid approach to managing those risks.
- 1.4.2.2 *Appropriate investigation and planning* – Risk management decisions should be made on the basis of appropriate investigations concerning all options, including the risks associated with taking no action, to identify and address key risks to the community, environment and economy, including downstream impacts.
- 1.4.2.3 *Representative decision making* – Stakeholders including affected landowners should be given the opportunity to be involved in the decision-making process.

1.4.3 Strategies

- 1.4.3.1 Ensure all stakeholders including Federal, State and Local Government and land managers have ownership of the policy framework for inland drainage including roles and responsibilities.
- 1.4.3.2 Develop protocols for triple bottom line assessment.
- 1.4.3.3 Develop a strategy to address State, Local Government and land managers' capacity to research, plan, assess, construct, operate and govern.
- 1.4.3.4 Develop environmental criteria and/or targets for the management of discharge and the identification of disposal options.
- 1.4.3.5 Identify and analyse risks to infrastructure and other assets for the affected drainage proposal; including risks associated if no action is taken.

1.5 Planning and assessment

1.5.1 Objective

To ensure drainage proposals are adequately planned and assessed within an agreed process.

1.5.2 Principles

- 1.5.2.1 *Catchment management* – Inland drainage should be considered within an integrated catchment management framework, where drainage is considered as part of the total water cycle and the quality of drainage water is managed together with the quantity.

- 1.5.2.2 *Environmental assessment* – Predicted impacts, positive and negative, on the immediate and surrounding environment should be identified and described. Investigation and planning of the site and disposal areas shall be at a level appropriate to, and accurately represent, the scale, potential benefits and risk assessment/impacts of the drainage scheme.
- 1.5.2.3 *Public good* – The level of public good expected should be identified and commensurate with the scale and risk of the proposal.
- 1.5.2.4 *Best practice* – Inland drainage proposals shall demonstrate practice appropriate to the project scale and level of risks relevant to planning, design, consultation, construction and ongoing operation and management, including consideration of use and recycling of discharge water.
- 1.5.2.5 *Participation* – In line with best practice, individuals and stakeholders affected by drainage proposals should have an opportunity to participate in planning to express/represent their perspectives, promote understanding of these perspectives, identify issues to be addressed, reveal the level of support for the proposal and avoid adverse impacts.
- 1.5.2.6 *Funding* – Costs for design, construction, operation and maintenance shall be identified, allocated and agreed to for the life of the project.
- 1.5.2.7 *Governance* – Inland drainage proposals shall document proposed governance structures, including organisational and financial arrangements and outline intentions for detailed design, access, construction, operation and maintenance, monitoring and evaluation. This will include allocation of liabilities.
- 1.5.2.8 *Assessment* – Inland drainage proposals will be assessed using the precautionary principle.

The precautionary principle states that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, decisions should be guided by –

(a) careful evaluation to avoid serious or irreversible damage to the environment where possible

and

(b) an assessment of the risk-weighted consequences of various options.

(EPA Position Statement No 7: Principles of Environmental Protection, EPA, 2004)

Note: Principles for Drainage Proposal Assessment, found in Appendix 2, addresses the issues of sustainability and governance and must be addressed by proponents in preparing drainage proposals.

1.5.3 Strategies

- 1.5.3.1 Develop an improved assessment process for inland drainage proposals which can be implemented in the short term within the current *Soil and Land Conservation Act 1945*.
- 1.5.3.2 Identify and provide the skills, capability and resourcing needed for the improved planning and assessment process.
- 1.5.3.3 Compile existing catchment information and ensure information about receiving environments is available to stakeholders.
- 1.5.3.4 Identify, document and release best practice guidelines including methodologies for engineering design.
- 1.5.3.5 Develop guidelines for the preparation of inland drainage proposals which includes a checklist and indicative timing for assessment. Proponents should undertake pre-consultation with the assessment authority and outline:
- reporting requirements for the life of the project, including where necessary costs associated with decommissioning
 - agreed roles, responsibilities, scheduling and funding for all project stages
 - agreed arrangements for land tenure and access
 - indicative best practice designs and construction methodologies
 - the inclusion of an operation and management plan which outlines arrangements for governance, operation and maintenance of drains for the life of the project, including appropriate and ongoing monitoring, evaluation and contingency plans.
- 1.5.3.6 Identify the preferred future processes for the assessment of inland drainage proposals, including legislative changes required.
- 1.5.3.7 Document approval requirements, and develop a coordinated approach for inland drainage.
- 1.5.3.8 Develop guidelines, standards and targets for quality and quantity of discharge of drainage water.
- 1.5.3.9 Investigate options for accreditation, or best management practice guidelines for/of service providers, designers, contractors and/or assessors.

1.6 Operation and maintenance

1.6.1 Objective

To ensure the ongoing operation of inland drainage achieves better outcomes for the management of salinity, waterlogging and the environment.

1.6.2 Principles

- 1.6.2.1 *Ongoing management* – Operation, monitoring and reporting of performance is required to facilitate adaptive management responses and effective learning.
- 1.6.2.2 *Compliance* – The proponent of a drain shall carry out the ongoing operations and maintenance of the drain in a responsible manner, consistent with an agreed management plan.
- 1.6.2.3 *Adaptive management* – Modifications may be required to the design or operation of a drain to ensure achievement of performance objectives.

1.6.3 Strategies

- 1.6.3.1 Develop standard reporting methods to facilitate collection of appropriate performance monitoring data.
- 1.6.3.2 Use performance data to review and update best management practice information.
- 1.6.3.3 Use an applied science approach for research and development to review and update best management practice information.
- 1.6.3.4 Develop an appropriate data management system which facilitates audit of drainage performance as appropriate.

1.7 Definitions

The following definitions have been used within the draft policy framework.

Term	Definitions
Drainage	The facilitated removal of water from a given area consistent with the Soil and Land Conservation Regulations 1992.
Governance	How and by whom the planning and assessment, risk management and operation and maintenance of inland drainage is implemented.
Inland	The State of Western Australia excluding urban drainage areas or gazetted drainage districts.
Policy Framework	A set of principles and long-term goals that form the basis of making rules and guidelines, and to give overall direction to Government planning and development. (Source: adapted from BusinessDictionary.com)
Public good	The whole-of-community benefits that the project will bring which are over and above the benefit to the proponent(s).
Sustainability	Meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity.

Appendix 1 - Roles and responsibilities

Table 1 *Current roles and responsibilities in inland drainage*

Current	Policy	Who Does it	Who Pays	Public liability
Catchment planning	Department of Water	Department of Water	Department of Water	None
Project planning	Soil Commissioner	Government/ proponent	Government/ proponent	Plan certifier
Environmental Impact Assessment report – data collection /analysis	Soil Commissioner / Environmental Protection Authority (EPA)	Consultant/ government	Government	Report certifier
Decision/approvals/ assessment	Soil Commissioner / EPA	Soil Commissioner	Soil Commissioner	None (Leg)
Construction	Department of Agriculture and Food / Department of Water	Proponent	Proponent / Gov	Proponent / Gov
On-going management of the drain	Department of Agriculture and Food / Department of Water / local gov	Proponent / local gov(s)	Proponent / local gov(s)	Proponent / local gov(s)
M&E	Minister for Environment	Proponent /Government	Government	N/A
On-going compliance management	Soil Commissioner	Soil Commissioner	Soil Commissioner	N/A

Table 2 Roles and responsibilities to deliver the Policy Framework for Inland Drainage

Short-term implementation of Policy Framework	Policy	Who does it	Who pays	Public liability
Catchment planning	Department of Water/ Department of Environment and Conservation	Department of Water	Department of Water	None
Project planning	Soil Commissioner (NOID)	Proponent	Proponent	Plan certifier
Environmental Impact Assessment report – data collection/analysis	Soil Commissioner / Environmental Protection Authority (EPA)	Proponent	Proponent	Report certifier
Decision/approvals/assessment - final	Soil Commissioner / EPA	Soil Commissioner/ EPA	Soil Commissioner / EPA	None (Legislative)
Construction	Department of Agriculture and Food / Department of Water	Proponent	Proponent	Proponent
On-going management of the drain	Department of Agriculture and Food / Department of Water	Proponent / local government(s)	Proponent / local government(s)	Proponent / local government(s)
Monitoring & Evaluation	Department of Agriculture and Food / Department of Water / Minister for Environment/ Department of Environment and Conservation	Proponent	Proponent	N/A
On-going compliance management	Soil Commissioner	Soil Commissioner	Soil Commissioner	N/A

NOTE: The Minister for Environment may become involved where EPA is listed in the above table.

Appendix 2– Principles for drainage proposal assessment

In general, the *Principles for Drainage Proposal Assessment* address the issues of sustainability and governance. These principles must be addressed by proponents in preparing drainage proposals and assessors need to ensure that this has occurred.

The principles are applicable for drainage at all scales where the goal is the management of groundwater discharge. The detail required within an application will vary with the scale and type of drainage scheme proposed.

In applying these principles all drainage proposals must demonstrate that regard has been taken for the following:

- Transparency and consistency
- Acceptable environmental impact
- Public good
- Adaptive management
- Compliance
- Access arrangements and
- Precautionary principle.

The precautionary principle within the *Principles for Drainage Proposal Assessment* is:

Precautionary principle

Inland drainage proposals will be assessed using the precautionary principle.

The precautionary principle states that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, decisions should be guided by –

(a) careful evaluation to avoid serious or irreversible damage to the environment where possible: and

(b) an assessment of the risk-weighted consequences of various options.

(EPA Position Statement No 7: Principles of Environmental Protection, EPA, 2004)

This definition has been taken from the Environmental Protection Authority Position Statement No 7: Principles of Environmental Protection, EPA 2004.

Drainage principles

The following drainage principles shall guide the planning and assessment of drainage scheme proposals. These principles must be addressed by proponents in preparing drainage proposals and assessors need to ensure that this has occurred.

The principles are applicable for all scales of drainage that are built for the management of groundwater discharge. The required detail within an application will vary depending on the scale and type of drainage scheme proposed.

The objective of the drainage scheme shall be described in the proposal, which should be designed to deliver a sustainable outcome, be efficient and effective in managing salinity and waterlogging to benefit landholders and the environment.

§ Sustainability

Drainage proposals shall aim to have a sustainable outcome.

The proposal shall demonstrate the likelihood of improvement to the project area and aim to have a sustainable outcome. It shall aim to result in a positive triple bottom line outcome. This requires an assessment of all potential public, private, community, environmental and economic benefits and impacts.

- **Environmental** – Land owners may implement engineering methods to manage salinity and waterlogging provided environmental impacts (including downstream), on State, community and other land managers are properly assessed. Predicted impacts, positive and negative, on the environment should be identified and described within an integrated catchment management framework, where drainage is considered as part of the total water cycle.
- **Social** – The community should participate in planning to express/represent the range of perspectives, promote understanding of these, identify issues to be addressed, reveal the level of support for the proposal and avoid adverse impacts.
- **Economic** – Costs for design, construction, operation and maintenance are identified, allocated and agreed for the life of the project. The proposal should also demonstrate the economic benefits of the proposed scheme.

§ Governance

Drainage proposals shall document appropriate planning, governance, funding, construction, and management arrangements.

The proposal shall document proposed governance structures, including organisational and financial arrangements and state intentions for detailed design, construction, management, maintenance, monitoring and evaluation.

- **Planning** – Investigation and planning of the site and disposal areas shall be at a level appropriate to accurately represent the scale, potential benefits and risk assessment/impacts of the drainage scheme. It shall include assessment of existing environmental conditions and pre-drainage monitoring. Drainage schemes should be consistent with any catchment water and waterways management plan (where available).
- **Roles** – Appropriate and agreed roles, responsibilities, scheduling and funding for all project stages must be documented.

- **Access** – Clear and agreed arrangements for land tenure and access shall be established and documented.
- **Funding** – Proposed public investment shall be consistent with the Salinity Investment Framework. Public and private costs (funding) shall be clearly documented.
- **Construction** – Drainage systems must be consistent with best practice. This will incorporate best available design, standards, management and plans.
- **Management** – Information must be provided for the management and maintenance of drains for the duration of their operation.
- **Monitoring and evaluation** – Appropriate and ongoing monitoring and evaluation shall be undertaken, including quantification of benefits and impacts to enable early identification of issues requiring management or maintenance.
- **Approval** – A formal approval process is required which must have consideration of all of the above and have the capacity to representatively deal with the range of relevant stakeholders.

Application of principles

Proponents must demonstrate that regard has been taken of the following matters and drainage assessors need to ensure these matters are adequately covered by the drainage proposal.

- Transparency and Consistency

Drainage proposals shall fully document the development processes, including stakeholder engagement that results in publicly available information that is true, correct and not misrepresented.

- Acceptable environmental impact

Drainage proposals should demonstrate an overall environmental benefit.

- Public good

Drainage proposals should demonstrate whole-of-community benefit, by achieving a balance between environmental, social and economic factors.

- Adaptive management

Drainage proposals should demonstrate an adaptive management approach which is supported by effective monitoring and evaluation procedures.

- Compliance

Drainage proposals shall comply with all relevant standards, legislation and regulations.

- Access arrangements

Drainage proposals shall document appropriate arrangements with regard to ownership of land and access to land for drainage construction, operation and maintenance. Works may require execution of the Public Works Act 1902 or Land Drainage Act 1925.

- Precautionary principle

Drainage proposals should be assessed using the precautionary principle and must examine the full range of alternatives and not immediately opt for no action.

The precautionary principle states that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, decisions should be guided by –

(a) careful evaluation to avoid serious or irreversible damage to the environment where possible; and

(b) an assessment of the risk-weighted consequences of various options.

(EPA Position Statement No 7: Principles of Environmental Protection, EPA, 2004)

Appendix 3 – Priority Strategies

Recommended priority strategies and suggested approach – a way forward

Objective	Governance: To ensure appropriate governance procedures are in place before drainage construction commences
Recommended Priority Strategy	<p>1.3.3.1: Clearly define present and future roles, responsibilities and structures for:</p> <ul style="list-style-type: none"> § Policy development and delivery § Catchment planning § Assessment of proposals § Project planning, implementation and management.
Context	<p>Portfolio: Agriculture and Food; Environment; Water Resources</p> <p>Lead Agency: Department of Water</p> <p>Department of Agriculture and Food regulates and coordinates the assessment of drainage under the Soil and Land Conservation Regulations 1992. The existing controls are ‘private’ (only released with proponents’ consent) and are rather limited in the powers necessary to implement the governance arrangements outlined in the draft policy framework. The Department of Water has lead agency responsibility for drainage policy development and catchment planning. The Department of Environment and Conservation and other stakeholders provide advice on notified drainage.</p>
Suggested Approach	<p>The implementation of the draft policy framework will require greater coordination, transparency, consistency and timeliness in the planning and assessment processes, land access arrangements, improved compliance arrangements including monitoring and evaluation, funding mechanisms (‘Beneficiary pays’ principle) for the construction and ongoing operation and maintenance of drainage systems.</p> <ol style="list-style-type: none"> 1. Document current and recommend future roles and responsibilities for: <ol style="list-style-type: none"> a. Policy development and delivery b. Catchment planning c. Assessment of proposals d. Project planning and implementation. 2. Review and identify gaps in agency policies to ensure consistency with the draft Policy Framework for Inland drainage.
Implementation Issues	Different stakeholder views on the allocation of roles and responsibilities, including the related costs, will need to be reconciled.

Objective	Risk Management: To ensure inland drainage achieves an overall improvement in the management of salinity and waterlogging, and minimises adverse impacts on the environment and infrastructure
Recommended Priority Strategy	1.4.3.3: Develop a strategy to address State, Local Government and land managers' capacity to research, plan, assess, construct, operate and govern.
Context	<p>Portfolio: Agriculture and Food; Environment; Local government, Water Resources</p> <p>Lead Agency: Department of Water</p> <p>The Department of Agriculture and Food regulates and coordinates the assessment of drainage proposals under the Soil and Land Conservation Regulations 1992. There is no power under the regulations to ensure positive social, economic and environmental outcomes. Agencies and stakeholders have limited resources and capacity to plan and assess drainage proposals as well as govern and assess performance after drain construction.</p>
Suggested Approach	<p>To deliver the draft policy framework, resources, funding, information and capacity issues for all stakeholders need to be identified and prioritised.</p> <ol style="list-style-type: none"> 1. Assess the current capacity to administer and deliver the 'Policy Framework' recommendations for an improved assessment process, policy development, catchment planning, project planning and project implementation. 2. Assess stakeholders' capacity for: research, construction, operation and maintenance. The assessment is to identify shortfalls in funding, staffing, knowledge, information and tools. 3. Develop a strategy to address the identified shortfalls.
Implementation Issues	<p>Longer-term changes to legislation will be required to achieve full implementation of the draft policy framework. Funding and the availability of suitable personnel are barriers for the successful implementation of this strategy.</p> <p>Immediate: Carry out assessments 1 & 2 in the suggested approach.</p> <p>Future: Implement action 3 on a priority basis.</p>

Objective	Risk management: To ensure inland drainage achieves an overall improvement in the management of salinity and waterlogging and minimises adverse impacts on the environment and infrastructure
Recommended Priority Strategy	1.4.3.4: Develop environmental criteria and/or targets for the management of discharge and the identification of disposal options
Context	<p>Portfolio: Environment</p> <p>Lead Agency: Department of Environment and Conservation</p> <p>Ideally, for any drainage proposal one would be able to readily and accurately predict the downstream environmental impacts, including those of the ‘do nothing’ option. Given that the downstream impacts of altered hydrology, including but not limited to dryland salinity, are expected to worsen over the next 100 years in many areas, the ‘do nothing’ option provides an important baseline for comparison with proposed treatments. To effectively assess downstream environmental impacts requires:</p> <ol style="list-style-type: none"> 1. an adequate conceptual understanding of catchment hydrology, soil and water geochemistry and their interactions, as well as the variability in these physiochemical relationships 2. sufficient data to model downstream impacts, including adequate forecasts in relation to climate variability and trends, and 3. a sound understanding of the relationships between the native biota and hydrological and physiochemical regimes. <p>Of these action (1) is largely available, but requires improvement, and this will be achieved through available resources in DAFWA, DEC and Department of Water. Action (2) is problematic, and is being tackled initially through existing projects, but will ultimately require new resources for baseline monitoring in a representative sample of catchments, particularly recovery catchments. However, where the interactions between deep drainage and biodiversity assets are to be managed, some baseline understanding (monitoring data) will be required prior to intervention. Adequate monitoring of drainage interventions are also necessary (dealt with elsewhere in the drainage policy). For action (3) a number of current projects – including some under the Engineering Evaluation Initiative (EEI), Future Farm Industries CRC and existing departmental programs will assist but will also leave significant gaps.</p>
Suggested Approach	Implementation of this strategy will bring together the existing data on the tolerances of the native biota to hydrological and physiochemical regimes, set criteria for acceptable change in wetlands, and document a monitoring and evaluation scheme to ensure that management

interventions and predicted impacts are assessed, and new data is captured and predictive models refined.

1. Publish the EEI Reports on Downstream Impacts, Acid Groundwater and Regional Drainage Evaluation. (Note that this work will not give a complete understanding or a robust threat assessment).
2. Review existing information on the tolerances of native biota, identify gaps, and outline investigations required to redress gaps.
3. Set criteria and/or targets for acceptable change to receiving environments.
4. Identify potential locations for drainage discharge.

Implementation Issues	Availability of suitable personnel is a barrier for the successful implementation of this strategy.
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Objective	Planning and Assessment: To ensure drainage proposals are adequately planned and assessed within an agreed process
Recommended Priority Strategy	1.5.3.1: Develop an improved assessment process for inland drainage proposals which can be implemented in the short term under the current <i>Soil and Land Conservation Act 1945</i>
Context	<p>Portfolio: Agriculture and Food</p> <p>Lead Agency: Department of Agriculture and Food</p> <p>Drainage is regulated under the Soil and Land Conservation Regulations 1992. The regulation requires the Commissioner to consult public authorities and district committees affected by drainage proposals. Although the focus of the regulation is avoidance of land degradation through a notification and assessment process, the Commissioner is obliged under s38 of the <i>Environmental Protection Act 1986</i> to refer to the Environmental Protection Authority (EPA) proposals that are likely to have a significant environmental impact. Documented evidence of the efficacy and impact of drainage in WA is limited. Therefore advice provided by the Department of Water (DoW) and Department of Environment and Conservation (DEC) is critical to the assessment process. The EPA has limited capacity to undertake formal assessment of drainage proposals. DEC is developing some of the tools to support an improved assessment process. Department of Water is compiling a 'Drainage Design Handbook' to guide the planning and assessment.</p>
Suggested Approach	<p>In view of the legislative short comings it is intended to deliver improved planning, assessment and ongoing operation and maintenance of drainage systems through properly promulgated policy and amended regulation. It is proposed to require proponents to locally advertise drainage proposals, notify "conveyance" structures and disposal basins, and amend the Notice of Intent to Drain (NoID) forms to require additional information to support an improved and integrated assessment process.</p> <ol style="list-style-type: none"> 1. Review the current legislation, policy and administrative requirements to identify gaps and opportunities to facilitate implementation of the improved assessment process consistent with the policy framework. This will include a review of measures to ensure compliance. 2. Gazette amended drainage regulations. 3. Document roles and responsibilities in the improved assessment process (NoID). <p>Refer Diagram 1: Proposed Improved Assessment Process for Inland</p>

Drainage Proposals below

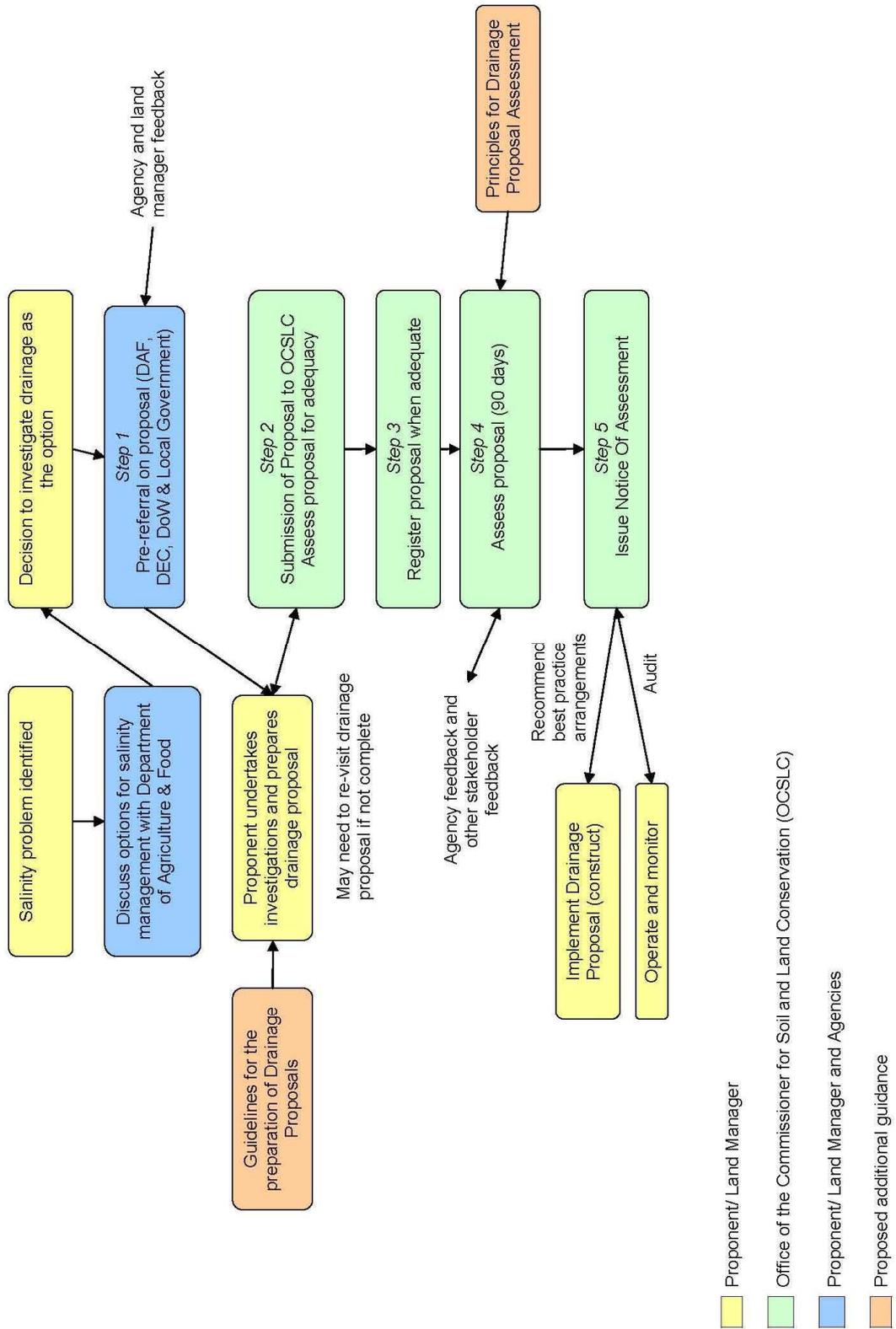
Implementation Issues

Immediate: Continuous improvement in the integrated assessment of notified drainage is dependent on interagency cooperation. There are no planning, management and operation head powers under the *Soil and Land Conservation Act 1945*. Difficulties are liable to be encountered to fully implement the draft policy framework.

Achievement of the strategy's objective go beyond changes to the Soil and Land Conservation Regulations 1992 will require legislative change. Voluntary adoption and compliance with best practice should be encouraged as well as development of cross compliance mechanisms for publicly funded schemes.

Future: New legislation to implement the recommended future roles, responsibilities and governance arrangements.

DIAGRAM 1: Proposed Improved Assessment Process for Inland Drainage Proposals



Objective	Planning and Assessment: To ensure drainage proposals are adequately planned and assessed within an agreed process
Recommended Priority Strategy	1.5.3.4: Identify, document and release best practice guidelines including methodologies for engineering design
Context	<p>Portfolio: Agriculture and Food, Water Resources</p> <p>Lead Agency: Department of Water</p> <p>Many drainage projects that are inconsistent with accepted best practice have been implemented. Although literature and information are available it is not generally applied by proponents or contractors. Examples of good design require acknowledgement and should be documented in a user-friendly format that can be promoted to the drainage industry. Application of best engineering design in large-scale drainage schemes will minimise risk.</p>
Suggested Approach	<p>Positive promotion to encourage adoption of best practice guidelines (as has happened with urban and coastal drainage best practice).</p> <ol style="list-style-type: none"> 1. Review existing Department of Agriculture and Food and Department of Water policies and guidelines, identify gaps and develop strategies for research, development and extension. 2. Develop and promote best practice guidelines consistent with the <i>Draft Policy Framework for Inland Drainage, Principles for Drainage Proposal Assessment</i> and take account of the review findings above. 3. Develop an engineering design handbook consistent with these best-practice guidelines. 4. Develop and implement a communication strategy to stakeholders for the Best Practice Guidelines and Engineering Design Handbook.
Implementation Issues	<p>Immediate: Implementation of best practice guidelines will be based upon current information and tools, but the guidelines will be designed to allow for continuous improvement and updating. An effective communication strategy is a key to success.</p> <p>Future: Regular updating and communication of the Best Practice Guidelines and the Engineering Design Handbook to stakeholders will be required.</p>

Objective	Planning and Assessment: To ensure drainage proposals are adequately planned and assessed within an agreed process
Recommended Priority Strategy	<p>1.5.3.5: Develop guidelines for the preparation of inland drainage proposals which includes a checklist and indicative timing for assessment. Proponents should undertake pre-consultation with the assessing authority and outline:</p> <ul style="list-style-type: none"> • Reporting requirements for the life of the project, including where necessary plans for decommissioning • Agreed roles, responsibilities, scheduling and funding for all project stages • Agreed arrangements for land tenure and access • Indicative best-practice designs and construction methodologies • An operation and management plan which outlines arrangements for governance, operation and maintenance of drains for the life of the project, including appropriate and ongoing monitoring, evaluation and contingency plans
Context	<p>Portfolio: Agriculture and Food</p> <p>Lead Agency: Department of Agriculture and Food</p> <p>Drainage is regulated under the Soil and Land Conservation Regulations 1992. Regulation requires the Commissioner to consult public authorities and district committees likely to be affected by drainage proposals. Guidelines and checklists are available to assist proponents in the preparation of inland drainage proposals for assessment under the current 'Notice of Intent to Drain' (NoID) system. The draft policy framework recommends a significant increase in the information that drainage proponents will be required to provide with an updated NoID form. Pre-consultation with the assessing authority is also recommended. New guidelines and checklists will need to be developed consistent with this strategy. They will seek different levels of information depending on scale and risk. Notification of drainage 'conveyance' structures and disposal basins is not specifically required under current regulation but is recommended for inclusion by the draft policy framework.</p>
Suggested Approach	In view of timeframes associated with legislative change, it is intended to deliver this strategy through promulgated policy and amendments to the regulation that require local advertising of drainage proposals and additional information through amended

	<p>NoID forms. New guidelines will be developed to support the implementation of the improved process consistent with the amended regulations.</p> <ol style="list-style-type: none"> 1. Review the current Notice of Intent to Drain (NoID) form and incorporate the recommended additional requirements. 2. Develop guidelines for the preparation of inland drainage proposals consistent with the <i>Draft Policy Framework for Inland Drainage</i> and <i>Principles for Drainage Proposal Assessment</i>. 3. Develop and implement a communications plan for the release of the guidelines for drainage proposals and the new NoID.
<p>Implementation Issues</p>	<p>Immediate: Implementation of guidelines for the preparation of inland drainage proposals will be based upon current information and tools, but the guidelines will be designed to allow for continuous improvement and updating. An effective communication strategy is a key to success.</p>

Objective	Operation and Maintenance: To ensure the ongoing operation of inland drainage achieves better outcomes for the management of salinity, waterlogging and the environment
Recommended Priority Strategy	1.6.3.1: Develop standard reporting methods to facilitate collection of appropriate performance monitoring data
Context	<p>Portfolio: Agriculture and Food</p> <p>Lead Agency: Department of Agriculture and Food</p> <p>There is little systematic monitoring of the performance of inland drainage systems and of their impact on the receiving environment linked to the outcome of the regulatory assessment process. The absence of head powers to ensure compliance has seriously impeded the Commissioner’s ability to obtain monitoring data from proponents and seriously undermines this objective. The desired adoption of adaptive management for drainage systems cannot be implemented under the existing regulatory framework.</p>
Suggested Approach	<p>The development and adoption of biophysical monitoring methods, linked to the assessment process, would assist both proponents and regulatory agencies to gather, report and manage data to document and evaluate the salinity, waterlogging and environmental impacts of drainage. In the short term this is only likely to be applicable to publicly funded projects where cross compliance can be achieved and financial incentives provided.</p> <ol style="list-style-type: none"> 1. Develop protocols for performance reporting. 2. Identify the appropriate data and reporting custodians, including resource requirements for collection, analysis, data management and reporting. 3. Determine the responsibilities for reporting and auditing. 4. Develop mechanisms for dissemination of knowledge gained to relevant stakeholders.
Implementation Issues	<p>Immediate: The absence of head powers limits the Regulator’s ability to ensure compliance. However, it is intended to encourage adoption of the above approach in the immediate term.</p> <p>Future: The collection, analysis and reporting of data gathered is a significant new function with associated costs and resourcing implications for both proponents and agencies. Making it mandatory will require legislative change.</p>

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