A draft blueprint for water reform in Western Australia
**ACKNOWLEDGEMENTS**

The Water Reform Implementation Committee would like to acknowledge those people who have contributed to the Water Reform Program.

In particular:

- Staff from the Departments of Agriculture and Food; Industry and Resources; Land Information; Water; and the Department for Planning and Infrastructure, for their very significant contributions to the drafting of this and other public discussion documents.

- Members of the Water Forum, the stakeholder representative group established by the Government to provide input to the water reform process, for their contribution to the initial scoping of this work and their ongoing interest and participation in public consultation processes.

- Staff of the Office of Water Strategy, Department of the Premier and Cabinet.

© Government of Western Australia 2006

Copies are available by phoning 1300 369 809 or can be downloaded from [www.water.wa.gov.au](http://www.water.wa.gov.au)

Copies are also available at Western Australian public libraries.

**Disclaimer**

This document has been prepared by the Water Reform Implementation Committee and is provided for information and discussion purposes. It is not a statement of Western Australian Government policy.
FOREWORD

This discussion paper provides a draft blueprint for water reform in Western Australia in a number of key areas, which, taken together, form a challenging, though necessary, agenda.

In the face of increased demand for water and reduced availability in many parts of Western Australia, we need to continue to work to improve the management of our water resources and, at the same time, provide greater security of access and certainty of process for water users and the environment.

The directions proposed in this discussion paper are consistent with the findings of the Irrigation Review Steering Committee, the Government Response to the Report of the Irrigation Review Steering Committee, the draft Policy Framework for the State Water Plan and the National Water Initiative.

With the signing of the National Water Initiative on 6 April 2006, by the Premier Hon Alan Carpenter MLA, closer focus and greater impetus have been given to a number of important areas, including the form of water access entitlements, the planning process for setting allocations, water entitlement trading, metering and the scope of water resource management charges.

However, important questions about the best way to proceed on a range of matters still remain, and the Water Reform Implementation Committee welcomes written submissions. This will assist the Committee to finalise its advice to the Western Australian Government by the end of 2006. It will also assist in finalising the State Water Plan and inform legislative reform to water resource management legislation in 2007-08.

Additional information on most of the proposed directions in this discussion paper can be found in a series of Directions Papers. These can obtained from www.water.wa.gov.au or by phoning 1300 369 809.

Workshops will also be held throughout Western Australia during July, August and September 2006 to provide interested people with an opportunity to discuss the proposed directions and make suggestions.

I encourage you to make a written submission, attend a workshop, or both.

I urge you to get involved with continuing the important process of water reform in Western Australia by contributing to the way forward.

Ross Kelly
CHAIRMAN, WATER REFORM IMPLEMENTATION COMMITTEE
EXECUTIVE SUMMARY

Around the world there is an ongoing process of change to the way water is managed, allocated and used. Western Australia is no exception. The increased awareness of water availability, impacts of climate change, the current and future needs of economic development and the environment have become key issues. Water reform has become a pressing need in order to ensure the sustainability of water resources in the state.

Increased effort to find, quantify, manage, allocate and share water is essential. Greater security of entitlement to use water and improved planning and measurement of water use is also necessary to encourage economic development and greater investment in water use efficiency.

The Final Report of the Irrigation Review Steering Committee, and the Government Response, initiated a significant water reform agenda in Western Australia, particularly in the following areas:

• Changing the water entitlement system
• Facilitating water trading
• Implementing water metering
• Recovering water resource management costs
• Land and water planning for the longer-term protection of agricultural land
• Increase self-management
• Invest in water use efficiency.

This agenda has been given greater urgency and direction with Western Australia’s signing of the National Water Initiative in April 2006.

The Government has also committed to the development of a State Water Plan and Regional Water Plans and these provide important direction for the Water Reform Program.

The Government has charged the Water Reform Implementation Committee with advising it on the implementation of the water reform agenda, which must now take into account and give effect to the relevant directions contained within the National Water Initiative. See Appendix 2 for the Committee’s membership and terms of reference.

This discussion paper outlines a blueprint for water reform that integrates the key directions contained in the Government Response with the requirements of the National Water Initiative and provides an opportunity for public comment on these proposals.

For some key directions, the Water Reform Implementation Committee has identified options; in others, very clear directions are put forward, consistent with the National Water Initiative.

The Water Reform Implementation Committee will provide its final advice on these matters to the Government by the end of 2006, to enable those matters that require legislative support to be incorporated into the legislative reform program proposed for 2007-08.

The Water Reform Implementation Committee’s proposals are summarised below under each of the key directions that the Government has requested the Committee to address.

Changing the water entitlement system

• Statutory water management plans should be developed on a priority basis for those water systems under significant resource pressure. Plans may be developed for water systems in particular circumstances.

• Statutory water management plans should describe the water sources covered, reliabilities under specified climate scenarios, the water available for consumptive use (the consumptive pool), the process for calculating seasonal or short-term changes to the consumptive pool and the rules for water entitlement trading in the relevant stream or water management zone. These plans should follow the guidelines set out in the National Water Initiative.

• Statutory water management plans should identify the environmental and public benefit outcomes over the life of the plan and the water management arrangements that will be followed to meet those outcomes.

• Water management plans should be based on the best available information. They should specify the obligations and responsibilities of water entitlement holders and government.
• Plans would be periodically reviewed and amended to reflect modern resource management strategies and new knowledge. Where changes are made to the size of the consumptive pool compensation may be payable according to the reason for the changes.

• A comprehensive system of licences and share-based access entitlements should be introduced that covers all significant uses and interceptions of water sources and in particular for those sources that are at, approaching or exceed full allocation.

• Access entitlements should be issued as shares of a consumptive pool.

• Access entitlements should be defined in terms of unit shares rather than percentage shares to allow shares in the pool to be added and removed. This strategy has already been adopted by Western Australia’s irrigation cooperatives.

• As water plans are finalised, existing water licences in the plan area will be replaced by water access entitlements. In places not covered by water management plans or where the resource is poorly defined, the existing licence arrangement will remain.

• To use water on a particular site should require a site use approval if the use can create land, water or environmental degradation. The use approval should not be part of the access entitlement.

• To construct and operate works to take water should require a works approval.

• Water access entitlements should be registered at a Torrens-style registry whereby the registry entry is the title. The register will specify the owners of the entitlement, the ownership arrangements and the number of unit shares. Interests, encumbrances and transfers can be registered under protocols and procedures that align with those used for transfer and changes in land titles.

• The Committee considers that greater clarity is required on the matter of indefeasibility of the registry. However the title should be suitably guaranteed against error in the registry.

• Consistent with the Government Response to the Irrigation Review, a system of rolling entitlements should be created. The water access entitlement should have a maximum term of 40 years with an opportunity for an extension of the term, say after ten years of operation. Subject to satisfactory compliance with the requirements of the entitlement, its term would be ‘topped up’ to the maximum fixed term, unless the relevant water plan specifies that the entitlements are not to be renewed after the full term has expired. This arrangement provides long term certainty for the entitlement holder while recognising that water resources are vested in the Crown. Rolling tenure has also been adopted for pastoral leases over Crown land as a means of providing security for investment and project planning.

• The Committee proposes that a new entitlement system would apply uniformly to all water users. However, consistent with paragraph 34 of the National Water Initiative and the needs of particular systems, factors specific to resource development projects or particular systems, such as isolation, lack of a common consumptive pool, relatively short project duration, water quality, and obligations to remediate and offset impacts, may require that a new system is flexible enough to accommodate site-specific arrangements for such projects that vary from the above general provisions.

Facilitating water trading

• Currently water trading is enabled under the Rights in Water and Irrigation Act 1914.

• In the future the Committee considers that water trading will remain restricted in Western Australia until water use is comprehensively licensed, metered and allocation limits are set.

• Trade will likely be most beneficial in the southwest of Western Australia and other areas where there is strong or growing competition for water, including the major irrigation areas.
Implementing water metering
• Metering should be undertaken in the following circumstances:
  - where new water allocations (including licences) are issued
  - in areas where there are disputes over the sharing of available water
  - where there is community demand
  - for those licensed water users who intend to trade entitlements, regardless of the volume traded
  - for existing allocations above 50 ML
  - for existing allocations less than 50 ML only where:
    - a water management plan requires it
    - there is significant potential for interference with other users' abstraction
    - there are water quality concerns
    - there is potential for unacceptable impacts on the water dependent environment or there is limited information on which to assess the risk of adverse outcomes.
• Water users should contribute significantly to the cost of water metering. Government should meet the installation and operating costs of metering and recover these from water users.

Recovering water resource management costs
• A water licence administration fee should be introduced.

Further consideration of water resource management charges, which are required under National Water Initiative, should occur following national consideration of this matter, currently being led by the National Water Commission.

• If a case is established to adopt a nationally consistent approach to the introduction of resource management charges, such charges should be introduced following the completion of a relevant statutory water management plan and the conversion of the licence to a water access entitlement.

Land and water planning for the longer term protection of agricultural land
• The Department of Agriculture and Food should identify precinct locations for irrigated agriculture.
• An appropriate level of land zoning restrictions should then be provided so that the horticultural activity can be sustained.

Increase self-management
• Greater opportunity should be provided for water users and local citizens to support statutory water planning and assist with water resource management under delegation from the Minister for Water Resources (for example local groups could be contracted to undertake meter reading, flow management and resource monitoring).

Invest in water use efficiency
• Mechanisms and support for encouraging technical and productive water use efficiency through a combination of subsidies, market mechanisms and appropriate price settings that reflect externality impacts with a particular focus on irrigated agriculture will encourage the efficient use of water.

• The fundamental driver for water use efficiency will be establishing a more valuable water entitlement and separating the entitlement to access water from the license to use water. This will encourage water trading.

• In support of water use efficiency, the Committee proposes that:
  - to facilitate commencement of water trading, new allocations of water should be restricted at a level below the determined sustainable yield
  - any new allocations in a water management area should occur through an auction or tender process to establish a value for water in that area
  - in scheme areas, trading of water by individuals and cooperatives to the Water Corporation should be facilitated through development of appropriate agreements
  - targeted intervention in water markets should be undertaken in support of equity, regional development and environmental management goals of Government.
Implementation
The Water Reform Implementation Committee proposes that the reforms contemplated in this document should recognise the inter-relationships that exist between the various elements.

It is also important to note that the proposals contained in this discussion paper are significant and far-reaching and will not be achieved quickly, or in some instances, without legislative reform. Therefore, it is likely that the full changes contemplated here will take some years to materialise.

This should not, however, prevent Government working diligently to implement policy changes that can be made quickly, so that the benefits to both consumptive and non-consumptive water users begin to accrue.

Abbreviations
kL Kilolitre (1 000 litres)
ML Megalitre (1 000 000 litres)
GL Gigalitre (1 000 000 000 litres)
The purpose of this discussion paper is to invite public feedback on a range of proposals by the Water Reform Implementation Committee as to how the Government could continue to support important water reforms in Western Australia across a number of key directions.

The Committee has identified key questions that require further consideration, and these are clearly identified throughout the document under the heading Questions for Comment.

By using the feedback forms provided with this report and using the key questions as guidelines, you will assist the Committee to prepare clear and detailed advice to the Government on progressing this important agenda.

This discussion document is informed by Directions Papers on most of the key directions. The Directions Papers have been prepared under the guidance of the Water Reform Implementation Committee by project teams made up of representatives from government agencies. Marsden Jacob and Associates was contracted to prepare advice in relation to water entitlements and trading.

All of the directions papers can be downloaded from [www.water.wa.gov.au](http://www.water.wa.gov.au) or can be obtained by calling 1300 369 809 or emailing waterreform@water.wa.gov.au

HOW TO COMMENT
The Water Reform Implementation Committee welcomes your comments on this discussion paper.

There are three ways to send us your comments:

1. Complete the feedback form at the back of this document and send it to the postal address below.

2. Download and complete an electronic feedback form from [www.water.wa.gov.au](http://www.water.wa.gov.au) and email it to the address below.

3. Provide a written submission and email or post it to the address below.

Your feedback form or written submission can be sent:

By email to waterreform@water.wa.gov.au

or

By mail to:

Water Reform Program
PO Box K822
PERTH WA 6842

Submissions must be received by close of business on 15 September 2006. All submissions (except feedback forms) will be published on the website unless expressly requested otherwise.

For enquiries please phone 1300 369 809 or email waterreform@water.wa.gov.au

GUIDELINES FOR SUBMISSIONS
The following guidelines may assist in preparing written submissions. Submissions should:

- include your name, address and phone number
- provide comment on the key questions for each of the key directions and any other comments you may wish to make
- indicate omissions or errors
- suggest alternative or additional concepts that should be considered.
# TABLE OF CONTENTS

ACKNOWLEDGEMENTS

FOREWORD 1

EXECUTIVE SUMMARY 2

PURPOSE OF DISCUSSION PAPER 6

HOW TO COMMENT 6

GUIDELINES FOR SUBMISSIONS 6

1 INTRODUCTION 8

2 CHANGING THE WATER ENTITLEMENTS SYSTEM 13

3 FACILITATING WATER TRADING 23

4 IMPLEMENTING WATER METERING 27

5 RECOVERING WATER RESOURCE MANAGEMENT COSTS 31

6 LAND AND WATER PLANNING FOR THE LONGER TERM PROTECTION OF AGRICULTURAL LAND 37

7 INCREASE SELF MANAGEMENT 44

8 INVEST IN WATER USE EFFICIENCY 49

APPENDIX 1 NATIONAL WATER INITIATIVE 54

APPENDIX 2 WATER REFORM IMPLEMENTATION COMMITTEE: TERMS OF REFERENCE 58

FEEDBACK FORM 59
1 INTRODUCTION

Water reform is critical to ensuring the long term sustainable management of Western Australia’s water resources, as well as their productive and efficient use. The twin challenges of reduced water availability and increased water demand are the primary drivers for water reform. Water reform is necessary to deal with these challenges responsively and fairly. These challenges provide the context for the water reforms already undertaken in Western Australia and those proposed in this discussion paper.

These challenges must be addressed in the context of providing greater security and certainty of water access entitlements for all water users, including the environment. Rural and urban areas need suitable water supplies to sustain economic development, vibrant communities and the health of the environment. Water reform will improve the way Western Australia’s water resources are planned, managed, allocated, shared and used.

All levels of government in Australia, together with the community and industry, are directing increased resources and effort to developing better arrangements for managing, sharing and protecting our water resources. Western Australia is no exception.

WATER AVAILABILITY

In Western Australia, most of the water suitable for consumptive purposes is found in groundwater systems. Groundwater is essential to the mining and pastoral industries, and most horticulture activities. It is also the sole source of water supply for most towns and provides more than half of Perth’s water supply.

The bulk of the groundwater used by the mining sector is however non-potable, and sourced from aquifers in remote areas of the State where there is little or no alternative use for such poor quality water.

Along the State’s west coast, large sedimentary aquifers contain significant volumes of easily accessible fresh groundwater. Inland, groundwater exists in fractured rock aquifers and old river beds. Accurate data on the sustainable yields of groundwater resources are more difficult to obtain than for surface water catchments. This makes resource management decisions such as determining sustainable yields more difficult.

Of all the Australian States and Territories, Western Australia has the highest groundwater use. In contrast to other states and territories (excluding NT), groundwater use dominates overall water use. In 2005, the total volume of groundwater used in Western Australia (1443 GL/year) was almost double the total volume of surface water (936 GL/year).

Figure 1 Perth rainfall deviation from the mean

INCREASED DEMAND

Until quite recently, our water resources have been more than sufficient to meet Western Australia’s needs. In 2000, total water use in Western Australia was an estimated 1796 GL/year. With the rapid growth of the State’s economy and population, total water use is estimated to increase to 3500 GL/year by 2020 (State Water Strategy 2003). New sources of water are likely to be more costly than currently available sources. This will place cost pressures on all water users.
Some significant water resources in Western Australia are reaching the limit of their sustainable yield. This includes groundwater resources near population centres such as Perth, Mandurah, Exmouth and Broome. As resources near their sustainable limits, greater levels of resource management are needed to ensure these resources are not over allocated.

Figure 2 shows the relative proportion of water use by sector in Western Australia.

**Figure 2 Water use (potable and non potable) by sector in Western Australia (1999/2000)**

Agriculture
Agriculture is currently the largest user of water in Western Australia. This includes water for intensive horticulture and in some cases irrigated agriculture and pastures.

The majority of water used in agriculture is supplied by four irrigation schemes through cooperatives: Harvey Water, Ord Irrigation Cooperative Ltd, Gascoyne Water Cooperative and Preston Valley Cooperative. Outside the irrigation cooperatives, ‘self-supply’ irrigators utilise ground or surface water sources to meet their needs.

Mining
The mining sector is the second largest user of water. Water is highly valued by this industry due to the significant investment needed to discover, develop and manage the resource. However, most of the water used is of poor quality, with about 75 per cent of usage occurring in the more remote areas of the State.

Even though the mining sector develops and self supplies approximately 95 per cent of the water taken, the resource is extracted under licence from the Department of Water and metered. Companies are also required to supply hydrogeological information to the Department in order to enhance the knowledge of our water resources and allow assessment of local impacts.

**Urban and residential**
Water for urban and residential purposes is the third largest use. The Water Corporation is the dominant provider of reticulated water and wastewater services to the State’s industry and communities, servicing 98 per cent of all consumer connections. The Bunbury (Aqwest) and Busselton Water Boards provide water services to those towns, while the Water Corporation provides sewerage and drainage services. The Rottnest Island Board provides water, wastewater and drainage services to the Island. Each of these entities is responsible for long-term planning within their licensed area of operation. Collectively they cover the vast majority of Western Australia’s population.

**Industry**
The industrial sector is the fourth largest water user. It encompasses all industry not directly involved in the extraction of minerals and energy resources. The industry sector either extracts water directly or is supplied by a water service provider; some organisations rely on both.

**Recreation**
The recreation sector consists of sporting facilities such as playing fields, golf courses, school ovals, parks and gardens that are managed by local government, sporting clubs, golf clubs and resorts or the Department of Education and Training. These facilities are present in nearly all cities and towns and play an essential role in the cultural, recreational and social fabric of Western Australia. Groundwater is the dominant water source for this sector within towns and cities near the coast. In many inland, arid areas recycled water is used where suitable quality groundwater is not available.

**WATER REFORM**
In 1994 the Council of Australian Governments (COAG) agreed to a package of water reforms to improve management of the nation’s water resources. Since then, a range of water reform activities have occurred in Western Australia. These are summarised in Table 1.
### Table 1 Recent water reform activities in Western Australia

<table>
<thead>
<tr>
<th>Year</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>- The Rights in Water and Irrigation Act 1914 is amended to allow commercial trading in licensed water allocations.</td>
</tr>
</tbody>
</table>
| 2002 | - Water Forums are held across the state on water issues and the sustainable management of water resources.  
     - The Water Symposium is held at Parliament House from 7-9 October. |
| 2003 | - The State Water Strategy is published.  
     - The Water Wise Rebate Program provides rebates to consumers of water efficient technologies.  
     - The Premier’s Water Foundation is established to support research and develop innovative ways of conserving water and maximising reuse of wastewater.  
     - The ICLEI Water Campaign™ is launched to assist local governments to reduce their water consumption and impacts on water quality. |
     - The Water Corporation launches the Security through Diversity initiative.  
     - Work commences on the State Water Plan and the South West Water Plan.  
     - The Water Reform Implementation Committee and the Water Reform Program is established. |
| 2006 | - The Department of Water is established.  
     - The Premier of Western Australia, Hon Alan Carpenter MLA, signs the National Water Initiative on 6 April, committing Western Australia to the national water reform agenda. |
| Ongoing | - The Water Reform Implementation Committee will finalise its advice to Government by November 2006.  
     - The State Water Plan will be finalised by early 2007.  
     - The Western Australian Government is due to submit a National Water Initiative Implementation Plan in early 2007.  
     - New water legislation to consolidate and streamline existing outdated legislation is proposed in 2007-08. |
Water Reform Program
The State’s current water reform agenda arose from the State Water Strategy, the Report of the Irrigation Review Steering Committee, and the Government Response to that report. These highlighted the need for reform in seven areas:

• Changing the water entitlement system
• Facilitating water trading
• Implementing water metering
• Recovering water resource management costs
• Land and water planning for the longer-term protection of agricultural land
• Increase self-management
• Invest in water use efficiency.

This discussion paper addresses each of these areas.

The Water Reform Program is being implemented within the context of two other significant reform initiatives: the development of a State Water Plan for Western Australia and the requirements of the National Water Initiative.

State Water Plan
The State Water Plan will provide a framework for the community, water users and other stakeholders to understand, engage and assess progress towards the strategic management of water in Western Australia. It will include three major components:

1. A water policy framework
2. A water planning framework
3. An overview of water availability and use throughout the State

The draft State Water Plan Policy Framework was released for public comment in April 2006. It provides high level objectives and elements that provide a context for the detailed policy positions proposed through the Water Reform Program.

National Water Initiative
Western Australia joined the National Water Initiative on 6 April 2006. The National Water Initiative represents the current stage of the progressive reform of water policy and legislation across Australia. It promotes the COAG twin agendas of environmental protection and economic efficiency for water regulation.

The National Water Initiative commits states and territories to outcomes, principles and actions in a range of areas including:

• Water access entitlements and planning framework
• Water markets and trading
• Best practice water pricing
• Integrated management of water for environmental and other public benefit
• Water resource accounting
• Urban water reform
• Knowledge and capacity building
• Community partnership and adjustment

The National Water Initiative provides a national model for water reform. It also acknowledges that Western Australia’s particular circumstances may require different approaches as many of our water resources are less developed than in some other states and hence less is known about them.

The decision to join the National Water Initiative shifts the focus from whether to implement reforms similar to those adopted elsewhere in Australia to the questions of how and how far to implement these reforms. The sections of the National Water Initiative relevant to the Water Reform Program are summarised in Appendix 1.

Many of the reforms contemplated in this paper are fundamental to achieving the objectives of the National Water Initiative. Other elements of the Initiative, such as urban water pricing, are not addressed here. The Department of Water is leading work to address these matters through preparation of a National Water Initiative Implementation Plan.

GOVERNANCE
The State Government has charged the Water Reform Implementation Committee with advising it on the implementation of the water reform agenda. The Committee’s membership and terms of reference are included in Appendix 2.

The Water Reform Implementation Committee reports to the Water Resources Cabinet Subcommittee, through the Minister for Water Resources.
The Water Reform Implementation Committee will provide its final advice to Government by the end of 2006.

The Department of Water provides executive support to the Committee and will be responsible for implementing reform measures agreed by Government, including through the legislative reform program that is proposed for 2007-08.

IMPLEMENTATION

The Water Reform Implementation Committee will provide advice to Government on mechanisms and approaches to support the implementation of water reform.

The proposals contained in this discussion paper are significant and far-reaching. The full suite of reforms would take a number of years to fully implement.

The Committee supports the Government in introducing reforms in an integrated and phased manner that recognises the reforms as a package. Many of the reforms contemplated in this document are inter-related. An example is the relationship between water metering, water entitlements and water trading. Water metering will allow resource managers to allocate with greater certainty water to various uses including the environment. This will facilitate secure water entitlements with longer tenures. These will be more valuable to water users and provide a stronger platform for water trading. Water trading, in turn, can only occur efficiently where water is metered.

Many of the reforms contemplated can only be fully implemented following either completion of a statutory water management plan or changes to existing legislation. To that end, new arrangements may need to co-exist with existing arrangements for some period.

The Committee proposes that implementation of reforms be done using a phased approach. To the extent possible, reforms are to be commenced as quickly as possible and advanced wherever possible without recourse to comprehensive legislative reform.

The following is an approximate implementation order for the reforms contemplated in this paper:

- Continue the phased introduction of a state-wide metering program
- Introduce a Water Licence Administration Fee
- Prepare statutory water management plans in priority areas
- Following the finalisation of the plans, introduce new forms of water access entitlement, and migrate existing licences to the new arrangements
- Continue to support and encourage water trading, and other mechanisms in support of water efficiency
- Introduce cost recovery mechanisms (other than for licence administration) only after the development of nationally agreed approaches and implementation of new water access entitlements.

COMMUNITY CONSULTATION

The Government has requested the Water Reform Implementation Committee to prepare its advice with input through public consultation.

This discussion paper forms the basis of the public consultation process and written submissions are invited. There will also be a series of community workshops in regional areas of Western Australia in July, August and September 2006.

Details of the consultation program and workshops can be accessed from www.water.wa.gov.au
2 CHANGING THE WATER ENTITLEMENT SYSTEM

The Government Response to the recommendations of the Irrigation Review Steering Committee sought specific advice on:

- The preferred form of water entitlements, including the duration of entitlements appropriate for Western Australia
- Entitlements as a share of a consumptive pool
- Management of water resources through statutory water plans.

CURRENT SITUATION

The entitlement system for water, like entitlement systems for fisheries or other common pool resources, is a regulatory method of ensuring effective resource management and use.

The framework for water resource management in Western Australia is provided by the Rights in Water and Irrigation Act 1914 supplemented by other relevant legislation. The Water and Rivers Commission is responsible for managing and allocating Western Australia’s water resources, although this function is expected to transfer to the Department of Water in 2006/07. The Department currently grants the right to take water by issuing a licence with water entitlements under the Act to individuals or companies who meet the Department’s criteria.

In exercising this function, the Department takes account of environmental water needs as required by the Act. Current policy provides for the identification of Ecological Water Requirements, that is, the water regimes needed to maintain ecological values of a water dependent ecosystem at a low level of risk. Ecological Water Requirements are determined on the basis of the best scientific information available and are the primary consideration in the determination of Environmental Water Provisions, or the water regimes that are provided as a result of the water allocation decision making process, taking into account ecological, social and economic impacts. Environmental Water Provisions may meet in part or in full the Ecological Water Requirements.

Licences are generally issued on a first in first served basis although merit selection has been trialled in some highly allocated areas. Usually the maximum period of a licence is ten years. Terms, conditions and restrictions are placed on the annual volumetric allocation and management issues are identified.

Small users of water are not licensed. These include more than 140,000 garden bores in and around Perth and bores used for livestock watering in rural areas. These non-licensed water uses are considered when developing policies and strategies for water resource management.

Water entitlements may be transferred within the same management area provided the impacts of taking water are acceptable. To reduce speculation, transfers are generally not allowed where the entitlement has never been used.

Under the Rights in Water and Irrigation Act 1914, two licences may be issued:

1. A licensed allocation to take water from a proclaimed water source.
2. A licence or approval to construct and operate works to access water.

WHAT IS DRIVING THE NEED FOR CHANGE?

A strong framework for water entitlements and allocations is necessary for effective water resource management. The current water entitlements system in Western Australia has some weaknesses that should be addressed. Modifying the water entitlements system is also necessary to bring it into line with the objectives and outcomes sought in the National Water Initiative.

1 Common pool resources are characterised by the fact that use by one individual or group means less resource is available for use by others.

2 To avoid confusion, subsequent references in this paper to responsibilities and powers that are currently exercised by the Water and Rivers Commission will assume that the functions and powers have transferred to the Department of Water.

3 The water allocation decision making process includes provision for assessment of proposed Environmental Water Provisions under the Environmental Protection Act 1986, where environmental impacts may be significant.

4 Requests for licences are attended to in the order in which they arrive, without bias or preference.
The National Water Initiative notes that:

The framework within which water is allocated attaches both rights and responsibilities to water users - a right to a share of the water made available for extraction at any particular time, and a responsibility to use this water in accordance with usage conditions set by Government.

Likewise, governments have a responsibility to ensure that water is allocated and used to achieve socially and economically beneficial outcomes in a manner that is environmentally sustainable.

Water licensees in Western Australia seek greater security of water entitlements. More secure entitlements will promote the efficient use of water and provide a sounder basis for investment and security for finance. They will also provide greater certainty that water resources will be accessed and used in a sustainable manner.

Currently, rights to water, licensing requirements and the powers of the Department of Water often differ depending upon whether or not a water resource is located in a proclaimed management area. The majority of Western Australia’s groundwater resources have been proclaimed under the Rights in Water and Irrigation Act 1914 and are therefore subject to licensing requirements. However many of its surface water resources have yet to be proclaimed and thus are not currently subject to licensing.

Consistent with the above, the State Water Plan (Draft Water Policy Framework) identifies the following objectives and elements relevant to the creation of an enhanced water entitlement system for Western Australia.

---

**OBJECTIVE: ENHANCE THE SECURITY AND CERTAINTY OF WATER RESOURCES**

Water allocation and planning
Water allocations are consistent with water plans and conditions to preserve the values of the water resource.

Separation of water allocation from land
Water allocations are separated from access to land or title.

Water Allocations, licences
Significant consumptive water use is licensed.

Water allocations, undeveloped resource
Entitlement to a water allocation is granted as a fixed amount for a period that matches its expected efficient productive use, where a resource is relatively undeveloped.

Speculation in water allocations
Prior to a resource becoming fully allocated, water allocation licences are supported by planning for productive economic use to discourage speculation.

Water allocations, developed resource
Entitlement to a water allocation is granted as a share of a consumptive pool on a rolling long-term basis, where a resource is substantially developed.

Reservation of allocations
The Government may set aside allocations for public water supply and other high value uses, recognising its scarcity.

Environmental and social water requirements
Water required to meet agreed environmental and social values has equivalent security as allocations for consumptive use.

Risk assignment
Changes to the consumptive pool arising from climatic variation are equitably shared by all water users and the environment.
ADVANTAGES OF CHANGING THE ENTITLEMENTS SYSTEM

A new form of water access entitlement in Western Australia will have a number of significant advantages over the current licensing arrangement. These include:

1. Enhancing the security and commercial certainty of water access entitlements through statute and reducing business risk
2. Providing increased certainty on the meaning and content of entitlements through statutory water plans based on best available information following transparent planning processes
3. Enhancing statutory instruments for environmental and other public benefit outcomes in surface and groundwater systems to protect water sources and their dependent ecosystems
4. Adapting surface and groundwater systems to accommodate changes in the consumptive pool over time
5. Transparently and consistently assigning risks from future changes to the consumptive pool to governments and water users
6. Protecting the integrity of water access entitlements from unregulated growth in interception through land-use change
7. Increasing the productive use of water.

PROPOSED DIRECTIONS

Statutory plans for water management

Under the National Water Initiative, statutory water management plans are the principal device for shifting from licences to access entitlements and improving the security of the entitlement. If there is no statutory water plan for a water source then there is no access entitlement. Until a statutory plan is in place, the right to take water is simply a licence (National Water Initiative paragraph 29).

Under the new system (Figure 3), the Minister for Water Resources would proclaim those water sources and districts for which statutory water management plans would be developed. As a particular water plan is finalised, existing water licences in the plan area would be migrated to become water access entitlements. However, until statutory water management plans are in place the current arrangements for water licences would remain.

Statutory water plans will be based on the best available information. They will codify and extend the existing obligations and responsibilities of water holders and users. The plans will restrict Ministerial and Departmental discretion to areas specified in the plans. The final approval of the water management plans would rest with the Minister for Water Resources.

‘Statutory’ does not mean ‘perfect’. Particularly with regard to groundwater systems, there is a need to develop an entitlement and allocation system that does not require ‘perfect knowledge’. In this way, sustainable limits can be established at first conservatively. As pumping of the aquifers occurs and monitoring happens, the knowledge gained can be utilised at low risk. The statutory water management plans are intended to promote certainty. They are not meant to require it.

Adaptive management of the taking of water is essential to ensure that use is environmentally sustainable in the face of change. Change may occur with respect to water use or availability or changes in knowledge and understanding of system limits, environmental impacts and other factors.

Statutory plans will clarify and document the conditions attached to access entitlements. They will strengthen the powers of the water resources manager to enforce compliance but reduce the traditionally large residual discretion available to the water resource manager in each jurisdiction.
The National Water Initiative leaves the period or duration of the plans for each state to decide. The initial round of plans may be limited to between five and seven years as suggested in the Government Response. As knowledge of individual systems improves, it would be sensible to move to longer duration plans (for example, 10 years).

**Form of water access entitlements**

Terminology

The word ‘allocation’ is often used interchangeably to mean both a water access entitlement and a water allocation. However, under the National Water Initiative the terms have distinct meanings. The term:

1. **Water access entitlement** is used to define any perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan

2. **Water allocation** is used to define the specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water plan.

Unbundling

In Western Australia the Department of Water grants the right to take water by issuing a water allocation licence, including water entitlements, to individuals or companies.

An unbundling of existing rights and licences is proposed. This includes separation of water access entitlements from water and land use approvals. The new entitlement system would include:

1. A water access entitlement to provide exclusive access to a share or volume of water from a consumptive pool defined by the relevant water plan

---

1. A water access entitlement should generally be viewed as a share of the resource available for consumption - which when considered over a number of years can be termed the ‘consumptive pool’. The consumptive pool is determined on the basis of an agreed planning process.
2. A separate site use approval
3. A separate works approval.

In effect, the current allocation licence would be replaced with two new types of licence. In the proposed system one licence would specify the nature of the water access entitlement to receive periodic allocations. The other licence sets the conditions under which any issued allocation can be used.

For example, under the proposed arrangement, an existing licence allocation authorising extraction and use of 50 ML for irrigation would be replaced with:
1. A water access entitlement for 50 ML defining the nature of the holder’s share in the consumptive pool
2. A site use approval authorising, say, flood irrigation of up to 50 ML per year.

Consumptive Pool
Prior to granting access entitlements or use licences, the consumptive pool would need to be defined for the water resource. The consumptive pool is the amount of water resource that can be made available for consumptive use in a given water system. Consumptive uses include purposes such as irrigation, industry, urban and, also, livestock and domestic use.

Reflecting current policy and in accordance with the approach adopted in the National Water Initiative, the consumptive pool would reflect an environmentally sustainable level of extraction, that is, the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource.

The consumptive pool for a particular water resource will be defined and adaptively managed through the development and implementation of statutory water management plans.

A water access entitlement is defined as a ‘share’ of the consumptive pool. The share can either be in the form of:
- Unit shares - indicating the number of shares that each licensee holds of the total number of shares issued for the consumptive pool
- Proportional shares - defining the proportion of the consumptive pool that each licensee holds on the entitlement.

A unit share arrangement is preferred as additional shares can be issued should additional water become available. It is also administratively much simpler than a proportional share arrangement.

Access entitlements and annual allocations
The relationship between the access entitlement and the allocation to that entitlement is summarised in Figure 4. Once a statutory water management plan is in place, an access entitlement may be granted to an individual as shares in the consumptive pool. Each share would have a volumetric value. In the example shown in Figure 4, an irrigator is granted 50 shares of the consumptive pool at a volume of 2 ML per share. This gives a total access entitlement of 100 ML.

However the amount of water available for use would be determined on an annual/seasonal basis to reflect the current conditions. In the Figure 4 example, only 92 per cent of the consumptive pool is available for allocation in that season. Thus the amount of water available to the irrigator in that season is 92 ML (i.e. 100 ML X 92 per cent pool availability = 92 ML).

**Figure 4 Relationship between access entitlements and allocations**

<table>
<thead>
<tr>
<th>Number of unit shares in consumptive pool</th>
<th>x</th>
<th>ML per share</th>
<th>=</th>
<th>Volumetric entitlement (ML)</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. 50</td>
<td>x</td>
<td>2 ML</td>
<td></td>
<td>100 ML</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volumetric entitlement (ML)</th>
<th>x</th>
<th>Allocation announcement (%)</th>
<th>=</th>
<th>ML available to irrigator this season</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. 100 ML</td>
<td>x</td>
<td>92 per cent</td>
<td>=</td>
<td>92 ML</td>
</tr>
</tbody>
</table>
Changes to allocations
Adjustments are made in the resource allocation to avoid situations of over-allocation or overuse of the water resource. An issue is the frequency that allocations should be reviewed.

Surface water systems tend to fluctuate more often and more significantly than confined aquifers. For a dam-regulated surface water system, allocations to entitlements should be made seasonally or even progressively through a season. For confined aquifers that show very little change from year to year, it may be appropriate for allocation levels to be reviewed every 5-10 years. A review of allocation levels for superficial (that is, unconfined) aquifers may need to occur more frequently. They tend to be more susceptible to changes in water levels than confined aquifers.

The Committee proposes that the period for setting allocations be determined through individual statutory water management plans. This will allow the period for setting allocations to reflect the nature of the specific water resource and situation.

Adaptive management approach to water allocation
Many water resources and groundwater management areas have not been allocated to their sustainable limit because the exact limit is not known. The Department of Water adopts a conservative approach that limits the potential for over-allocation of the resource. As better information and understanding becomes available the sustainable limit may be increased. This ‘staged release’ of water, similar to the release of land, encourages the efficient and productive use of water and the application of the precautionary principle in the release of additional licences or entitlements.

The National Water Initiative (paragraph 26) requires that existing situations of surface or groundwater over-allocation be addressed. The precise pathways by which over-allocated systems will be adjusted to resolve situations of over-allocation must be defined. This may be accomplished through the use of one or a combination of the following methods:

- An immediate pro-rata cut in allocations so that use is reduced to sustainable yield
- Provision of bridging allocations, either to all or a subset, by allowing temporary drawdown of the aquifer (or stream)
- Introduction of opportunities to borrow and carry forward allocations so that individuals can distribute impacts between years. This method is facilitated by the possibilities of trade.

The Committee proposes that the preferred methods to address over-allocation of a particular resource should be determined during the development of a statutory water management plan.

Duration of entitlements
A key objective of the Western Australian Government and the National Water Initiative is to strengthen the security of the access entitlement in order to promote investment and productive use. The more secure the entitlement the more certain water users will be of investments based upon that entitlement and the more willing financiers will be to use that asset for the purposes of loan security. The Government Response recommended that water entitlements be a rolling entitlement defined in a similar manner to the rolling renewal of pastoral leases.

Consistent with the Government Response to the Irrigation Review, a system of rolling entitlements should be created. The water access entitlement will have a maximum term of 40 years with an opportunity for an extension of the term, say after ten years of operation. Subject to satisfactory compliance with the requirements of the entitlement its term would be ‘topped up’ to the maximum fixed term unless the relevant water plan specifies that the entitlements are not to be renewed after the full term has expired. This arrangement provides long term certainty for the entitlement holder while recognising that water resources are vested in the Crown. Rolling tenure has also been adopted for pastoral leases over Crown land as a means of providing security for investment and project planning.

Risk assignment
The National Water Initiative requires a risk assignment framework that provides for the payment of compensation when changes are made to water access entitlements arising from changes to knowledge about the water resource. In short, after 2014, liability switches from the entitlement holder to the State and Commonwealth Governments. This risk assignment framework is summarised in Figure 5.

Given that the State signed the National Water Initiative two years late and given Western Australia’s reliance on groundwater resources this date needs to be carefully considered.
Figure 5 National Water Initiative Risk Assignment for Changes in Allocation

Change to consumptive pool / allocations

Currently resource overallocation or overused

YES

Precise pathway to address

Significant adjustment issues?

NO

STATE consults on appropriate responses (poss C’wealth)

No action required. No cost to govt

NO

Risk assignment framework (RAF)

Any further reductions (after proper plans)

YES

Climate variability & change; natural events

Bona fide improvement in knowledge

Changes in policy (new environmental policy)

RAF informs

Up to 2014

Post 2014

1st 3% - holder
2nd 3% - State 1/2
>6% - State 1/2 C’wealth 1/2

Cost to govt

Holder bears costs

Independently initiated C’wealth responses

RAF informs
It may be necessary for Western Australia to negotiate a later trigger date. In any case, the State needs to invest significant resources in developing statutory water management plans in priority areas.

There may also be advantages in exploring other methods of dealing with the higher uncertainty associated with groundwater planning. For instance, a separate class of licences might be created for the last 10-30 per cent of allocations. This would be distinct from uniformly reliable entitlements. As the resource is proven, these less reliable licences could be converted to entitlements.

**Special issues**

**Single licences of irrigation co-operatives**

In Western Australia the four irrigation cooperatives (Harvey, Ord, Gascoyne and Preston) hold single allocation licences. Individual irrigators hold shares in the cooperative in proportion to their water entitlements. The single licence arrangements, in combination with the respective Articles of Association, allow the cooperatives to restrict sales of water by individual irrigators to external parties.

Under the National Water Initiative (paragraph 60), the states and territories have agreed to remove existing institutional barriers to intra and interstate trade of water. For irrigation cooperatives this means:

1. There should be no restriction by an irrigation cooperative on temporary sales of seasonal allocations
2. Permanent sales of water access entitlements should be unrestricted subject to protection of third parties, including the environment.

The Implementation Committee believes compliance with this National Water Initiative objective should not be achieved without regard to the net impacts and multiple advantages of self-management via a ‘single desk’ approach. This position is consistent with that of the Irrigation Review Steering Committee and the Government Response.

The policy challenge is to remove the negative impacts of restrictions on external trade without losing the benefits of the ‘single desk’ approach. If any changes are sought, the Committee proposes that this be done in negotiation with the irrigation cooperatives.

**Mining**

The resources sector uses around 24 per cent of Western Australia's water compared to only 3 per cent nationally. However most of that water is non-potable or hyper-saline from groundwater sources in remote regions of Western Australia.

Water is sourced by the mining industry from its own borefields, mine dewatering or onshore petroleum operations. This is undertaken in accordance with prescribed environmental protection conditions. Due to the distance from each other, there is likely to be little opportunity for water trading between mining operations.

Water used by the resources sector, other than that supplied through a government utility supply scheme, is licensed and subject to conditions that stipulate the volume of water that can be abstracted in any given year. Mining operations using large volumes of water or located in sensitive areas are usually required to draft and implement a detailed operating strategy that includes monitoring and reporting requirements.

The National Water Initiative makes specific provision for the minerals and petroleum sectors. It recognises that specific project proposals need to be assessed according to environmental, economic and social considerations. Factors specific to resource development projects, such as isolation, relatively short project duration, water quality issues, and obligations to remEDIATE and offset impacts, may require specific management arrangements.

In terms of future licensing and trading arrangements, it is proposed that:

1. Water use by mining operations requires ownership or lease of allocations to a volumetric water licence or to an access entitlement in the consumptive pool
2. Short term uses be subject to licences.

**Environmental requirements**

Reflecting both current policy and in accordance with the approach adopted in the National Water Initiative the consumptive pool would reflect an environmentally sustainable level of extraction, that is, the level of water extraction from a particular system which, if exceeded would compromise key environmental assets, or ecosystem functions and the productive base of the resource.
The consumptive pool for a particular water resource will be defined and adaptively managed through the development and implementation of statutory water plans.

Current policy provides for the identification of Ecological Water Requirements, that is, the water regimes needed to maintain ecological values of a water dependent ecosystem at a low level of risk. Ecological Water Requirements are determined on the basis of the best scientific information available and are the primary consideration in the determination of Environmental Water Provisions, or the water regimes that are provided as a result of the water allocation decision making process, taking into account ecological, social and economic impacts. Environmental Water Provisions may meet in part or in full the Ecological Water Requirements.6

The National Water Initiative provides that environmental water:

1. Be given statutory recognition and have at least the same degree of security as water access entitlements for consumptive use and be fully accounted for

2. Be defined as the water management arrangements required to meet the outcomes sought, including water provided on a rules basis or held as a water access entitlement

3. If held as a water access entitlement, may be made available to be traded (where physically possible) on the temporary market, when not required to meet the environmental and other public benefit outcomes sought and provided such trading is not in conflict with those outcomes.

Indigenous access
The National Water Initiative (paragraphs 52-54) states that:

1. Parties will provide for indigenous access to water resources, in accordance with relevant Commonwealth, State and Territory legislation, through planning processes that ensure:
   i) Inclusion of indigenous representation in water planning wherever possible

ii) Water plans will incorporate indigenous social, spiritual and customary objectives and strategies for achieving these objectives wherever they can be developed.

2. Water planning processes will take account of the possible existence of native title rights to water in the catchment or aquifer area. The Parties note that plans may need to allocate water to native title holders following the recognition of native title rights in water under the Commonwealth Native Title Act 1993.

3. Water allocated to native title holders for traditional cultural purposes will be accounted for.

Further consideration needs to be given to indigenous access to water in relation to the proposed water reforms. In particular, there are a number of issues relating to both the possible existence and nature of native title rights to water that requires further detailed consideration.

Form of water register
A register of water access entitlements is essential to improve the security of entitlements in order to promote investment and efficient use of water. In addition, registries are essential to record the change in ownership as a result of the transfer or trade of those entitlements.

The Register would provide a record of every water access entitlement. The Implementation Committee recommends the registry system adopted be similar to a Torrens Title system. In a Torrens title system:

- The register is the title
- Interest and encumbrances on those titles can be registered and this registration can be independent of the holder of the title
- There is a range of other protocols and procedures generally familiar to persons engaged in land transfer and trades.

The Committee considers that greater clarity is required on the matter of indefeasibility of the registry. In other jurisdictions (for example NSW and Qld) the registry is not indefeasible7. This is because water remains vested in the Crown for the purposes

---

6 The water allocation decision making process includes provision for assessment of proposed Environmental Water Provisions under the Environmental Protection Act 1986, where environmental impacts may be significant.

7 Indefeasible: impossible to annul, make void, or forfeit.
of management and water users hold access entitlement conditional upon compliance. Nonetheless, the Committee is of the view that titles should be guaranteed against error in the registry in the longer term so that detriment arising from error could potentially be compensable.

**Implementation issues**
Implementation is critical in terms of maximising the net benefits of the recommended changes. Experience in other states suggests the following sequence of steps for individual water resources:

1. Monitor and meter comprehensively to gain an appropriate level of understanding of the behaviour of aquifers or stream flows
2. Identify and quantify hydrological interactions
3. Develop the statutory plan
4. Convert allocation licences to perpetual or long-term water access entitlements
5. Establish the register of access entitlements
6. Allow trade of entitlements under the new rules.

In terms of prioritisation, the challenge for Western Australia is to ensure that fully allocated or over-allocated water sources, plus other priority sources, have statutory plans in place in the next five to six years. To do less would result in little achievement against National Water Initiative objectives and little immediate benefit to licence holders from the foreshadowed reforms.

Four groundwater resources have been identified as highest priority for the development of statutory water management plans. These are Gnangara, South West, Collie and Pilbara.

One possibility would be to develop a pilot or trial of the new entitlements system in one surface water source and one groundwater management zone. This would allow an applied test of the new system before its full scale implementation.

A rolling approach is preferred whereby the number of statutory water plans under development is scaled up each year. Lessons from each new round of plans would benefit subsequent plans.

Until a statutory water management plan is in place for a particular water resource, the Department of Water and allocation licence holders will essentially operate under the existing Rights in Water and Irrigation Act 1914. As new statutory plans are put in place, licence holders would move from the old to the new system.

**QUESTIONS FOR COMMENT**
What are your views of statutory water plans as the basis of new water access entitlements?

What are your views on the proposed framework for water access entitlements?

Do you have any comments on the proposal for a register of water access entitlements?

How should the uncertainty associated with groundwater resource management be addressed? Would creation of different classes of licences be a good solution?

Do you have any comments regarding what system might apply for irrigation cooperatives?

Do you have any comments in relation to environmental water, indigenous access or mining?
3 FACILITATING WATER TRADING

The Government noted in its Response to the Irrigation Review that allowing water entitlements to move between users in an open market tends to ensure that water allocated for consumptive use progressively moves to higher values.

The Government also indicated it requires an efficient trading system that reflects local conditions and encompasses the needs of water users.

CURRENT SITUATION

Water trading currently occurs in Western Australia and is governed by the Rights in Water and Irrigation Act 1914. The Act was amended in 2001 to permit trading of water entitlements. Policies that govern trading seek to ensure that trades are consistent with approved resource management plans, where these exist.

The Rights in Water and Irrigation Act 1914 provides that the resource manager (that is, the Department of Water), in considering whether to permit trades, will:

- Have regard to protecting the environment and other users from damage
- Ensure that outcomes continue to be beneficial to Western Australia
- Prevent non-efficient uses and monopolies in water
- Encourage trading for water use efficiency.

Both permanent and temporary trades may be undertaken. Permanent trades are realised by the transfer of a licence from one party to another. Temporary trades may be undertaken by the temporary assignment of a licence, or part thereof to another party on an annual basis, or, in special circumstances, periods of less than a year. Generally trades may only take place within a defined area containing an aquifer or stream basin.

The Government has indicated that the existing policy framework will continue to operate until alternative arrangements are agreed and statutory water management plans are in place.

The National Water Initiative sets out the principles for trading rules in Schedule G. Trading must be consistent with provisions of individual statutory water management plans.

There is a more extensive history of water trading in the eastern states. As shown in Table 2, the volume of water traded through permanent trades in water entitlements is typically much lower than for ‘temporary’ trades in seasonal allocations (see Table 2). Most permanent transfers occur when a property is sold, typically at generational change. However, many entitlement holders who hold excess water, for insurance against dry seasons, are willing to engage in a temporary trade once the seasonal allocation has been announced and the insurance is no longer needed for that season.

<table>
<thead>
<tr>
<th>Table 2 Water Trading in the Murray Darling Basin 2003-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation Diversions (GL)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>NSW</td>
</tr>
<tr>
<td>Victoria</td>
</tr>
<tr>
<td>South Australia</td>
</tr>
<tr>
<td>Queensland</td>
</tr>
<tr>
<td>ACT</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

WHAT IS DRIVING THE NEED FOR CHANGE?

The proposed changes to water trading are intended to ensure that water is used productively and for highest value purposes. This requires arrangements that facilitate efficient water trading.

The separation of land from water and the unbundling of existing rights and licences, the establishment of a comprehensive system of licences and access entitlements to water, the establishment of a Torrens-like registry system where interests and encumbrances and changes of owners can be registered, will also facilitate trade in water.

There is little or no incentive to trade entitlements or seasonal allocations if there is no constraint on water availability and existing use is unmeasured. This is an important water trading principle.

Greater ease and efficiency of water trading potentially provides a means to reduce environmental risks and impacts by expanding the number of sources which may be accessed to satisfy consumptive demand in a particular region or location.

The State Water Plan (Draft Water Policy Framework) identifies the following objective and elements relevant to the development of a water trading system for Western Australia.

OBJECTIVE: ENHANCE THE SECURITY AND CERTAINTY OF WATER RESOURCES

Water markets and trading
Market rules for an efficient water trading market will be developed to promote a healthy economy and reduce the risk of over-allocation.

Water Transfers
After consideration of local needs and impacts, water may be transferred within or between surface and ground water systems.

ADVANTAGES OF FACILITATING WATER TRADING

Trade is voluntary and will not occur in the absence of benefits to both buyer and seller. Trade in water, like trade in land, will benefit all parties provided third party impacts, including environmental impacts, are appropriately handled. Trade will be most beneficial where:

- The returns to and risks of water use differ significantly between parties
- The constraints on availability are most pressing
- There are multiple potential buyers and sellers
- There are unrealised opportunities for efficiency improvements
- Transaction costs are low
- The means to transport water exists.

Trade can improve groundwater management by enabling the more efficient use of water. This can provide economic, social, and environmental benefits.

Allowing water access entitlements to move between users in an open market can contribute to water allocated for consumptive use progressively moving to higher value uses. The economic benefits from trade include optimising the overall use of groundwater by freeing unused allocations ('sleeper licences') and allowing more efficient users to gain greater economic opportunity. This enhances the local economy.

As noted above, trade can provide a "pressure relief" mechanism in relation to environmental demand for water.

The substantial benefits from trade in water are well documented in the case of Australian surface water systems. A pro-rating of the likely impact of water trade in NSW in the mid 1990s to the Murray-Darling Basin estimates a contribution to Australian gross domestic product of around $130 million in the 2003-04 season. This probably understates the benefits of trade in recent years since the cutbacks in seasonal allocations in recent drought years have been severe. More severe cutbacks in allocations result in greater gains from trading.

---

Climate variability and change have already seen declines in rainfall and stream flow in the Southwest of Western Australia. These changes affect both the supply of and demand for water and enhance the attractiveness of water trading.

In general, the larger the area over which trade can occur, the larger the volume of trade and the larger the likely magnitude and benefits.

**PROPOSED DIRECTIONS**

**General observations and principles**

Effective trade will occur where:

- The ‘rules’ for trading are outlined in statutory water management plans
- Access to additional water resources is capped or available only at a price
- Volumes taken by both buyer and seller are metered
- The seller holds title to a licence or entitlement which can be transferred to the buyer and is recognised by Government.

Some view the lessons from trade in surface water in the eastern states, while relevant to surface water trade in Western Australia, as of little overall relevance in this state because of the dominance of groundwater. Others view the lessons and experience of water trading elsewhere as having both direct and general relevance to the Western Australian situation. Water trading will be more important in regions of high development and use where there is strong competition for the available water. This is true for significant parts of the Perth Basin where the overwhelming percentage of Western Australia’s approximately 19,000 licences for groundwater are located.

Competition for surface water supplies is also strong in the rivers and streams in the Perth Basin southward of Harvey. There the volume of licensed allocations for surface water approaches the volume of licensed allocations for groundwater. In currently unmanaged surface water systems there is growing competition for water and potential benefits from water trading.

**Trade in groundwater**

There has been very little trade in groundwater in Australia including in Western Australia. One reason is that there is little or no incentive to trade entitlements or seasonal allocations if existing use is unmeasured. With the exception of significant groundwater users such as the mining industry, this is also the situation in Western Australia. These conditions do not encourage water trading.

Nonetheless, as noted by the High Level Steering Group (HLSG) on Water:

> Trade can improve groundwater management by enabling the more efficient use of water. The efficient use of groundwater can provide economic, social, and environmental benefits. Trade is also a redistribution mechanism and can be used to reduce conflict. Trade has a number of other desirable attributes. It is optional; people are not forced to trade. It also creates flexibility for users and does not involve the government in choosing between competing potential water users. Nonetheless, government does have a role in the development of market rules and principles.

The heterogeneous nature of many groundwater resources (for example, differing quality constraints on movement due to the transitivity of the aquifer) creates additional uncertainties that may constrain trading activity. Information and knowledge of the resource is a more important requirement amongst the several preconditions for trade than it is in the case of surface water.

Trading is obviously more likely in systems that are over allocated, fully allocated or approaching full allocation, or where there are at least interim caps or

---

sustainable limits. The Department of Water’s database indicates there are up to 47 groundwater management zones where this is the case.

Since trade must be limited to the same source or groundwater management zone, this suggests the volumes of trade in Western Australia will be smaller than in the large surface water systems of the eastern states.

These observations suggest that:

- Trade will remain very restricted in Western Australia until water use is comprehensively licensed, metered and allocation limits are set
- Trade will be most beneficial in the southwest of Western Australia and other areas where there is strong or growing competition for water, including the major irrigation areas
- The general lack of interconnection between the rivers and groundwater management zones across Western Australia will restrict the extent of trade except where pipe connections or channels are already in place or can be established at low cost.

Speculation and monopoly
The introduction of water trading in surface water systems has triggered concerns, especially among irrigators, that speculators could purchase large volumes of water and thereby push up the price.

Concern over speculation is both an issue of equity and efficiency. In terms of efficiency impacts, monopoly power in water can be used to block wider scale developments. The inability to access water could for example restrict a new mining development.

Experience in the major active water markets has revealed virtually no evidence to support these fears. In these markets the greatest protection against the possibility of ramping the market has been the breadth, openness and transparency of the water markets. This does not mean there is no speculation. Indeed, there is reasonable evidence of speculation in water in these markets at present. The greater importance of groundwater in Western Australia and the necessity to restrict trade to within a groundwater management zone means the potential for multiple, small local monopolies in water may be much higher than in the large surface water systems of the eastern states.

Options that might limit speculation include:

- Restrictions on who can hold and trade titles to the asset
- Inspection to ensure the asset in question is being used in precisely the way intended or prescribed
- Limits to the size and concentration of holdings
- Public disclosure, naming and shaming
- General powers to prosecute the abuse of monopoly power.

None of the above options are likely to be particularly effective. Apart from the uncertainty of this approach, it is hostile to the promotion of trade and to the National Water Initiative objective of ensuring security of title. Limits on the size and concentration of holdings offer a more attractive option since they deal more directly with the question of monopoly power. However, the practical issues may defeat this option since the diversity of sources, management zones and their size may make the definition of the key thresholds problematic. Public disclosure and general mechanisms such as the Trade Practices Act provisions relating to the misuse of market power may be more useful.

Implementation issues
While trading can occur now and should continue, any further changes in legislative and policy arrangements for water trading should occur only after the following matters have been addressed in any given water management area:

- Metering is implemented
- Sustainable yields within water management areas have been determined and expressed through statutory water management plans
- A new approach to water entitlements has been implemented.

QUESTIONS FOR COMMENT
Are there further issues in relation to water trading that need to be considered?
How important is water trading likely to be for your area or industry?
Do you have any comments in relation to speculation and monopolies in water markets?
4 IMPLEMENTING WATER METERING

The Government Response to the Final Report of the Irrigation Review Steering Committee supported metering as a fundamental tool for managing water use and allocation.

The Government asked the Implementation Committee to recommend a threshold of water extraction at which metering should be a licensing requirement. It was also asked to consider who should pay for metering and others matters related to meter standards and measurement.

CURRENT SITUATION

The current policy of the Department of Water requires metering:

- As a licence condition if an allocation is equal to or greater than 500 ML per year. This threshold captures the water use of large mining operations, water service providers and agricultural cooperatives
- In declared areas where the resource is over, or approaching, full allocation
- In specified circumstances where more accurate measurement is needed (for example, some areas subject to water management plans).

Less than 5 per cent of the water licences issued in the state are currently metered. However, almost all of these are licensed abstractions above 500 M L/year. This level of metering captures approximately 80 per cent of the licensed water use in Western Australia.

The mining industry, which accounts for approximately 24 per cent of water use in Western Australia, is fully metered.

WHAT IS DRIVING THE NEED FOR CHANGE?

Recognition of the value of water metering is widespread. The extension of metering is a significant thrust of the National Water Initiative.

However, such estimates will never have the value of a metered record of water use.

The State Water Plan (Draft Water Policy Framework) also identifies the following objective relevant to the extension of water metering in Western Australia.

OBJECTIVE: BUILD KNOWLEDGE AND CAPACITY THROUGH SCIENCE AND INNOVATION

Water resources information
Information on water resources is accurate, maintained, publicly available and accessible.

Performance Monitoring
Performance indicators are developed and monitored for water resource management and service provision.

ADVANTAGES OF WATER METERING

A consistently high level of water resource management is not possible without accurate data on current use or the ability to develop a reliable historical record. A more secure entitlement system and an effective water trading market also require accuracy in water use measurement that cannot be achieved without metering.

The use of information provided by meters has significant potential to improve the business performance of an individual grower or other commercial water users. While the Water Reform Implementation Committee will recommend a mandatory metering threshold to Government, the Committee also hopes the Water Reform Program will increase the awareness of the benefits of metering and promote the voluntary uptake of metering as a management tool.

PROPOSED DIRECTIONS

When should metering be required?
Two options are presented below. The first describes a threshold approach; the second option is based on the level of resource utilisation.

Option 1 - Threshold above 50ML/year
The Implementation Committee’s preferred option is to change the metering threshold from the current 500 ML/year to 50 ML/year. While this is a large change, it is a lesser reduction than the 5 ML/year threshold recommended by the Irrigation Review.
Ideally, from a resource management perspective, all water usage would be metered. However, the cost-benefit needs to be considered. Research by the Implementation Committee revealed that approximately 93 per cent of water abstraction in Western Australia is attributable to licensees with an allocation above 50 M L/year. Approximately 10 000 meters would currently be required in order to measure this water usage. A decision to reduce the threshold to 5 M L/year would allow an additional 6 per cent of the State’s allocated water to be metered. However, to do so would require the installation of a further 8000 meters.

For this reason, the Committee proposes 50 M L/year as the preferred cut-off for mandatory metering. This threshold will provide a high level of data at reasonable cost. Below this threshold the management benefit comes at the substantially higher cost associated with the installation, maintenance and data management of the additional 8000 meters.

As the current policy of the Department of Water requires, there will be circumstances where metering should occur below the 50 M L/year threshold. Consistent with the National Water Initiative, the Committee proposes that metering be required below the 50 M L/year threshold in the following circumstances where:

- New water allocations are issued
- There are disputes over the sharing of available water
- There is a community demand
- There are licensed water users who intend to trade water, regardless of the volume traded.

In addition metering would be required for abstraction below the level of 5 M L/year where:

- A water management plan requires it
- There is significant potential for interference with other users’ abstraction
- There are water quality concerns, limited information or potential for unacceptable impact on water-dependent environments or the water resource

**Option 2 - Metering according to the level of resource utilisation**

A second option is to link the requirement to meter to the level of utilisation of the resource in a given sub-area. As water use in a sub-area increases so too would the need for stricter measurement of water use.

The Department of Water has developed categories (namely C1 - C4) to reflect the level of water utilisation as a percentage of sustainable yield: C1 (0 - 30%), C2 (30 - 70%), C3 (70 - 100%), C4 (> 100%). Resources in the C3 category are nearly fully allocated while those in the C4 category are over allocated.

As shown in Table 3, in areas where the utilisation of water is nearing the safe yield of a resource, the requirement for metering would increase for smaller individual allocations.

Theoretically, this approach would provide improved capacity for management decisions and resource protection in step with increased demand for a resource. It could therefore allow a graduated response over time.

**Table 3 Metering threshold by level of resource use intensity**

<table>
<thead>
<tr>
<th>Allocation Limit M egalitres per year (M L/year)</th>
<th>A specific reason</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>5-20</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>20-50</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>50-500</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>500 and above</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Trading of water</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
However, as the amount and reliability of information available is still highly variable between systems (at least until a comprehensive series of statutory water plans is in place), and the status of individual systems may fluctuate significantly, this option is considered less useful than a general threshold approach.

For this reason, it is not the preferred option of the Water Reform Implementation Committee.

Cost recovery for metering
A metering project is currently underway on the Gnangara Mound, the largest single source of good quality fresh water in the Perth region. The State Government is meeting the cost of meter purchases and installations for this pilot project. This action was taken in response to the urgent need to obtain good information on current water use as a result of concerns about the sustainability of the resource.

Notwithstanding the Gnangara precedent, it is proposed that the cost of purchase, installation and maintenance of meters be met by the water users. Meters are a tool required to manage the impact of water extraction for commercial purposes by licensees. The use of meters leads to benefits for the water user. However, the Committee recognises that the costs associated with meter installation may be significant in any one case. Estimates range from $1800 - $7500 for a single retro-fitting, depending on meter capacity. The Committee advocates a scheme whereby the Government contributes substantially or wholly to the up-front cost of purchase and installation, with an appropriate repayment period for cost recovery from the user.

In Queensland, users pay an annual metering service charge made up of:

- A meter user charge - initial site assessment, purchase, installation and borrowing costs
- An operating charge - maintenance, reading, administration and borrowing costs.

In exchange for the metering service charge, the Queensland Government is responsible for the purchase, installation, reading and maintenance of each meter for the life of the meter. Charges also reflect the type and size of meter installed.

In Western Australia there are many options for apportioning the costs and timing of a repayment schedule. There are also scale considerations depending upon the metering threshold ultimately adopted. It is not possible to provide detailed cost recovery options at this time. Once an option is approved a detailed cost analysis and cost recovery options will be prepared. Any charging methodology must be transparent to ensure users understand the basis for the charges.

Meter specification and installation
Currently there is no national standard for irrigation meters. However, a standard is being developed under the National Water Initiative with the direct involvement of the Department of Water.

It is expected that the meters currently being installed on the Gnangara Mound will meet or exceed the national standards and specifications likely to emerge from this work. In the absence of a national standard, all meters should be installed in accordance with the requirements of the State’s Rights in Water and Irrigation (Approved Meters) Order of 2003. The Department of Water is currently developing a meter installation guide.

In future, meters selected for installation should be equipped or able to be equipped with a pulse output to facilitate data retrieval. The Department of Water will trial the use of this technology as part of the Gnangara Mound Metering Project with the aim of testing its suitability to Western Australian conditions.

The Gnangara Mound metering pilot project has demonstrated the difficulties in retro fitting meters into existing bore and well infrastructure. Fitting a meter to headworks at the time of construction of a new bore is relatively easy and cheap. However, to fit a meter into existing headworks can be very difficult, time consuming and expensive.

After installation it is important to conduct periodic inspections of the meter and headworks to ensure it is operating effectively. This should be included in the scheduled meter reading program by Departmental licensing officers as part of their normal compliance visits.

Options for installing meters include that it either be done:

- By the water user in accordance with the standard, or
- By the Department of Water, including by contractors engaged by the Department.
Option 1 - Meters installed by Department of Water through contract
Experience with Gnangara Mound indicates that contract installation is the cheapest and most efficient method. This is due to: the economies of scale achieved through bulk buying, competitive tendering and development of contractor expertise.

Option 2 - Meters installed by water users
The Department of Water's Gnangara Mound Pilot Metering Project has inspected and tested many existing private installations. The findings suggest that many user-installed meters are inaccurate and can either under-read or over-read. In many cases of incorrect installation the meters are over reading by as much as 40 per cent. In some cases licensee’s records are falsely indicating they are exceeding their total annual allocation, exposing them to compliance action by the Department of Water.

Meter reading and compliance
Once a meter is installed it is necessary to access it to collect data at regular intervals. Water users could undertake meter reading, with the results supplied to the Department of Water. Alternatively the Department could undertake this task, including through the use of contractors. 

Option 1 - Meter reading by users
Reading by water users is cheaper for the user. However it is subject to inaccuracies caused by inexperienced meter reading. There is also the potential for delays in the submission of data and differences in the way the data are received by the Department from users. These issues can be mitigated by audit and inspection programs and compliance conditions linked to licence renewal.

Option 2 - Meter reading by the Department of Water
If the Department of Water were to read meters (through contract) accuracy is improved and meter readings can be collected at source to make analysis of data easier and cheaper.

Implementation issues
It will take a number of years to implement metering throughout Western Australia. While the capacity for reading and maintenance of meters is relatively good, there are currently limitations in the areas of meter supply and installation. There is a shortage of suitably qualified people to design (or redesign) irrigation infrastructure and install meters to the appropriate standards.

Therefore, the Committee proposes that implementation should be prioritised according to the:

- need to provide high quality data in the development of new statutory management plans
- metering requirements determined in current water management plans
- number of high risk triggers (for example, the presence of vulnerable water dependent ecosystems) in a sub-area
- recommendations from Water Resource Management Committees, arising from an ongoing consultation process
- level of trades in an area
- level of demand for meters from users, including to improve management capacity
- requirement for metering of all new allocations, regardless of volume
- in dedicated horticultural precincts.

Decisions to implement metering in particular areas should be made public and water users consulted on the most appropriate method of implementation. This should include:

- An audit of existing meters and their suitability
- A review of user needs
- An assessment of types of meter to be installed
- The level of abstraction from each site
- The difficulty of installation
- Weather conditions suiting installations and users needs.

QUESTIONS FOR COMMENT
Do you have any comments about the proposed metering requirements?
Which option do you prefer in relation to the installation of meters?
- By the user
- By the Department of Water (through third party contractors)

What do you believe is a fair basis to recover the costs associated with meter installation?
Which option do you prefer in relation to meter reading?
- By the user
- By the Department of Water (through third party contractors)
5 RECOVERING WATER RESOURCE MANAGEMENT COSTS

The Government Response to the Final Report of the Irrigation Review Steering Committee stated that it is appropriate to recover a realistic level of costs associated with water resource management. At a minimum, this should include the recovery of the cost to administer water licensing.

There are two separate but related issues concerning the need for cost recovery. The first is water resource management charges, the second is licence administration fees.

CURRENT SITUATION

All states and territories except Western Australia and the Northern Territory have introduced charges that apply generally to non-scheme water users. To varying degrees, these offset the costs incurred by their governments in managing water resources, including the costs associated with administration of water licensing. Table 4 summarises the current fee arrangements for other jurisdictions.

The Government has requested the Minister for Water Resources to develop a proposal to introduce cost recovery mechanisms for water licences and the Water Reform Implementation Committee to undertake public consultation on a proposed fee structure and amount. In 2005-06 the Water and Rivers Commission allocated $5.8 million for this initiative. The proposed fee structure is described later under Proposed Directions.

With some minor exceptions, in Western Australia charges are not levied on non-scheme water users. Water resource management is largely funded by the State Government. The State and Commonwealth Governments jointly fund some activities through programs such as the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality. Large individual or corporate water users also contribute significantly towards the cost of proving and managing the water resources from which they benefit.

There is no uniform national approach to cost recovery. Currently, however, the National Water Commission is developing a nationally consistent framework for water resource management cost recovery.
**Table 4 Water Licence and Usage Charges by Australian Jurisdiction**

<table>
<thead>
<tr>
<th>State</th>
<th>Description of charges</th>
<th>Process/collection</th>
<th>Licence fee/Fixed component</th>
<th>Variable component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensland</td>
<td>Licence fees were removed at the start of 2006. Natural resource management costs are recovered through usage charges - a tiered system based on customer sectoral grouping. Variable for irrigators and industrial users and fixed for un-metered and livestock/domestic users. Unvaried by region.</td>
<td>For supplemented users - fees are charged to water suppliers and are collected from end users by the water suppliers. For unsupplemented users and local governments, mines etc, DNRM maintains contracts directly with and collects fees directly from the end user.</td>
<td>No licence fees as of 1 Jan 2006. $52.85 per annum fixed fee only for livestock and domestic and other, un-metered users. Does not vary by region or river valley.</td>
<td>Varies by industry/water user type: $4/ML (irrigators), $10/ML (other industry inc mining) and $15/ML (utilities eg electricity).</td>
</tr>
<tr>
<td>Victoria</td>
<td>Department’s natural resource management and other activities are recovered through that licence fees and usage fees vary by water supplier and region.</td>
<td>An environmental contribution charge is levied on the commercial water suppliers 0% of total revenue for rural water suppliers and 5% of total revenue for urban water suppliers (other industry inc mining) and collected by the water supplier through licence and usage charges to the customer.</td>
<td>$100-150 annual licence charge - varies by region and water supplier.</td>
<td>$3-$10/ML depending on region and supplier.</td>
</tr>
<tr>
<td>NSW regulated</td>
<td>Two part charge (fixed entitlement charge per M L of entitlement and variable usage charge per M L of usage) set for each river valley, by level of security and for regulated and unregulated users.</td>
<td>IPART sets water charges based on submissions from the NSW Department of Natural Resources, State Water and water users. Charges are collected by State Water Corporation - the Government water corporation.</td>
<td>Fixed licence charge based on entitlement: $4-14/ML (high security), $4-10/ML (general security). Varies by river valley.</td>
<td>$1-11/ML depending on river valley.</td>
</tr>
<tr>
<td>State</td>
<td>Area based charge ($/ha) for non-metered users, plus a two part tariff for metered users incorporating a fixed entitlement ($/ML) component and a variable usage charge ($/ML)</td>
<td>As above, for metered users. Fixed licence fee based on water entitlement or size of property for un-metered users: $1-3/ML ($8-14/ha for un-metered users). Varies by river valley</td>
<td>$1-2/ML depending on river valley</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td></td>
</tr>
<tr>
<td>NSW unregulated</td>
<td>Charging consists of a fixed annual licence fee (administrative fee) and a variable usage fee (field management fee) for surface water users. Groundwater users are charged a fixed field management fee</td>
<td>The charges are set by DOTAF after submissions by DPIWE. Charges are collected by regional offices of the DPIWE.</td>
<td>$83 per annum administrative fee - does not vary by region</td>
<td></td>
</tr>
<tr>
<td>Tasmania</td>
<td>Water supply and NRM costs are recovered through a one-off licence application fee, and annual land based catchment environment levy or water based levy</td>
<td>The amount and basis of water levies are declared by the Minister for Environment and Conservation. The levies are collected by the Government(DLWBC) and circulated to regional catchment management boards</td>
<td>$2-20/ML ($3.72/ML for Murray Catchment irrigators)</td>
<td></td>
</tr>
<tr>
<td>South Australia</td>
<td>An annual fixed licence fee and a water abstraction charge based on usage</td>
<td>Collected by State utility corporation ACTEW.</td>
<td>$75 per annum licence charge for irrigators</td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>n/a</td>
<td>n/a</td>
<td>$250/ML (97 per cent is refunded, therefore effective rate is $7.50/ML)</td>
<td></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

\*\*Note that the Queensland Government announced on 20 March 2006 that all new water charges are suspended pending external review.\*\*
WHAT IS DRIVING THE NEED FOR CHANGE?

The range of reforms the Government is committed to introduce cannot benefit individual water users unless there is consistent and effective management of the State’s overall water resources. This requires considerable and continued investment in the investigation, evaluation, planning and regulation of the state's water.

In some situations, notably in the mining industry and public water supply, it is the water users rather than Government agencies that assume the major part of the responsibility for resource investigation, evaluation and planning. In other industry sectors, for example agriculture, there is also greater scope for some of the activities currently conducted by the Department of Water (or other government agencies) to be conducted at regional or sub-regional level by non-government organisations, private water user corporations or associations built around coalitions of private and public interest. Cost recovery policy needs to recognise the situation of the mining industry and public water supply and the implications of extended self-management arrangements for other water users.

The National Water Initiative contains provisions that relate to cost recovery through the attribution of costs associated with water resources management. The National Water Commission commenced work in May 2006 on a national process with all States and Territories in relation to water pricing, including consideration of water resource management charges.

Therefore, apart from Water Licence Administration Fees, the Water Reform Implementation Committee is of the view that if a case is established to adopt a nationally consistent approach to the introduction of resource management charges, such charges should only be introduced following the completion of statutory water management plans and the establishment of longer-term, secure water access entitlements.

PROPOSED DIRECTIONS

Water Licence Administration Fees

Water licences currently enable allocation decisions that reflect the efficient long term management of the water resource for the community’s benefit (including environmental concerns) and provide a degree of certainty of entitlement to water users.

Currently the licensing activities of the Department of Water are funded through consolidated fund appropriations, despite creating tangible and valuable rights to a tradeable asset for licence holders (predominantly engaged in commercial activities).

The Water Resources Cabinet Sub Committee has requested the Minister for Water Resources to develop a proposal to introduce cost recovery mechanisms for water licences. The Water Reform Implementation Committee has been requested to consult specifically on the proposed fee structure and amount, assuming full cost recovery.

The recovery of licence administration costs would be for assessment of applications and licence renewals, checking compliance with licence conditions, maintaining licensing databases, appeals and community awareness. These activities are directly related to the creation and protection of water users’ valuable entitlements.

The recovery of costs would apply on application for all licences under the Rights in Water and Irrigation Act 1914 including:

• Section 5C licences to take water
• Section 26D licences to construct or alter a well
• Section 11, 17 and 21A permits.

The fee would also apply annually on the anniversary of approval for all Section 5C licences, but not to Section 26D licences or Section 11,17 or 21A permits as they are issued only once and only for the duration of the associated project.

The recovery of water licence administration costs will be transparently linked to the licensed volume. This is reflected in the licence classes defined in Table 5.
These are indicative costs based on budgeted figures for water licensing activities from the Water and Rivers Commission 2005-06 budget of $5.8m. The actual costs to be recovered, whilst substantially in-line with these figures, may be slightly different depending on the final budget structure adopted by the Department of Water from 2006-07.

Table 7 provides a breakdown of the current licences by proposed class. Table 8 provides an indication of the cost impact on typical licence types within proposed classes.

### Table 5 Licence application classes

<table>
<thead>
<tr>
<th>Licence class</th>
<th>Volume Band</th>
<th>Application type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>0 to 5000 kL</td>
<td>5C, 26D, 11/17/21A</td>
</tr>
<tr>
<td>Class 2</td>
<td>5001 to 50 000 kL</td>
<td>5C</td>
</tr>
<tr>
<td>Class 3</td>
<td>50 001 to 500 000 kL</td>
<td>5C</td>
</tr>
<tr>
<td>Class 4</td>
<td>500 001 to 5 000 000 kL (5 GL)</td>
<td>5C</td>
</tr>
<tr>
<td>Class 5</td>
<td>&gt; 5 000 000 kL (5 GL)</td>
<td>5C</td>
</tr>
</tbody>
</table>

Classes have been defined through the level of assessment required on an application. The greater the allocation, the greater the detail required on assessing user impacts. The costs associated with each class are outlined in Table 6.

### Table 6 Licence administration charges

<table>
<thead>
<tr>
<th>Licence Class</th>
<th>Licence administration cost component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$180</td>
</tr>
<tr>
<td>2</td>
<td>$275</td>
</tr>
<tr>
<td>3</td>
<td>$850</td>
</tr>
<tr>
<td>4</td>
<td>$1720</td>
</tr>
<tr>
<td>5</td>
<td>$2295</td>
</tr>
</tbody>
</table>

These are indicative costs based on budgeted figures for water licensing activities from the Water and Rivers Commission 2005-06 budget of $5.8m. The actual costs to be recovered, whilst substantially in-line with these figures, may be slightly different depending on the final budget structure adopted by the Department of Water from 2006-07.
Table 8: Examples of costs for typical water users

<table>
<thead>
<tr>
<th>User type</th>
<th>Water licence administration fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic scheme and garden bore user</td>
<td>$0</td>
</tr>
<tr>
<td>Commercial scheme water user</td>
<td>$0</td>
</tr>
<tr>
<td>Livestock and rural domestic user</td>
<td>$0</td>
</tr>
<tr>
<td>Off-stream farm dam user</td>
<td>$0</td>
</tr>
<tr>
<td>Small dairy (1 licence)</td>
<td>$180</td>
</tr>
<tr>
<td>Small vegetable grower (1 licence)</td>
<td>$275</td>
</tr>
<tr>
<td>Large vineyard (50ha) (1 licence)</td>
<td>$850</td>
</tr>
<tr>
<td>Large (export) vegetable grower (1 licence)</td>
<td>$1720</td>
</tr>
<tr>
<td>Large irrigation cooperative (1 licence)</td>
<td>$2295</td>
</tr>
<tr>
<td>AQWEST (Bunbury Water Board) (2 licences)</td>
<td>$3440</td>
</tr>
<tr>
<td>Local Government Authority (e.g. 13 licences)</td>
<td>$8190</td>
</tr>
<tr>
<td>Mine (e.g. 55 licences)</td>
<td>$39 005</td>
</tr>
<tr>
<td>Water Corporation (200 licences)</td>
<td>$265 560</td>
</tr>
</tbody>
</table>

QUESTIONS FOR COMMENT
Do you have any comments in relation to the proposed structure and level of licence administration fees?
6 LAND AND WATER PLANNING FOR THE LONGER TERM PROTECTION OF AGRICULTURAL LAND

The Government Response to the Irrigation Review supported the integration of land and water planning and requested from the Implementation Committee further advice on:

- Existing uncertainties in the current approach
- Mechanisms to facilitate clarity in achieving the objectives of State Planning Policy 2.5
- Improving public understanding the need for integrating water and land planning.

This section considers:

- The current ways in which water and land planning are working at both the policy level and on the ground in agricultural areas
- Options for better integration of land use and water planning to provide longer term protection of quality land for irrigated agriculture.

WHAT IS DRIVING THE NEED FOR CHANGE

Irrigated agriculture

Two key elements for irrigated agriculture are suitable and capable land and water supply. As the populations of major urban centres grow, increasing land prices puts pressure on irrigated agriculture to move further away from the urban centres. Invariably, this is towards land less suitable for agriculture and hence more difficult to make a living from, necessitating larger enterprises that can benefit from economies of scale in production. While increasing land prices can benefit land owners who are able to sell their land at a profit, the community as a whole suffers. Higher prices are paid for fresh food, the land is fragmented causing conflict between land uses, the ongoing potential for agricultural production is lost and the character of the community is changed.

Those irrigators who stay do so in an environment of smaller, more fragmented lots. They may no longer have the buffers needed to protect urban uses from normal rural activities such as spraying, equipment noise or light at unconventional times. This can lead to conflict in the local community.

Irrigated agriculture is a significant contributor to the State’s economy but is put at risk without longer-term protection of prime agricultural lands. Failure to protect agricultural land could contribute to a decline in irrigated agriculture, reduced local employment, decreased export earnings, rising imports, and increased reliance on overseas and interstate markets to provide fresh produce. It would also reduce opportunities for wastewater reuse and organic waste management through irrigated agriculture. There is growing recognition in the community that priority agricultural land should be identified and protected against inappropriate land uses.

In protecting priority agricultural land, the planning process will need to take into account and manage several constraints. The most significant of these is the offsite impacts of chemicals used in agricultural production. The concern is that long-term irrigated agriculture on some soil types and in certain environmentally sensitive locations can lead to undesirable environmental impacts, particularly on sites with sandy soils that overlay groundwater resources. Excessive use of fertilisers and insecticides can lead to elevated levels of these chemicals in groundwater, surface water and downstream wetlands. These problems can be overcome through careful selection of sites for irrigated agriculture precincts and appropriate on-going monitoring and management of chemical usage.

Another constraint relates to the historical lack of incentives to provide agricultural precincts. Historically, irrigated agriculture has been viewed as a lower value land use. This is usually reflected in the price of agricultural land. It has been much easier to provide ‘precincts’ for industrial land uses because these are seen as ‘higher value’ land uses. Once zoned for industrial uses, the land typically increases substantially in value. As a result, owners of agricultural land often seek ‘higher’ land uses for their land so as to realise some capital gain.

Irrigated agricultural precincts offer some opportunities for both optimising land uses in an area and synergies with other land uses. Some industrial land uses require buffers between residential areas. Provided other constraints can be addressed and the impacts from those industries do not affect the quality of the agricultural product, then agricultural uses could provide a long term use of some buffer areas.
Further, effluent from wastewater treatment plants and some industries is currently disposed of without further use. With minimal treatment these could be suitable for irrigated agriculture. Locating these land uses near each other could provide opportunities for water reuse at a scale large enough to be more economic and beneficial to industry, the irrigators and the environment.

Other industries

Although this section focuses on the agricultural sector, many of the concepts and issues surrounding the integration of land and water planning are relevant not only to agriculture but other land uses as well.

Like agriculture, other industries are also driven by the need for land that is cost effective to develop and has ongoing access to resources. Industrial precincts can assist in making developments more cost effective where infrastructure costs can be shared, facilitate wastewater recycling due to synergies and benefits from many approval processes already being resolved.

While the cost of water can be significant, industry finds it easier to plan for access to process water and it is not usually the driver for the location of industrial precincts as the cost of water is usually minor compared with other infrastructure required for industry. In general, industries will purchase water from the water service provider although desalinisation is an option if this is unavailable. These sources of water are cost prohibitive for irrigated agriculture. Whilst better integration of land and water planning is of benefit to both industry and irrigated agriculture, the need for cheap water is much more critical to the agricultural sector and hence irrigated agriculture is the focus.

Existing land use planning

There are a number of planning policies which support the identification and protection of agricultural precincts based on consideration of water resources and compatibility of land uses, among other factors.

The most significant of these is Statement of Planning Policy 2.5 Agriculture and Rural Land Use Planning (Gazetted March 2002). This conceptually identifies Agricultural Priority Management Areas across the State and recommends these be refined, defined and zoned for Priority Agriculture. These areas were identified from a land suitability perspective but in the absence of water availability information, which is a critical requirement for priority agricultural areas. No review of the areas having consideration of water availability has occurred to date.

The State's land planning system is hierarchical. It generally requires consideration of issues at decreasing scales before planning decisions are made. The planning process commences at the state level and becomes more detailed as it progresses through regional, district and local planning to subdivision, proposed development and construction. Relevant planning tools for each level of planning are outlined in Table 9.

Currently the land use planning system has tools and policies to achieve total water cycle outcomes and protect priority agricultural areas in the short to medium terms. These tools include integrated land use and water management strategies; strategic land use plans and complementary water management plans; and legislation such as the Swan Valley Planning Act 1994.

Despite some successes, in general these tools are not working effectively to provide security for agricultural activities in the short or long term. Insufficient water and land planning has been completed to guide decision-making.
Existing water planning

The State’s water planning system is also hierarchical. The Rights in Water and Irrigation Act 1914 provides a clear framework of water management plans (that is, regional, sub-regional and local area management plans). Prioritisation for development of water plans has been carried out for the whole state. Priority is given to those areas of high or growing water demand.

Existing water planning, including source protection and water allocation planning, provides some information to facilitate land use planning decision-making. However these contain limited discussion of water quality and quantity management requirements and rarely refer to water conservation and/or recycling/reuse options. More information on non-drinking water quality and reuse is required to guide land use planning and decision-making.

State Water Planning framework

A State Water Plan is currently being developed by the Department of the Premier and Cabinet. It will describe the hierarchy of water plans and facilitate interaction with the land use planning system at appropriate stages. It will also broaden the focus of water management planning to include the total water cycle as opposed to focussing primarily on water demand and allocation.

National Water Initiative

The National Water Initiative commits Western Australia to transparent and statutory-based surface water and groundwater planning that optimises economic, social and environmental outcomes. It also highlights the importance of understanding the total water cycle, the economic and environmental costs and benefits of various land use activities and the need for appropriate planning, management and/or regulatory measures.

The State Water Plan (Draft Water Policy Framework) identifies the following objective relevant to the integration of land and water planning.

**OBJECTIVE: PLAN AND MANAGE WATER RESOURCES SUSTAINABLY**

Water Planning

Water plans are developed at state, regional and local levels and progressively integrated with land planning and other natural resource management activities.
PROPOSED DIRECTIONS
Planning for precincts
The Water Reform Implementation Committee proposes that the Department of Agriculture and Food Western Australia should be the lead agency to champion the need for dedicated irrigated agricultural precincts. The Committee proposes that appropriate steps would include to:

- Initiate the assessment of agricultural areas for State or regional significance where opportunities arise for preparation or review of regional planning strategies or regional schemes. This should occur in association with relevant government agencies, industry groups, local government, other stakeholders and the community.
- Provide local government and the Department for Planning and Infrastructure with advice and assistance to identify opportunities for agricultural precincts for inclusion in planning for a local government town planning scheme or local planning strategy.
- Initiate industry development planning to assess agricultural industry growth requirements by region, and where these may be able to be met through agricultural precincts and formal zoning for Priority Agriculture Areas.
- Support industry development/ investment attraction to help implement the planning objectives of the identified precinct - creating a geographic/ spatial linkage to industry planning and sustainable development.
- Use Departmental representation on the key Western Australian Planning Commission committees to argue the case for irrigated agricultural precinct planning.

Planning Options
Five options have been identified that could lead to better integration of water and land uses planning once an appropriate area for an agricultural precinct is defined (Table 10). These options offer varying levels of precinct security. No one option is likely to be most suitable for all contexts across the State. The following options would need to be considered on a case by case basis:

1. Development of a strategic land use plan and a complementary water management plan to allocate water to designated agricultural uses within a defined location
2. Preparation of an integrated Land Use and Water Management Strategy to guide future land zoning and agency actions
3. Separate legislation to secure land zoning and uses for the long-term
4. Leasing Crown Land for Agricultural purposes
5. ‘Purchase’ of development rights on private agricultural land subject to growth pressures.

Some of these options, particularly those offering short to medium term protection, have already been applied in Western Australia. The Warren-Blackwood Rural Strategy (Box 1) and the East Wanneroo Land Use and Water Management Strategy (Box 2) are examples. Measures providing longer term protection have rarely been used for agricultural precincts in Western Australia. However separate legislation has been used in the Swan Valley (Box 3) and the leasing of Crown land has occurred for Industrial Precincts (Box 4).
### Table 10 Five options for protecting agricultural precincts

<table>
<thead>
<tr>
<th>Option/ Instrument</th>
<th>Method of defining and protecting precincts</th>
<th>Level of protection (security)</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Development of a strategic land use plan and a complementary water management plan to allocate water to designated agricultural uses within a defined location</td>
<td>Region Scheme Zoning or Planning Control area (Perth, Peel and Bunbury) supported with Local Town Planning Scheme Zoning/special control area</td>
<td>Short to medium term</td>
<td>Changes to land uses in surrounding areas and changing land owner aspirations</td>
</tr>
<tr>
<td>2 Preparation of an integrated Land Use and Water Management Strategy to guide future land zoning and agency actions</td>
<td>Region Scheme Zoning or Planning Control area (Perth, Peel and Bunbury) supported with Local Town Planning Scheme Zoning/special control area.</td>
<td>Short to medium term</td>
<td>Changes to land uses in surrounding areas and changing land owner aspirations</td>
</tr>
<tr>
<td>3 Separate legislation to secure land zoning and uses for the long-term</td>
<td>Water legislation support mechanisms. Town Planning Scheme Amendment (zone provisions)</td>
<td>Long term</td>
<td>Given the permanence of the legalisation, political and community support may be difficult to achieve</td>
</tr>
<tr>
<td>4 Leasing Crown Land for Agricultural purposes</td>
<td>Subdivision (Subdivision conditions)</td>
<td>Long term</td>
<td>Changes to land uses in surrounding areas. High level of default on lease conditions.</td>
</tr>
<tr>
<td>5 Purchase of development rights on private agricultural land subject to growth pressures</td>
<td>Market controls - government identifies and purchases development rights for the land</td>
<td>Long term</td>
<td>Conflict over the value of the development rights and legal arrangements to support it. High costs relative to benefits (e.g., buffer maintenance).</td>
</tr>
</tbody>
</table>
Box 1
Strategic land use plan and complementary water strategy
Warren-Blackwood Rural Strategy
The Warren-Blackwood Rural Strategy was prepared to guide rural land use, agricultural productivity, environmental protection and resource rehabilitation across the Warren-Blackwood Region. The Strategy reviewed land capability information and water availability data to identify areas with the greatest potential for diversified and intensified rural production. These areas were translated into recommended zones and reflected in identified planning units. These planning units form the basis for more detailed planning and natural resource assessment. The four local governments within the Warren-Blackwood Region agreed to reflect the findings and recommendations of the Warren-Blackwood Rural Strategy in their local planning strategies, which are still being finalised.

Box 2
Integrated land and water plan
East Wanneroo Land Use and Water Management Strategy
The East Wanneroo Land Use and Water Management Strategy was developed to address increasing conflict over land and water resources in East Wanneroo. Encroaching urban development is fragmenting agricultural land, groundwater recharge (quality and quantity) is influenced by land uses and this in turn is impacting on the environment and large areas of pine forest are being harvested. The draft strategy examines issues and proposes solutions and facilitates the continuation of the horticultural industry in Wanneroo. It proposes land use changes including rezoning rural land to urban and establishing an agricultural and horticultural area in northern east Wanneroo to replace those areas lost to future urban development. The Land Use and Water Management Strategy provide the planning framework for land use decision making and begins the process of addressing land and water management issues together.

Box 3
Separate legislation
Swan Valley Planning Act 1994
The historic, iconic and highly productive Swan Valley viticultural area was being threatened by urban expansion and proposals for development that could conflict with the rural and landscape character of the area. Following intense lobbying from key community members, the Swan Valley Planning Act 1994 was passed. This secured viticulture and horticultural land zoning along with water provision in certain areas. It proved effective in protecting land zoning although it could not ensure that viticultural activities took precedence over other compatible land uses (e.g., tourism and equestrian). A review in 2004 indicated the Act has generally functioned well.

Box 4
Leasing crown land
Industrial Precincts
While this approach has not been used for the irrigated agricultural sector it has been used by Government for pastoral leases and other industries. There are examples where pastoral leases have been resumed by the Crown and transferred through the Department for Planning and Infrastructure to Landcorp who have leased them to heavy industry (for example, in the Burrup). There are also examples where the government has purchased private land through the market and leased this for agricultural use while waiting for industrial uses to come on line (for example, Kemerton).
The Water Reform Implementation Committee proposes consideration of options that provide longer term protection. However, no single option can be recommended. This is because significant variation exists across geographical areas in terms of environmental, social and economic issues, the type of water required and the land use proposed, and the type and level of information available to guide decision-making.

Implementation
It is likely that the land use planning process offers the best mechanism to drive the overall process, provided that suitable links are made to the water planning process. The key steps in the process are likely to be as follows:

- A state-wide approach needs to be adopted to identify the most important agricultural land that has an adequate supply of irrigated water
- The level of protection for each area should be established taking into account other competing needs
- Options for providing that level of protection should be discussed with key stakeholders, including land owners, to identify the most appropriate way to provide that level of protection
- An appropriate mechanism should be put in place to provide some protection for water availability at the same time as the preferred land use option is put in place
- Consider best management practice in terms of water use efficiency and waste management
- Where land use planning is not the primary tool to be used, complementary land use planning needs to be conducted.

Irrespective of which options are chosen to provide ongoing protection of agricultural land, more cooperative working relationships between the land use and water agencies need to be developed.

QUESTIONS FOR COMMENT
To what extent do you support the longer-term protection for existing and future agricultural precincts?

What are your views on the methods for determining agricultural areas that require longer-term protection?

In general terms, what are your views about the five options for providing longer-term protection for agricultural land?

What other things could be done to ensure better integration of land and water planning?
7 INCREASE SELF MANAGEMENT

The Government Response to the Irrigation Review acknowledged that irrigation cooperatives have provided an effective basis for water management and maintenance where extensive shared assets are required for users to access water.

However, it was thought that groundwater or other self-supply schemes might require a ‘tailored’ approach because of the absence of the common distribution systems that characterise the existing cooperatives.

The Government requested the Water Reform Implementation Committee to:

• further investigate opportunities and mechanisms for extending self-management
• establish criteria to determine whether and what kind of cooperative arrangements might be effective.

CURRENT SITUATION

There is already significant ‘self management’ by groups of water users operating in Western Australia, primarily through the irrigation cooperatives. The Harvey, Gascoyne, Ord and Preston Valley cooperatives control two thirds of water allocated to almost half of the land under irrigation in Western Australia.

In addition, under the Rights in Water and Irrigation Act 1914 the Minister may create a water management committee for any locality or area of the State and delegate to that committee whatever procedural matters he or she thinks fit. A number of committees have been established around the State to provide advisory input, including for example the Warren Water Management Area Advisory Committee and the Whicher Water Resources Management Committee. However, no committee has been made responsible for the administration of the key self-management powers of monitoring and enforcement of entitlements.

For the purposes of this section self-management of water resources is defined as the exercise of functions by an organisation under Ministerial delegation.

Responsibilities acquired through Ministerial delegation could include investigation of new water sources, water quality monitoring and meter-reading. Under such self management arrangements, Government, through the Minister for Water Resources and the Department of Water, retains its role in setting and auditing the strategic framework for the sustainable management of the water resources. Such activities include establishing strategy, policy and regulation and issuing water licenses (or in the future, water access entitlements), guided by appropriate statutory water management plans.

WHAT IS DRIVING THE NEED FOR CHANGE?

The prospect of increased cost recovery for water resource management activities, the requirement for increased transparency of allocations, entitlements and trading and increases in regulatory requirements for self-supply irrigators are potential drivers for irrigators and other water users to investigate greater responsibility for the management of the water resources they use. There may be potential for groups of water users in local areas to assist the Department of Water with water planning, as well as undertake certain activities on behalf of the department, such as meter reading.

The Water Reform Implementation Committee is of the view that there is significant potential for water users to be better engaged collectively in the management of water in their areas. Greater devolution of water management responsibilities should be undertaken where it is appropriate and cost-effective to do so, and where there is community desire to accept additional responsibilities.

A self-management structure would be preferred when it is a lower cost option to deliver effective monitoring and compliance of entitlements or other benefits compared to a system managed solely by Government.

Figure 6 illustrates the potential range of functions that Government may delegate to a self-management organisation and represents a continuum of community engagement in water resource management from strategy to development to metering.
Figure 6  A continuum of community engagement in water resource management

The State Water Plan (Draft Water Policy Framework) identifies the following objective relevant to the extension of self-management for Western Australia.

**OBJECTIVE: PLAN AND MANAGE WATER RESOURCES SUSTAINABLY**
Community involvement
Community involvement is essential to achieve the best outcomes in the management of water resources.
Advantages of increased self-management

Increasing self-management of water resources has the following potential advantages for water users and the community:

- upgraded infrastructure, providing security of water supply, reduction of wastage and an opportunity to upgrade watering systems, particularly for cooperatives
- reduction in the cost of water resource management for government and all water users
- increased water use efficiency and water trading
- maximising financial benefits for all water users
- potential for taxation benefits for water corporates and cooperatives
- making groups of water users more accountable for their water use.

The National Water Initiative, primarily through requiring community consultation in the development of statutory water management plans, also provides support for an extended application of the self management principle.

Proposed criteria for determining when increased self-management of water resources might be appropriate are outlined below.

Criteria required for increased self-management of water resources by a water users group.

1. Clearly defined objectives set by the government regulator/manager through appropriate water management plans.
2. Clearly defined water boundaries. If these are not identified and enforced then the investment made by individuals or enterprises is at risk from third parties misusing the water resource.
3. Sound knowledge of the physical water system and its independencies, so as to understand what sustainability issues pertain to a given system.
4. Clear specification of entitlements. Without these, monitoring and enforcement of objectives could be ineffective.
5. Internal monitoring against agreed objectives. Must be comprehensive, rigorous and measured.
6. Accountability. A self-management structure needs to be liable for the sustainability decisions it makes.
7. Collective decision-making by a delegated water management committee consisting of locally elected representatives.
8. Sanctions that apply to all and are graduated according to the seriousness of the offence with a structure that will need to withstand internal political pressure for sectional favouritism.
9. Conflict resolution mechanisms to settle conflicts.
10. Freedom to organise affairs without government interference as the government’s role is to strike the sustainability outcomes that it will apply to the organisation.
11. Nesting of solutions. If the regulator/manager grants a bulk entitlement to the organisation, a further set of individual entitlements may need to be devolved by the organisation.
12. A business organisation is required to ensure the financial viability of the organisation.
It should be noted that the benefits received from encouraging self management can extend beyond the intensive irrigation sector. For example, it can include special localities such as strategic industrial areas or integrated mining (including dewatering) and industrial development opportunities. Principles applicable to self management can apply to many enterprises coming together who share or seek to share the water resource, infrastructure and common outcomes (for example, flexibility, cost reduction and increased security of supply).

**PROPOSED DIRECTIONS**

The Water Reform Implementation Committee proposes three basic models for increased devolution of responsibility for water management that may be tailored to individual circumstances.

**Corporate structure**

A corporate structure is most commonly used to meet an investor objective. Owner investor structures are prevalent in the self-management of oil and gas reservoirs. An oil and gas reservoir is a common pool resource where leaseholders try to maximise the value of their own leases rather than of the reservoir as a whole. This leads to over investment by single leaseholders as they strive to extract the most they can and as quickly as they can in competition with other leaseholders. Too rapid an extraction lowers the total recoverable amount of oil and increases the costs of extraction. This common pool problem has similarities to unsustainable uses of a groundwater resource.

The most complete solution to the problem is to unitise the field. That is, all production is organised into a single unit, usually a joint venture between leaseholders, in which one leaseholder is given responsibility to maximise the extraction and the other leaseholders share in the profits. The objective of the shareholders is to maximise their return on investment. That is, they are bound together by a simple, common objective of profit maximisation.

Unitisation highlights the need for clarity of a field’s boundaries and detailed knowledge of its physical systems. Without these it is impossible for leaseholders to clearly identify a common interest that will bind them together in a joint venture.

Under this structure a possible scenario for an irrigation district utilising groundwater might be that an organisation is established to manage and operate the supply of groundwater to individual farmers. The prime objective and unitising force is to manage the water resource sustainably for the long term, through climatic variability and competing demands for water. A difference between this model and an irrigation cooperative is that there may not be common infrastructure.

**Cooperative structures**

Water cooperatives currently dominate the delivery of surface water for irrigation purposes in Western Australia. Cooperatives are established under the Companies (Cooperatives) Act 1943. Common principles that underscore the success of water cooperatives across Australia are:

- well defined property rights
- water trading
- security of water supply
- financial incentives
- sound skills base for management
- a shared distribution system of irrigation water
- a common interest (or unitising force) which ensures competitive use does not compromise the value of the collective and individual water assets under management.

Harvey Water, for example, has successfully unitised water rights based on the common interest of distributing water to customer members through a common supply and drainage infrastructure. The cooperative receives a bulk water allocation that is then further allocated to members in line with their use of the cooperative’s assets.

Centrally managing the resource as a consequence of providing common infrastructure lowers the costs of monitoring and enforcement of allocation conditions. Ownership of the infrastructure creates greater incentives for investment in infrastructure.

The pre-conditions for a self-managed system existed in Harvey Water’s case. Most importantly a regional water plan exists so that the organisation can define its business goals within a known set of regulatory constraints. The system boundaries are clearly understood, as are its physical characteristics. Its entitlements are tailored to suit both the business needs of the cooperative as well as delivering the environmental outcomes required by the regulator.
For the groundwater self-supply scheme a common interest would be ensuring use by others does not compromise access to, and therefore the value of water property. Additionally monitoring, compliance and other regulatory aspects can potentially be undertaken in a cost effective and transparent manner.

Water Management Committees
Under the Rights in Water and Irrigation Act 1914 the Minister may create a water management committee for any locality or area of the state and delegate whatever procedural matters that he or she thinks fit.

The Act has the objective of fostering consultation with members of local communities over water resource management so as to enable them to participate in the local administration of the Act. The Act also has the objective of assisting the integration of the management of water resources with the management of other natural resources.

The Act provides for the establishment of water resources management committees to implement these objectives. The Minister for Water Resources may establish committees or they may be formed with representation from existing groups, such as local councils, natural resource management committees, co-operatives or catchment management councils.

The Minister must establish a committee by order and the committee may be required to undertake the following activities:

• provide the Minister with assistance and advice on water resource management matters
• review plans prepared by the Department of Water
• consider draft local by-laws
• ensure the Government is informed of, and has access to, community views on matters relating to water resources
• assist in the resolution of disputes about the use of water resources
• undertake tasks delegated to the committee.

The Act also allows these committees to be delegated with the powers needed to undertake management activities, such as preparing plans and granting, amending and approving the transfer of licences.

As an example of the further development of the use of committees it would be possible to establish a water co-operative as a management committee and provide it with powers to regulate the use of groundwater and surface water by its members.

The critical conditions for self-management identified earlier would suggest that for a water management committee to evolve into a self-management structure the following conditions would need to be in place:

• a statutory water management plan
• a clearly understood set of boundaries to the water resource and detailed knowledge of the system
• a clearly defined set of internal structures so that responsibility for decisions could be readily identified
• accepting liability for the decisions made
• local participation in the governance of the committee
• accountability for its performance as its primary role would be to monitor and enforce entitlement conditions.

QUESTIONS FOR COMMENT
Under what circumstances would particular models work?
How would the model work in practice?
Is/are there other model(s) for self-management that should be considered?
In a self-management arrangement, what level of responsibility for water resources management should water users be prepared to accept?
8 INVEST IN WATER USE EFFICIENCY

The Government Response to the Final Report of the Irrigation Review Steering Committee requested its agencies and the Water Reform Implementation Committee to identify and pursue any new opportunities for water use efficiency that may arise through new irrigated agricultural developments.

The Water Reform Implementation Committee has expanded the scope of this advice to include all water use sectors because there is considerable scope to enhance water use efficiency across the board.

CURRENT SITUATION

The State Water Strategy 2003 identified that all water use sectors and the broader community needed to take action to continuously improve water use efficiency.

The National Water Initiative addresses water use efficiency through policy settings, economic mechanisms and innovation to provide incentives for investment in water use efficiency.

For the purposes of this discussion, water users are divided into five major sectors, irrigated agriculture, mining, industry, urban and residential and recreational.

Increasing water use efficiency is one tool in the suite of measures that can be used to address the constraints of current and future mismatch between supply and demand for water. The types of measures that can be used to increase water use efficiency are:

- water reuse
- increased technical efficiency (reducing intermediate demand)
- demand management (reduced final consumptive demand)
- water trading
- pricing mechanisms for allocative efficiency.

WHAT IS DRIVING THE NEED FOR CHANGE?

The key driver for water use efficiency is the scarcity of water supply. Where water has been scarce or supply variable, water users have already achieved significant improvement in efficiency of water use and have developed innovative measures to secure and maintain water supplies at considerable cost.

The implications of reduced rainfall in the southwest are dramatic, leading to future water shortages and increased competition between water use sectors for scarce resources.

For water resource areas approaching full allocation, further development of public and private water supply will become increasingly expensive. This is because resources nearing full allocation have increased system management costs and require a higher level of understanding of the environmental and social dependencies of the system.

The value of water and the cost of securing water will drive efficiencies in water use in situations where the cost of accessing water is a significant impact on profit margins. Economic growth based on water resources will increasingly rely on water savings through efficiencies in current water use.

Increasingly, irrigators will need to conserve their water entitlements and maximise their production per unit of water available. Water saved through increased efficiency at both scheme and on-farm levels is a valuable resource. It can be used for increased agricultural production and growth of high-value industries, or potentially as potable water for town water supplies.

The meaning of efficiency

In the context of water use efficiency there are three types of efficiency: technical, productive and allocative.
Technical efficiency

Technical efficiency is closest to the common understanding of water use efficiency. Being technically efficient involves maximising a physical output for a given level of physical inputs, or conversely minimising the amount of water used for a given level of physical outputs.

Technical efficiency is associated with measures such as new or improved technology, recycling, water re-use, improving water practices, and reducing physical losses in the delivery of water through infrastructure networks.

Productive efficiency

Productive efficiency is related to technical efficiency, in that it relates to maximising output for a given level of inputs. However, productive efficiency is an economic concept that measures inputs and outputs in terms of value/cost.

A productively efficient company organises its inputs to the production process in such a way that the average cost of production is minimised.

For example, one way of improving water efficiency is by investing in and improving infrastructure (technical efficiency). However, investment costs should never outweigh the benefits obtained (productive efficiency). Reducing leakage is only cost-effective up to a point. Physical improvements are only a partial solution; maximum gains in efficiency are only made when physical improvements are combined with better management practices. Options for improving physical infrastructure include:

- investing in water loss reduction systems
- strengthening regular maintenance programs
- encouraging recycling and reuse
- introducing better land-management practices.

Allocative efficiency

Allocative efficiency looks at water in the broader economy. Allocative efficiency is achieved when the value consumers place on the last unit of consumption of a good or service (reflected in the price they are willing to pay) equals the additional cost of the resources used up in production. Conversely if water is not being used in a manner that is allocatively efficient then it is possible to improve economic outcomes by transferring water to uses where it may make a relatively larger economic contribution.

Improving allocative efficiency relates to how well water is allocated across different industries and uses. For example, markets move water to those willing to pay the highest price and in so doing allocates the water to its highest economic value use.

The State Water Plan (Draft Water Policy Framework) identifies the following objective for the promotion of water use efficiency.

**OBJECTIVE: DEVELOP WATER RESOURCES TO SUPPORT A DIVERSE AND VIBRANT ECONOMY**

Water use efficiency
Government, water users and the community share a responsibility to use water resources efficiently in periods of abundance and scarcity.

**ADVANTAGES OF INVESTING IN WATER USE EFFICIENCY**

Water resource management policies can significantly assist in driving effective water use efficiency in all sectors. For example, large capital investments in water use efficiency technology can only be supported with long term security of access to water. Water markets improve efficiency by creating incentives for consumers and producers to save water and potentially sell their rights to the portions they do not use.

Achieving efficiencies in water use has the potential to contribute to improving environmental outcomes by limiting rising land salinity levels and reducing nutrient loads.

Recycling and reuse can be encouraged on a larger scale by separating run-off drainage water from household and municipal wastewater and providing low-cost treatment options. In this way, ‘grey’ and ‘black’ water flows can be used appropriately to provide water for uses that would otherwise compete for freshwater supplies (for example, irrigated agriculture and public gardens).

**PROPOSED DIRECTIONS**

The policy framework for water resource management and allocation needs to provide support for the efficient use of water in all sectors. The Water Reform Implementation Committee proposes the following policy directions.
Establishing markets for water and water entitlements

It is important that mechanisms exist to ensure that water can move to its highest value uses. In this context a prerequisite is ensuring that water resources can move easily to their most productive uses. Efficiently functioning water markets are the key to this objective.

Water markets require well-defined, tradeable and enforceable water entitlements, a strong regulatory framework and the infrastructure necessary to transfer water from one user to another.

In the view of the Committee, the fundamental driver for water use efficiency will be establishing a more valuable water entitlement (see Section 2) and separating the entitlement to access water from the license to use water. This will encourage water trading.

Mechanisms and support for encouraging technical and productive water use efficiency through a combination of subsidies, market mechanisms and appropriate price settings that reflect externality impacts with a particular focus on irrigated agriculture will encourage the efficient use of water.

The Committee therefore proposes that:

- to facilitate commencement of water trading, new allocations of water should be restricted at a level below the determined sustainable yield
- any new allocations in a water management area should occur through an auction or tender process to establish a value for water in that area
- in scheme areas, trading of water by individuals and cooperatives to the Water Corporation should be facilitated through development of appropriate agreements
- targeted intervention in water markets should be undertaken in support of equity, regional development and environmental management goals of Government.

There are instances where an effective market will not result in water transfers. This is because of the physical limitations imposed by water location. For example groundwater is generally only available within the constraints of the aquifer from which it is abstracted. It is not possible, as with an extensive river system, to trade between widely dispersed locations within the system (between different states and territories, for example).

A discussion on establishing markets for water is presented under the sections on water entitlements and trading.

Full-cost pricing of water

The price charged for water can be used to affect consumer behaviour and promote conservation and efficient water use. The degree to which changes in the price of water modify consumer behaviour depends on the responsiveness of the quantity of water demanded to a price change.

The argument for ‘full-cost' pricing of scheme water has been advanced both under the National Competition Policy and the National Water Initiative. Both contend that full-cost pricing is the only way to achieve an efficient and sustainable use of water resources. Full cost recovery water pricing requires that water prices be set so that revenues from water sales cover all operating costs, on-going maintenance costs, capital expenses necessary for ongoing operation and costs of water use to the environment.

Moving to full cost pricing may be a desirable goal from the point of view of achieving allocative efficiency in the long run. However, any attempt to implement it needs to be accompanied by measures to ensure that low income earners, existing agricultural industries, and those in remote areas still have an affordable supply of water. That is, the movement towards a more allocatively efficient distribution of water resources must be balanced against equity considerations.

A reallocation of water between sectors will only improve the allocative efficiency of water use across the economy where water availability and price is the limiting factor in the production process.

The National Water Initiative proposes that water resource management charges be introduced to contribute to the cost of managing the overall water resource. This would aid in ensuring ongoing resource sustainability and the availability of water for irrigation industries. However, the Water Reform
Implementation Committee proposes that, if a case is established to adopt a nationally consistent approach to the recovery of water resource management costs, such charges should only be introduced following the completion of statutory water management plans and the establishment of longer-term, secure water access entitlements.

**Reuse and recycling**
The State Water Strategy committed the Government to achieving 20 per cent reuse of treated wastewater by 2012. Some businesses have been able to use recycled water in large quantities. The effectiveness of this is borne out by the success of the Kwinana Water Recycling Project. The use of treated wastewater for non-potable purposes can reduce industry’s use of ‘new’ water. The Committee is of the view that increased water recycling and reuse would be achieved by developing:

- mechanisms, targets and incentives
- standards and environmental health and safety guidelines for use of recycled water and wastewater within irrigation industries.

**Other options by sector**
Options to improve water use efficiency in each of the five major water use sectors are described below. Some of the options may be applicable across multiple sectors. The irrigation sector uses a significant portion of Western Australia’s water and the gains from increased water use efficiency are likely to be greatest in this sector.

**Irrigated agriculture**
- Assess the potential for increased levels of automation in conveyance and distribution systems.
- Within scheme areas, provide financial incentives and farm planning support to change flood irrigation systems to sprinkler and dripper systems.
- Investigate the potential for use of real time monitoring in conveyance and distribution systems within irrigation scheme areas.
- Investigate the potential for use of telemetry for self-supply users in small defined groundwater areas.
- Assess the potential for expansion of piped scheme irrigation areas.

- Completion of a Farm Water Conservation Plan as a condition of water licences to ensure all irrigators have a well developed plan for using water.
- Implement a program to benchmark water use and irrigation practice at industry level.
- Implement an industry based consultation program to establish practical and achievable targets for water use efficiency.
- Develop, with industry, agreed measures and indicators for reporting on water use efficiency.
- Continue the Waterwise on the Farm program.
- Develop best practice demonstrations in use of irrigation technology.
- Establish a scheme to accredit irrigation system designers.

**Mining industry**
- Identify viable new technologies in the mining sector:
  - For dust supression
  - To replace water as a suppressant of fugitive dust.
- Establish an industry/government forum to research the cost effectiveness of water use and recovery in mining and mineral processing.
- Continue to support the Centre of Excellence for Sustainable Mine Lakes.
- Provide sufficient funding to enable the Department of Water to establish and maintain a data management system to readily provide strategic water information. This, for example, would assist in updating the water usage figures in the study entitled “Water and the Western Australian Minerals and Energy Industry: Certainty of Supply for Future Growth”. (ECS 2004)
Industry
• Share recycling facilities.
• Construct or refurbish commercial properties to provide significant potential for water savings in the future.
• Prepare water management plans (the top 200 water using businesses in the State are required to do this)
• Business development for water efficient technologies
• Industry recognition awards.
• Incentives for the adoption of water efficiency equipment.

Urban and domestic
• Optimise supply networks so that areas of high water pressure in the distribution network are identified and pressure reduction techniques are employed.
• Retro-fit programs.
• Individual metering in multi-story buildings.
• Include comparative information in consumer accounts.
• WaterSmart project: high water consuming customers are engaged in dialogue and encouraged to modify water using behaviour.
• Offer customers the opportunity to install waterwise meters with a maximum flow of 30 L/minute.
• Review progress against water targets.
• Review the target set for per person consumption of water.
• Review targets set for water service providers outside the Integrated Water Supply System.
• Continue the successful Waterwise Rebate Program.
• Continue restrictions on garden sprinklers.
• Promote the use of water efficient appliances.
• Establish standards and codes relating to water efficiency.
• Investigate ways of supporting the wider use of rainwater tanks.
• Use water pricing to encourage water wise practices and efficient use of water by domestic consumers.

Recreation
• Establish standards for irrigation systems used to support recreation activities. Ensure all new systems are designed to achieve a satisfactory level of water use efficiency and provide a framework for existing systems to be assessed.
• Support Waterwise accreditation to encourage recreational park managers to demonstrate their water use efficiency achievements to the public.
• Improve the availability of water resources information to assist in the process of engaging with water users.
• Provide continued funding of the International Council for Local Environmental Initiatives to support capacity building in local government.
• Provide incentives to water users in the recreation sector for upgrading systems.

QUESTIONS FOR COMMENT
To what extent do you support the proposals for water use efficiency?
Are there other ways to improve water use efficiency in any water use sectors that should be considered?
Appendix 1 National Water Initiative

Relevant Paragraphs from the National Water Initiative are summarised below under each of the main directions considered in this discussion paper.

Paragraphs of general significance to Western Australia

Paragraph 34 of the Agreement states that there may be special circumstances facing the minerals and petroleum sectors that will need to be addressed by policies and measures beyond the scope of the National Water Initiative. The Parties to the Agreement note that specific project proposals will be assessed according to environmental, economic and social considerations, and that factors specific to resource development projects, such as isolation, relatively short project duration, water quality issues, and obligations to remediate and offset impacts, may require specific management arrangements outside the scope of the Agreement.

Entitlements

Key paragraphs of the National Water Initiative relevant to water access entitlements include:

- 28 to 32 establish the essential features of water access entitlements, specifically that:
  - they be separate from land
  - they be defined as a perpetual or open-ended share of the available consumptive pool
  - they be consistent with a statutory water management plan
  - regulatory approval enabling water use at a particular site for a particular purpose will be specified separately.

- 29 establishes the clear link between entitlements and water planning, and in simple terms, confirms that if there is no statutory water management plan for a water source then there is no access entitlement, rather a right to take water, is simply a licence

- 33 notes that fixed term or annual licences will only be issued for consumptive use in certain circumstances, including where water resources are poorly understood and/or less well developed, and specifically mentions Western Australia in that context

- 41 to 45 establish the clear priority to address over-allocation and over-use

- 46 to 51 and 79 codify the agreed assignment of risk changes in allocations

- 55 to 57 recognise and respond to the threat posed by significant interception of water flows to the future integrity of water access entitlements and the achievement of environmental objectives for water systems

The National Water Initiative also notes that entitlements will have characteristics to allow their free and open trade, and will only be able to be cancelled by governments in the case of water users not meeting their conditions of entitlement.

National Water Initiative-schedule E: guidelines for water plans

1. The following characteristics and components will guide States and Territories in preparing water plans: Descriptions to include:
   i) the water source or water sources covered by the plan
   ii) the current health and condition of the system
   iii) the risks that could affect the size of the water resource and the allocation of water for consumptive use under the plan, in particular the impact of natural events such as climate change and land use change, or limitations to the state of knowledge underpinning estimates of the resource
   iv) the overall objectives of water allocation policies
   v) the knowledge base upon which decisions about allocations and requirements for the environment are being made
   vi) the uses and users of the water including consideration of indigenous water use
   vii) the environmental and other public benefit outcomes proposed
   viii) the estimated reliability of the water access entitlement and rules on how the consumptive pool is to be dispersed between the different categories of entitlements within the plan
   ix) the rates, times and circumstances under which water may be taken from the water sources
   x) conditions to which entitlements and approvals having effect within the area covered by the plan are to be subject.
2. Where systems are found to be overallocated or overused, the relevant plan should set out a pathway to correct the overallocation or overuse.

3. A plan duration should be consistent with the level of knowledge and development of the particular water source.

4. In the case of ongoing plans, there should be a review process that allows for changes to be made in light of improved knowledge.

5. Further consideration to include:
   i) relevant regional natural resource management plans and cross jurisdictional plans, where applicable
   ii) an assessment of the level of connectivity between surface (including overland flow) and groundwater systems
   iii) impacts on water users and the environment that the plan may have downstream
   iv) water interception activities.

**Water trading**

The National Water Initiative is centrally concerned with removing barriers to trade in water and broadening and deepening the water market:

Paragraphs 25 to 62 of the National Water Initiative are also directly relevant to the key directions to change entitlements and to facilitate water trading.

The specific outcomes of the National Water Initiative concerned with trading are contained at Paragraph 58, and agreed actions are listed at Paragraph 59.

Paragraph 58 requires that:

- water trading is to be allowed within and between States and Territories, where water systems are physically shared or hydrologic conditions and water supply considerations will permit water trading
- transaction costs of water trading is to be minimised through ensuring information flows and compatible entitlement, registry and regulatory arrangements
- a mix of ‘water products’ that can be traded temporarily or permanently, or through lease arrangements is to be enabled
- the needs of the environment are to be recognised and protected
- appropriate protection of third-party interests is to be provided.

Paragraph 59 provides for compatible, publicly-accessible and reliable water registers of all water access entitlements and trades (both permanent and temporary) on a whole of basin or catchment basis, consistent with the principles in Schedule F.

Paragraph 60 provides compatible institutional and regulatory arrangements that facilitate intra and interstate trade, including:

- principles for trading rules
- where appropriate, the use of water access entitlement exchange rates and/or water access entitlement tagging and a system of trading zones
- application of consistent pricing policies
- immediate removal of barriers to temporary trade
- immediate removal of barriers to permanent trade out of water irrigation areas up to an annual threshold limit of four per cent of the total water entitlement of that area, subject to a review by 2009 with a move to full and open trade by 2014 at the latest
- no imposition of new barriers to trade, including in the form of arrangements for addressing stranded assets
- where appropriate, implementing measures to facilitate the rationalisation of inefficient infrastructure or unsustainable irrigation supply schemes, including consideration of the need for any structural adjustment assistance.

Paragraph 35 (iii) of the National Water Initiative also indicates that water provided to meet agreed environmental and other public benefits may be made available to be traded where physically possible on the temporary market, when not required to meet the benefits, so long as this is not in conflict with those benefits.
Water Metering

The National Water Initiative addresses metering in the context a range of actions concerned with Water Resource Accounting.

The relevant outcome is contained at Paragraph 80 and the relevant actions at Paragraphs 87 and 88.

Paragraph 87 requires that metering be undertaken on a consistent basis and specifies the circumstances under which metering should occur including:

- for categories of entitlements identified in a water planning process as requiring metering
- where water access entitlements are traded
- in an area where there are disputes over the sharing of available water
- where new entitlements are issued, or
- where there is a community demand.

Paragraph 88 provides for the following actions:

- a national meter specification
- national meter standards specifying the installation of meters in conjunction with the meter specification
- national standards for ancillary data collection systems associated with meters.

Water resource management costs

The National Water Initiative provides that the proportion of costs that can be attributed to water access entitlement holders should also be consistent with the principles below:

- charges exclude activities undertaken for the Government (such as policy development, and Ministerial or Parliamentary services)
- charges are linked as closely as possible to the costs of activities or products (paragraph 87).

Land and water planning

The National Water Initiative addresses water planning, but not specifically land planning, in the context a range of actions concerned with Water Access Entitlements and Planning Framework.

The National Water Initiative places a heavy emphasis on transparent, statutory-based water planning, as the basis of allocating water access entitlements.

The relevant outcome is contained at Paragraph 25 and the relevant actions at Paragraphs 36 to 40.

In defining the requirements of water access entitlements and the associated planning frameworks, Paragraph 25 identifies they should be characterised by planning processes in which there is adequate opportunity for productive, environmental and other public benefit considerations to be identified and considered in an open and transparent way. The National Water Initiative also specifically acknowledges the need to protect the integrity of water access entitlements from unregulated growth in interception through land-use change.

Without directly mentioning land use planning, clearly there are important contextual requirements of the National Water Initiative which impact on the evolution of this important policy area.

Increase self management

Self-management is not specifically mentioned in the National Water Initiative but is also not precluded.

The National Water Initiative addresses community engagement in water resource management in the context a range of actions concerned with Community Partnership and Adjustment.

Paragraph 93 acknowledges the importance of engaging water users and stakeholders in achieving the objectives of the National Water Initiative, by providing transparency in decision making and ensuring sound information is available to all sectors at key decision points.

Various other parts of the agreement specifically require community consultation, including for example, in the preparation of statutory water management plans.

Water use efficiency

The National Water Initiative has a strong emphasis on water use efficiency through the document. Relevant points include:

Paragraph 23 (viii) aims to achieve policy settings that will facilitate water use efficiency and innovation in urban and rural areas.
Paragraph 61 (iii) commits Western Australia to consider by June 2005 a study to assess the feasibility of establishing market mechanisms such as tradeable salinity and pollution credits to provide incentives for investment in water-use efficiency and farm management strategies and for dealing with environmental externalities.

Paragraph 64 (i) provides a commitment to implement water pricing and institutional arrangements which promote economically efficient and sustainable use of:

- water resources
- water infrastructure assets
- government resources devoted to the management of water.

Paragraph 65 requires bringing into effect pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements.

Paragraph 71 considers if a release of unallocated water is justified, generally, it should occur only where alternative ways of meeting water demands, such as through water trading, making use of the unused parts of existing entitlements or by increasing water use efficiency, have been fully explored.

Paragraph 79 (ii) agrees that where it is necessary to recover water to achieve modified environmental and other public benefit outcomes, to adopt the following principles for determining the most effective and efficient mix of water recovery measures:

- investment in more efficient water infrastructure
- purchase of water on the market, by tender or other market based mechanisms
- investment in more efficient water management practices, including measurement
- investment in behavioural change to reduce urban water consumption.

Paragraph 81(iii) recognises that a national framework for comparison of water accounting systems can encourage continuous improvement leading to adoption of best practice, the Parties agree to benchmark jurisdictional water accounting systems on a national scale by June 2005, including water service provider water use/delivery efficiency.

Paragraph 90 (ii) recognises that increased water use efficiency in domestic and commercial settings is an outcome for urban water reform.

Paragraph 91 (i) (ii) (iii) require the following actions in regard to demand management by 2006:

- legislation to implement the Water Efficiency Labelling Scheme (WELS) to be in place in all jurisdictions and regulator undertaking compliance activity by 2005, including mandatory labelling and minimum standards for agreed appliances
- develop and implement a 'Smart Water Mark' for household gardens, including garden irrigation equipment, garden designs and plants
- review the effectiveness of temporary water restrictions and associated public education strategies, and assess the scope for extending low level restrictions as standard practice.

Paragraph 92 (i) requires the following actions in regard to innovation:

- development of national health and environmental guidelines for priority elements of water sensitive urban designs (initially recycled water and stormwater) by 2005
- development of national guidelines for evaluating options for water sensitive urban developments, both in new urban sub-divisions and high rise buildings by 2006.

Paragraph 104 (ii) commits the Natural Resource Management Ministerial Council (NRMMC) in consultation with the National Water Commission (NWC), to develop by mid 2005, a comprehensive national set of performance indicators for this Agreement. The indicators should, where possible, draw on existing indicators and include initialisation of water access entitlements, environmental water, water use efficiency, water pricing and water trading.
Appendix 2 Water Reform Implementation Committee: Terms of Reference

Then Premier Dr Geoff Gallop MLA tabled the Report of the Irrigation Review Steering Committee and the Government Response to the Irrigation Review Report on 1 September 2005. At that time, the Premier announced the formation of the Irrigation Implementation Committee to coordinate the implementation of the Government response.

The Water Reform Implementation Committee consists of the following members:

- Mr Ross Kelly, Chairman
- Mr Rob Hammond (Deputy Chairman), Department of Water
- Mr David Hartley, Department of Agriculture
- Mr David Morrison, Department of Treasury and Finance
- Mr Jos Mensink, Water Corporation
- Mr Neil Delroy, Agribusiness Research and Management.

Representatives of the Department for Planning and Infrastructure, the Department of Industry and Resources and other relevant government agencies attend meetings as required.

Following feedback from stakeholders, the name of the Committee was changed to the Water Reform Implementation Committee. This was done in recognition of the breadth of the matters that the Committee had been requested to address, and the impact of the reforms contemplated on industry sectors other than irrigation, including water service provision, mining, industrial and urban use.

The Government requested the Committee to:

- Undertake analysis of the exact form of an enhanced tenure for water licence holders, and produce an implementation plan that addresses transitional arrangements and the preferred entitlement as set out in the Government response to Key Direction Three
- Provide advice on land and water planning as set out in Key Direction Four
- Coordinate the assessment on self-management as set out in Key Direction Five
- Identify and pursue opportunities for water use efficiency
- Consult with user groups and produce a metering issues paper as set out in Key Direction Seven
- Produce a water trading issues paper as set out in Key Direction Eight
- Prepare a detailed proposal for implementing licence fees for consideration by December 2005 and produce an options paper discussing resource management and volumetric usage charges as set out in Key Direction Nine.

The Committee's first priority was to develop a work program with clearly specified milestones. The Committee prepared this report by December 2005 with advice on:

- Identification of any transitional arrangements that may be required
- Analysis of the costs of implementing specific recommendations
- Review of the irrigation reform timetable to identify opportunities to achieve early milestones
- Identification of any major impediments to implementing irrigation reform
- Analysis of the nature and scope of legislative amendments.

As a result of this report, the Government agreed to a revised timeframe for the preparation of advice. The Committee is now working to prepare advice on all of the matters in the Government Response to the Irrigation Review Report by November 2006.

The Government requested the Committee to consult with water users, water sectors, irrigators, government and any other key stakeholders identified during the course of investigating and coordinating implementation.
FEEDBACK FORM

To assist the Water Reform Implementation Committee in considering your comments about this discussion paper, please respond to the questions on the following pages.

Please note these submissions will not be published on the website.

CHANGING THE WATER ENTITLEMENTS SYSTEM

1. What are your views in relation to statutory water management plans as the basis of new water access entitlements?

2. What are your views and comments on the proposed framework for water access entitlements?

3. Do you have any comments on the proposal for a register for water access entitlements?

4. How should the uncertainty associated with groundwater resource management be addressed? Would creation of different classes of licences be a good solution?

5. Do you have any comments regarding what system might apply for irrigation cooperatives?

6. Do you have any comments in relation to environmental water, indigenous access or mining?

Comments

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
FACILITATING WATER TRADING

1. Are there further issues in relation to water trading that need to be considered?
2. How important is water trading likely to be in your area or industry?
3. Do you have any comments in relation to speculation and monopolies in water markets?

Comments

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
IMPLEMENT WATER METERING

1. Do you have any comments about the proposed metering requirements?

2. Which option do you prefer in relation to the installation of meters:
   - By the user
   - By the Department of Water (through third party contractors)

3. What do you believe is a fair basis upon which to recover the costs associated with meter installation?

4. Which option do you prefer in relation to meter reading:
   - By the user
   - By the Department of Water (through third party contractors)

Comments
RECOVERING WATER RESOURCE MANAGEMENT COSTS

1. Do you have any comments in relation to the proposed structure and level of licence administration fees?

Comments

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
LAND AND WATER PLANNING FOR THE LONGER TERM PROTECTION OF AGRICULTURAL LAND

1. To what extent do you support the longer-term protection for existing and future agricultural precincts?
2. What are your views on the methods for determining agricultural areas that require longer-term protection?
3. In general terms, what are your views about the five options for providing longer-term protection for agricultural land?
4. What other things could be done to ensure better integration of land and water planning?

Comments
INCREASE SELF-MANAGEMENT

1. Under what circumstances would particular models work?
2. How would the model work in practice?
3. Is/are there other model(s) for self-management that should be considered?
4. In a self-management arrangement, what level of responsibility for water resources management should water users be prepared to accept?

Comments

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________

_________________________________________________________________________________________
INVEST IN WATER USE EFFICIENCY
1. To what extent do you support the proposals for water use efficiency?
2. Are there other ways to improve water use efficiency in any water use sectors that should be considered?

Comments
OTHER COMMENTS

Do you have any other comments to make in relation to the proposed directions in this consultation paper?

Comments

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________

____________________________________________________________________________________________
SUBMISSION DETAILS

Your name

Address

Telephone number

Email (optional)

THANK YOU FOR YOUR COMMENTS

Please return this feedback form:
By email to: waterreform@water.wa.gov.au

OR

By mail to: Water Reform Program
PO Box K822
PERTH WA 6842

Submissions must be received by close of business 15 September 2006.

For enquiries please phone 1300 369 809 or email waterreform@water.wa.gov.au