

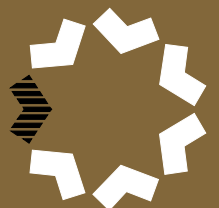


Assessment of Governments' Progress in Implementing the National Competition Policy and Related Reforms

VICTORIA WATER REFORM

June 2001

NATIONAL
COMPETITION
COUNCIL



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Inquiries or comments on this report should be directed to:

Communications Officer
National Competition Council
12 / 2 Lonsdale Street
MELBOURNE VIC 3000

Ph: (03) 9285 7474
Fax: (03) 9285 7477
Email: info@ncc.gov.au

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The National Competition Council

The National Competition Council was established on 6 November 1995 by the *Competition Policy Reform Act 1995* following agreement by the Commonwealth, State and Territory governments.

It is a federal statutory authority which functions as an independent advisory body for all governments on the implementation of the National Competition Policy reforms. The Council's aim is to 'help raise the living standards of the Australian community by ensuring that conditions for competition prevail throughout the economy which promote growth, innovation and productivity'.

Information on the National Competition Council, its publications and its current work program can be found on the internet at www.ncc.gov.au or by contacting NCC Communications on (03) 9285 7474.

Table of contents

Abbreviations	v
Introduction	1
Summary	17
Pricing and cost recovery: urban	26
Full cost recovery	26
Consumption-based pricing	35
Community Service Obligations	38
Cross-subsidies	40
Rural water services	42
Full cost recovery	42
Consumption-based pricing	47
Community Service Obligations	48
Cross-subsidies	49
New rural schemes	50
Institutional reform	52
Structural separation	52
Performance monitoring and best practice	61
Commercial focus	61
Devolution of irrigation scheme management	62
Allocation	63
Water allocations and property rights	63

Provision for the environment	75
Water trading	95
Trading within Victoria	95
Trading to date	97
Interstate trade	98
Environment and water quality	110
Integrated Resource Management	110
National water quality management strategy	114
Public consultation and education	119
Attachment 1: Full cost recovery in the rural sector 2000-01 forecasts	123
Attachment 2: Progress on bulk entitlement program	124
Attachment 3: Progress on streamflow management plans	126
Attachment 4: Development categories for surface water management areas	128
Attachment 5: Groundwater management plans	130
Attachment 6: Management of stressed rivers – river restoration plans	132
Attachment 7: The Victorian River Health Strategy	134
Attachment 8: Victoria's 3 year stressed rivers program	136
Attachment 9: Trading Irrigation Areas and districts	141
Appendix A: 2001 Assessment Framework	142
Appendix B: Water Trading Framework	169
Appendix C: List of submissions	175
References	176

Abbreviations

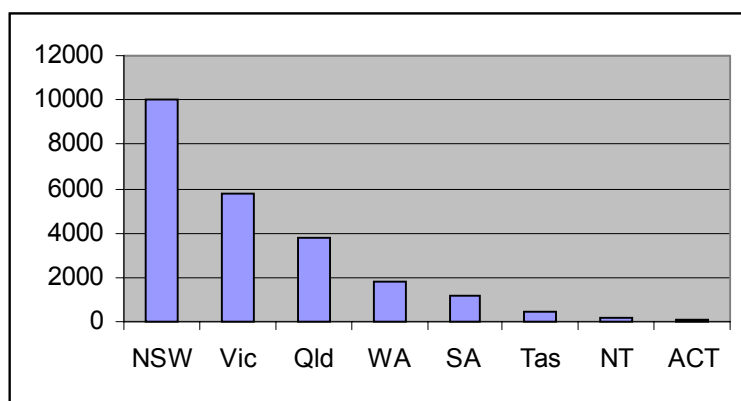
ANCID	Australian National Committee on Irrigation and Drainage
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
CoAG	Council of Australian Governments
CSO	Community Service Obligation
EPA	Environment Protection Authority
ESC	Essential Services Commission
NCC	National Competition Council
NCP	National Competition Policy
NLWRA	National Land and Water Resources Audit
NWQMS	National Water Quality Management Strategy
ORG	Office of the Regulator General
WHO	World Health Organisation
WSAA	Water Services Association of Australia

Introduction

For the last seven years governments across Australia have been implementing the strategic framework for the reform of the Australian water industry. As the reform program is progressing, there has been a growth in both the understanding of the complexity of these reforms and the level of national recognition of the importance of change.

Australia's water use is growing. Water use grew by 59 per cent between 1983-84 and 1996-97, mostly due to increases in irrigated agriculture. Chart 1 illustrates the level of water use for each State and Territory in 1996-97.

Chart 1: Mean annual water use 1996-97 (GL)



Source: National Land and Water Resources Audit (2001)

There has been significant progress since governments first agreed to the reform framework.

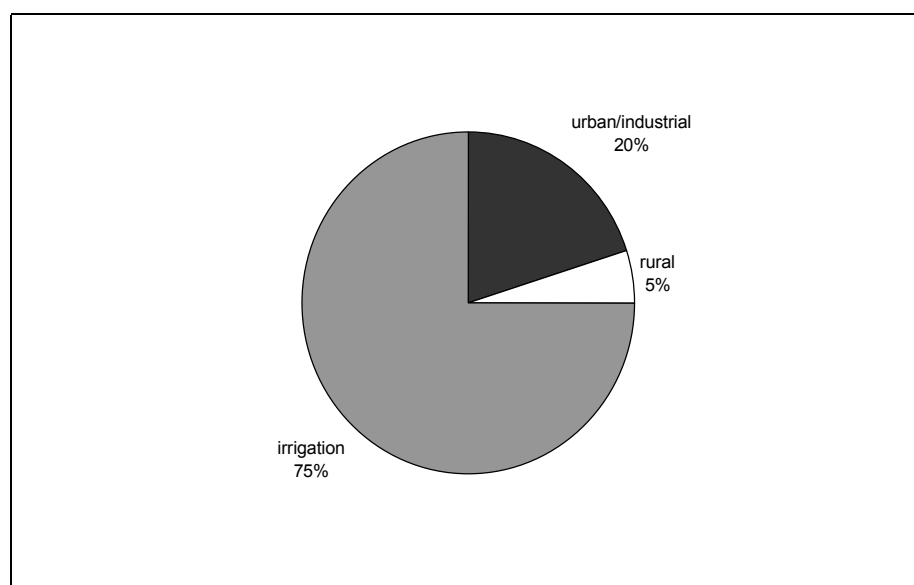
- Metropolitan water businesses have shifted from being part of a larger government bureaucracy to customer focussed commercial operations. This has generated benefits such as a real reduction in customer bills of nearly five per cent over the last four years, with improvements in drinking water quality and effluent treatment.
- Most urban Australians face water prices that reflect the amount of water they use and to create an incentive to conserve water.
- The need for water to be allocated to the environment is legally recognised across Australia.
- Regional planning processes on natural resource management issues have started in all States and Territories and communities are heavily involved in consultation on these processes.

- All governments recognise the difficulties that are arising from incomplete scientific information on the ecology and hydrology of water systems, particularly groundwater systems. Governments are addressing this by adopting a precautionary approach to any further allocations of water and increasing the level of monitoring and research.

This is the National Competition Council's second major assessment of the implementation of water reform. The first (the second tranche assessment in June 1999) focussed on the passage of legislation and urban water reform. The June 1999 assessment identified a number of issues that needed to be progressed further before the Council could conclude that all of the States and Territories had met their water reform commitments. Consequently, following the June 1999 assessment there were four follow-up or supplementary assessments that addressed outstanding issues from the 1999 assessment.

The 1999 assessment process saw the passage of legislation that provides the overarching framework for many of the water reforms. The current assessment starts the process of reviewing how these frameworks are being implemented and whether, in practice, they are delivering appropriate reform outcomes. Previous assessments also focussed on the implementation of reforms in the urban sector because the timeframes in the CoAG water reform agreements envisaged urban reforms occurring first. However, as illustrated in chart 2, rural and irrigation water makes up the majority of water use in Australia.

Chart 2: Mean annual water use by category 1996-97 (gigalitres)



Source: National Land and Water Resources Audit (2001)

The Council's 2001 NCP assessment has a much broader focus. While it discusses outstanding urban pricing issues its primary emphasis is on the rural sector covering, pricing, property rights, water trading and environmental issues. This is the first assessment in which the agreements call for the Council to examine the detail of rural reform.

The 2001 NCP assessment has also recognised the importance of establishing clear property rights and allocating water to the environment through a transparent process of community based planning. The key elements of these processes are:

- governments setting timetables and supporting the development plans;
- community consultation and involvement in the planning process;
- the development of scientific information on which to base the plans; and
- finalised plans that provide:
 - sufficient information for stakeholders to understand the plan and its implications for irrigators, the environment and the community generally;
 - water for the environment in a way that reflects the current understanding of environmental needs; and
 - well defined water allocations that provide irrigators with predictability in their property rights.

Assessment

In its assessment the Council has identified that an important issue for New South Wales is the development of well defined property rights, including an appropriate registry system, while for Victoria the assessment raises issues about the process for allocating water for the environment. Both States have provided substantial responses to the Council detailing how they intend to deal with these issues both over the next twelve months and into the future. These will be important issues in the Council's 2002 NCP water assessment. New South Wales is consulting with stakeholders and will review its policy on the water rights registry system before November 2001. The Council will reassess New South Wales's approach to the water rights registry in December 2001.

Overall the Council's 2001 NCP assessment has concluded that all States and Territories have made sufficient progress to receive their 2001-02 NCP payments. However, while the Council found that the Queensland Government has taken a positive and active approach to encouraging reform among local governments, one local government, Townsville City Council has failed to explain why introducing reform of water pricing within its jurisdiction is not in the public interest. In this assessment, the Council recommended a permanent reduction of \$270 000 in Queensland's NCP payments from 2001-02 (reflecting the remaining money available to Townsville Council for water reform through the Queensland Competition Authority's Financial Incentive Scheme). This reduction relates to the failure

by Townsville City Council to take a rigorous approach to considering consumption-based price reforms. The Council will reconsider Townsville's approach to two-part tariffs in the 2002 NCP assessment. It will look at both the progress made by Townsville and the State Government's efforts to resolve the issue. At that time, the Council will reconsider whether a continued reduction in competition payments is warranted and the appropriate size of any such reduction.

Finally, Queensland has acknowledged that the Condamine-Balonne is now a stressed river system. Consequently, the establishment of water allocations for the environment and consumptive use is now overdue. The Council will address this issue in its 2002 assessment. The Council is not satisfied that any of the options for setting environmental allocations specified in the draft water resources plan would be adequate to meet the environmental needs of the lower Balonne basin and the internationally listed Narran Lakes wetlands. More generally, the Council is not satisfied with the transparency of current reporting arrangements of the Government's final decisions for setting allocations. Queensland has agreed to address this concern over the next 12 months.

Local and national approaches to reform

The reform framework is a comprehensive approach that addresses the environmental, economic and social issues associated with water reform. It covers both surface and groundwater and recognises that while water reform is primarily a State responsibility some issues need to be addressed by coordination and cooperation between state initiatives. The approach to the Murray-Darling Basin is an obvious example.

State and Territory governments recognise the need for a more coordinated approach and are increasingly looking at water reform issues jointly. While some of these processes are in their early stages, it is the Council's view that they need greater emphasis if water reform generally is going to deliver the outcomes all stakeholders recognise as necessary. The following are examples where national approaches have been initiated to address important reform issues.

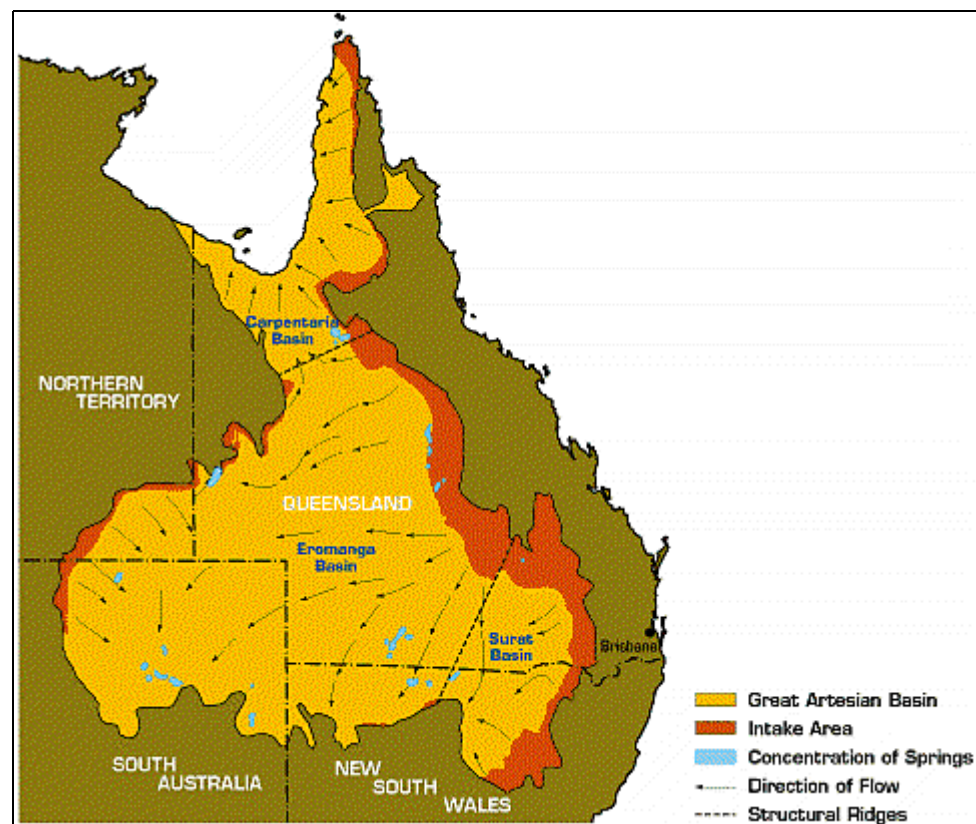
Managing groundwater basins cooperatively

The Great Artesian Basin is the largest artesian groundwater basin in the world. It underlies approximately one-fifth of Australia and extends beneath the arid and semi-arid parts of Queensland, New South Wales, South Australia and the Northern Territory, stretching from the Great Dividing Range to the Lake Eyre depression. The Basin covers a total area of over

1 711 000 square km and it has an estimated total water storage of 8 700 million megalitres (a megalitre is one million litres and is equivalent to about half the water in an Olympic swimming pool).

Many bores initially flowed at rates of over 10 megalitres per day. However, the majority of flows are now flowing between 10 000 litres and six megalitres per day. Total flow from the Basin reached a peak of over 2 000 megalitres per day around 1915, from approximately 1 500 bores. Since then, artesian pressure and water discharge rates have declined, while the number of bores has increased. The total flow from the basin during 1995 was in the order of 1 200 megalitres per day.

Figure 1: Great Artesian Basin



Source: www.gab.org.au (accessed July 2001)

The Great Artesian Basin Strategic Management Plan is a good example of a cooperative approach to managing groundwater resources. This plan was released in September 2000 after agreement by the Commonwealth, New South Wales, South Australia and Northern Territory Governments.

The plan proposes the following strategies to address basin management issues:

- a commitment to resource management partnerships to accelerate change;
- programs to encourage and achieve agreed understanding of the worth of the water resource;

- expanded infrastructure renewal programs, underpinned by public investments to:
 - stimulate private investments to minimise water losses and wastage; and
 - provide a platform for further investments in meeting environmental, social and economic objectives;
- changes to institutional arrangements and water entitlement systems to provide security of access to water (including water supply to priority groundwater-dependent ecosystems). Opportunities for new higher-value uses and clear responsibility for maintaining bore and reticulation systems maintenance;
- promotion of the socio-economic, environmental and heritage values of the basin;
- an emphasis on the need to sustain commitments to infrastructure renewal, maintenance and improved management;
- programs to improve knowledge and the technology underpinning improved management; and
- monitoring and evaluation to assess progress towards specific natural resource management outcomes sought through the plan.

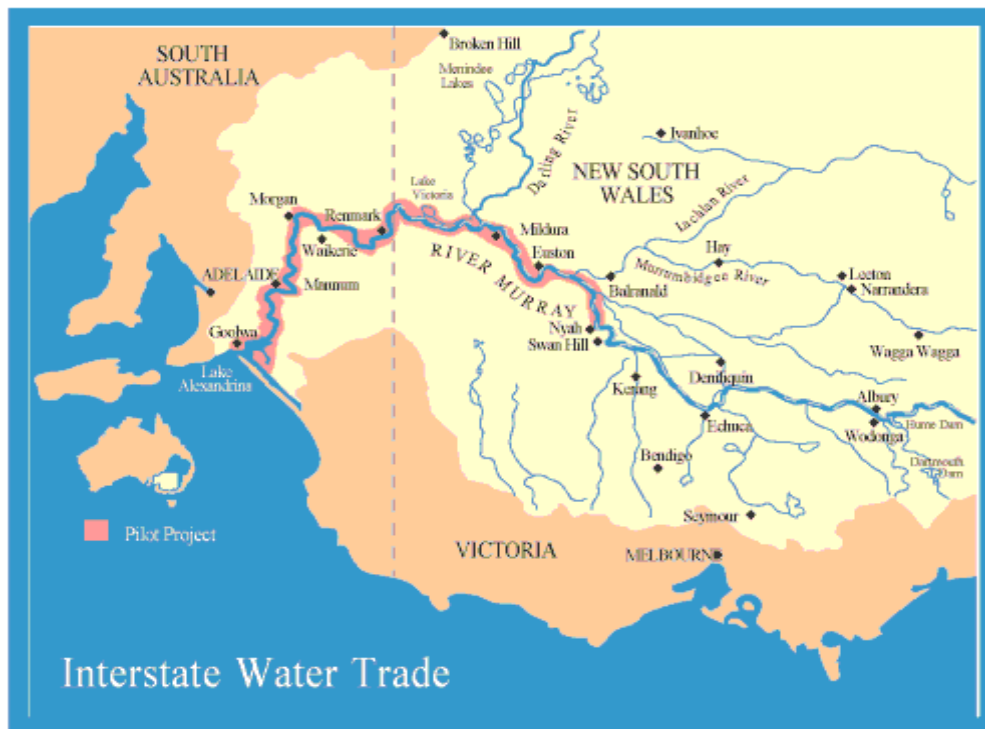
These strategies provide guidance for governments, water users and other stakeholders on policies, programs and actions necessary to attain optimum economic, environmental and social benefits from the existence and use of basin groundwater resources.

This Great Artesian Basin Strategic Management Plan is expected to be implemented over the next 15 years at a cost of \$286 million.

Interstate Trading

The CoAG water agreements explicitly recognise interstate trading as an important component of water reform. This view is reinforced by the observations made by the CSIRO that while ‘..intrastate trading is driving the market for water, interstate trading arrangements are keeping the various markets in place.’ (CSIRO 2000, p.2)

The Murray-Darling Basin Commission’s Pilot Interstate Water Trading Project was established to promote interstate water trading within the basin. The objective of the pilot is to facilitate and promote interstate trade of high-security water in the Mallee region of South Australia, Victoria and New South Wales as shown in figure 2.

Figure 2: The pilot interstate water trading project area

Source: CSIRO (2000)

The pilot, in operation since 1998, has resulted in:

- the increased value of water use in the basin by allowing water to move to higher value uses;
- the expansion of the number of traders able to participate in the water trading marketplace by allowing permanent trade to occur across State boundaries; and
- the movement of water out of degraded or areas of high environmental risk. (CSIRO 2000)

The Murray-Darling Basin Commission keeps a register of all transfers and calculates exchange rates for each trade. It must also assess each trade on the basis of any environmental damage it may cause and the physical capability of the system to deliver the water. The exchange rates are designed to account for transmission system losses in the river channel and for changes in the level of water supply security. The security can fall in response to the decreased ability to retain water within storages as the water moves upstream.

According to the review, the pilot enabled 51 trades — accounting for more than 9.3 gigalitres — between 1998 and September 2000. The total value of these trades was more than \$9.9 million, with three trades individually worth more than \$1 million. More than 90 per cent of the water traded (more than 8.8 gigalitres) was transferred to South Australia.

The pilot was assessed in a two-year review of interstate trading (reported by the MDBC 2000). The review examined the net effect of the pilot and noted areas where progress or improvement could be made. The review findings included:

- that arrangements for interstate trade are improving;
- that administrative arrangements are an impediment to efficient trade and need to be streamlined;
- that interstate trading is increasing the value of water use in the Murray-Darling Basin;
- that interstate trade has had no measurable adverse social impact during the pilot;
- that environmental impacts are mixed. The environmental flow impact has probably been positive, while the salinity impact is expected to be negative;
- that exchange rates are poorly understood; and
- that mechanisms for enforcement need to be improved.

While going a long way to promote interstate trade, the Murray-Darling Basin Commission trial is restricted in both the area covered and the type of water rights that can be traded. Consequently, there are three issues governments will need to focus on in the future.

First, different types of water property rights exist within the basin. In some instances, inconsistent property rights could impeded interstate trade. A consistent approach to the key components of property rights, for example, security of tenure and security of water — is needed. Also needed is an exploration of opportunities to better define and specify the water property rights across the basin and to improve the exchange rate arrangements to reflect fully the extent of overallocation, security of tenure and the salinity impact. The Council notes the effort of the Murray-Darling Basin Commission in attempting to resolve some of these issues. In the 2002 NCP assessment, the Council will review the progress made in addressing concerns about property rights and, where relevant, check whether all jurisdictions have cooperated to resolve difficulties.

Second, the broader environmental impacts of trading will depend on the degree to which individual States set and enforce irrigation and drainage plans. The Murray-Darling Basin Commission and the member States need to consider further the best means by which to address environmental impacts of interstate trade.

Third, as the previous two issues are addressed, consideration needs to be given to expanding the pilot both in the area covered, and the types of licences that can be traded. For example, consideration is currently being given to the

creation of a second pilot zone between New South Wales and Queensland in the Border Rivers catchment.

Restoration of the Snowy River

The Snowy River is an Australian icon which has been degraded over the last 50 years as a result of the Snowy Mountains Hydro-electric Scheme. Its cultural, social and environmental values to the Australian community are immense and thus Governments have agreed that it is the top priority for restoration. The Victorian, New South Wales and Commonwealth Governments have agreed to restore this river with a combination of flow improvements generated by water saving projects and habitat improvements. The three governments have agreed to provide \$375 million over 10 years to achieve this.

National Benchmarking

States and Territories have established a national process to extend inter-agency comparisons and benchmarking. Benchmarking systems are in place for the non-metropolitan urban and rural sectors, *WSAA Facts* is to be used to benchmark major urban service providers.

All States and Territories are participating in benchmarking projects.

The Water Services Association of Australia has been benchmarking major urban water service providers for 6 years. The most recent report covers 1999-2000 data. *WSAA Facts* (2000) covers 21 water businesses and provides information on:

- customer profiles and water volumes;
- service performance including, health, environment, service delivery and pricing;
- infrastructure; and
- economic and financial performance.

For the non-metropolitan urban sector, a report is compiled by the Australian Water Association under the direction of the Non Major Urban Water Utilities Working Group. The second national benchmarking report for the non-metropolitan urban service providers covered 1998-99 data and was released early in 2000. The report provides information covering 67 utilities from all States and the Northern Territory. It includes information on:

- customer and utility profiles;
- prices and revenues;

- energy consumption for water supply and environment (for waste water);
- levels of service;
- operating costs; and
- whole of business performance summary.

In total the non-metropolitan urban and *WSAA Facts* benchmarking reports cover water services to 83 per cent of the Australian population.

For rural schemes the second industry benchmarking report, covering 1998-99 data was prepared by the Australian National Committee on Irrigation and Drainage and released in February 2000. The report provides comparisons of performance in four key areas:

- systems operation;
- environmental issues;
- business processes; and
- financial aspects.

The Australian National Committee on Irrigation and Drainage is continuing to improve and refine their approach to benchmarking. The report notes, however, that data collection and reporting processes are still being developed and, therefore, this limits the ability to compare information between the 1997-98 and 1998-99 reports. It appears that the industry has a strong commitment to this project, as there was a 40 per cent increase in the number of rural service providers participating in the rural benchmarking project.

National Land and Water Resources Audit

The audit is a program of the Natural Heritage Trust. It was set up in 1997 to help improve decision-making on land and water resource management in Australia. In 2000, the fourth water resources assessment was undertaken in partnership with Commonwealth, State and Territory agencies.

The national audit provides summary information at national, State and Territory and surface water basin and groundwater management unit levels. It also identifies gaps and monitoring requirements which need to be addressed in order to make more effective water resource management decisions.

The key outputs of the water resources audit are to better define Australia's surface and groundwater management areas. The audit also attempted to quantify the amount of water being used and how it is being used and allocated.

The audit found that:

- of Australia's surface water resources, 84 of 325 basins (25 per cent) are either fully allocated or overallocated in terms of sustainable flow regimes. Of the 325 surface water basins, 44 have formal allocations for the environment;
- of Australia's groundwater resources, 161 of 538 groundwater management areas are either fully allocated or overallocated in terms of the sustainable yield assessments;
- water use efficiency, recycling, trading and pricing are increasingly becoming priorities and provide opportunities for development. To support this shift in development emphasis, improved information on water use is essential;
- water availability is at the centre of economic development and environmental management; and
- it is essential that Australia capitalise on the data collection investment of States and Territories and the audit and put in place Australia wide assessment and reporting systems.

The National Land and Water Resources Audit also produced a *Dryland Salinity Assessment 2000* in collaboration with the States and Territories which defines the distribution and impacts of dryland salinity across Australia.

The dryland salinity assessment concluded:

- approximately 5.7 million hectares of Australia are within regions mapped to be at risk or affected by dryland salinity. It has been estimated that in 50 years time the area of regions with a high risk may increase to 17 million hectares (three times as much as now);
- some 20 000 kms of major road and 1600 kms of railways occur in regions mapped as high risk. Estimates suggest these could be 52 000 kms and 3600 kms respectively by 2050;
- salt is transported by water. Up to 20 000 kms of streams could be significantly salt affected by 2050;
- Areas of native vegetation (630 000 hectares) and associated ecosystems are within regions with areas mapped to be at risk. These areas are projected to increase by up to 2 000 000 hectares over the next 50 years; and
- Australian rural towns are not immune: over 200 towns could suffer damage to infrastructure and other community assets from dryland salinity by 2050.

National Action Plan for Salinity and Water Quality

On 3 November 2000, CoAG endorsed the Commonwealth's proposal for an action plan to address salinity, particularly dryland salinity, and deteriorating water quality issues. These issues are of major national significance and are appropriately handled through a national action plan.

Salinity and deteriorating water quality are seriously affecting the sustainability of Australia's agricultural production, the conservation of biological diversity and the viability of our infrastructure and regional communities. At least five per cent of cultivated land is now affected by dryland salinity – this could rise as high as 22 per cent. One third of Australian rivers are in extremely poor condition, and land and water degradation, excluding weeds and pests, currently costs approximately \$3.5 billion per year.

The Action Plan builds on the achievements of the Natural Heritage Trust, initiatives by individual State and Territory governments, the CoAG water reforms, and the work of the Murray-Darling Basin Commission.

The goal of the Action Plan is to motivate and enable regional communities to use coordinated and targeted action to:

- prevent, stabilise and start to reverse trends in dryland salinity affecting the sustainability of production, the conservation of biological diversity and the viability of our infrastructure; and
- improve water quality and secure reliable allocations for human uses, industry and the environment.

The national Action Plan will involve six elements, all of which are necessary to achieve lasting improvements over dryland salinity and deteriorating water quality:

1. targets and standards for salinity, water quality and associated water flows, and stream and terrestrial biodiversity agreed either bilaterally or multilaterally, as appropriate;
2. integrated catchment/regional management plans developed by the community and accredited jointly by Governments, in the 20 agreed catchments/regions that are highly affected by salinity, particularly dryland salinity, and deteriorating water quality;
3. capacity building for communities and landholders to assist them to develop and implement integrated catchment/region plans, together with the provision of technical and scientific support and engineering innovations;

4. an improved governance framework to secure the Commonwealth, State and Territory investments and community action in the long term: including property rights; pricing; and regulatory reforms for water and land use;
5. clearly articulated roles for the Commonwealth, State, Territory, local government and community to provide an effective, integrated and coherent framework to deliver and monitor implementation of the action plan; and
6. a public communication program to support widespread understanding of all aspects of the action plan so as to promote behavioural change and community support.

The action plan involves new expenditure by Commonwealth, State and Territory governments of \$1.4 billion over the next seven years. The Commonwealth's financial contribution of \$700 million for regional implementation of the action plan will be matched by new State and Territory financial contributions.

CoAG agreed that compensation to assist adjustment where property rights are lost will need to be addressed in developing catchment plans. While any such compensation is the responsibility of the States and Territories, the Commonwealth is prepared to consider making an additional contribution, separate from the \$700 million announced to implement the action plan.

National Objectives for Biodiversity Conservation

In June 2001, the Commonwealth, New South Wales, Victoria, South Australia, Western Australia and the ACT endorsed an overarching policy document that sets targets and objectives for national biodiversity conservation in Australia.

The objectives cover such areas as:

- protection and restoration of native vegetation and terrestrial ecosystems;
- freshwater ecosystems, marine and estuarine ecosystems;
- control of invasive species;
- integration of measures for dryland salinity;
- promotion of ecological sustainable grazing;
- minimisation of the impact of climate change on biodiversity;
- maintenance of the biological knowledge held by indigenous people;

- improvement in scientific knowledge and access to scientific information; and
- introduction of institutional reform in integrated regional management and review and remove any legislative impediments to biodiversity conservation.

High Level Steering Group

The High Level Steering Group on Water provides a good example of intergovernmental cooperation in water reform. The group is set up under the Agriculture and Resource Management Council of Australia and New Zealand and comprises representatives of the agriculture and environment agencies of the Commonwealth and Australian State Governments.

This group's role is to help maintain the impetus of the CoAG water reforms, by reporting to the Agriculture and Resource Management Council of Australia and New Zealand and the Australian and New Zealand Environment and Conservation Council on progress in implementing reform. Importantly, the High Level Steering Group is also involved in valuable work to assist in implementation of the water reforms. This has included commissioning research on key reform issues such as costing and charges for externalities, establishing a consistent national approach to water trading, institutional approaches to water resource management, water for the environment and opportunities for improved management of groundwater. It is intended that, once finalised, these papers will be available on the Commonwealth Department of Agriculture Fisheries and Forestry website.

The Council's approach to assessing progress

The Council's approach to assessing the water component of the 2001 NCP assessment has recognised the complexity of the issues and the level of detail and breadth of the agreements. This assessment needs to accommodate the fact that each State and Territory faces different problems and has started with different sets of environmental and institutional characteristics.

The Council based its 2001 assessment on information provided by State and Territory Governments, its own research, and other reports including:

- The Australian Urban Water Industry (WSAA Facts);
- The National Land and Water Resource Audit Assessment of Water Resources 2000; and

- work by the High Level Steering Group on Water.

Stakeholders have also had a substantial input into this assessment. The Council received 10 submissions from irrigators and environmental groups. None of these submissions questioned the need for reform, or the underlying objectives of the water agreements. Generally, the submissions discussed the process and speed of reform and which aspects of the reform package should be given priority. However, there is universal recognition that appropriate water reforms are fundamental to Australia's future.

To facilitate a broad understanding of the Council's approach and to enable interested stakeholders to provide submissions the Council released a framework for the 2001 NCP assessment in February 2001.

The CoAG water reform agreements generally provide very broad descriptions of the water reform obligations. Because of this, the framework developed a more detailed explanation and interpretation of the water reform obligations. The framework did not redefine the commitments determined by CoAG, rather it's aim was to:

- provide a clear, transparent basis for assessment particularly in relation to matters considered in previous assessments;
- identify the type of information that jurisdictions should provide to demonstrate compliance; and
- provide a basis for early identification and bilateral discussion of areas where achieving reform outcomes is proving difficult.

The assessment framework is at appendix A to this document.

To further assist informed debate the Council also released seven discussion papers (see box 1). The discussion papers are available on the Council's website.

In this report the Council has provided comprehensive coverage of the water reform assessment issues identifying current and future issues and providing sufficient information to inform stakeholders of the reasons for the assessment.

Box 1: Background information papers on water reform commitments

Rural water pricing - covers full cost recovery in the rural sector including CSOs and positive rates of return.

New investment in rural water infrastructure - discusses a methodology to assess the economic viability and ecological sustainability of new investments in this area.

Institutional reform issues in the water industry - discusses why regulation is important and examines the potential for conflicts of interest between regulation and service provision and arrangements to deal with these.

Environmental requirements of the CoAG Water Reforms (paper prepared with the assistance of Environment Australia) - outlines the national agreements on the environment that may be useful as a guide in reporting progress against the environmental requirements of the water framework.

Implementing the National Water Quality Management Strategy (paper prepared by Environment Australia and the Department of Agriculture Fisheries and Forestry Australia in consultation with State and Territory government agencies) - the Commonwealth, after consultation with States and Territories, has proposed that implementation of the guidelines should be assessed through a two yearly review process. This paper provides a list of the component modules of the National Water Quality Management Strategy guidelines and their current status. The Council will be looking to jurisdictions to show how the guideline principles have been adopted in the 2001 NCP assessment and subsequent assessments.

Defining water property rights - discusses the specification of water property rights so as to promote efficient and sustainable investment and trade.

Water reform and legislation review - outlines the status of legislation reviews of relevant water legislation for each jurisdiction based on a stocktake report conducted by Marsden Jacob consultants.

Victoria

Around 89 per cent of total water use in Victoria comes from surface water sources. There are two major drainage divisions in Victoria. Northern Victoria drains into the Murray-Darling Basin, which provides two-thirds of Victoria's surface water needs. Northern Victoria also contains most of the State's irrigation. The two major irrigation areas are the Goulburn-Murray and the Mallee irrigation areas around Mildura and Sunraysia. Southern and eastern Victoria are coastal drainage systems. Irrigation in this area includes the Wimmera and Gippsland. In the coastal division, domestic use, services and power generation are the main urban uses. Rural water use across Victoria is dominated by pasture irrigation, followed by horticulture, and stock and domestic use.

Groundwater accounts for around 11 per cent of the total water use in Victoria. Of this, groundwater irrigated agriculture accounts for 70 per cent and urban/industrial uses for 20 per cent. Groundwater diversion in Victoria is controlled through volumetric licensing within 50 groundwater management areas.

Urban water and wastewater services in Melbourne are provided by four metropolitan service providers. Melbourne Water is the wholesaler providing bulk water supply, sewerage treatment, drainage, and floodplain management services to the three retail service providers. These are City West Water, South East Water and Yarra Valley Water. Outside of metropolitan Melbourne, there are 15 non-metropolitan urban service providers providing services to country towns.

Rural water services are delivered by 5 regional water authorities. These authorities manage irrigation systems and services, manage stock and domestic systems, manage headworks such as large dams, and licence private diversions and conduct environmental management initiatives. Goulburn-Murray Water is by far the largest authority accounting for 90 per cent of all entitlements used for irrigation, and supplying bulk water services to two other rural water authorities and several non-metropolitan urban areas.

Progress on reforms

Pricing and cost recovery

Urban water services

The Council is satisfied that for the most part Victoria's urban water and wastewater services are recovering costs consistent with CoAG commitments. However, the Council has noted its concern with the high level of returns being generated by some of the metropolitan service providers (City West Water in particular). The Council has also concluded that a number of non-metropolitan urban providers are not operating on a commercially viable basis as defined by the CoAG guidelines.

The Victorian Government is to release a 2001 Price Review which will establish a three year price path for full cost recovery from July 2001. Victoria has also announced that an Essential Services Commission will be created as an independent economic regulator to oversee the implementation of the price paths. Victoria will also apply a state based tax equivalent regime to the urban sector from July 2001. The Council therefore considers commitments have been met for this assessment.

Demonstration of further progress on full cost recovery particularly among the non-metropolitan urban providers will be a significant issue for the Council's 2002 NCP assessment. In future assessments, the Council will continue to look for Victoria to have made progress in the following areas:

- consideration of the treatment of externalities arising from urban water use;
- an independent audit of non-metropolitan urban providers' compliance on asset valuation;
- commercially based dividend arrangements consistent with CoAG commitments;
- a rigorous consideration of cross-subsidies; and
- more transparent reporting of CSOs.

The Council is satisfied that all Melbourne metropolitans and non-metropolitan urban providers throughout Victoria are applying two-part tariff arrangements consistent with consumption based pricing commitments.

The Council has found that Victoria's CSO framework meets 2001 commitments. The Council has however noted a concern with the level of

transparency of CSO reporting for the metropolitan and non-metropolitan urban sectors. Victoria has advised that non-metropolitan urban providers will be required to report on CSOs in their annual reports as a condition of the water service agreements with the State Government. The Council will look for progress on transparent reporting mechanisms in the 2002 NCP assessment.

The Council is satisfied that water reforms implemented by Victoria to date have decreased the potential for non-transparent cross-subsidies and met minimum commitments. Victoria will consider a broader examination of cross-subsidies between water and wastewater businesses including the development of guidelines for the non-metropolitan urban providers and rural water authorities sector over the next 12 to 18 months. The Essential Services Commission will then assume responsibility for regulating water and wastewater prices. The Council will review progress in this area as part of the 2002 NCP assessment.

Rural water services

Victoria provided indicative information only on the level of full cost recovery by the rural water authorities. For Goulburn-Murray Water, the largest rural authority, 25 of 34 schemes are recovering an amount consistent with the lower bound of the CoAG guidelines. However, there are some systems for Goulburn-Murray and First Mildura Irrigation Trust that are not operating on a commercially viable basis as defined by the CoAG guidelines. Goulburn-Murray Water have advised that the 9 schemes in question (10 per cent of Goulburn-Murray's total rural services), will be shown to be commercially viable for 2000-01. Again the 2001 Pricing Review is considering issues of cost recovery for the rural sector, and Victoria has advised that the Essential Services Commission may have some responsibilities in this area.

Demonstration of further progress on full cost recovery for this sector will be a significant issue for the Council's 2002 NCP assessment. The Council will look for Victoria to have made progress in the following areas:

- finalised figures for full cost recovery by the authorities for 2000-01 and 2001-02 including state tax equivalent regime payments;
- resolved appropriate rates of return to be earned by rural authorities and non-metropolitan urbans on headwork services; completed arrangements to improve asset valuation;
- completed guidelines for renewals annuities and oversight by the Essential Services Commission;
- considered a process to improve the treatment of externalities; and
- set a process in place to ensure that where dividends are paid they reflect commercial realities and stimulate a competitive market outcome.

The Council is satisfied that all irrigation charges levied by the rural water authorities reflect consumption based pricing arrangements and that all NCP commitments are met. Victoria has advised that the rural water authorities will be required to report on CSOs and cross-subsidies in their annual reports as a condition of the water service agreements with the State Government. The Council will look for progress on transparent reporting mechanisms in the 2002 NCP assessment.

The Council is satisfied that for the 2001 NCP assessment Victoria has complied with water pricing and cost recovery commitments.

Institutional reform

The Department of Natural Resources and the Environment is responsible for resource management and water allocations. Currently, the Minister for Environment and Conservation is also responsible for the non-metropolitan urban service providers and the rural water authorities, and is the joint shareholder of Melbourne Water with the Victorian Treasurer. The Treasurer is the Minister responsible for the three Melbourne water retailers. This can raise potential conflicts because the processes of water resource planning and ensuring compliance with water management requirements, can have an impact on the commercial viability of the non-metropolitan urban and rural water authority businesses. To address these issues the Council is looking for measures that ensure potential and actual conflicts of interest are minimised.

While the Council has concluded that Victoria has not yet completed the changes necessary to meet institutional reform commitments, it notes that Victoria is in the process of implementing a range of reforms over the next 12 months to improve transparency and accountability. These include:

- the proposed introduction of the Essential Services Commission as the economic regulator of the water industry and several other industries;
- the *2001 Price Review of Water, Drainage and Sewerage Services in Victoria*;
- transfer of the responsibility for recommending prices in the metropolitan sector from the Department of Treasury and Finance to the Department of Natural Resources and Environment;
- establishing the Energy and Water Ombudsman to handle customer complaints in the water industry;
- the National Competition Policy Review of Victoria's Water Legislation;
- developing water services agreements that clearly specify the obligations on non-metropolitan urban and rural water authorities;

-
- developing a new regulatory framework for drinking water quality in Victoria;
 - undertaking a review of the current regulatory arrangements for septic tank systems; and
 - developing improved departmental guidelines for assessing the need for compulsory installation of small town sewage schemes.

The Council will reassess progress against these initiatives in the 2002 NCP assessment and for this assessment the Council will look for Victoria to have made progress in the following areas:

- defining the roles of the Essential Services Commission and establishing this organisation;
- demonstrated that the approach taken in the 2001 Pricing Review is consistent with the CoAG obligations;
- finalised the new drinking water standards framework so that there is independence (from the service provider) in the setting and enforcement of standards consistent with the 1996 Australian Drinking Water Guidelines;
- signed water services agreements with non-metropolitan urban providers and rural water authorities that provide the transparency and accountability necessary to remove any conflicts of interest between the ownership of these organisations and regulation;
- responded to any institutional reform issues that arise from the review of Victoria's water legislation; and
- responded to the Environmental Protection Authority's review of the regulatory arrangements for septic tank systems.

Victoria has met commitments in relation to benchmarking service providers, a commercial focus for metropolitan water authorities, and devolution of irrigation scheme management through water service committees that give customers a significant input into irrigation management.

The Council is satisfied that Victoria has complied with institutional reform commitments for this assessment.

Allocation

Bulk entitlements and take and use licences create water property rights under the *Water Act 1989* in Victoria. For the regulated systems, bulk entitlements legally define allocations of water and property rights to water authorities, including the environment. For unregulated rivers not covered by bulk entitlements, the management of diversions is undertaken through

streamflow management plans which set conditions for take and use licences and environmental flow provisions. Licences are issued separately to the land title.

The Council is satisfied that Victoria's property rights system meets the requirements for the 2001 NCP assessment. For the 2002 NCP assessment, the Council will look for the Victorian Government to have made progress on the River Health Strategy, progress on the 2001 Farm Dams Review, and to revise the recent decision by Sunraysia rural water authority to reduce the duration of private diverter's licences from 15 years to five years.

Victoria's bulk entitlement and streamflow management plans do provide allocations for the environment. However, the Council has found for this assessment, that Victoria has made insufficient progress to meet commitments for allocations to the environment on overallocated or stressed river systems. In the second tranche assessment, Victoria identified 8 stressed surface water systems that required action for this assessment. Victoria has now added an additional 3 stressed river systems.

Victoria has advised that the policy on stressed rivers will be set by a River Health Strategy to be released for public comment in November 2001 and finalised by May 2002. The strategy is expected to:

- set a benchmark in defining what is an ecologically healthy river;
- propose the development of regional catchment strategies and waterway health plans;
- set regional targets in waterway health plans which draw from existing mechanisms such as streamflow management plans, bulk entitlements, and other integrated catchment management mechanisms;
- identify short to medium term targets at the State and regional level in the regional catchment strategies and water health plans; and
- aiming to put in place an integrated framework for waterway management which will maximise environmental improvements from investment.

Victoria has committed to finalise the Strategy by June 2002, and has provided a three-year timetable for actions on current priority stressed rivers based on the development of regional Waterway Health Plans.

While progress was made on consultation and the development of plans that were agreed in the second tranche assessment, the Council is concerned that sufficient on-the-ground change was not achieved on stressed rivers for the commitment to be met. The Council will reassess this issue in the 2002 NCP assessment. The Council considered imposing a suspension for this assessment until the reforms are in place. However, it is now satisfied that the Victorian Government has committed to a more comprehensive program to address this issue including a three-year action plan.

For the 2002 NCP assessment, the Council expects that Victoria will have a final publicly endorsed strategy in place and will begin to implement plans in accordance with Victoria's new stressed rivers timetable. The Council will also look for sufficient resources to be devoted to the environment to ensure improvements on stressed rivers are being made. Given the seriousness of this issue and the late delivery of this area of reform, the Council is of the view that insufficient progress in future assessments would be likely to result in a permanent penalty.

Trading

The majority of water entitlements in Victoria are contained within regulated irrigation districts. These irrigation districts are managed by rural water authorities who provide bulk water services to irrigators. Bulk entitlements are issued to these authorities as the basis for providing water to irrigators within the districts.

Water rights are transferable in regulated systems, although the right remains attached to land at all times. A transfer detaches the water right from one licence and reattaches it to the licence of the buyer. This has an impact upon the capital efficiency of the right. Water may be transferred into or out of an irrigation district, although only 2 per cent of water (net) can be transferred out of selected irrigation districts in a given year. This level has been reached twice in recent years.

In unregulated systems, streamflow management plans will set the balance between environmental and consumptive water allocations and, where appropriate, the rules for the transfer of water rights. Transfers may be made in unregulated systems on a similar basis to the regulated systems. Water remains attached to a land holding at all times. A prohibition on trade upstream and a 20 per cent levy on trade downstream (unless it is a winter-fill licence), limit trade in unregulated streams. These restrictions ensure that the environment is not further degraded until streamflow management plans are implemented.

Victoria has a well established trading market for high security water and trading has continued to play an increasingly important role in agricultural production in Victoria. Over the three years from 1997-98 to 1999-2000 many irrigators only coped with the low allocations of water, due to drought conditions by turning to the water market. This prompted record levels of water trading with permanent transfers up to 20 000 megalitres and temporary transfers of up to 250 000 megalitres. Water trading is now providing an alternative to high security allocations, as water users enter the market to buy additional water if needed to irrigate their crops.

The Council is satisfied that Victoria has met water trading commitments for the 2001 assessment. The Council will look for further progress in trading arrangements in future assessments.

Environment and water quality

Victoria is implementing regional catchment strategies. One of the primary objectives of these strategies is the protection of land and water resources. To implement the strategies, regional management plans are being developed by the nine catchment management authorities that cover non-metropolitan Victoria. These plans target Government investment in catchment areas in waterway management, floodplain management, salinity, drainage, groundwater management, water quality, soil conservation and land management.

Other catchment management initiatives developed by Victoria include Statewide benchmarking of the environmental health of all Victorian rivers. The data contained in the Index of Stream Condition is publicly available on a website. This Statewide benchmarking was undertaken by catchment management authorities. The release of Victoria's River Health Strategy is also likely to result in further developments for integrated catchment management.

Victoria continues to implement the National Water Quality Management Strategy through catchment management strategies and regional schedules to the state environmental protection policies. Nutrient management plans are being developed to minimise the outbreak of algal blooms. Victoria is also developing a new drinking water quality framework to be implemented in January 2002. Victoria has identified salinity targets to be addressed by catchment management authorities in developing regional management plans.

The Council is satisfied that Victoria has complied with environment and water quality reform commitments.

Consultation and education

Victoria has widespread public consultation and education mechanisms throughout its water industry. Customer consultative committees in the urban sector and water service committees in the rural sector ensure adequate consultation takes place. Substantial stakeholder involvement is also a key part of the process to develop bulk water entitlements and environmental flows.

The Council is satisfied there is a genuine commitment by Victoria to ongoing public consultation in the implementation of water reform. The implementation of reforms in such areas as the ongoing conversion of existing water rights to bulk entitlements, the setting of streamflow management plans on unregulated rivers, and the findings of the Farm Dams Review have been subject to considerable consultation.

With regard to public education, Victoria has established a Statewide Water Conservation Initiative which will set explicit obligations and targets for the water businesses themselves to undertake education campaigns. It is the Council's view that the features of the initiative should minimise the potential for any conflicts of interest in the roles of water service provision and public education. The initiative will ensure the Department of Natural Resources and Environment plays a greater role in coordinating water conservation and public education in Victoria. This will be achieved through setting clear obligations and targets in water service agreements with water businesses to meet Government expectations in this area.

The Council is satisfied that Victoria continues to comply with public education and consultation reform commitments.

Assessment

The Council concludes that Victoria has not met its reform commitments required for the 2001 NCP assessment, because of insufficient progress to meet commitments for allocations to the environment on overallocated or stressed river systems. However, Victoria has provided the Council with details on its commitment to develop a policy on stressed rivers to be set by a River Health Strategy that is to be finalised by May 2002. It has provided a three-year timetable for actions on current priority stressed rivers based on the development of regional Waterway Health Plans. Victoria has argued that the work now underway including the Snowy River initiative, reflects Victoria's commitment to allocating water to the environment.

Given the CoAG commitment has not been met, the Council will reassess this issue in the 2002 NCP assessment. The Council considered recommending a suspension of Victoria's NCP payments until the environmental reforms were in place. However, it is satisfied that the Victorian Government has committed to a more comprehensive program to address stressed rivers, including the three-year action plan. For the 2002 NCP assessment, the Council expects that Victoria will have a final publicly endorsed strategy in place, and will have begun to implement plans in accordance with Victoria's stressed rivers action timetable. Given the importance of this matter and Victoria's delay to date in delivering this area of reform, the Council will consider recommending a reduction in NCP payments in future assessments if progress is insufficient to meet CoAG obligations.

The Council acknowledges the substantial degree of commitment and progress by Victoria.

Pricing and cost recovery: urban

Full cost recovery

Governments have agreed to set prices so that water and wastewater businesses earn sufficient revenue to ensure their ongoing commercial viability but to avoid monopoly returns. To this end governments agreed that prices should be set by a jurisdictional regulator (or its equivalent) to recover:

- at most the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes, provision for the cost of asset consumption and cost of capital, the latter being calculated using a weighted average cost of capital; and
- at least, the operational, maintenance and administrative costs, externalities, taxes or tax equivalents (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement. Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.

Asset values should be based on the deprival methodology unless an alternative approach can be justified and an annuity approach should be used to determine medium to long term cash requirements for asset replacement/refurbishment. Governments can still provide assistance to special needs groups through community service obligations but this should be done in a transparent way (clause 3a, b and c).

Victorian arrangements

The 2001 price review for setting water and wastewater prices

Victoria's 2001 NCP annual report cites the establishment of the Essential Services Commission as one of its major reform initiatives. The report notes that, when established, the Essential Services Commission will be responsible for ensuring that Victoria continues to comply with CoAG pricing principles. To this end, the Essential Services Commission will oversee the metropolitan retail water businesses' implementation of three year price paths that will be established by the State's *2001 Price Review of Water, Drainage and Sewerage Services in Victoria* (the 2001 Price Review).¹ The price paths for metropolitan and non-metropolitan urban water services provided by this report are to apply from 1 July 2001. The Essential Services Commission will not assume responsibilities in relation to the non-metropolitan sector until 1 January 2003.

¹ This review was released very late in the Council's assessment process. Therefore, its results have not been considered in this assessment and will be reviewed as part of the 2002 assessment (see section on institutional reform).

In developing the price paths, Victoria has adopted a 'building block' approach. This involves the specifying the requirements of each business including identifying the capital and operating costs necessary to meet those obligations, defining the appropriate rate of return on capital and then setting a tariff that will recover these costs. Victoria's metropolitan water prices have been frozen since 1999.

Metropolitan services

Commercial viability

Victoria's 2001 NCP annual report notes that the revenue earned by metropolitan service providers exceeds the minimum for commercial viability as required by the CoAG guidelines. This outcome is considered further in the 2001 Price review of water, drainage and sewerage services.

Taxes

All metropolitan service providers are subject to the State's tax equivalent regime. Metropolitan services will also be subject to the National Tax Equivalent regime when it is introduced in July 2002.

Externalities

Victoria does not currently charge metropolitan services a separate levy to reflect the cost of environmental management. However, service providers are required to meet a range of environmental and resource management standards. To the extent that these requirements increase the operating costs of the service providers they will be reflected in water and wastewater prices.

Assets

The four metropolitan water businesses use historic costs in reporting asset valuations. Straight line depreciation is used to provide for the consumption of infrastructure and building assets. The recoverable amount test is applied to ensure that asset values reflect fair value. For City West, Yarra Valley and Melbourne Water this test compares an asset's carrying cost with the discounted net cash inflow from its continued use and subsequent disposal. South East Water's 2000 annual report notes that in estimating the recoverable amount, the authority does not discount the expected net future cash flows to present value. Land and buildings are subject to regular independent valuations. Revaluations of infrastructure (sewerage mains, pump stations, treatment plants) and plant and equipment assets are currently conducted in-house.

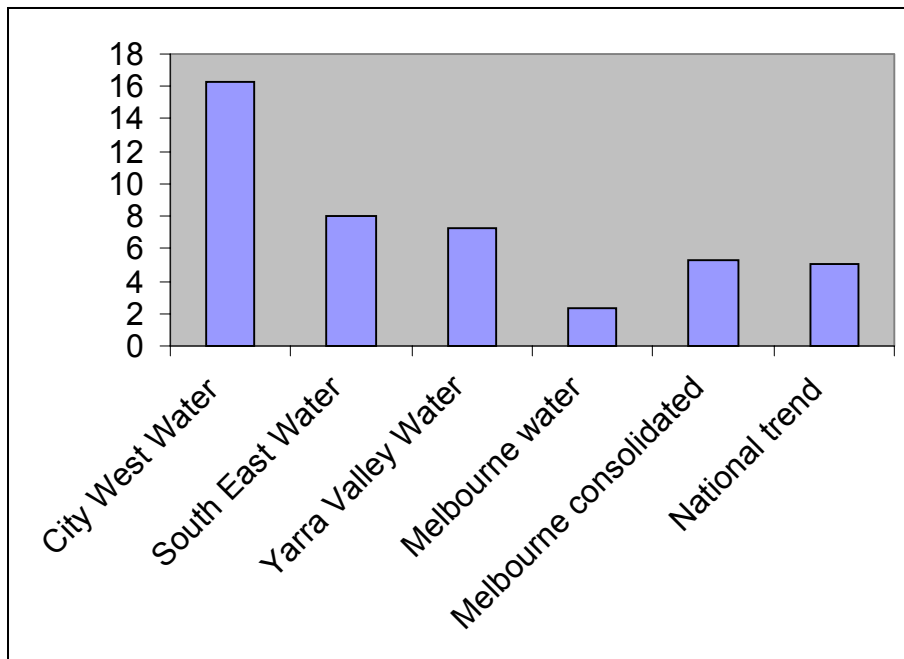
Victoria has advised that asset management plans are audited annually by the Office of the Regulator General. The findings of these audits are reported publicly in the *Metropolitan Water Companies – Annual Management Audit*.

Victoria has adopted the ‘line in the sand approach’ to establishing the value of the asset base. This means that the regulatory asset values are struck with reference to the net present value of the net revenue stream for each business.

Rate of return

Figure 3 highlights the variation in the returns earned by the four metropolitan businesses. However, the consolidated rate (which provides an indication of the returns to the system overall) is 5.28 and very close to the 1999-2000 national trend figure of 5.08 per cent (WSAA 2001).

Figure 3: Economic real rates of returns to combined water and wastewater businesses 1999-2000 (per cent)



Note: Melbourne consolidated figure reflects the returns to the system over all and nets out the impact of charges between Melbourne Water and the 3 retail businesses.

Source: WSAA (2000)

Victoria’s 2001 NCP annual report notes that independent consultants have been engaged to estimate the current weighted average cost of capital for urban water business to ensure Victoria’s defined rates of return do not push revenue levels above the upper bound.

Dividends

Dividends paid by metropolitan service providers in 1999-2000 and their share of before tax income are listed in Table 1.

Table 1: Dividends paid by metropolitan businesses, 1999-2000

<i>Provider</i>	<i>Dividend</i> (\$m)	<i>EBIT⁽¹⁾</i> (\$m)	<i>Share EBIT⁽¹⁾</i> (%)
Melbourne Water	126	204	62
City West Water	57	110	52
South East Water	68	104	65
Yarra Valley water	63	96	65

Notes (1) Earnings before interest and tax after abnormals

Source: Melbourne Water, City West Water, South East Water and Yarra Valley Water annual reports

Non-metropolitan services

Commercial viability

The Council has examined the performance of Victoria's non-metropolitan urban water and wastewater businesses relative to the elements of the CoAG pricing principles. The data suggest that all but Central Highlands and Glenelg earned sufficient revenue to be commercially viable as defined by the CoAG guidelines.

Taxes and tax equivalent regimes

Victoria's 2001 NCP annual report states that a State based tax equivalent regime for non-metropolitan urbans and rural water authorities will be introduced in July 2001, prior to the introduction of the National tax equivalent regime in July 2002. This decision took into account the impacts of the tax equivalent regime on revised asset values consistent with a draft practice statement on *Assets Valuation and Financial Reporting* (discussed below) for the Victorian water industry.

Externalities

Victoria has advised that while there is no separate externalities charge, any resource management activities undertaken by non-metropolitan urban businesses would be reflected in costs and thus prices. However, these are not separately identified.

Assets

The State's Asset Valuation practice statement will apply to all water services. However, a date for the implementation of the practice statement has yet to be determined.

Victoria has advised that as part of the water service agreements with the non-metropolitan urbans, service providers are required to have in place asset management systems, process and plans. The Council understands that Victoria is considering extending the annual audit of metropolitan asset management plans to include non-metropolitan urban and rural water authorities.

Rate of return

Information provided by Victoria suggests that all but two non-metropolitan urban providers earned a small but positive return on assets in 1999-2000. As with metropolitan providers Victoria has engaged independent consultants to estimate a weighted average cost of capital for urban service providers.

Dividends

Victoria have advised that non-metropolitan urban service providers are moving towards paying commercial dividends with the transition period due to expire at the end of 2000-01. The Council has also been advised that the 1999-2000 dividend represented 65 per cent of pre-tax operating surplus after adjustments for non-government contributions and non-cash abnormal items. Victoria states that this is consistent with its commercial dividend policy for government business enterprises. Victoria also notes that there is a need to remove the adjustment mechanism before the next dividend determination. A review of appropriate long term arrangements for the industry is due to commence soon.

Discussion

Metropolitan services

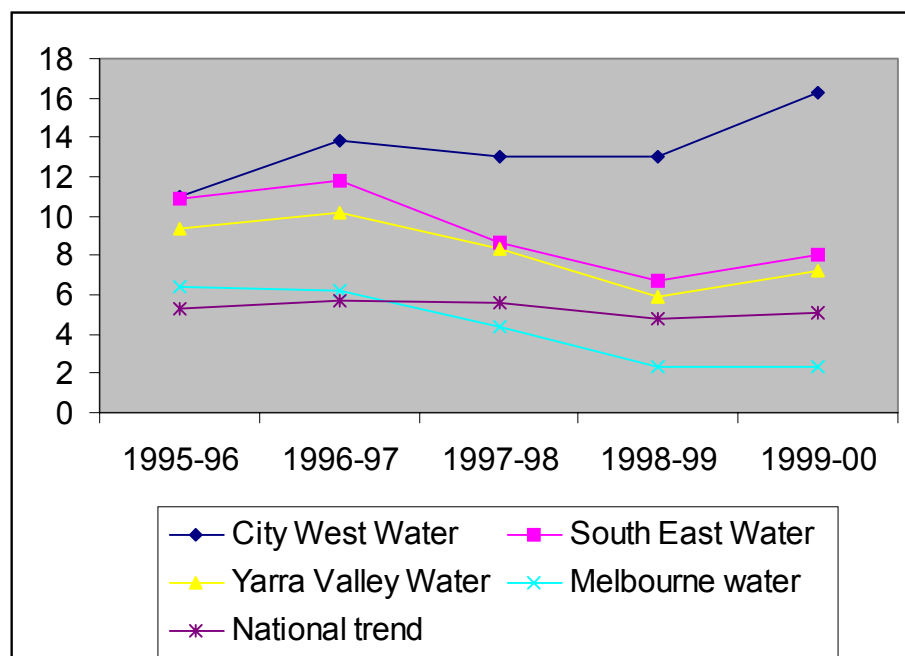
Victoria's metropolitan service providers have continued to earn returns well in excess of the minimum requirement for commercial viability as defined by the CoAG pricing guidelines.

The second tranche assessment noted that by Australian standards, Melbourne had a history of high water bills. This is not the product of higher costs but rather higher profits before interest and tax. Further, the assessment also noted advice that during the 1980s substantial dividends (above the benchmark of 65 per cent pre tax profit) were required whilst

metropolitan providers had to pay internally for a substantial capital program. However, Victoria has stated that while industry revenues were previously close to or even above the upper bound the introduction of a set of significant reforms in October 1997 brought the industry within the agreed CoAG band.

Figure 4 shows the real economic rate of return earned by metropolitan service providers for the five years to 2000. The rate of return earned by each retail service provider increased in the year following the second tranche assessment. All three providers were already well above the national trend for other large metropolitan businesses. In contrast to the retail businesses, Melbourne Water's rate of return is below the national trend.

Figure 4: Economic real rates of return for Victorian water businesses and the Australian average 1998-99 to 1999-2000 (per cent)



Source: WSAA Facts 2000

The rate of return earned by Yarra Valley Water and South East Water do not appear to be cause for concern. However, the very higher returns earned by City West Water for water services in particular (27 per cent) are of significant concern. City West Water's combined rate of return for water and wastewater services (16.3 per cent) was more than three times the national average (WSAA 2000) and more than twice the weighted average cost of capital of 7.5 per cent reported in the company's annual report. City West Water's 2000 annual report notes that before tax profit increased by 33.4 per cent on the previous year marking the company's fifth consecutive increase,

and the return on water supply services (27 per cent) was more than 5 times the national average. (WSAA 2000).²

The Council notes that prices have been frozen since 1999 pending the 2001 Price Review. In addition, benchmarking information provided by *WSAA facts 2000* suggests that, broadly speaking, the increase in the rates of return earned by the retail companies in 1999-2000 reflect higher demand (as a result of drought conditions) and lower costs per property. *WSAA facts 2000* suggests that all metropolitan retail services have achieved reductions in water and wastewater operating costs per property over the four years to 1999-2000. Per property costs are also well below the national average for large urban services. These reductions in costs do not appear to be at the expense of service quality. For example, the Office of the Regulator General's 2001 performance report on Melbourne's retail water companies noted that:

'overall the information reported here shows that Melbourne's water and sewerage customers generally received improved levels of service in 1999/2000 compared to 1998/99, continuing the trend of the previous three years.' (ORG 2001,p.1)

Further, the higher returns earned by the three retail services have not been accompanied by a greater proportion of earnings being paid to the Government as dividends but rather have been retained within the businesses.

In regard to asset valuation, the Council supports the use of asset registers and asset management plans by metropolitan providers. The timely introduction of the Victorian Water Industry Asset Valuation and Financial Reporting Practice Statement will provide a consistent basis for establishing asset values which will assist benchmarking and adoption of best practice methodologies.

The Council also suggests that in applying the recoverable amount test South East Water discount expected net future cash flows to ensure a balanced treatment of future costs and benefits.

Previously, the Council noted its view that the 'line in the sand' approach provides a basis for setting asset values for pricing consistent with CoAG commitments.

² Victoria argues that a significant factor in this result is the asset values used by City West Water which are based on historic costs and therefore reflect a relatively low value.

Non-metropolitan services

Commercial viability

At the time of the second tranche NCP assessment, Victoria's 15 non-metropolitan urban water and wastewater service providers were earning sufficient returns to:

- meet operating maintenance and administration costs;
- meet interest costs;
- pay a dividend to government; and
- cover the cost of externalities.

Recent information provided by Victoria suggests that in 1999-2000, even when tax equivalent regimes and externalities are not considered, two water businesses did not earn sufficient revenue to be commercially viable as defined by the CoAG pricing guidelines. Further, the Council has not been provided with information on cost recovery to demonstrate the viability of water and wastewater businesses separately. However, information provided by three non-metropolitan urban cross-subsidy reviews undertaken by the Victorian Government does raise concerns about the potential for at least one water and one wastewater business to be considered as not commercially viable.

Tax equivalent regimes

The Council's second tranche assessment noted that Victorian non-metropolitan urban providers do not pay federal taxes and are not subject to tax equivalent regimes. The Council also stated that this matter would receive particular consideration when the Council considered full cost recovery for the purposes of the 2001 assessment. The Council therefore welcomes the Victorian Government announcement to introduce a State based tax equivalent regime to non-metropolitan urban providers ahead of the national tax equivalent regime in 2002.

Assets

The second tranche assessment noted that while non-metropolitan urban providers had revalued their assets using a replacement cost methodology, differences in the application of this methodology had led to inconsistencies in financial reporting. The Council stated that greater consistency in asset valuation would receive particular attention when the Council reviewed full cost recovery in the 2001 NCP assessment.

Since then Victoria has introduced the Water Industry Asset Valuation and Financial Reporting Practice statement as a basis for consistency in establishing asset values. This should assist benchmarking and adoption of best practice methodologies. The Council will look at non-metropolitan urban compliance with the practice statement, when rolled out, to be audited independently. For example, this could be conducted by the Essential Services Commission.

Also, as noted above, the Council is satisfied that the 'line in the sand' approach as the means of estimating asset values for pricing purposes.

Dividends

The second tranche assessment noted Victoria's intention to move non-metropolitan urban water businesses to a commercial dividends basis by 1999-2000. This is yet to be achieved. Consequently, this matter will be reviewed by the Council for the 2002 NCP assessment. At that time, the Council will look for dividend arrangements to be consistent with the CoAG guidelines.

Externalities

Non-metropolitan urban providers do not appear to make explicit provisions for externality charges. The Council suggests that the potential for a more explicit and consistent treatment of externalities could be referred to the Essential Services Commission.

Assessment

While the Council does have reservations regarding the high returns earned by the retail companies (and City West Water in particular), it has concluded that overall the Melbourne metropolitan sector earns a rate of return close to the national average. The Council also believes that the three year price paths to be set by the 2001 Price Review should provide a sound basis for recovering costs consistent with the CoAG guidelines. The Council also strongly supports the proposal for oversight of the price paths by the Essential Services Commission. Therefore, the Council concludes that Victoria has met cost recovery reform commitments for this assessment. In conducting future assessments the Council will look for evidence that returns more closely reflect the weighted average cost of capital.

In regard to the non-metropolitan urban sector, the Council is not yet satisfied that full cost recovery commitments have been met. However, the Council notes that this matter is the subject of the 2001 Price Review and the establishment of the Essential Services Commission as the independent

regulator will oversee that implementation of the resulting price paths.³ Therefore, consistent with the Council's approach to other assessment issues and given Victoria has in place a process for addressing this matter in a timely way, the Council does not consider that this matter has competition payment implications at this stage. Rather the Council will look for evidence that all water and wastewater businesses are separately meeting the lower bound set by the CoAG pricing guidelines when it reviews progress in the 2002 NCP assessment.

The Council also suggests that the following matters be given further consideration (possibly by the Essential Services Commission) prior to the Council's next assessment:

- issues in developing a more consistent treatment of any externalities arising from urban water use;
- independent audit of non-metropolitan urban compliance with the State's practice statement on Asset Valuation and Financial Reporting;
- progress with introducing a commercially based dividend arrangements consistent with CoAG commitments;
- rigorous consideration of cross-subsidies (discussed further below); and
- a more transparent reporting of CSOs (discussed below).

Consumption based pricing

Governments have endorsed the principle that prices should reflect the volume of water supplied so that prices encourage more efficient water use and to give customers more control over the size of their water bill. For urban water providers using surface or groundwater, two-part tariffs (comprising a fixed access component and a volumetric cost component) are to be introduced where cost effective (clause 3a, b and c).

Victorian arrangements

Retail water charges

Victoria's 2001 NCP Annual Report states that two-part tariffs, including a volumetric component, have been implemented throughout Victoria.

Domestic minimum charges are a flat charge not reflecting property value or meter size (see table 2). Charges vary from \$33 per annum at South East

³ The Essential Services Commission will only oversight implementation of the metropolitan retailers' price paths but will not assume responsibilities in relation to the non-metropolitan sector until 1 January 2003.

Water to \$75.60 per annum at City West Water. Volumetric charges for all three services are around 70 cents per kilolitre with the proportion recovered through volumetric charging ranging from 54 per cent at City West Water to 69 per cent at South East Water (WSAA 2000). For non-residential customers (including industrial and commercial customers) annual minimum charges vary from \$37.50 levied by South East Water to \$112.20 charged by City West Water.

Table 2: Metropolitan residential and non-residential water charges

	<i>City West Water</i>	<i>South East Water</i>	<i>Yarra Valley Water</i>
Residential	\$75.60 p.a. 71c/KL	\$33 p.a. 72 c/KL	\$52.80 p.a. 69 c/KL
Non-residential	\$112.2 p.a. 69 c/KL	\$37.50 p.a. 70 c/KL	\$75 p.a. 67 c/KL

Note: c/KL — cents per kilolitre

Source: Victorian Government Gazette (1997)

There are no free water allowances provided by the metropolitan retailers. The proportion of total revenue provided by fixed charges has halved since 1996-97. Over the same period the proportion of total income derived from volumetric charges (and other charges such as developer charges) has increased.

Metropolitan wastewater charges are made up of a fixed service charge and volumetric charge as shown in table 3.⁴

Table 3: Metropolitan wastewater charges

	<i>City West Water</i>	<i>South East Water</i>	<i>Yarra Valley Water</i>
Residential	\$81.60 p.a. 81 c/KL	\$116.10 p.a. 77 c/KL	\$112.50 p.a. 80 c/KL
Non-residential	\$144 p.a. 79 c/KL	\$190 p.a. 76 c/KL	\$175 p.a. 78 c/KL

Note: c/KL — cents per kilolitre, does not include trade waste charges

Source: Victorian Government Gazette (1997)

⁴ This reflects the volume of water consumed multiplied by a discharge factor. In the case of residential charges, a seasonal factor is applied although some flexibility is provided to service providers.

Non-metropolitan urban water and wastewater charges for selected towns were examined by the Council. Residential water service charges range from \$54 per annum to \$190 per annum. Volumetric charges range from 30 cents per kilolitre to 80 cents per kilolitre. Three schemes include inclining volumetric water charges, Westernport has adopted a seasonally based peak and off-peak charge, and three schemes levy a volumetric wastewater charge.

Non-residential water service charges range from \$54 to \$280 per annum. Volumetric charges are the same as for residential charges. Wastewater service charges are similar to residential charges. Twelve schemes have volumetric wastewater charges for non-residential customers.

Trade waste charges

All three metropolitan retail companies levy trade waste charges. However, these represent only a small proportion of total income ranging from 6 per cent at South East Water and Yarra Valley Water to 14 per cent at City West Water. Trade waste charges are based on both the quantity and quality of the waste, reflecting a daily maximum, the total volume discharged over the year and the toxicity of the waste.

Bulk water charges

In relation to wholesale prices, the three metropolitan retail companies have paid bulk water (and wastewater) charges to Melbourne Water since 1995. A long run marginal cost approach is used to determine the volumetric charge paid by each metropolitan business. The residual is made up through a fixed charge (NCC 1999). Charges are set so that the amount recovered from each retailer broadly reflects the proportion of the assets and operating costs incurred in the service. In 1999-2000, 71 per cent of Melbourne Water's total income was derived from volumetric charges compared to 36 per cent in 1996-97 (WSAA 2000).

Bulk wastewater charges paid by the three retail businesses to Melbourne Water are based on a two-part tariff. The proportion of Melbourne Water's total wastewater income recovered through volumetric charges has fallen to 33 per cent in 1999-2000 compared to 56 per cent in 1996-97.

Discussion and assessment

Metropolitan

The widespread adoption of volumetric charges as part of a two-part tariff and the absence of free water allowances ensures that water users across the State have a strong incentive to use water efficiently. Therefore, the Council

has concluded that Victoria has met its metropolitan price reform commitments for this assessment.

Non-metropolitan urban

The second tranche assessment stated that while advice that two-part tariffs were being applied, few details of the size and structure of these tariffs were provided. The Council has been provided with greater detail of the charges levied by non-metropolitan urban providers and is satisfied that these regimes adequately reflect the principle of consumption based pricing. The Council supports the use of off peak pricing by Westernport to assist with demand management. Overall it has concluded that Victoria has met its reform commitments for non-metropolitan pricing.

Community service obligations

Where service deliverers are required to provide water services to classes of customers at less than full cost this cost be fully disclosed and ideally be paid to the service deliverer as a CSO. Governments have agreed that the Council would not make its own assessment of the appropriateness of any individual CSOs but would review information provided by governments in totality to ensure that these CSOs do not undermine the objectives of the agreed water reform framework (clause 3a, b and c).

Victorian arrangements

Table 4 shows the CSOs paid to metropolitan and non-metropolitan urban providers by the Victorian government.

In regard to non-metropolitan urban services, Victoria has advised that the Government has recently provided a subsidy totalling \$26.5 million to a number of non-metropolitan urban authorities to reduce and cap customer capital contributions for new sewerage schemes throughout regional and rural Victoria. This funding was provided for schemes which improve public health, the environment and the economy in regional Victoria. The Council understands that the funding arrangements for new schemes are governed by explicit departmental guidelines which require the support of the Environment Protection Authority and local government. The government contributions are disclosed in non-metropolitan urban water providers' annual reports.

Victoria's 2001 NCP Annual Report notes that the Government will review its CSO policy before transferring responsibility for pricing to the Essential Services Commission.

Table 4: CSOs provided by metropolitan and non-metropolitan urban water and wastewater businesses

<i>CSO</i>	<i>Description</i>	<i>Responsible agency</i>	<i>Reporting mechanism</i>
Pensioner Rebate Scheme	Provides pensioner concessions of up to 50 per cent of water and wastewater service and usage charges.	Department of Human Services	Concessions unit annual report
Utilities Relief Grant Scheme	Provides one-off assistance to eligible customers for temporary financial problems.	Department of Health	Melbourne retail Water and Sewerage Companies – Performance Report
Water and Sewerage Rebate Scheme	A rebate of up to \$260 on fixed water and sewerage charges for not-for-profit organisations (education, hospitals and nursing care, religions, charities, sporting activities and war veterans' organisations) and low-income earners. Rebates are explicit on the customer's bills. The water authorities are reimbursed for the rebates by the Government, and the Government, not the authorities, determines eligibility for the rebate.	State Revenue Office	State Revenue Office Annual Report
Capital Grants Scheme	One-off assistance with the cost to customers having difficulty affording the repair or replacement of an essential appliance that would reduce consumption or people experiencing hardship and cannot maintain access to the service.	Department of Human Services	Concessions unit annual report

Source: Victoria (2001)

Discussion and assessment

The Council supports Victoria's CSO arrangements. CSOs are provided with a clearly stated public benefit objective and clearly target recipient groups. However, the Council does have some reservations with respect to the transparency with which the cost of these CSOs are reported. For example, the cost of CSOs provided by large metropolitan services are not reported in the national benchmarking report, WSAA Facts nor are they clearly listed in the retailers' annual reports. Similarly, there is no requirement to include information on the nature and value of CSOs delivered by non-metropolitan urban providers in annual reports.

Victoria has advised that over the next twelve months the non-metropolitan urban water service agreements will contain a requirement to report CSOs in annual reports. The Council is satisfied that 2001 assessment commitments have been met. However, the Council will revisit progress in the transparent reporting of the size and nature of CSOs provided by all urban service providers in the 2002 NCP assessment.

Cross-subsidies

Cross-subsidies should be transparently reported and ideally removed where they are not consistent with efficient service provision and use. (clause 3a, 3b, and 3c)
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Victorian arrangements

Victoria's 2001 NCP Annual Report argues that the State removed its distortionary cross-subsidies when it removed water and sewerage rates based on property valuations in 1997. In the metropolitan sector, volumetric charges are set on the basis of long run marginal costs, which ensures no one customer or location pays less than the incremental cost of supply for services received. Victoria states that with the abolition of land value based charges, there is much less variation between the average prices paid by different customers. Consequently, it is unlikely that any customers are paying above the standalone costs of supply.

Victoria has also undertaken three case studies to identify whether there are any remaining cross-subsidies in the non-metropolitan urban sector. While these studies identified some price discrimination, Victoria states that it did not identify any major distortionary cross-subsidies. Victoria is confident that the three authorities participating in the case studies (Gippsland Water, Grampians Water and Western Water) provide a good cross-section of the non-metropolitan urban sector. Victoria has concluded from these studies that it is unlikely there are any significant distortionary cross-subsidies remaining in the non-metropolitan urban sector.

The Council understands that the independent regulator, the Essential Services Commission, will be responsible for ensuring Victoria continues to comply with the CoAG cross-subsidy requirements.

Discussion

The Council supports price reforms initiated by Victoria to date and echoes the State's view that these measures have significantly lessened the potential for non-transparent cross-subsidies.

The Council has also had the opportunity to review the three non-metropolitan urban case studies initiated by Victoria. In identifying cross-subsidies the consultants compare the price paid by each customer class with an estimate of the long run marginal cost. The long run marginal cost is estimated for each scheme by combining short run marginal costs with an estimate of long run capacity costs adjusted to remove any amounts recovered through developer charges. Differences in price markups over long run marginal cost between customer classes were also considered to establish the degree of price differentiation.

The Council is satisfied that this approach appears sound and is therefore comfortable with the result that no cross-subsidies exist between customer classes for the water businesses participating in the study.

However, the case studies focused on the scope for cross-subsidies within either water or wastewater services and did not discuss the potential for cross-subsidies between these services even though evidence supporting this was provided. For example, in regard to Gippsland Water the wastewater business is projected to operate at significant loss over the next 5 years while the water business is expected to return a profit with these profits trending upwards. On this, the case study noted that:

'Prima facie it would appear that the water entity is operating at revenue levels between the two bounds, whereas the wastewater business is operating below the minimum level.' (Marsden Jacob 2000a, p.5)

Similarly the case study on the Grampians Region Water Authority concluded that:

'Modeling of the Grampians Water as a whole indicates that it doesn't satisfy the lower bound test for long term viability... This is also a best case result since it does not allow for future renewals past the initial 5 years.' (Marsden Jacob 2000b, p.5)

By contrast Grampians Water's wastewater business does appear to be profitable, although again the consultants note that this figure does not include renewals outside the next five years.

The Council also has some reservations about whether the findings of three case studies can be used to conclude that there are no cross-subsidies within charging arrangements set by other non-metropolitan urban providers. This is particularly the case given the closeness of long run marginal cost and the prices charged for some groups identified in the three case studies. The Council suggests that thought be given to releasing a set of guidelines for identifying cross-subsidies which could include the case studies and use the Essential Services Commission to audit compliance. Including a requirement to transparently report any cross-subsidies arising from applying the above guidelines would also assist in meeting this commitment.

Victoria has advised that it will consider the issue of identifying and reporting cross-subsidies over the next twelve to eighteen months with a view to establishing a preferred approach before the Essential Services Commission assumes responsibility for regulating water and wastewater prices. Victoria also notes that the preferred approach is likely to include a set of guidelines for identifying and reporting cross-subsidies.

Assessment

The Council is satisfied that 2001 NCP commitments have been met given Victoria's commitment to continue to progress this issue. The Council will review progress as part of the 2002 NCP assessment.

Rural water services

Full cost recovery

Governments have agreed to set prices so that water and wastewater businesses earn sufficient revenue to ensure their ongoing commercial viability but to avoid monopoly returns. To this end governments agreed that prices should be set by a jurisdictional regulator (or its equivalent) to recover:

- at most the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes, provision for the cost of asset consumption and cost of capital, the latter being calculated using a weighted average cost of capital; and
- at least, the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement. Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.

Asset values should be based on the deprival methodology unless an alternative approach can be justified and an annuity approach should be used to determine medium to long term cash requirements for asset replacement/refurbishment. Governments can still provide assistance to special needs groups through community service obligations but this should be done in a transparent way (clause 3a and d).

Victorian arrangements

The 2001 Price Review will not provide a three year price path for rural services. Rather, future prices are to be negotiated directly with rural water authorities and their water services committees (see section on institutional reform). However, the 2001 Price Review is expected to provide advice to assist these negotiations.

Commercial viability

Victoria's 2001 NCP Annual Report indicates that the State has continued to implement full cost recovery in the rural sector. The majority of rural water services recover operations, maintenance and administrative costs, finance charges and a renewals annuity. Information provided by Victoria suggests that in regard to Goulburn-Murray Water, the State's largest rural water authority, 25 of its 34 schemes are recovering an amount consistent with the lower band of the CoAG guidelines. The remaining nine schemes are expected

to recover full costs by the end of 2001. Attachment 1 provides a forecast of the level of cost recovery expected to be achieved by 2001 by the State's five rural water authorities.

Tax equivalent regimes

As with non-metropolitan urban service providers, Victoria will introduce a state based tax equivalent regime in July 2001 prior to the commencement of the national tax equivalent regime in 2002.

Externalities

Victoria's 2001 NCP Annual Report also notes that where externalities are directly attributable to water users and rural water authorities have incurred costs to carry out remedial works to address these externalities, these costs are fully recovered from rural water customers. For example, the cost of operating salinity mitigation schemes in Northern Victoria are reflected in the operating costs of the relevant rural water authorities and thus prices.

The issues paper preceding the 2001 Price Review states that drainage charges included in rural water prices are a 'pseudo-externality charge', as they are based on the irrigation usage (input charge) rather than on actual drainage discharge. The issues paper states that all authorities are reviewing their models for reflecting externalities in water prices.

Assets

As with non-metropolitan urban services, rural water authorities are required to have asset management systems in place. The Victorian government is considering extending the current audit of metropolitan asset management arrangements to include rural water authorities.

In regard to provision for asset consumption, the 2001 Price Review issues paper states that rural water authorities use a renewals annuity to make provision for asset consumption. The renewals period varies between authorities. The methods used in calculating annuity payments will be considered in the 2001 Price Review to ensure 'all cost components are calculated in a robust, fair and transparent manner and are comparable between authorities.'

Victoria has advised that the determination of renewals is one of the more difficult areas in managing local irrigation channel systems and that there is evidence that current practices are leading to significant over/under estimation of annuity charges. Victoria is considering the development of guidelines to aid development of more consistent treatment of annuity charges. It is envisaged that the Essential Services Commission could oversee the treatment of renewals charge in the future.

Rate of return

Rural water authorities do not currently charge a rate of return on the headworks component of rural water supplies. This policy was adopted in 1989 and supported by the recommendations of the 1992 McDonald Review. This is in contrast to the 4 per cent rate of return currently charged by Goulburn-Murray Water, Southern Rural Water and Wimmera Mallee Water on the headworks component of bulk water sales to non-metropolitan urban providers. In supplementary information provided to the Council, Victoria expressed the view that the differential in water charges creates efficiency implications in the market for water entitlements. It was argued that the two groups of customers face different long run costs of buying water entitlements. Victoria also notes that the revenue generated by the 4 per cent return is used to fund CSOs, meet the costs of dam safety and pay a dividend to government.

Dividends

The Council understands that rural water authorities collectively pay dividends of around \$1 million to the State Government in recognition of previous debt write-off under the financial reform components arising from the 1992 McDonald Review. However, as noted in Victoria's 2001 NCP Annual Report these payments are not currently based on commercial principles.

Next steps

While the proposed role for the Essential Services Commission in the rural water sector is yet to be determined, the Essential Services Commission is likely to have some responsibilities in relation to the ongoing implementation of full cost recovery principles in the rural sector.

Discussion

Regulated water

Based on the information provided, forecast 2000-01 earnings for some systems in both Goulburn-Murray Water and to a lesser extent First Mildura Irrigation Trust are below the lower bound of the CoAG pricing guidelines, raising the questions as to the commercial viability of these schemes. Also notes the information provided does not include explicit provision for tax equivalent regimes and externality charges.

However, the Council notes Victoria's advice that:

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- the earnings figures provided are indicative and are for a point in time whereas cost recovery targets are set on normalised revenues based on ten year rolling averages;
 - sales water⁵ on the Goulburn System has not been available due to drought and this has dramatically reduced Goulburn-Murray Water's revenues over the past three years;
 - the nine Goulburn-Murray Water systems currently below the CoAG lower bound represent only 10 per cent of Goulburn-Murray Water's total rural water services;
 - Goulburn-Murray Water is confident that final figures for 2000-01 will show all schemes to be commercially viable; and
 - tax equivalent regimes will apply from 2000-01 and some provision is made for resource management/externality charges in rural water prices.

Victoria has undertaken to provide the Council with more detailed information following the completion of the *2001 Price Review*.

The Council is comfortable that the use of normalised ten year averages provides a sound basis for ensuring the ongoing commercial viability of water businesses. The Council also notes the potential role for the Essential Services Commission in assisting improved performance and reporting.

Based on the information provided, there is only limited consideration given to the cost of externalities in Victoria. However, all governments are still reviewing their approach to externalities and the Essential Services Commission would provide an appropriate vehicle for considering these issues in Victoria. The Council also notes that pricing represents only one aspect of a holistic approach to externalities.

In regard to asset valuation, the State's practice statement on Asset Valuation and Financial Reporting has the potential to provide a more robust and consistent basis for valuing rural water authority assets and hence encourages the timely introduction of the practice statement. The Council also supports the auditing of asset management systems.

The Council supports Victoria's proposal for developing guidelines to assist more accurate provision for renewals annuities. Ensuring that sufficient provision is made for the replacement and refurbishment of infrastructure is a critical issue in maintaining the ongoing self-sufficiency and commercial viability of rural schemes. Self-sufficient rural services are consistent with both CoAG commitments and the recommendations of Victoria's 1992 McDonald Review.

⁵ See section on allocations.

On the matter of the differential between the returns earned by the three rural water authorities on services to rural customers and services to non-metropolitan urban customers, the Council supports the view expressed in the issues paper that this potential distortion be addressed by charging the same return for all water users. The Council notes the point made by the issues paper that this may lead to some loss of income to rural water authorities. The Council will examine this issue in the 2002 NCP assessment.

The Council notes dividends are currently not based on commercial principles. The agreed CoAG pricing principles state that dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome. Prior to its next assessment the Council will look for progress with ensuring that dividends, where paid, are based on commercial principles.

Unregulated water

Victoria provided the Council with a copy of one of Goulburn-Murray Water's licence fee schedules for unregulated catchments. The licence fee schedule shows that Goulburn-Murray recovers administration costs for licence applications, renewals, transfers, amalgamations and amendments. Licence fees range from \$60 to \$500 depending on the nature of the licence.

Assessment

For this assessment, the Council was provided with indicative information only on the level of cost recovery currently being achieved by rural water businesses. However, the Council notes that the issue of cost recovery is currently being considered by the 2001 Price Review and recognises the potential for the Essential Services Commission to provide expert assistance to the water service committees⁶ to achieve efficient performance and improved financial management. The Council has not been provided with sufficient information to be satisfied that commitments in this area have been met. However, Victoria have demonstrated a genuine commitment to delivering on this reform in full in the near future. Therefore in conducting its next assessment of progress the Council will look for Victoria to:

- provide final figures on cost recovery by the States rural water authorities for 2000-01 and 2001-02 including state tax equivalent regime payments;
- ensure appropriate returns are earned on rural and non-metropolitan urban headworks services;
- put arrangements in place for improved asset valuation;

⁶ For further details on these committees, see the section on institutional reform.

- complete guidelines for renewals annuities and oversight by the Essential Services Commission;
- commence consideration of avenues for improved treatment of externalities; and
- establish a process for ensuring where dividends are paid they reflect commercial realities and stimulate a competitive market outcome.

Consumption based pricing

Governments have endorsed the principle that prices should reflect the volume of water supplied so that prices encourage more efficient water use and to give customers more control over the size of their water bill. For urban water providers using surface or groundwater, two-part tariffs (comprising a fixed access component and a volumetric cost component) are to be introduced where cost effective (clauses 3a and d).

Discussion

Information provided by the 2001 Australian National Committee on Irrigation and Drainage Benchmarking Report suggests that all irrigation charges have a volumetric charge. In the case of four rural authorities⁷, service charges are also levied. First Mildura Irrigation Trust also includes a charge based on the area of land serviced. Water delivery charges range from \$114 per megalitre at Werribee to \$2.10 per megalitre for Goulburn-Murray Water Diverters. Bulk water charges range from \$1.77 per megalitre for Goulburn-Murray Water Diverters to \$9 per megalitre at First Mildura Irrigation Trust. The report also shows that 3 authorities⁸ levy renewals annuities and environmental charges on a volumetric basis.

The report also suggests that volumetric charges are widespread in stock and domestic water charges while Goulburn-Murray Water drainage services are volumetrically based. Surface drainage charges for Wimmera Mallee and subsurface drainage charges at Sunraysia Rural Water Authority are included within the water charge and therefore reflect the volume of water consumed.

⁷ These are First Mildura Irrigation Trust, Goulburn-Murray Water Diverters, Sunraysia and Wimmera Mallee.

⁸ These are Goulburn-Murray Water, First Mildura Irrigation Trust, and Sunraysia Rural Water Authority.

Assessment

The Council is satisfied that for the 2001 NCP assessment, rural water prices for regulated services reflect the principle of consumption based pricing.

Community service obligations

Where service deliverers are required to provide water services to classes of customers at less than full cost this cost be fully disclosed and ideally be paid to the service deliverer as a CSO. Governments have agreed that the Council would not make its own assessment of the appropriateness of any individual CSOs but would review information provided by governments in totality to ensure that these CSOs do not undermine the objectives of the agreed water reform framework (clauses 3a and d).

Victorian arrangements

Rural water authorities undertake a range of non-commercial activities that facilitate land and water based recreational activities at water storages. These include maintaining picnic facilities, toilet blocks, boat ramps and marker buoys for boating and skiing. The Council understands that the cost of these services (approximately \$3 million) is currently met through the 4 per cent rate of return included within non-metropolitan urban bulk water costs.

Discussion and assessment

The Council is concerned at the apparent lack of transparency in CSOs arrangements among rural water authorities. For example, there is currently no requirement to provide information on the nature or value of CSOs in rural water authority annual reports. The Council suggests that the non-commercial elements of the public use management business segment be separately identified and reported. One way of improving the level of transparency in current arrangements would be to include a requirement within the water service agreements that each annual report includes information on the nature and value of any CSOs provided by the rural water authority.

Victoria has advised that over the next 12 months rural water authority water service agreements will contain a requirement to report CSOs in annual reports. the Council is satisfied that 2001 NCP commitments have been met. However, it will look for transparent reporting of the quantum and nature of CSOs provided and also examine the issue of the most efficient way of funding these non-commercial activities in the 2002 NCP assessment.

Cross-subsidies

Cross-subsidies should be transparently reported and ideally removed where they are not consistent with efficient service provision and use (clauses 3a and d).

Victorian arrangements

Victoria's 2001 NCP Annual Report states that in the rural sector, cross-subsidies have been removed because each service has progressively moved to full cost recovery and the process by which prices are negotiated and agreed to by Water Services Committees limits the potential for cross-subsidies to exist.

The State's 2001 NCP Annual Report also notes that once established as the economic regulator of the water industry, the Essential Services Commission will be responsible for ensuring Victoria continues to comply with the CoAG cross-subsidy requirements.

Discussion and assessment

Consistent with the conclusion reached for the non-metropolitan urban providers the Council notes the progress achieved by Victoria but is of the view that Victoria has yet to meet cross-subsidy commitments in full. While progress in reforming cost recovery and consumption based pricing has decreased the scope for non-transparent cross-subsidies, a more rigorous consideration of this issue is needed to meet CoAG commitments. The Council's concerns relate to the:

- depth with which the issue of cross-subsidies have been considered to date; and
- apparent absence of a mechanism for reporting cross-subsidies transparently.

One possible way of addressing the Council's concerns would be to develop a set of guidelines for identifying cross-subsidies (see discussion on cross-subsidies in the non-metropolitan urban section) and requiring each rural water authority as part of its water service agreement to apply the guidelines and report any identified cross-subsidies in annual reports.

Victoria has advised that it will consider the issue of identifying and reporting cross-subsidies over the next twelve to eighteen months with a view to establishing a preferred approach before the Essential Services Commission assumes responsibility for regulating water and wastewater prices. Victoria also notes that the preferred approach is likely to include a set of guidelines for identifying and reporting cross-subsidies.

New rural schemes

Governments have agreed that all investments in new rural water schemes or extensions to existing schemes should only be undertaken after appraisal indicates that it is economically viable and ecologically sustainable. (clause 3d(iii))

Victorian arrangements

Arrangements for the appraisal of the economic viability and ecological sustainability of new rural schemes have not changed dramatically since the second tranche assessment.

Ecological sustainability

Victoria's 2001 NCP Annual Report notes that any investment on new or existing schemes must meet the legislative requirements of the *Water Act 1989*. Section 40 of the Act requires ecological sustainability to be assessed before a bulk entitlement order can be revised. Since bulk entitlement orders are affected by changes to rural schemes and dam construction⁹, any new investment must prove its ecological sustainability before a new bulk entitlement or the necessary amendments to the existing bulk entitlement will be approved.

In addition, any major development in Victoria that impacts upon the environment is subject to the *Environment Effects Act 1978*. This Act sets out environment assessment procedures that must be complied with before a major development can proceed.

The Victorian Government has recently initiated a review of the environment assessment procedures. The review will examine existing procedures for the environmental assessment of projects, develop improved procedures, and evaluate the need, scope and form of environment assessment for strategic projects. This review will further strengthen Victoria's commitment to ecologically sustainable development. The review is expected to develop Statewide guidelines for assessing the environmental impact of dams.

⁹ All dams that are for commercial use and on waterways require a licence and before a licence is issued, an environmental assessment must be undertaken. For example, Southern Rural Water and Goulburn Murray Water have in place a process for reviewing the environmental impact of dams that requires referral to the Department of Natural Resources and Environment.

Economic viability

The *Investment Evaluation Policy and Guidelines* (1996) and *Partnerships Victoria* (2000) documents, issued by the Victorian Department of Treasury and Finance, ensure that all new investments are economically viable.

Under the *Investment Evaluation Policy and Guidelines*, water authorities must perform a comprehensive investment evaluation for all capital projects in excess of \$5 million. Once completed, authorities must submit their evaluations to the Department of Natural Resources and Environment for the approval of the Minister for Environment and Conservation. The Minister also seeks the Treasurer's approval to ensure economic evaluations have been adequately performed and all commercial matters have been addressed. These arrangements ensure all new investments are economically viable.

Partnerships Victoria is the Victorian Government's policy for integrating private sector investment into public infrastructure. This policy also ensures new investments are economically viable.

As well as meeting the legislative requirements of the *Water Act 1989* and undertaking investment evaluations, extensive pre-feasibility studies that assess economic viability and ecological sustainability matters are undertaken prior to any investment in major rural schemes or dam construction.¹⁰ These studies involve extensive consultation with stakeholders and are made available to the public.

Discussion and assessment

The Council's second tranche assessment noted that existing arrangements in Victoria met requirements for ecological sustainability and economic viability. The Council has again reached this conclusion.

The second tranche assessment report also identified the Deakin Irrigation development as one area that would need to comply with the sustainability and viability requirements. The Victorian Government has yet to decide to proceed with this development. If this development does proceed, the Council will need to ensure in a future assessment that appraisal showed the investment to be both economically viable and ecologically sustainable.

¹⁰ For example, the *Deakin Irrigation Development Pre-Feasibility Study* and *Deakin Irrigation Project Feasibility Study*.

Institutional reform

Structural separation

As far as possible the roles of water resource management, standards setting and regulatory enforcement and service provision should be separated institutionally by 1998 (clause 6c and d)

Currently the regulation of Victoria's water sector differs between the metropolitan, non-metropolitan urban and rural sectors. Victoria has, for some time, been undertaking institutional reform. For instance, the Council's second tranche assessment noted that rural water services committees were well established and had an integral role in determining prices and setting service quality and performance standards.

Implementing further change in Victoria has been simplified, somewhat, by previous reforms that have led to fewer service providers with clearer roles. In Melbourne, there are three retail water businesses and one supplier of wholesale water and sewage services. There are 15 non-metropolitan urban water authorities, reduced from 370 entities in the early 1970s, and five rural water authorities.

Victorian arrangements

Victoria has recognised the need to further develop its institutional arrangements. Since the Council's second tranche assessment Victoria has undertaken some reforms and is planning a substantial package of future initiatives. This package includes reforms that, if fully implemented, will lead to significant changes in the current legislative and regulatory framework and provide a Statewide approach to regulation in the water industry. Specifically, Victoria is planning the following initiatives that will address issues of price and service standard regulation for the:

- proposed introduction of the Essential Services Commission as economic regulator of the water industry;
- *2001 Price Review of Water, Drainage and Sewerage Services in Victoria*;
- transfer of responsibility for recommending prices in the metropolitan sector from the Department of Treasury and Finance to the Department of Natural Resources and Environment;
- establishment of the Energy and Water Ombudsman to handle customer complaints in the water industry; and
- National Competition Policy Review of Victoria's Water Legislation.

The Victorian Government is also considering initiatives that will reform the regulation of service standards and resource management in non-metropolitan urban and rural water authorities. These initiatives include, for example, developing water services agreements that clearly specify the obligations on non-metropolitan urban and rural water authorities.

Further, Victoria is planning several specific initiatives that will affect the regulation of drinking water standards and decision making on whether individuals are required to connection to sewage services. These include:

- developing a new regulatory framework for drinking water quality in Victoria;
- undertaking a review of the current regulatory arrangements for septic tank systems; and
- developing improved departmental guidelines for assessing the need for compulsory installation of small town sewage schemes.

Service provision

In the metropolitan sector the three retail water businesses are government owned corporations with operating licences under the *Water Industry Act 1994*.

Melbourne Water Corporation is a statutory authority that supplies wholesale water and sewerage services principally to the metropolitan retail water businesses as well as main waterway and drainage services in the metropolitan area.

The Minister for Environment and Conservation is the relevant portfolio Minister for these four businesses and is the joint shareholder of Melbourne Water with the Treasurer. The Treasurer is the sole shareholder of the three retail businesses and has responsibilities in relation to the financial performance of the retail businesses.

The 15 non-metropolitan urban water authorities are statutory authorities that are responsible for providing water and sewerage services to urban areas (residential, commercial and industrial customers) outside the metropolitan area.

The five rural water authorities are also statutory authorities and supply rural water services for use in irrigated agriculture, drainage in rural areas, rural domestic and stock water supplies, groundwater supplies and bulk supplies to some non-metropolitan urban retailers.

The Minister for Environment and Conservation is the relevant portfolio Minister and sole shareholder for both the non-metropolitan urban water authorities and the rural water authorities.

Pricing and service standards

One of the key components of these reform commitments is the Victorian Government's intention to establish an Essential Services Commission. The Essential Services Commission will be the economic regulator for the water industry looking at pricing and those service standards issues currently under the jurisdiction of the Office of the Regulator General.

Victoria considers that the process of developing the water regulatory framework required to establish the Essential Services Commission will clarify the roles and accountabilities of government, water authorities and other regulators to further minimise the potential for conflicts of interest. Victoria's 2000 annual report on the implementation of NCP notes that this process will involve:

- new state-wide legislation that establishes the role of the Essential Services Commission for the water sector and puts in place regulatory arrangements which recognise the diversity of the sector and meet government objectives for the sector;
- Essential Services Commission obligations and transitional responsibilities established with respect to the three-year price paths set in the 2001 Price Review and the future application of the pricing policy framework; and
- explicit obligations for the businesses either set out in legislation, licences or other appropriate regulatory tools.

At this stage, Victoria is still considering the scope of the role of the Essential Services Commission. Initially its price regulation role will be constrained to oversight of the metropolitan retailers' three-year price paths. It will administer the new pricing framework from 1 January 2003.

The 2001 Price Review is being undertaken with extensive consultation and adopting an approach similar to that used by other independent regulators in Australia. As a result of this consultation, Victoria argues that there is greater public awareness of pricing issues and this increase in transparency has made the government more accountable for its pricing decisions. Therefore, Victoria argues that the development of the three-year price path will meet its NCP obligations to separate, as far as possible, water pricing regulation from the operation of the water business. The pricing order takes effect from 1 July 2001.

In the interim, the arrangements for making pricing recommendations in the metropolitan sector have been changed. The Department of Natural Resources and Environment, rather than the Department of Treasury and Finance, is now responsible for such recommendations.

Another significant component of these reform includes the establishment of an Energy and Water Ombudsman. The Ombudsman has responsibility for handling customer complaints and making rulings on compensation. This is

an industry based scheme underpinned by legislation. The Ombudsman commenced operations in April 2001.

In addition, Victoria is currently awaiting the report of its National Competition Policy Review of water legislation. The four main acts under review are:

- *the Water Act 1989*;
- *the Water Industry Act 1994*;
- *the Melbourne and Metropolitan Board of Works Act 1958*; and
- *the Melbourne Water Corporation Act 1991*.

The final report of the review was due to be completed in May 2001. This review will consider, among other things, the powers held by water authorities and where these powers restrict competition whether the restrictions are justified. Potentially, the government's response to this report could also have implications for the further development of institutional arrangements.

Regulation of non-metropolitan urban and rural water authorities

As part of the 2001 Pricing Review, Victoria has developed and is refining water services agreements that set out the specific service obligations for non-metropolitan urban and rural water authorities.

Victoria has recognised that these agreements need further development. As part of its overhaul of the regulatory arrangements it intends to consider adopting explicit regulatory tools and establishing clear accountabilities to address any deficiencies in the current arrangements. Victoria argues that by clarifying these agreements it will address any remaining issues of conflicting roles in the non-metropolitan urban and rural sectors between service provision and any residual functions in standards setting and regulation.

Templates for the non-metropolitan urban and rural water authority water services agreements were provided to the Council. Agreements for the non-metropolitan urban areas are expected to be signed by 30 June 2001. There has been some delay in the finalisation of water services agreements for rural water authorities.

In the case of non-metropolitan urban providers, the agreements are expected to be comprehensive documents that require them to: publish a customer services charter; establish an internal complaints handling mechanism; develop their asset management systems; comply with drinking water standards; and meet environmental requirements. The agreements also specify any CSOs the service provider is required to deliver and outline independent audit, monitoring and reporting requirements, including public reporting to ensure the non-metropolitan urban providers comply with the agreements.

The template for the rural water authority water services agreement is less developed. It is likely to cover: customer and community consultation; service standards; asset and investment management; environmental requirements; planning processes; and compliance audits, monitoring and reporting.

Drinking water quality

Victoria is implementing a new framework for regulating drinking water quality. It is intended that this framework will:

- facilitate a more consistent approach to providing good quality drinking water;
- provide greater clarity in the obligations placed on all stakeholders (government, water businesses, regulator and customers); and
- establish a drinking water quality regulator that minimises any potential conflicts of interest.

It is proposed that the new drinking water regulatory framework will be in place by 1 January 2002.

Regulation of sewage connection

The Environment Protection Authority has undertaken a review of the current regulatory arrangements for the management of septic tank systems. As part of its examination of regulatory roles and responsibilities, the review considered the issue of water businesses having the power to require properties to connect to sewers and concluded that these powers were inappropriate. On the basis that health and environmental issues provide the grounds for compelling connection to reticulated sewerage, the review has recommended that health and environmental regulators be responsible for deciding whether a scheme to which people would be required to connect should go ahead. The review also recommended that individual householders should have the opportunity to be exempted from the requirement to connect where they can establish that wastewater can be managed on-site on a sustainable basis. The Government is currently considering the review's recommendations.

In the meantime, as part of the Government's package of initiatives relating to providing sewerage services to small towns in regional Victoria, property owners will only be required to contribute to the capital costs of schemes that have been approved by the Minister for Environment and Conservation. Guidelines have been developed which require authorities to follow a number of steps including extensive consultation with the community and a requirement that compulsory schemes should only proceed where other options have been considered and the Environment Protection Authority or the council agrees that alternative arrangements cannot be made to meet health and environmental needs. These arrangements also limit the potential

for a service provider to compel a community to use a service without justifying on health and environmental grounds the need to provide the service.

The National Competition Policy Review of Victoria's Water Legislation is also reviewing the powers held by water authorities. The issue of the legislative powers of non-metropolitan urban with respect to regulating wastewater reticulation will be thoroughly considered as part of that review.

Discussion

In its second tranche assessment the Council concluded that while Victoria's institutional arrangements largely met the requirement of the CoAG water reform agreements for rural service providers, there were several significant outstanding issues in the metropolitan and non-metropolitan urban sectors.

In the metropolitan sector the Council was particularly concerned about the various roles of the Treasurer. It concluded that there was no effective structural separation between price setting, dividend setting and price regulation and that there was difficulty in getting independent verification of the levels of full cost recovery.

In the non-metropolitan urban sector, the Council was concerned about the roles of the minister responsible for the Department of Natural Resources and the Environment. The Minister effectively controlled all aspects of non-metropolitan urban service delivery, standards setting and pricing. In addition, the Minister and the Department were also responsible for water allocation and management.

Another issue was the role of non-metropolitan urban providers in determining the most appropriate method of wastewater reticulation and disposal. Overall the Council concluded that there was a range of potential conflicts of interest given the all encompassing role of the Minister and the various roles of non-metropolitan urban providers as service providers, standards setters and, in some situations, regulators.

In the rural sector the Council recognised that the active and influential role of water services committees provided a degree of separation, particularly between service provision and standards setting and to some extent water resources management. However, the Council was also concerned that there was no clear distinction between service provision and standards setting. That assessment noted that any review of institutional arrangement undertaken by Victoria should also examine the arrangements in the rural sector.

There are three broad areas of regulation that the Council has considered when looking at institutional arrangements:

- economic regulation and service standards;

- resource allocation, water management and environmental regulation; and
- health regulation.

Of these the Council's second tranche assessment considered that there were deficiencies in non-metropolitan urban and metropolitan institutional arrangements in the area of economic regulation and standards setting. There were also potential problems in the non-metropolitan urban and rural authorities in water management and resource allocation. At the time of the second tranche assessment Victoria committed to a further review of its institutional arrangements in the water sector.

Since then the Productivity Commission has undertaken a study on the regulation of health standards in the water industry. That study noted that there were testing and reporting procedures for water quality in Victoria. While it questioned the extent to which the standards were enforced it noted that Victoria was reviewing its approach to regulating the quality of drinking water.

Economic regulation and service standards

The Victorian Treasurer is the shareholder of the three metropolitan retail water businesses. The Treasurer and the Minister for Environment and Conservation are also joint shareholders for Melbourne Water, the wholesale water and sewage business. Previously, the Department of Treasury and Finance was responsible for recommending prices. This responsibility has now been transferred to the Department of Natural Resources and the Environment.

This change goes a long way to addressing the concerns discussed in the second tranche assessment. However, the Minister for the Environment and Conservation still has responsibility for service provision and pricing regulation in the case of Melbourne Water. The introduction of an Essential Services Commission, however, is expected to provide the transparency and accountability necessary to address any possible conflicts of interest.

Similarly, the Minister for Environment and Conservation still oversees all aspects of service delivery, standards setting and pricing for non-metropolitan urban water providers. Victoria plans to introduce an Energy and Water Ombudsman and the Essential Services Commission could also introduce the transparency and accountability necessary to address any potential conflicts of interest in the non-metropolitan urban sector.

In addition, the template for non-metropolitan urban water services agreements indicates that these agreements will add to transparency by clarifying, auditing, monitoring and reporting on the obligations of non-metropolitan urban water providers.

Resource allocation, water management and environmental regulation

The Minister for Environment and Conservation is responsible for the Department of Natural Resources and the Environment and the Environmental Protection Authority and hence for water allocations, management and environmental regulation. The Minister is also a joint shareholder of Melbourne Water and the sole shareholder of non-metropolitan urban and rural water authorities. This raises the potential conflict in the Minister's focus on the commercial success of these organisations and responsibility for effective water and environmental management.

Melbourne Water currently does have some limited regulatory powers in its roles in drainage, waterway, floodplain and catchment management. They do not relate to the provision of water and wastewater services, rather they allow Melbourne Water to be involved in activities such as reviewing applications for developments that could affect the main drainage system and control of development on land adjoining waterways.

The NCP review of water legislation is examining the by-law making powers of Melbourne Water and other Water Authorities operating under the *Water Act 1989*.

The template for non-metropolitan urban water service agreements indicates that these agreements will define the obligations for wastewater management, environmental management, water conservation and biodiversity.

The template for rural water authority water services agreement indicates that it is likely to include obligations for environmental management, biodiversity and water conservation. However, issues still need to be resolved in the areas of nutrient levels and salinity and the management of stream flows, groundwater, flood plains and environmental flows.

Victoria is relying on developing and refining its water services agreements to set out clear responsibilities and accountabilities for service delivery and regulatory functions.

Drinking water quality

The consultation paper on *A New Regulatory Framework for Drinking Water Quality* in Victoria reflects the State's intention to adopt a comprehensive approach to water quality regulation. The consultation paper recognises the issues raised in the Productivity Commission report on the regulation of health standards in the water industry and notes that the new Victorian framework will reflect the *1996 Australian Drinking Water Guidelines*.

Assessment

In the last two years, Victoria has made some progress in implementing institutional reforms. The options being considered for further institutional reform are now more defined and consideration of these options is progressing. However, many of these reforms are not yet implemented and the exact nature of the reforms that will be introduced is still unclear in several key areas. However, Victoria is committed to a rigorous and thorough process that incorporates strong consultation. Also, from the comments in the Performance Report (2001) it appears that, particularly in the areas of health standards and dispute resolution for water customers, the government is responding positively to issues raised through the existing independent monitoring processes.

Therefore, while the Council has concluded that Victoria has not yet completed the changes necessary to meet its institutional reform commitments it is likely that most of the necessary reforms will be implemented over the next 12 months. Therefore, it will continue to monitor Victoria's progress to June 2002.

In particular, the government announced its new pricing framework for Victorian Water Businesses on 26 June 2001, very late in the Council's assessment process. Consequently, the Council has been unable to fully consider the outcomes of that review in this assessment.

For its June 2002 assessment the Council will expect Victoria to have made substantial progress in implementing the changes proposed and be able to demonstrate that these changes have addressed any remaining institutional reform issues. In particular:

- defining the roles of the Essential Services Commission and establishing this organisation;
- demonstrating that the approach taken in the 2001 Pricing Review is consistent with the CoAG obligations;
- finalising the new regulatory framework for drinking water standards so that it allows for independence (from the service provider) in the setting and enforcement of standards consistent with the 1996 Australian Drinking Water Guidelines;
- signing water services agreements with non-metropolitan urban and rural water authorities that provide the transparency and accountability necessary to remove any conflicts between the ownership of these organisations and their regulation;
- responding to any institutional reform issues that arise from the review of Victoria's water legislation; and
- responding to the Environmental Protection Authority review of the regulatory arrangements for septic tank systems.

Performance monitoring and best practice

ARMCANZ is to develop further comparisons of interagency performance with service providers seeking best practice (clause 6e).

Victorian arrangements

Victoria is continuing to support all benchmarking processes. Nine urban authorities are participating in the *WSAA Facts* comparisons. This includes the 4 Melbourne based water providers and 5 non-metropolitan urban providers.

The remaining 10 non-metropolitan urban providers are involved in the Australian Water Association non-metropolitan urban benchmarking.

In the rural sector the number of irrigation districts involved in the Australian National Committee on Irrigation and Drainage benchmarking has increased from seven to 17.

Assessment

Victoria is actively involved in benchmarking projects with all urban service providers participating in either *WSAA Facts* or the Australian Water Association report. The number of irrigation districts involved in the rural benchmarking work has also increased substantially. Therefore, the Council has concluded that Victoria has met its reform commitments for benchmarking service providers.

Commercial focus

Metropolitan service providers must have a commercial focus, whether achieved by contracting out, corporatisation, privatisation etcetera, to maximise efficiency of service delivery (clause 6f).

Victorian arrangements

Victoria's metropolitan service providers are State-owned Corporations Law companies. They have skills-based boards, pay dividends and tax equivalent and their performance is benchmarked against each other through both *WSAA Facts* and standards and service monitoring by the Office of the Regulator General. Victoria also argues that the introduction of the Essential Services Commission as the economic regulator for the water industry is likely to strengthen the commercial focus and will ensure that this reform commitment continues to be met.

Discussion and assessment

The Council concludes that Victoria has met its reform commitment as its metropolitan water authorities continue to have a commercial focus.

Devolution of irrigation scheme management

Constituents be given a greater degree of responsibility in the management of irrigation areas, for example, through operational responsibility being devolved to local bodies, subject to appropriate regulatory frameworks being established. (clause 6g)

Victorian arrangements

Victoria is continuing to use its Water Services Committees as the primary vehicle for local input into the management of irrigation areas. The committees play an important role in negotiating and agreeing to price and service level trade-offs and provide a communication link between authorities and their customers. Victoria has noted that while the proposed role of the Essential Services Commission in the rural water sector is yet to be determined, water service committees will most likely continue to play a significant role in negotiating trade-offs between price and service levels.

Discussion

The Council's second tranche assessment concluded that, while Victoria's approach to rural water management may be more prescriptive than other approaches, there is encouragement and support for water service committees and their members. Also the Council was satisfied that the committees did give water customers intimate involvement in the setting of performance standards, prices and other matters of concern to irrigators. That assessment concluded that Victoria had met its reform commitments for devolution of irrigation management.

It appears that the water service committees continue to have an involvement with rural water authorities that goes beyond simple consultation arrangements and gives customers a significant input into irrigation management. After the introduction of the Essential Services Commission, the active involvement of the water service committees in decision making processes would need to continue for the Council to conclude that Victoria still met its commitment to devolution of responsibility in the management of irrigation areas.

Assessment

Therefore, the Council has concluded that Victoria is continuing to meet this reform commitment.

Allocations

Water allocations and property rights

There must be comprehensive systems of water entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality. Governments must have determined and specified property rights, including the review of dormant rights (clause 4a).

Victoria's bulk entitlement conversion program directly deals with the allocation of water to water authorities and the environment. Bulk water allocations are being negotiated for all water diverters including irrigators and urban water users. Water for the environment is provided for in the bulk entitlement agreements, either as a specific entitlement or in the conditions of diversion. The bulk entitlement conversion program has reached the stage where flow sharing arrangements at approximately 76 per cent of diversion sites have been negotiated and agreed with stakeholders.

Victorian arrangements

Water property rights

A brief summary of the features of the Victorian system of property rights is provided in Table 5 below:

Table 5: Victorian property rights

<i>Key Item</i>	<i>Victoria</i>
Allocations	
Initial Allocation	A 3 megalitre per hectare water right, as a high security' allocation and a 3 megalitre per hectare water right as a 'sales water' allocation.
Entitlements/Rights	
Nature of water entitlement	<p>Landholders may obtain access to water through the provision of private rights to water (domestic and stock rights). Domestic and stock rights apply to persons who have access to land adjacent to a waterway, occupy a bore, or occupy the land on which the water flows or occurs (overland flows).</p> <p>Water rights over and above these basic rights require the issue of licences for the taking and use of water.</p>
Nature of water right	<p>Water may be allocated by the Minister under a bulk entitlement granted to a water authority, issuing a take and use licence, or by a streamflow management plan.</p> <p>For regulated rivers, bulk entitlements define the relationship between the Crown, bulk entitlement holders, users and the environment. There are three types:</p> <p><i>Source</i> entitlements – the right to harvest direct from a waterway, with specific rights to volume, capacity share and passing flow.</p> <p><i>Delivery</i> entitlements – the right to harvest direct from a regulated waterway operated by another authority, with specific rights to volume, security and restriction.</p> <p><i>Hybrid</i> entitlements – a bit of both.</p> <p>For unregulated rivers, streamflow management plans set the rules for take and use licences, which are 15-year licences with a presumption of renewal. All are volumetric.</p> <p>All licences are volumetric (megalitre, and where, appropriate megalitre per day). Reliability is specified in bulk entitlements. Water entitlements are attached to land, transferable, divisible and enforceable.</p> <p>There are no provisions for compensation under the <i>Water Act 1989</i>. Victoria will buy water for the environment on the market.</p> <p>Appeals are made to the Victorian Civil and Administrative Tribunal.</p>

Bulk entitlement regimes

As outlined in the second tranche assessment, the *Water Act 1989* provides for the conversion of existing water entitlements to bulk entitlements. Bulk entitlements legally define allocations of water and property rights to water authorities and the environment and provide a comprehensive framework for the trading of surface water entitlements. The bulk entitlement program provides a basis for sharing limited water resources, protecting the entitlements of other users, facilitating water trading, and allowing for specific entitlements for environmental purposes.

Bulk entitlements are granted to rural water authorities for the regulated systems and to all urban authorities irrespective of whether they are supplied by regulated or unregulated streams. For rural water authorities, the bulk entitlements are an aggregation of entitlements held by individuals (water rights and licences) plus allowances for losses and imposes obligations on the

authority to supply water to individuals at a specified level of security. Bulk entitlements also specify the basis for sharing during shortages.

For the second tranche assessment report, Victoria reported that 115 bulk entitlements had been granted covering 75 per cent of the State's water resources and setting water flow sharing arrangements at 70 per cent of diversion sites across the State.

Victoria has provided a progress report on implementation of the bulk entitlement program at attachment 2. As at April 2001, of a total of 191 bulk entitlements, 127 bulk entitlements are complete, 25 are more than 50 per cent complete, and nine are less than 50 per cent complete. In the two years since the last assessment, an additional 12 bulk entitlements have been granted, and a further five finalised. The bulk entitlement conversions are now at the stage where flow sharing arrangements at approximately 76 per cent of the diversion sites across the State have been negotiated and agreed with stakeholders.

Progress on the major systems still to be converted to bulk entitlements has been slower than Victoria anticipated in the original implementation program:

- bulk entitlement conversions for Melbourne and Tarago have been delayed by the need for a review of the approach to the conversion. This review will examine aspects of environmental sustainability and the need for an extended stakeholder consultation to ensure entitlements are in line with community needs. The Barwon, Ovens, Broken River, and Melbourne systems are now due for completion by end 2001;
- Victoria is behind with respect to the Loddon River and Birch Creek conversions, while the process has only just commenced in the Wimmera-Mallee and Grampians;
- Victoria has sought to modify its bulk entitlement conversion program from that submitted in the second tranche assessment. In particular, the remaining systems scheduled for bulk entitlement conversion will now commence at the completion of the processes for the Ovens and Broken systems; and
- Victoria now expects to complete the bulk entitlement conversion process by 2003, a year behind that envisaged in the second tranche report.

Streamflow management plans

On unregulated rivers, the management of diversions is undertaken through the development and implementation of streamflow management plans. These plans define competing uses of water in unregulated streams. They establish environmental objectives (immediate and, where necessary, long term environmental flow provisions), mechanisms to achieve these provisions, rostering rules, trading rules, and rules covering the granting of any new

licences. Streamflow management plans are being implemented for priority waterways determined by scarcity, environmental values and other issues.

There are seven steps involved in developing streamflow management plans. These are:

1. development of background reports from collation of existing information on environmental values, hydrology and water use;
2. commencement of an environmental flow study;
3. establishment of a Steering Committee from key water use, environmental and recreational shareholders;
4. development of a hydrology report;
5. development of a draft plan;
6. release of the draft plan for public comment; and
7. submission of the final plan to Government.

Victoria has provided a progress report on the implementation of streamflow management plans at attachment 3. Twenty streamflow management plans are in progress of which three are community endorsed and two have been put into operation:

- The three community endorsed plans are the Merri River, Gellibrand and Upper Latrobe Creek. These plans are in the final drafting stage although all three rivers are being managed according to the draft streamflow management plans. Finalisation of these plans is dependent on the rural water authorities revising the plans to address public comments and then forwarding the plans to the Minister for endorsement; and
- an additional three plans (Hoddle's Creek, Upper Maribynong River, and Kiewa River) are scheduled to be endorsed by the community by mid 2001. This makes a total of eight streamflow management plans completed by June 2001. Victoria has advised that:
 - the Maribynong River streamflow management plan consultative committee has agreed in principle to the draft recommendations and the plan is close to release for public comment;
 - the Hoddle's Creek streamflow management plan is reviewing aspects of the environmental flow recommendations and interim rules before finalising recommendations; and
 - the Kiewa River streamflow management plan is currently considering endorsement, including some modifications for Running and Yackandandah Creek.

According to the Victorian revised timetable, an additional 10 streamflow management plans will be completed by June 2002. There are eight creeks scheduled to start in 2002 or later.

Take and use water licences

Under s51 of the *Water Act 1989*, a person must apply to the Minister for a take and use licence for surface or groundwater. For regulated waterways, licences can be converted into notional delivery bulk entitlements. For unregulated systems, take and use licences are managed by performance contracts that specify resource commitments, and streamflow management plans for priority waterways.

A take and use licence remains in force for a period not exceeding 15 years. The licence holder may apply to the Minister for renewal of a licence prior to expiry and the Minister must renew the licence unless there are good reasons not to do so.

The Register

Under s48 of the *Water Act 1989*, a register must be kept of all bulk entitlements and streamflow management plans. The register tracks the status of each bulk entitlement and streamflow management plan from inception to approval, including transfers and amendments. The register also holds information on extraction caps, passing flow requirements, diversion sites, waterways, gazettal dates, and reporting obligations.

The registry does not guarantee title. Rather, bulk entitlement orders and streamflow management plans themselves guarantee entitlement at a specified security of supply. Third party interests in an allocation can be noted on the register. The register is publicly available for inspection at the Department of Natural Resource and Environment free of charge.

Murray-Darling Basin Commission cap compliance

The Independent Audit Group advised that Victoria continues to implement the cap by implementing bulk entitlements and streamflow management plans. On the unregulated systems, interim cap arrangements were put in place to constrain diversions until streamflow management plans could be developed. For these systems, the two key rules are no new diversion licences except through transfer of existing ones, and trade must be downstream and involve a 20 per cent reduction in volume.

Victoria's diversions for 1999-2000 were within the Murray-Darling Basin cap requirements. All diversions from the Murray, Goulburn, Campaspe and Wimmera-Mallee systems in this period were all below climate adjusted cap targets. Cumulative diversions on all systems are now in credit. The Independent Audit Group report notes that bulk entitlements need to be

finalised for the Ovens River, Broken and Loddon Basins and the Wimmera-Mallee systems.

Overland flows – the Victorian farm dams review

Under the *Water Act 1989*, there is currently no mechanism for control over irrigation dams that are constructed off waterways to capture overland flows. The Victorian Government has recognised that these dams impact on instream users and on the environment. In April 2000, the Victorian Government instituted a review on the management of farm dams. The key issues covered by the 2001 Farm Dams Review included the:

- need to ensure that all commercial dams (including catchment dams) are considered in water allocation processes;
- need for a two step process in the management of unregulated streams incorporating:
 - sustainable diversion limits to be established across the state which will provide rules for granting any new diversions and/or for trading; and
 - where the current level of diversions is close to sustainable diversion limits or in priority areas, streamflow management plans are to be developed; and
- need for formal recognition of the streamflow management plan process in legislation.

The 2001 Farm Dam Review recommendations are currently with the Victorian Government. A response on the recommendations is anticipated by mid 2001.

Surface water overallocation

The National Land and Water Resource Audit's Assessment of Water Resources 2000 has provided data on surface water resource use for Victoria in table 6 including those areas where the resource appears overallocated in relation to the sustainable yield.¹¹

¹¹ Sustainable yield is defined for surface water management areas in the Murray-Darling Basin as the level of diversions available under the cap. In southern Victoria where environmental values could be potentially threatened by further allocations, sustainable yield is limited to allocation volume pending outcome of detailed investigations of environmental water requirements. For all other areas, sustainable yield is assessed as the degree of change to the natural flow regime.

Table 6: Summary of data for surface water management areas

<i>Surface water management area</i>	<i>developed yield (megalitre)</i>	<i>Diversion (megalitre)</i>	<i>water use (megalitre)</i>	<i>sustainable yield (megalitre)</i>
Avon River	7 650	7 650	47 025	7 650
Hopkins River	10 440	6 980	13 570	10 440
Werribee River	35 900	32 250	82 300	35 900
Avoca River	3 380	3 380	39 840	3 380
Broken River	32 000	32 000	897 125	32 000
Campaspe River	121 000	121 000	441 980	121 000
Goulburn River	1 943 000	1 943 000	919 770	1 943 000
Kiewa River	9 000	9 000	14 910	9 000
Loddon River	109 000	109 000	1 175 530	109 000
Mitta Mitta	834 500	834 500	20 835	834 500
Ovens River	26 000	26 000	39 340	26 000
Wimmera- Avon Rivers	94 250	94 250	130 030	76 300

Source: NLWRA (2000)

Victoria has advised that it is not appropriate to compare water use with either developed yield or sustainable yield to reach a conclusion about the degree of over-use or over-allocation for surface water management areas.¹² Rather, the appropriate comparison in terms of water currently being used is between the total diversion¹³ for a surface water management area and the sustainable yield.

Victoria has categorised all surface water management areas against sustainable yield measures at attachment 4. This information shows that:

- the Wimmera-Avon is Victoria's only category 4 overdeveloped surface water management area in terms of both diversion and allocation (123.5 per cent of sustainable yield).
- North of the Divide, all surface water management areas (with the exception of the Wimmera-Avon) have been categorised as highly developed relative to diversions (category 3*) and fully developed relative to allocations (category 3*), and have sustainable yields set at the Murray-Darling Basin cap.

¹² Developed yield and sustainable yield relate specifically to resources generated within the area. Water use includes all water used within the area including water imported into an area.

¹³ This refers to the current use of resources available within a surface water management area including allocations within the area and allocations exported from other areas.

- South of the Divide, all surface water management areas flowing into the Gippsland Lakes have been classified as fully developed relative to allocations (category 3*) subject to an environmental study on the Gippsland Lakes.
- The Snowy surface water management area (Victorian component) has been categorised as fully developed relative to allocations (category 3*) pending the outcome of the Snowy Water Inquiry. Total diversions for the Victorian component of the Snowy are 39.3 per cent, while allocations are 100 per cent of sustainable yield.¹⁴
- The Yarra and Moorabool surface water management areas have been categorised as fully developed (category 3*) pending the outcome of streamflow management plans that are being developed for these rivers.
- The Hopkins and Lake Corangamite surface water management areas have also been categorised as fully developed relative to allocations (category 3*) because further development is constrained by the salinity of the resource.

Victoria has advised that the concepts used by the audit focus on identifying development potential in terms of the volume of 'spare' water available to meet increased demand. As outlined above, many surface water management areas in Victoria have been classified as already highly or fully developed. However, the audit data may provide a misleading picture of the potential for water-based economic development as water can be acquired via trading or freed up through water savings via efficiency gains.

Victoria has 31 surface water management areas. Of these:

- twenty-two areas have total diversions that are less than 20 per cent of the total available water;
- four surface water management areas have total diversions that lie between 20 and 30 per cent of total available water; and
- only five surface water management areas (Thomson-Macalister, Yarra, Mitta Mitta, Goulburn, and Campaspe) have total diversions greater than 30 per cent of total available water. All five areas have either been through, or are currently going through, the setting of allocations via a consultation process in the context of setting bulk entitlements to water and/or the development of streamflow management plans.

¹⁴ This is because the sustainable yield has been set at the current allocation pending the completion of detailed environmental studies for the Snowy.

Groundwater

As noted in the second tranche report, a statutory licensing process monitors Victoria's groundwater allocation system. These groundwater licences are linked to community driven groundwater management plans which are being implemented on a priority needs basis.

Where allocations exceed 70 per cent of the sustainable yield of an aquifer (expressed as the Permissible Annual Volume), a mechanism to establish a groundwater supply protection area is triggered and a groundwater management plan developed. The objective of these plans is to ensure the groundwater resources of the relevant groundwater supply protection area are managed in an equitable manner so as to ensure the long-term sustainability of the resource. A plan must address issues such as metering and monitoring, environmental allowances for groundwater dependent ecosystems, allocation arrangements including transferable water entitlements, and costs associated with implementing the plan. A consultative committee comprising mainly farmers but representing all relevant interests is responsible for developing groundwater management plans.

The National Land and Water Resource Audit's Assessment of Water Resources 2000 has also provided data on groundwater resource use for Victoria including where the resource is approaching full allocation, fully allocated or overallocated in relation to the sustainable yield in table 7.

Victoria has noted there is a lack of hard data to assess the water balance for groundwater management units. For example, determining the recharge that provides the basis for sustainable yield has meant some broad assumptions have to be made regarding sustainable yields. Because of data limitations, the impact of climate variability, and plantation forests on sustainable yields, a conservative approach has been adopted by Victoria in estimating sustainable yields.

Table 7: Summary of data for groundwater management units which are at full allocation or are overallocated

<i>Groundwater management unit</i>	<i>Total abstraction (megalitre)</i>	<i>Total allocation (megalitre)</i>	<i>Sustainable yield (megalitre)</i>
Denison Groundwater Supply Protection Area	12 115	11 325	12 000
Rosedale	14 969	19 948	14 000
Sale Groundwater Supply Protection Area	9 014	14 828	13 000
Seacombe	113 575	113 785	100 000
Deutgam	3 394	4 518	2 400
Gerangamete	9 447	12 619	4 000
Bridgewater (Loddon)	13 321	17 742	14 200
Campaspe Groundwater Supply Protection Area	31 040	38 670	19 850
Katunga Groundwater Supply Protection Area	33 141	50 292	12 500
Murrayville Groundwater Supply Protection Area	1 950	5 110	1 815
Nagambie	1 393	7 214	5 650
Neuarpur Groundwater Supply Protection Area	12 660	18 430	10 307
Shepparton Groundwater Supply Protection Area	127 880	180 678	170 000

Source: NLWRA (2000)

Victoria has continued to implement groundwater management plans and has reported against the second tranche implementation program at attachment 5. Fifteen groundwater supply protection areas have been established and groundwater management plans for these areas are currently being developed and implemented. Two plans have been completed and a further seven have been released for public comment and approval is expected before end 2001. Victoria has advised that the remaining six groundwater management plans will be completed within two years. In Table 2 of attachment 5, Victoria has outlined a three year work plan for an additional 20 groundwater supply protection areas to be established and the development of plans for these areas.

Assessment

The quality of title of a right goes to the security with which the right is held and the likelihood of alteration or loss of that right. With regard to quality of title, the Council believes that it would be optimal for rights to be vested in the end user in regulated systems. However, where rights are not vested in the end user, the Council believes the rights must still be able to ensure a licence holder can:

- invest in the rights;
- buy and sell the right commodity (that is, trade it); and

-
- plan business activities based on the surety of the rights.

For these reasons, the Council has reviewed the efficacy of property rights in terms of the following three criteria:

- first, the reliability should be specified. There should be enough information to enable stakeholders to know what they have got and to be able to trade;
- second, the length of the right, the presumption of rollover of a right unless there is a specific need for change, and the registry system need to be adequately established to enable the right to hold a third-party interest such as a mortgage. A right does not necessarily need to be granted in perpetuity; and
- third, provision for compensation during the terms of a plan based on the frequency and likelihood of the need for change. If there is a low frequency need and likelihood of change based on the needs of the environment during the plan's life, then no compensation may be necessary. If however there is a high frequency need for change based on environmental needs (for example, a high level of overallocation), then compensation may be payable.

In Victoria, the Council is satisfied that water rights in both regulated and unregulated systems meet these criteria. The conversion of the rights of rural water authorities to bulk entitlements establishes clear property rights to water across the State. Rural water authorities have an obligation to maintain supply for water users within regulated irrigation districts. Rights can be traded and provide a secure right for water users. When fully implemented, bulk entitlements will cover approximately 95 per cent of all diversions from Victorian streams.

Outside the regulated systems, irrigation and other take and use licences do not reside under bulk entitlements. Rather, the clarification of these rights will occur progressively through the establishment of streamflow management plans. As these plans are completed, the nature of water rights in these areas will be clearly specified. The Victorian Government is presently considering the recommendations of the 2001 Farm Dams Review including the need to formally recognise the streamflow management plan process in legislation.

In terms of duration, bulk entitlement water rights in regulated systems are rights held in perpetuity. In unregulated systems, a take and use licence remains in force for a period not exceeding 15 years.¹⁵ The licence holder may

¹⁵ In practice, these licences have been issued for 15 year periods. However, at the time of writing, Sunraysia rural water authority has just announced that the tenure of private diverters' licences is to be reduced from fifteen years to five years on renewal. The Council is concerned that this decision effectively undermines irrigator's property rights. The Council will look closely at this decision in the 2002 NCP assessment including a strong justification for this decision given the effects on the

apply to the Minister for renewal of a licence prior to expiry and the Minister must renew the licence unless there are good reasons not to do so.

The Council has considered the level of progress made by Victoria since the last assessment in the bulk entitlement conversion program, and the reasoning where slippage has occurred. Some 76 per cent of the bulk entitlement conversion program is now in place and Victoria envisages completing the program by 2003. Victoria recognised in submitting its original implementation timetable that the timeframes set would be subject to the constraints of the consultation process. This ensures the community accepts the outcomes. The Council is satisfied that the bulk entitlement program will be completed in accordance with the revised timetable.

With regard to the registry system, the Council notes the register holds information on the status of each bulk entitlement and streamflow management plan from inception to approval, including transfers and amendments. The registry does not guarantee title. However, bulk entitlement orders and streamflow management plans guarantee entitlement at a specified security of supply. Third party interests in an allocation can be noted on the register.

In order to maintain property rights into the longer term, Victoria needs to address the river restoration plan process for stressed rivers (see the section on provision for the environment) and provide for amendments where a need for change is identified as significant. Victoria has a number of stressed, fully allocated or overallocated waterways, and hence there is a real need to develop river restoration plans as a priority. Given property rights have been established as part of the bulk entitlement process, there may be a need for river restoration plans or streamflow management plans to require the Victorian Government to buy water on the market to provide adequate entitlements for the environment. Victoria has provided evidence that the Wimmera-Avon is Victoria's only overallocated river. The Independent Audit Group reported that all Victorian Murray-Darling Basin systems are within the Murray-Darling Basin Commission cap on diversions.

There are a number of ways that a buy back of water for the environment could be achieved. For example, one mechanism could be the creation of different priority property rights in water. This mechanism could provide for high value, high security property rights and lower value, "interruptible" water rights. Any buy back or compensation for loss of rights might then be linked to the lower value rights. These rights would be closer in nature to existing rights in stressed and overallocated systems. The Council notes that Victoria will release a River Health Strategy in November 2001 for public consultation to address the issue of stressed rivers (see the section on provision for the environment).

Victorian property rights system. It should be noted that following a recent request from Government, Sunraysia Rural Water has agreed to review its decision to shorten the length of the licence.

It is important to recognise that there needs to be sufficient certainty in all water property rights to enable effective utilisation and trade. It is therefore important for the Council to ensure the processes employed in implementing the stressed rivers program is bona fide. The Council is of the view that Victoria's system of water property rights meets the requirements for this assessment and will continue to review developments in this area as issues arise. For example, the ability of third party interests listed on the register to have priority over non-registered interests is an issue that is quite likely to arise. In the 2002 NCP assessment, the Council will review developments with regard to the River Health Strategy, progress on the 2001 Farm Dams Review, and the recent decision by Sunraysia rural water authority to reduce the duration of private diverter's licences from 15 years to five years.

Provision for the Environment

Jurisdictions must establish a sustainable balance between the environment and other uses, including formal provisions for the environment for surface water and groundwater consistent with the ARMCANZ/ANZECC national principles.

Best available scientific information should be used and regard should be had to the intertemporal and interspatial water needs of river systems and groundwater systems.

For the third tranche, States and Territories have had to demonstrate substantial progress in implementing their agreed and endorsed implementation programs. Progress must include at least allocation to the environment in all river systems that have been overallocated, or that are deemed to be stressed. By 2005, allocations and trading must be substantially complete for all river systems and groundwater resources must be identified in implementation programs.

Jurisdictions are to consider environmental contingency allocations, with a review of allocations five years after they have been initially determined (clauses 4b to f).

In Victoria, water allocations for the environment continue to be addressed in two phases:

- first, through the process of conversion to bulk entitlements where there is an opportunity for environmental managers to negotiate improved environmental flows or secure bulk entitlements for the environment.
- second, environmental provisions for stressed basins will be identified and addressed through the implementation of plans on the eight priority stressed river systems where bulk entitlements provide insufficient water for the environment. Victoria has added a further three stressed rivers to the implementation program in this assessment.

Victorian arrangements

Bulk entitlement conversion program

Bulk entitlements for the regulated rivers typically express environmental needs in terms of flow requirements passing a water authority's offtake works. The specified passing flow is often shared during periods of low flow. Bulk entitlements also oblige authorities to submit an environmental management program detailing actions and procedures that demonstrate diversions from a waterway are made in an environmentally sound manner.

Victoria advises that to date, improved environmental flow regimes have been negotiated in 82 per cent of bulk entitlement conversions. An example cited is the Thomson-Macalister bulk entitlement where water sharing arrangements increased the passing flow for the Thomson River below Cowwarr Weir from 25 megalitres per day to 125 megalitres per day as part of Southern Rural Water's bulk entitlement. This includes formal mechanisms for review as further information becomes available. Another example is the Wimmera-Mallee bulk entitlement process which is currently being negotiated. This will clarify the management of a 35 000 megalitre environmental allocation for the Northern Mallee.

The Council was provided with copies of three bulk entitlements.¹⁶ Each bulk entitlement order specified the annual average volumetric share of streamflow the water authority is allowed to take from a waterway.¹⁷ The order specifies minimum passing flows at points along rivers in the authorities area. For example, the Thomson-Macalister bulk entitlement conversion order states that:

The Agreement on Environmental Flows¹⁸ recognises that environmental flows are too low particularly on the Macalister River and establishes a program of studies and measures to improve the environmental flow regime over time.

This clause ensures that the environmental flow provisions of this order are reviewed in three year's time in accordance with negotiated outcomes arising from implementation of the Agreement (p.4)

¹⁶ These were the Latrobe-Southern Rural Conversion Order 1996, Maribyrnong-Southern Rural Water Conversion Order 2000, and the Thomson-Macalister-Southern Rural Water Conversion Order 2001.

¹⁷ Over a consecutive two year period for the Latrobe River, and over a consecutive five year period for the Thomson-Macalister and Maribyrnong Rivers.

¹⁸ This agreement was made between West Gippsland Catchment Management Authority, Gippsland Coastal Board, Southern Rural Water, Melbourne Water and the Victorian Department of Natural Resources and Environment.

Bulk entitlements also require the water authority to prepare a program to manage the environmental effects of aspects of their operations within twelve months of commencement of the bulk entitlement. For example, the program may address the effects on the bed, banks and the aquatic biota in the waterway, and operating practices to control releases from works and water quality. Bulk entitlements also specify requirements for reporting, and require the development of a metering program to monitor compliance with the Order.

Streamflow management plans

Streamflow management plans on unregulated rivers establish environmental objectives including immediate and, where necessary, long term environmental flow provisions. Victoria has advised that progress in the development of streamflow management plans has been slower than anticipated. Delays experienced in the preparation of streamflow management plans have been due to:

- the environmental flow methodology requires surveys to ascertain a reasonable range of flows. As Victoria was in drought between 1998 and 2000 there were delays of more than a year in obtaining sufficient survey results. Survey methodologies are now being reviewed to reduce the dependence on the need to do surveys over a wide range of flow conditions;
- many of the high priority streamflow management plans are for overallocated streams. The provision of acceptable environmental flows has significant impacts on the security of existing licences. This means that, to meet minimum environmental flows, major reductions in licensed use will be required which may have consequences for farm viability. To deal with this an interim environmental flow may be negotiated with a timeframe for meeting the target minimum flow; and
- the need to negotiate consensus outcomes has been more difficult than anticipated.

Victoria is developing standard procedural guidelines to assist consultative committees in the delivery of streamflow management plans and to improve the rate of progress. A key element will be the approach to dealing with transition from existing diversion practices to future practices which accommodate environmental flow requirements. The guidelines are currently being developed and are expected to be completed by mid 2001.

Statewide environmental flow determination methodology

The Statewide environmental flow determination methodology is being reviewed with a view to formally assessing and where possible improving on the current approach. The current method has been applied in the setting of ten streamflow management plans. Victoria has advised that the purpose of the review is to draw from recent international and Australian experience to

review the current approach to ensure it is based on the best scientific information available and fully meets the needs of decision-makers. The review is now underway and a refined Statewide approach is expected by August 2001. This will ensure the bulk of the streamflow management plan program that is yet to be undertaken will incorporate environmental flow studies representing best scientific information available.

Stressed rivers program - river restoration plans

Victoria has been involved in the development of river restoration plans for priority flow stressed rivers where the environmental provisions made through the bulk entitlement process are considered to be insufficient to meet environment objectives.

Victoria has reported on progress on stressed rivers against the river restoration plan implementation program as outlined in the second tranche report at attachment 6. Victoria has reported progress on an additional three river systems to its stressed river program, namely the Snowy, Wimmera and Macalister Rivers.

Progress to date on river restoration plans has focused on the three priority rivers – the Thompson, Avoca and Glenelg rivers. This work has included:

- an environmental flow assessment completed in the Thomson-Macalister system and the commencement of the development of the river restoration plan. Work on the Thomson-Macalister plan is the most advanced. As part of developing this plan, a scoping study is currently being undertaken by the Cooperative Research Centre for Fresh Water Ecology. The study includes community input and is expected to provide a framework for the development of final plans. In conjunction with the scoping study, the Minister has convened a Taskforce to address some of the environmental concerns identified during the bulk entitlement conversion for the Thomson-Macalister Rivers; and
- environmental flow requirements are being assessed for the Glenelg and Avoca rivers as the first step to the development of river restoration plans.

Development of the first river restoration plans have been seen as pilots to test the concept of integrating environmental flow improvement with complementary habitat restoration to maximise the environmental improvement in a river for the level of resources available. This concept of integrated river restoration incorporating environmental flows is 'at the leading edge' in river restoration science and planning and is currently testing existing knowledge bases.

The current approach to stressed rivers is being reviewed within the Victorian River Health Strategy to be developed by May 2002 (see discussion section).

The Snowy Initiative

The most significant environmental flow initiative that Victoria has invested in to date is the Snowy River initiative as shown in box 2.

Box 2: Environmental flows to restore the Snowy River

On 6 October 2000, the Victorian, New South Wales, and the Commonwealth Governments announced an historic 10 year \$300 million agreement to breathe life back into the Snowy River and preserve a national icon for future generations. The Snowy initiative is an historic commitment to restore the Snowy River to a long-term target of 28 per cent of the river's natural flows, while protecting other river systems and water users.

The Governments agreed to significant increases in environmental flows for the Upper Murrumbidgee River and key alpine rivers in the Kosciuszko National Park. At the same time, the Snowy Initiative has secured the property rights of Murray-Darling irrigators by ensuring that there are no adverse impacts on existing water rights including South Australia or on the environment of the Murray, Murray-Goulburn or Murrumbidgee River systems.

The rescue plan marks a new awareness of the importance of Australia's dwindling water resources and a new political will to invest public money in a national icon. The \$300 million allocated will finance a joint government body which will invest in capital water saving projects such as pipelining, major engineering works, better water accounting, and improved maintenance of irrigation distribution systems. The new body will also purchase water at the lowest cost to provide for further environmental flows.

The agreement sets a target flow rate of 21 per cent to be returned to the Snowy River over ten years. The remaining 7 per cent to reach the full 28 per cent is expected to be achieved through the development of new infrastructure projects involving the private sector to find and share water savings.

The River Murray has also been identified by Victoria as a priority for restoration through the Murray-Darling Basin Commission (see Murray-Darling Basin Commission chapter).

Other submissions

The Australian Conservation Foundation has argued that the Council should recommend a partial suspension of payments to Victoria for its lack of political commitment in allocating water to the environment. Specifically, it argued that Victoria has failed to review its bulk entitlements, provide adequate environmental allocations, sufficiently advance its river restoration plan program and streamflow management plans, or adequately fund the Environmental Protection Authority and fisheries managers to participate in flow management processes. The submission also argued that Victoria should institute high level inter-agency processes and programs to review the need for thermal pollution mitigation and the provision of fish passages and to commit to consumption-based pricing to generate sufficient funds to implement these programs.

Tim Fisher of the Australian Conservation Foundation discussed the outcomes of the bulk water entitlement program in a Productivity Commission report 2000:

While environmental flow needs of rivers are a consideration, bulk water entitlement processes have a stated aim of maintaining the status quo in water diversions. Where environmental flow issues are given serious consideration, this has only ever resulted in minor adjustments to the security of water supplies that have never been explicitly quantified in bulk water entitlement documentation...

Where environmental flow allocations are incorporated into bulk water entitlements, the following generalised criticisms invariably apply:

- . environmental allocations sometimes appear to be a token re-labelling of passing flows (rather than flows for any specific ecological purpose), and are seriously deficient in meeting real ecological needs;*
- . environmental allocations are often made available for consumptive use;*
- . minimum flow rules are arbitrary, often far lower than levels recommended by independent scientific advice;*
- . roles and responsibilities of water authorities and the Department of Natural Resources and the Environment are confused re the development of an operational plan for the use of environmental water;*
- . monitoring of compliance is minimal, and measurement points are sometimes highly inappropriate;*
- . no mechanisms or triggers for enforcement of environmental flow arrangements exist;*
- . clear ecological objectives are only rarely articulated;*
- . monitoring of ecological trends (including those in response to changed flow regimes) is minimal or non-existent; and*
- . provision for periodic review applies only in two cases in the State. (PC 2000 pp.42-43).*

In relation to the streamflow management program, Tim Fisher in the same report raised the following concerns:

- streamflow management plans are coordinated by rural water authorities which have commercial interests in the sale of water for irrigated agriculture which leads to a conflict of interest;

-
- few streamflow management plans have been completed and suffer from a lack of input from freshwater ecology expertise and have consultative processes that are 'stacked' with water users;
 - streamflow management plans are not linked to the stressed rivers program and bulk water entitlement processes in the same river systems;
 - streamflow management plans focus on a single environmental flow objective of 'minimum flows', rather than other flow regime aspects that might conceivably deliver desirable environmental outcomes;
 - there is inadequate metering and monitoring required to enforce streamflow management plans; and
 - there is a need to boost the Department of Natural Resources and the Environment's resources in the level of support for, and supervision of the streamflow management plan processes. (PC 2000, pp.43-44)

In relation to the stressed rivers program, Tim Fisher in the same report has raised the following concerns:

- only a handful of 'stressed rivers' are included;
- catchment management authorities are responsible for the program and these have no role under the Water Act and inadequate expertise regarding freshwater ecology, hydrology, flow management, and public consultation;
- the consent of rural water authorities is required for flow issues to be considered; and
- no input from environment non-government organisations. (PC 2000, p.44)

In its submission to the Council, the World Wide Fund has argued that bulk entitlements are allocated on the basis of past use and take precedence over streamflow management plans and river restoration plans. Bulk entitlements deprive streamflow management plans' and river restoration plans' right to reallocate flows. Minimum passing flows do not comply with the CoAG commitments and there is no process for clawback of allocations.

The World Wide Fund also expressed a lack of confidence in the adaptability and planning for bulk entitlements, and current consultative mechanisms to result in environmental allocations based on sound science.

The Council also received a submission from Mr Jon Neville with regard to the draft Wy Yung groundwater management plan. As this plan is still in the draft stage, the Council will address the issues raised in this submission in a future assessment when the plan is finalised.

Discussion

The Council is of the view that while Victoria has made provisions for the environment in all bulk entitlements and streamflow management plans, actual environmental allocations have been insufficient, particularly for the stressed rivers.

The bulk entitlements and the streamflow management plan processes do make provision for environmental flows whilst considering the current users' rights and related social and economic impacts. These activities are providing some protection of existing environmental values of Victoria's rivers consistent with the philosophy that the most effective management approach is to protect existing environmental values. Furthermore, the recommendations of the 2001 Farm Dams Review seek to protect environmental flow provisions from erosion due to incremental development within a catchment.¹⁹

Whilst these processes generally provide an improvement in environmental flow regimes over previous management arrangements, Victoria has recognised that the environmental flow provisions made may not be enough to meet the recommended ecological flow requirements. Where the environmental flow provisions do not meet ecological flow requirements, it is likely that environmental damage either has occurred or is occurring. Victoria is prepared to consider a number of options to improve environmental flows where this is a priority including investment in water efficiencies, and other policy mechanisms.

A January 2000 interim ministerial report by the Goulburn-North East Regional Water Coordinating Committee entitled *Rights To Water* prepared for the Minister for Environment and Conservation indicates that Victoria has tackled the issue of property rights first before considering environmental flows. As a result, the following statements are made concerning progress on environmental flows to date:

The major issue identified by the Committee that was adversely impacting on the environment, reducing the security of supply for water to existing entitlement holders, and impeding development due to increased uncertainty and risk, was the "private rights" issue with respect to water harvested for irrigation use.

The bulk water entitlement allocations have been incorporated into the Water Act. Thus, we have a fixed volume of water available for use in the region. Simultaneously, water can be harvested under Section 8(4) of the Water Act. The net result is that as more water is harvested, the Cap is exceeded, and as legal entitlements continue to be drawn,

¹⁹ This will be achieved through establishing rules for granting any new licences and incorporate environmental flow considerations in the development of trading rules for unregulated streams.

environmental flows suffer. In some cases, stream flows are affected to the extent that entitlements can not be drawn. The problem is exacerbated by the lack of Streamflow Management Plans across the State. These Plans provide important information relating to environmental management flows and the ability of a stream to support development. The quality of water management decisions is severely impacted by this shortfall. (Goulburn-North East Regional Water Coordinating Committee 2000, pp.3-4)

Victoria has indicated that the national audit categorised river basins by the level of commitment of water resources. Victoria believes that this is not helpful when deciding on priorities for action for river restoration. This needs to be done on a smaller scale by examining the environmental values and river condition at the river reach scale. River restoration plans are needed to address Victoria's stressed river problems. Victoria has advised that this will be addressed by a Victorian River Health Strategy.

The Victorian river health strategy – A way forward

Victoria is currently in the process of designing a Victorian River Health Strategy to establish a clear direction for the management of rivers and streams into the future including stressed rivers (see also attachment 7). The strategy will outline State policy on environmental flows and other waterway health-related issues. It is intended that the draft Strategy will set a vision for Victorian rivers based on:

- protecting rivers and streams which are of the highest value; and
- ensuring that all other rivers are ecologically healthy whilst being managed to meet the environmental, economic and social needs of current and future generation.

Whilst the Strategy will deal with the major drivers of river health including flow, water quality, riparian and instream management, some of the major issues to be considered include:

- how to define stressed rivers;
- what is a reasonable level of rehabilitation or restoration; and
- how to set priorities and achieve rehabilitation or restoration, including how to maximise integrated river health outcomes by integrating flow restoration with broader river restoration programs.

Ecologically Sustainable Rivers

A key concept of the Strategy will be the definition of an ecologically sustainable/healthy river. This is being developed with the assistance of a Scientific Panel.

The concept of an ecologically healthy river is an important one to understand within the context of the draft Victorian River Health Strategy. The term 'ecologically healthy' will be used throughout the Strategy. It will for the purposes of management, be used as synonymous with ecologically sustainable.

An 'ecologically healthy' river is defined as a river which retains the major ecological features and functioning of a river prior to European settlement and which would be able to sustain these characteristics into the future. This does not mean that the river is essentially pristine. Some change from the natural state has occurred but not to the point that there is a major loss of natural features, biodiversity or functions. These rivers are generally in good condition with a high resilience to change.

It is possible to identify a set of ecological characteristics of a river which is ecologically healthy (see Box 3). In Victoria, rivers showing these characteristics will be considered to be in an ecologically sustainable condition.

Box 3: Ecological Characteristics used in Victoria to define an Ecologically Healthy River

An ecologically healthy river will have flow regimes, water quality and channel characteristics such that:

- in the river and riparian zone, the majority of plant and animal species are native and no exotic species dominates the system;
- natural ecosystem processes are maintained;
- major natural habitat features are represented and are maintained over time;
- native riparian vegetation communities existing sustainably for the majority of its length;
- native fish and other fauna can move and migrate up and down the river;
- linkages between river and floodplain and associated wetlands are able to maintain ecological processes;
- natural linkages with the sea or terminal lakes are maintained; and
- associated estuaries and terminal lake systems are productive ecosystems.

Source: Victorian (2001) (unpublished)

The definition of a healthy river is based on an understanding of the key ecological aspects of rivers and is a precautionary one. Victoria is confident that a river exhibiting the characteristics in Box 3 will be ecologically healthy and these features will be self-sustaining over time.

Over time, as new knowledge becomes available, it will be possible to develop ecological performance indicators which can be used to identify whether rivers do meet this definition of ecological health. Once these performance indicators have been identified, communities will be able to use these in setting improved targets for river restoration and management and assessing whether targets have been achieved.

The draft Victorian River Health Strategy will recognise that some areas of Victoria are closer to achieving the vision of ecologically sustainable rivers than others. In some rivers, significant change in the current pattern of river uses and catchment management will be required over the longer term. The strategy will identify principles for priority setting for investment and community effort for river restoration. These will be based on three key elements:

- prevention is better than cure. Initial investment in the protection of existing high value areas or areas in good condition provides greater environmental benefits than investment in restoring degraded areas;
- maximising environmental gain from available investment. The best opportunities for restoration should be identified and investment targeted at restoration of those areas where there is the highest environmental gain for the investment; and
- degree of commitment of landholders. Investment in restoration will be undertaken where there is a real community commitment and involvement toward long term improvement of river health.

Using these principles, it is proposed that the draft Strategy will identify short to medium term targets at both the State and regional levels of:

- protecting the rivers that are of highest value from any decline in condition;
- maintaining the condition of ecologically healthy rivers; and
- achieving a 'net gain'²⁰ in the environmental condition of the remainder of rivers.

In adopting these principles for priority setting in the Strategy, Victoria has advised that it must be recognised that in some cases, areas in very poor condition may not be an immediate priority for action, and that the task of river restoration across Victoria is huge and the resources limited. The aim is to achieve the maximum outcomes for the resources invested.

Regional Waterway Health Strategies

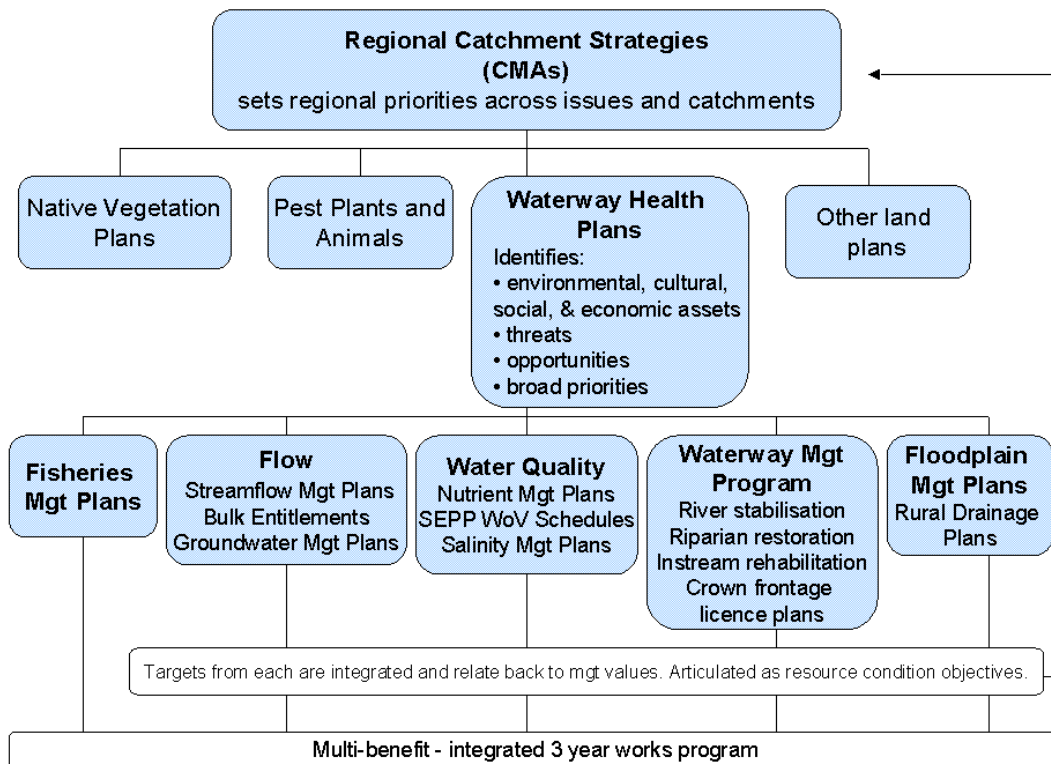
Regional targets will be set in the development of Regional Waterway Health Strategies. These regional strategies will bring together other river-related action plans (eg streamflow management plans, water quality management plans, and salinity management plans, etc). These strategies will:

²⁰ The concept of 'net gain' is an overall improvement in river condition at the regional scale to be articulated by regional targets.

- identify environmental, recreational, cultural, social and economic assets for each major river reach, the current condition of the asset and their comparative community value;
- identify processes threatening these values and the severity of the risk involved;
- identify opportunities for restoration of any degraded values and the requirements for restoration;
- identify broad actions required and set priorities - this step will identify specific action plans required and overall priorities (for example, if flow is a threat, then a streamflow management plan may be required, if the threat is increased incidence of algal blooms, then a nutrient management strategy will be needed); and
- include detailed action plans (for example, streamflow management plans, water quality management plans).

The proposed regional planning framework currently under consideration is shown in figure 5. The framework is aimed at integrating the management of all threats to river health and establishing priorities using the principles outlined above to achieve the maximum improvements in river health for the funds invested.

Figure 5: Proposed regional planning framework currently under consideration for river management and restoration



Source: Victoria (2001b)

Victoria has committed to completing the Victorian River Health Strategy by May 2002 to set the priorities within regional waterway health plans. A draft strategy is due for public release in November 2001. The process will include broad-ranging stakeholder consultation. Development of waterway health plans for priority stressed rivers will commence by June 2002.

Progress will also be made within regions in integrating existing work on the flow, habitat and water quality components of the water health plans for the priority stressed rivers (including short and medium term priorities) into the regional waterway health plan framework. Without pre-empting the process, Victoria has provided an outline of how the strategy will be developed including a list of objectives. Victoria has also provided a three-year work program for each of the identified stressed rivers within the waterway health plan framework. These are shown as attachment 8.

National principles for the provision of water for ecosystems

The ARMCANZ/ANZECC National Principles of Water for Ecosystems relevant to this assessment are discussed below.

Principle 1: River regulation and/or consumptive use should be recognised as potentially impacting on ecological values.

In all surface water allocation plans an environmental assessment is conducted. This information is then compared with current user requirements to form the basis for negotiation on the tradeoffs to be considered and decisions made.

The continuing implementation of the bulk entitlement conversion program, as well as developments of the river restoration plans for stressed or overallocated systems and streamflow management plans on unregulated systems clearly recognise the potential and actual impact of river regulation and/or consumptive uses on ecological values. The Council is satisfied that Victoria has met this principle.

Principle 2: Provision of water for ecosystems should be on the basis of the best scientific information available on the water regimes necessary to sustain the ecological values of water dependent ecosystems.

Victoria continues to use the best scientific available in determining allocations for the environment. The following are examples of assessment methods used by Victoria

- Scientific panels for the bulk entitlement conversion program. For example, scientific panels were used for the Murray and Campaspe Rivers, and are currently being used for the bulk entitlement process for the Broken and Ovens systems.

- Victoria's Rapid Assessment (Modified Available Habitat). This has been used for all streamflow management plans that have been completed or are underway. Currently, Victoria is conducting an Environmental Flow Determination Project to review the appropriateness of Victoria's Rapid Assessment Method and to propose better ways for determining environmental water requirements. The project will test the proposed improved method on the Avoca, Glenelg and Wimmera Rivers, as well as aspects of the Upper Wimmera streamflow management plan, Wimmera-Mallee bulk entitlement, and by the scientific panel assessment of environmental flows for the Broken River.
- Environmental Effects Statement for any large new bulk entitlement application.
- A scientific panel will be involved in the River Health Strategy to ensure that the scientific basis of the strategy is sound.

The Council also notes that Victoria has developed an index of stream condition which benchmarks the environmental conditions of Victoria's major rivers and tributaries (see section on environment and water quality). The Council is satisfied that Victoria continues to meet this principle.

Principle 3: Environmental water provisions should be legally recognised.

The Water Act explicitly recognises environmental conditions on bulk entitlements, including specific bulk entitlements for the environment.

Section 40 of the Act requires any new licence to take and use water to consider the impact on the environment.

At present, the environmental allocations set by streamflow management plans are not statutory based. Currently streamflow management plans are agreements between local stakeholders and the water authority which can specify environmental flows, rostering and restriction rules, and caps on water use development in catchments. The 2001 Farm Dams Review has recommended that streamflow management plans should be legally recognised in the Water Act.

The Council is satisfied that Victoria is meeting this principle. The Council will review Victoria's response to the 2001 Farm Dams Review at the 2002 NCP assessment.

Principle 4: In systems where there are existing users, provision of water for ecosystems should go as far as possible to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users.

The process for both the bulk entitlement conversion and streamflow management plan assesses the environment's water requirements, defines

current water use, and then through a negotiation process recognises the rights of existing users and balance environmental, economic and social needs.

Victoria has advised the Council that it has made provisions for the environment in all bulk entitlements and streamflow management plans whilst recognising the existing rights of other water users.

In relation to high priority streamflow management plans for overallocated unregulated systems, Victoria is implementing an approach whereby interim environmental flow objectives are set and a timepath is set to achieve the target. When major reductions in the licensed use of existing users are required to meet minimum environmental flows this may have consequences for farm viability. An interim environmental flow may be negotiated with a timeframe for meeting the target minimum flow.

The requirements of clause 4d of the CoAG agreement note that failure to deliver adequate flows for a 'flow regime that is below that required to maintain long term environmental health' still leads to degradation. Clause 4d requires 'appropriate allocations to the environment in order to enhance or restore the health of river systems'.

The 2001 Farm Dams Review recognised this as a problem and put forward the need for a two step process in the management of unregulated streams. Sustainable diversion limits are to be established across the state which will provide rules for granting any new diversions and/or for trading. Where the current level of diversions is close to the sustainable diversion limit or in priority areas, streamflow management plans are to be developed.

The first river restoration plans are being developed as pilots to test the concept of integrating environmental flow improvement with complementary habitat restoration to maximise the environmental improvement in a river for the level of resources available. Victoria argues this concept of integrated river restoration incorporating environmental flows is 'at the leading edge' in river restoration science and planning and is currently testing existing knowledge bases.

Groundwater management plans recognise existing rights and seek to intervene where extractions approach or exceed sustainable amounts. Environmental allowances for groundwater dependent ecosystems are made for each groundwater management unit according to conditions in that unit. Systems included in the calculation include river baseflow, wetlands, and marine and estuarine systems in terms of saltwater intrusion limits.

The Council notes that the River Health Strategy is expected to set the framework for the development of waterway health plans. As yet, none have been developed. While the bulk entitlement and streamflow management plan processes make provision for the environment, the Council is of the view that the provisions are insufficient and therefore this principle is not being met. The Council will defer examination of compliance with this principle to future assessments.

Principle 5: Where environmental water requirements cannot be met due to existing uses, action (including reallocation) should be taken to meet environmental needs.

The streamflow management plan and bulk entitlement provisions go as far as possible to provide for the environment's water requirements balanced against current water users needs. The Council notes that the processes for the bulk entitlement program and the development of streamflow management plans have been slower than Victoria has anticipated. The reform commitments require that allocations, including provision for water for the environment on all systems identified in a jurisdictions timetable would need to be in place by 2005. While Victoria now expects to complete the bulk entitlement conversion process by 2003, a year behind that envisaged in the implementation program, this is still well within the 2005 timeframe. The majority of streamflow management plans will have commenced by June 2002 and will be determined against streamlined guidelines. The development of groundwater management plans is on schedule.

Other Victorian initiatives to ameliorate flow stresses identified through the bulk entitlement conversion and streamflow management plan planning process include:

- as part of the Stressed Rivers project study for the Thomson and Macalister rivers, a scoping study is being undertaken to identify management objectives and map out the process for developing a river rehabilitation plan for the Lower Thomson river;
- the streamflow management plans for the Merri and Avon Rivers have identified that providing for environmental flow requirements will severely impact on the security of supply for current users. Victoria is funding two projects to investigate and implement options, including on farm efficiency savings and off stream winterfill storages which will improve users' water security and allow sufficient water for the environment at critical times;
- Victoria has contributed \$1.85 million to construct fish passages to bridge 65 in-stream barriers;
- Victoria has allocated a \$5.3 million Rural Water Reform Package for environmental works on waterways and floodplains; and
- Victoria has contributed to the Northern Mallee pipeline to generate water efficiency savings that will deliver 35 000 megalitres for the environment between the Glenelg and Wimmera Rivers.

The Council will reassess progress against this principle in light of the finalised Victorian River Health Strategy and three year action plan in the 2002 NCP assessment.

Principle 6: Further allocation of water for any use should only be on the basis that natural ecological processes and biodiversity are sustained (that is, ecological values are sustained).

Where the bulk entitlement provides water for the environment, these are based on long term protections for existing aquatic values. Streamflow management plans and groundwater management plans provide for the future allocation of take and use licences based on the assessment of streams or aquifers. All new bulk entitlements are assessed to determine the impact on the environment. Any large new development requires an Environmental Effects Statement.

The Water Act requires a water authority to consider the impact on the environment and other uses before issuing a licence. A focus has been the cumulative impact of 'winterfill' dams on water resources.

The Farm Dams Review has recommended a number of processes to deal with cumulative impacts. These include sustainable diversion limits that will define precautionary diversion limits for all catchments and no new licences will be issued until a streamflow management plan is in place. The Review also recommended guidelines for assessing the environmental impact of dams to assess the local environmental impacts of issuing licences.

The Council is satisfied Victoria is meeting this principle. The Council will examine the Government's response to recommendations of the 2001 Farms Dams Review in the 2002 NCP assessment.

Principle 7: Accountabilities in all aspects of management of environmental water provisions should be transparent and clearly defined.

The Water Act establishes the Minister for Environment and Conservation as the responsible Minister for the management of environmental water. For day to day management, the Minister has delegated responsibility to the water authorities or to the Department of Natural Resources and the Environment. In Victoria there are two aspects to environmental water.

First, the management rules that protect the environment's water requirements that result from the water allocation planning process. The Minister has delegated responsibility for managing and complying with these rules to water authorities. A Water Resource Manager from each authority is required to report annually to the Minister in this regard.

Second, bulk entitlements and other water allocations for the environment. These are managed by the Flora and Fauna Division of the Department of Natural Resources and the Environment, with a management group comprising local stakeholders and agency personnel advising on best use. For example, the Murray bulk entitlement for the Environment is managed by the Flora and Fauna Division on advice from a Water Allocation Group. This group meets annually to review how the water was used in the previous year and how best to use water in the upcoming year.

The Council is satisfied Victoria continues to meet this principle.

Principle 8: Environmental water provisions should be responsive to monitoring and improvements in understanding of environmental water requirements.

Streamflow management plans are required to be reviewed every five years. Bulk entitlements can also specify reviews and, in a number of cases, environmental flow processes under specific bulk entitlements will be included in the review. For example, the Thomson and Macalister bulk entitlement is subject to an agreement on an environmental flow package that requires the environmental flow regime to be reviewed after three years.

Statewide monitoring on river health is determined via the Index of Stream Condition, AUSRIVAS, and Statewide water quality and quantity monitoring networks and these will be integrated as part of the River Health Strategy. Specific monitoring programs have been included in studies such as the Wimmera Glenelg environmental flows study conducted by Deakin University and the environmental flows study on the Campaspe River undertaken by the Cooperative Research Centre for Freshwater Ecology.

The Council is satisfied Victoria is meeting this principle.

Principle 9: All water uses should be managed in a manner which recognises ecological values.

A major component of Victoria's surface water allocation program is recognition that benefits to the environment can accrue through better management of water. The main outcomes to date of the streamflow management plans and bulk entitlement conversion program has been management rules that aim to minimise the impact on the environment. For example, streamflow management plans provide for rostering and restriction rules to be applied at times of high environmental stress. Dam management rules also target filling and releases to provide a more natural flow regime.

The bulk entitlement process provides some long term protection for existing aquatic values. However, there will also need to be further clawbacks of environmental water in some areas that will be addressed by the Victorian River Health Strategy.

The Council considers this principle has not been met and will reassess compliance with this principle in a future assessment.

Principle 10: Appropriate demand management and water pricing strategies should be used to assist in sustaining ecological values of water resources.

Victoria does not charge a separate levy to reflect the cost of environmental management. However, service providers are required to meet a range of

environmental and resource management standards. To the extent that these requirements increase the operating costs of the service providers they will be reflected in water and wastewater prices. For example, the cost of operating salinity mitigation schemes in Northern Victoria are reflected in the operating costs of the relevant rural water authorities and thus prices.

Victoria has also advised that changes to tariff structures such as peak load or seasonal pricing may be considered for the urban service providers following the 2001 Price Review. Operating licences require the metropolitan retailers to develop demand management plans. The Statewide Conservation Initiative establishes a Statewide education campaign to raise community awareness of the need for water conservation, and active management and goal setting.

The Council is satisfied Victoria is continuing to apply this principle.

Principle 11: Strategic and applied research to improve understanding of environmental water requirements is essential.

Victoria has developed strategic partnership with specialised research bodies such as the Arthur Rylah Institute - Fresh Water Ecology, and the Cooperative Research Centre for Freshwater Ecology. The Cooperative Research Centre for Freshwater Ecology undertakes a range of specific studies such as the environmental flow study for the Campaspe River. The Department of Natural Resources is a funding partner of the Cooperative Research Centre for Freshwater Ecology.

Victoria is reviewing the Statewide environmental flow determination methodology under the Environmental Flow Determination Study drawing from recent international and Australian experience. The review is expected to be completed by August 2001 and will ensure the bulk of the streamflow management plan program that is yet to be undertaken will incorporate environmental flow studies representing best scientific information available.

Other Victorian studies include the Wimmera and Glenelg Environmental Flows Study, and work on the effects of catchment dams.

The Council is satisfied that Victoria continues to meet this principle.

Principle 12: All relevant environmental, social and economic stakeholders will be involved in water allocation planning and decision-making on environmental water provisions.

The use of consultative committees containing representatives from all relevant stakeholders continues to be a feature of the development and implementation of bulk entitlements, streamflow management plans, and groundwater management plans. These plans are subject to full public consultation. In all cases, project groups of local stakeholders are convened to consider the issues and use a consensus approach to develop appropriate

plans and orders. The Victorian Government has provided in excess of \$500 000 to Environment Victoria to ensure there is adequate environmental representation in the process.

The Council is satisfied Victoria meets this principle.

Assessment

Victoria has 8 identified stressed surface water systems that required action on allocations for the environment for this assessment. The bulk entitlement and streamflow management plans provide for some allocations for the environment. However, the Council has found in this assessment that Victoria had made insufficient progress to meet commitments for allocations to the environment on overallocated or stressed river systems.

Victoria is developing a policy on stressed rivers to be set by a River Health Strategy that is expected to be released for public consultation in November 2001. The strategy is expected to:

- set a benchmark in defining what is an ecologically healthy river;
- propose the development of regional catchment strategies and waterways health plans;
- set regional targets (in waterways health plans) that draw from existing mechanisms such as streamflow management plans, bulk entitlements, and other integrated catchment management mechanisms;
- use the regional catchment strategies and water health plans to identify short to medium term targets at the State and regional level; and
- aims to put in place an integrated framework which will maximise environmental improvements from investment.

Victoria has committed to finalising the strategy by May 2002, and has provided a three year timetable for actions on stressed rivers based on the development of regional Waterway Health Plans. Victoria has argued that the work now underway including the Snowy River Initiative reflects Victoria's commitment to allocating water to the environment.

Given the CoAG commitment has not been met by Victoria, the Council will reassess this issue in the 2002 NCP assessment. The Council considered recommending a suspension of Victoria's NCP payments until the environmental reforms were in place. However, it is satisfied that the Victorian Government has committed to a more comprehensive program to address stressed rivers, including the three year action plan. For the 2002 NCP assessment, the Council expects that Victoria will have a final publicly endorsed strategy in place, and will have begun to implement plans in accordance with Victoria's stressed rivers action timetable. Given the importance of this matter and Victoria's delay to date in delivering this area

of reform, the Council will consider recommending a reduction in NCP payments in future assessments if progress is insufficient to meet CoAG obligations.

Water trading

Governments have agreed that water trading arrangements should be in place to so as to maximise water's contribution to national income and welfare, within the social, physical and ecological constraints of catchments. (clause 5)

Victoria generally has a high demand for high security water. This is a reflection of the high levels of irrigated dairy, horticulture and fruit production. Water trading is now providing an alternative to these high security allocations, as water users can enter the market if and when they need additional water to finish their crops.

Trading has continued to play an increasingly important role in agricultural production in Victoria. The Victorian 2001 NCP annual report noted that over the three years from 1997-98 to 1999-2000 many irrigators only coped with the low allocations of water by turning to the water market. This prompted record levels of water trading with permanent transfers up to 20 000 megalitres and temporary transfers of up to 250 000 megalitres.

Trading within Victoria

Legislative base

As noted in the second tranche assessment, the *Water Act 1989* provides the basis for water trading within Victoria. To give effect to a number of trading provisions, the *Water (Permanent Transfer of Water Rights) Regulations 1991* were established under section 228 of the Act.

Trade can generally be divided into regulated and unregulated systems.

Unregulated

Water rights in unregulated systems are provided through Take and Use Licences (see section on allocations), which allow the holder to pump water from a watercourse or, in limited circumstances, construct a dam on a watercourse.

The Act provides for the permanent or temporary transfer of a licence. In making a decision, the Minister may consider the effect of the transfer on

usage of water, the impact of subsidies and any other matter considered relevant. The Minister may also alter the conditions on a licence.

Temporary transfers are also possible with the agreement of the water authority and may only extend for one season. The transfer does not affect the ownership of the right, nor any amount payable under a tariff for irrigation, drainage or salinity.

Regulated

In regulated systems, bulk entitlements have been issued to water authorities, such as the Goulburn-Murray rural water authority. These bulk entitlements recognise existing water rights and, under powers delegated to them from the Minister, provide a water right for the end user.

A list of water rights is made within the schedule of a bulk entitlement. The bulk entitlement holder is also required to provide a register of water rights. This register is described below.

Water entitlements remain attached to a land holding at all times, with permanent trades simply transferring title between the holdings of the buyer and seller). The Act requires the approval of the Minister and relevant rural water authorities (both, if transferring between two districts) for permanent trades.

Once a trade has occurred, the bulk entitlement for the rural water authority involved is amended to reflect the change in volume. This is an administrative process only, and does not give the authorities the ability to refuse a trade. The amendments are conducted periodically.

The Act also permits the permanent or temporary trading of bulk entitlements, either in whole or in part, between authorities by auction, tender or in any other manner with the approval of the Minister. The Act also provides for the trading of bulk entitlements between the authorities and landholders in irrigation districts or take and use licence holders. Permanent transfers are required to be advertised and approved by the Minister. Amendments or transfers of bulk entitlements must be entered into the Register of Entitlements kept by the Director General.

Section 225 allows Authorities to make by-laws for the transfer of water in and out of the districts. The Act, through section 228, also permits the development of regulations for the transfer of water rights. This includes setting maximum and minimum amounts of water that may be held by land owners (having regard to salinity and the need to protect the water rights of other users) and setting limits on the amount of water that can be transferred out of districts.

This power has been utilised in the determination of the *Water (Permanent Transfer of Water Rights) Regulations 1991*, which provides detailed provisions on the administrative arrangements for permanent water trade

and sets the volume, region and other restrictions on the trade of permanent water entitlements in irrigation districts.

The regulations allow the seller's authority to refuse a transfer if it will result in more than 2 per cent of the total volume of water rights being transferred from the region in a given financial year. The regulations also set limits on the regions between which trade can occur, and maximum water rights that may be attached to each holding.²¹ These regulations are to sunset in December 2001.

An authority must keep a register for each irrigation district for which it is responsible. The register must record any transfer of water rights. The water right cannot be transferred without the approval of any person with a registered interest in the right.

Institutions and policies

The five rural water authorities in Victoria provide rural water services usually to a number of irrigation districts, and services to a number of small to medium towns. They operate a (sometimes limited) trading market as well as supplying irrigation services (such as bulk water supplies). In areas outside the irrigation districts, the Minister is responsible for the approval of water transfers. The Minister may delegate these powers.

The Victorian 2001 NCP annual report noted the important role played by the Northern Victoria Water Exchange in the temporary trading market. The Exchange services customers of Goulburn-Murray Water and Sunraysia Rural Water. Currently, the role of the Exchange extends only to temporary water trading where it aims to establish a transparent process to provide market information on prices and volumes.

Unregulated systems are managed through streamflow management plans. These plans define competing uses of water in unregulated streams in priority areas. Among other things (see allocation section), they will establish rules for the transfer of existing entitlements.

Trading to date

Unregulated

The volume of water entitlements in unregulated systems represents only 5 per cent of total entitlements. As such, the potential for trade is relatively small.

Regulated

The vast majority of water rights lie within the irrigation districts in Victoria. Table 8 shows the trading characteristics of the five Victorian rural water authorities.

Table 8: Trading characteristics of the rural water authorities.

<i>Authority</i>	<i>Can trading Occur?</i>	<i>Broker Service by Provider?</i>	<i>% Traded Permanently (1998-99)</i>	<i>% Traded Temporarily (1998-99)</i>
First Mildura Irrigation Trust	Yes	No	N/A	N/A
Goulburn Murray Water	Yes	Yes	1-2% (depends on region – average 1%)	4-15% (depends on region – average 10%)
Sunraysia Rural Water	Yes	No	4	7
Wimmera Mallee Rural Water	Yes	No	1	13
Southern Rural Water	Yes	No	No data	No data

Source: ANCID (2001)

The Northern Victorian Water Exchange's role in temporary water trading in the Goulburn-Murray and Sunraysia irrigation districts continues to grow. The Council understands that 49 033 megalitres of temporary trades were made on the Exchange in 1999-2000, a rise of almost 60 per cent from the previous year.

Only 20 per cent of purchases (or 11 per cent of traded water) are actually conducted through the exchange (Bjornlund and McKay 2001), indicating that the Exchange generally deals in smaller volumes of water. Some 38 per cent of trade are conducted through a broker, 19 per cent between neighbours and 23 per cent through other private sale mechanisms.

Interstate trade

Legislative Base

The Water Act permits the temporary interstate trade of the whole or part of a bulk entitlement by an authority with the approval of the Minister. The bulk entitlement may only be transferred for a maximum of 12 months. As noted previously, the Act also provides permanent or temporary transfer of licences interstate.

Interstate temporary or permanent transfers of water rights (other than sales water) are allowed with the approval of the Victorian rural water authority and the receiving authority. In the case of permanent trade, this transfer

must be advertised and cannot be approved without the consent of each person who has a prescribed interest in the right.

Authorities must review the water rights register to reflect permanent interstate transfers of water rights. The Minister may also determine guidelines for the transfer of water interstate.

Institutions and policies

Both temporary and permanent interstate trade has been possible in Victoria for some time. A major initiative for interstate trade involving Victoria (and New South Wales and South Australia) is the Murray-Darling Basin Interstate Water Trading Pilot project. The Pilot project operates along the Murray River downstream from Nyah, including high-security allocations supplied from the Murray in this region. The Pilot excludes the established irrigation districts in Victoria.

Victoria has also implemented a ban on temporary trades following the conclusion of the irrigation season in response to differences in the carry over provisions between Victoria and New South Wales.

Interstate trading to date

In the context of the Pilot project, Victoria has been a net exporter of water since the inception of the scheme in 1998. To September 2000, Victoria had participated in 17 trades, with only one trade coming into the State. Further information on the number, volume and direction of trades for Victoria conducted under the Pilot is available in the Murray-Darling Basin Commission chapter.

Discussion

Consistent with commitments under Clause 5 of the CoAG framework, the objective of water trading is to ensure water is used to maximise its contribution to national income and welfare, subject to the physical, social and ecological constraints of catchments.

In making its assessment, the Council recognises that the means through which jurisdictions achieve these reforms will vary. However, to provide a consistent basis for assessment, the Council has evaluated the arrangements

in each jurisdiction against a common set of key criteria, which are consistent with recent work by the High Level Steering Group on Water.²²

As trading in most jurisdictions is still in its infancy, the assessment has focussed on the establishment of mechanisms, policies and information that provide a sound foundation for efficient water trading. Particular focus in this assessment has therefore been extended to:

- the clear definition of sustainable water rights;
- adequate specification of appropriate trading rules and zones;
- appropriate market procedures; and
- accessible and equitable market information.

In future assessments, the Council will look for evidence of effective trade and measures to increase the depth of water trading markets.

In the second tranche assessment, the Council noted that, on the whole, Victoria had met allocation and trading requirements. However, the Council did note that the development of trading rules and interstate trading were issues that would be further scrutinised and examined as a part of the 2001 NCP assessment. In particular, the Council advised that work was needed on trading rules that:

- limit trade in sales water;
- limit trade out of upper tributaries;
- distinguish between summer and winter use;
- account for flow and financial adjustments; and
- allow for fraud prevention measures.

For this assessment the Council will be looking for significant progress in the areas of interstate trade and trading rules (including impediments to trade).

Definition of water entitlements

Victoria's progress on these issues has previously been discussed in the section on allocations and property rights. Discussion here will focus solely upon the impact of these issues on the efficacy of interstate and intrastate trading markets.

²² These criteria are based on the findings of the High Level Steering Group report *A National Approach to Water Trading*. Appendix B provides an outline of the criteria used by the Council.

Nature of the right

The conversion of rights of water authorities to bulk entitlements will cover approximately 95 per cent of all diversions in Victorian streams. This will provide a solid basis from which to trade, as the long-term value of water rights will be clearly understood.

The Council is satisfied that rights are sufficiently specified in Victoria to allow for efficient trade.

Ownership

Trade will not maximise the value of the water resource unless the water right is well defined in terms of ownership.

The discussion on property rights in the water allocations section concluded that Victoria's property right system meets commitments. Water rights in Victorian regulated systems are freely transferable and divisible within the system. There are, however, limitations on which systems water can be traded between and on the volume that may be transferred out of a given region.

The Council is therefore satisfied that water property rights for trading purposes are sufficiently well specified so as not to provide an impediment to effective trade.

Water trading zones and rules (where and how people can trade)

Water trading zones are relatively well developed in Victoria. There are five rural water authorities, each with one or more irrigation districts. Attachment 9 shows the irrigation areas and districts where water may be transferred. This list clearly specifies the areas in which trading can occur.

However, trading rules for these areas are not well defined. This is particularly true in the areas where streamflow management plans, which will provide local trading rules, have not been developed. To date, draft streamflow management plans have been completed for the Merri River, the Upper Latrobe River and the Gellibrand River. All of these rivers are under the management of Southern Rural Water. Further information on the actual rules proposed in these streamflow management plans is given below. Once developed, these streamflow management plans should be widely available within the immediate region or from the local rural water authority.

The Council also notes that a trading handbook is being produced. This will set out all the rules and their rationale, and will be the basis for further refinement. It will cover the constraints on trading sales water which are in

place as a result of the cap, and the limits to trade on unregulated tributaries including the slanting of entitlements to winter rather than summer.

It should also be noted that water trading is relatively well developed in the northern parts of the state, particularly within the Goulburn-Murray rural water authority. As such, information is available about the procedure and rules for trades, such as the *Waternotes* brochures. Goulburn-Murray also manages the Northern Victorian Water Exchange which provides further information and trading services.

Constraints on trade

Regulated

Within the regulated systems, the primary concerns of the Council are the provisions in the Regulations that restrict who can trade water, where it can be traded,²³ and caps on the volume of water that may be transferred out of an irrigation area.²⁴

Of particular concern is the '2 per cent rule' which notes that authorities may refuse trades that would result in more than 2 per cent of the total water entitlement being transferred from an irrigation district in any given financial year. The regions which employ the 2 per cent rule are shown in box 4 below. The Council recognises that this restriction is in place due to community concern that excessive water traded out of a district may result in:

- a negative impact upon local production;
- reduction in the rate base for local governments;
- corresponding regional decline; and
- the loss of economies of scale for irrigation infrastructure, with remaining members required to assume a greater proportion of the fixed costs.²⁵

²³ Sections 6, 7 8, 9 *Water (Permanent Transfer of Water Rights) Regulations 1991*.

²⁴ Section 8B *Water (Permanent Transfer of Water Rights) Regulations 1991*.

²⁵ Also known as 'stranded assets'.

Box 4: Irrigation areas and districts which employ the 2 per cent rule

- Cohuna, Kerang, and Swan Hill irrigation areas;
- Murray Valley irrigation areas;
- Shepparton irrigation areas;
- Rodney and Tongala irrigation areas;
- Rochester irrigation areas;
- Pyramid Hill and Boort irrigation areas;
- Campaspe irrigation district; and
- Merbein, Red Cliffs and Robinvale irrigation district.

In assessing the impact of this rule, the Council notes advice from Victoria that the rule has only ever been invoked twice and does not significantly suppress trade. With regard to the two instances cited, Victoria have advised that the net trade out of the Torrumbarry system in the 1998-99 irrigation season reached the 2 per cent level²⁶ in mid-February 1999. Any applications made after that time were approved to come into effect on 1 July 2001. The second example was in Nyah, where trade out of the system reached the two per cent level on 28 February 2001. No applications for transfers were received after this time.

Where restrictions such as the 2 per cent rule are used, the Council will look for:

- evidence that they do not result in a significant impediment to trade (for example, the Council would consider the frequency with which the rule is activated, at what point in the trading year it was activated, the back log of demand the following year and the likely significance of foregone trades);
- the action resulting from activation of the rule, for example, whether trade is halted for the rest of the year, or for a shorter period (as with stock exchanges), or whether a review is initiated; and
- the threshold for triggering an embargo on trade to be increased or phased out over time.

In examining the effect of this rule in the Victorian context, the Council is of the view is that the rule does not substantially impede trade in regulated systems at present. The rule has only been invoked twice, with both instances occurring toward the end of the irrigation season. Trade has generally been delayed rather than prevented. However, as trade increases, these limits are likely to be reached more often.

The Council notes that the regulations are currently sunset at December 2001, but that consideration is being given by the Victorian Government to

²⁶ Around 7500 megalitres of total scheme entitlement.

continuing these arrangements. The Council also understands that Victoria may be considering other options for managing this issue, such as through the use of capacity shares or exit fees. Therefore, while the Council is satisfied that 2001 commitments have been met, it will revisit this issue in the 2002 NCP assessment. In that assessment, the Council will determine the extent to which the two per cent rule is being reached and the progress of Victoria in examining other mechanisms to manage this issue.

Unregulated

In September 1995, Victoria implemented an interim cap as a part of the broader Murray Darling Cap on Diversions. As a part of this cap, no new licences, except those created through the transfer of existing rights including winter-fill licences, are permitted. In addition, trade in unregulated streams is limited to downstream trade only, and there is a 20 per cent reduction on volume traded unless it is a winter-fill licence.

Victoria has advised that these constraints are aimed at mitigating undesirable environmental or third party effects and it is unlikely that a 2 per cent rule equivalent will be used in unregulated areas.

The 20 per cent levy is a way of allowing trade to continue until the local circumstances of each stream had been examined and suitable rules for the stream established in streamflow management plans. This allows Victoria to be reasonably confident that trade is not exacerbating environmental problems. The Council acknowledges that the provision of water for the environment is essential. However, provision for the environment should be done in a manner that minimises the impact upon the trading market. This levy is a blunt instrument for maintaining or restoring environmental flows and taxes the transfer of water.

As such, the Council believes that this provision should only be used where other mechanisms are not possible and should ideally not be included in the finalised streamflow management plans.

The Council views the prohibition on upstream transfers in a similar manner. It is recognised that the limitation is for environmental reasons. However, there are other alternatives to protect environmental values, such as caps on water extraction, which have a smaller impact on trade.

The Council will continue to monitor these arrangements in future assessments to determine the impact of these reductions and assess progress with the implementation of streamflow management plans. Once appropriate provisions have been made within the streamflow management plans, the Council will look to see that unnecessary constraints on trade are removed.

Interstate trade

The Council is aware of the late-season suspension of trade between New South Wales and Victoria and understands that Victoria implemented the ban on temporary trades late in the irrigation season in response to differences in the carry-over characteristics of water rights between the two states. In New South Wales, up to 20 per cent of water rights can be 'banked' for use in the following year. Unused water was being temporarily transferred from Victoria to New South Wales at a low cost late in the irrigation season thereby reducing the water available in Victoria for the next season. The potential also existed for this water to be re-introduced into water markets during peak demand in the next season by speculators.

This issue is, in the opinion of the Council, part of the broader issue of differences in property rights impeding the transfer of water rights between states. The Murray-Darling Basin Commission is the logical body to progress issues of inconsistencies in property rights between different states in the Basin.²⁷

Markets and trading procedures

In Victoria, a number of buyer and seller checks have been implemented to reduce the risk for market participants. These include a register of water rights to be developed and maintained by each rural water authority. While this register does not provide indefensibility of title for water rights, it does allow interests to be registered by the right holder. The rural water authority may not approve a trade without the written agreement of any person with an interest in the right. This provides information to the seller on who has an interest in the right and protects the rights of these third parties.

Clearance processes have been put in place in Victoria to protect the interests of third parties and the environment. For example:

- in approving a transfer, the Minister or Governor in Council must consider:
 - future water availability;
 - existing and future water quality; and
 - the adverse impact that the allocation is likely to have on existing water uses, waterways or aquifers, the environment and the purpose for which the water is to be used;

²⁷ This issue is further considered in the discussion on the Murray-Darling Basin Commission.

- within the Goulburn-Murray Irrigation District, transfers can only be approved on the basis of supply feasibility, channel capacity, and salinity and drainage criteria. Transfers must comply with all guidelines;
- the register of water rights allows for third parties to register an interest in a water right. Approval for the trade cannot be given without the agreement of these third parties; and
- regulations may be made which set the maximum and minimum amount of water that can be held by an owner or occupier of a holding in an irrigation district. Regulations may also set limits on the amount of water that may be transferred to any part of the district. In determining these regulations, the following need to be considered:
 - drainage and salinity criteria;
 - the need to protect water rights of other users; and
 - in the case of limiting water being traded between parts of the irrigation district, the environmental impact of transfers.

The Council is satisfied that the risks to market participants, third parties and the environment brought about by the transfer of water, are minimised through these clearances.

Market choices

In Victoria, depending upon the region, water can be traded independently, through a broker and through an exchange (where available).

The Northern Victoria Water Exchange operates out of the Goulburn-Murray rural water authority. The exchange allows for the transfer of temporary water rights within the Goulburn-Murray and Sunraysia irrigation districts. The Council understands that a cooperative project of four rural water authorities has been developed, with the aim of expanding the exchange both geographically to include all of Victoria and interstate, and to include permanent transfers and leasing.

The permanent water market and areas that the exchange does not cover do not enjoy the same breadth of means to conduct trade. Trading in these regions is generally limited to water brokers and private trades. However, the Council is satisfied that impediments do not exist to their development. As such, the Council has concluded that market choices do not pose a constraint on trade in Victoria.

Market information

The Northern Victoria Water Exchange has also made a significant contribution to the provision of market information on prices and volumes,²⁸ in the Goulburn-Murray and Sunraysia districts in Victoria. Information is accessible through media releases after each exchange, area offices and by telephone.

Evidence also exists that the exchange serves a price setting function for private trades outside the exchange. This is beneficial for trading as it may set an appropriate market price for independent trades in the region. (Bjornlund and McKay 2001).

Market information in unregulated systems in Victoria is very limited. The Council is not aware of any mechanisms for price disclosure or the dissemination of broader market information in unregulated areas.

The Council also notes that a trading handbook is being produced, which will set out trading rules and their rationale. The handbook was not available at the time of writing.

However, in light of the fact that unregulated water is only a small proportion of the total water resource in Victoria and that no impediments exist to the introduction of further market choices, the Council is satisfied that a lack of market information or information asymmetry is not a strong impediment to trade in Victoria.

Certainty, confidence and timeliness

Water resources in Victoria are overallocated in a number of systems, for example, the Wimmera-Avon River. A reduction in the volume of allocations will be needed to restore these systems to a sustainable basis. As discussed in the allocations section, it is proposed to develop regional catchment strategies and waterways health plans for priority stressed rivers where the environmental provisions made through the bulk entitlement process are considered to be insufficient to meet environment objectives. streamflow management plans are being developed to manage water resources in unregulated systems. The implementation of the Farm Dam Review in Victoria will also contribute to the security of the allocation system through to improved controls over farm dams that are constructed off waterways.

The Council notes that provisions for the payment of compensation for reduced allocations is not made in the Water Act. However, Victoria have previously noted that they will use methods other than clawback to achieved required environmental flows. This could, for example, include improving

²⁸ Information Package, Northern Victoria Water Exchange, Goulburn-Murray Water.

water use or transmission efficiency or the Government entering the trading market to buy the required water.²⁹

The expansion of the Northern Victoria Water Exchange is also likely to lead to improved confidence and certainty in the trading process. The project is looking to set consistent, high standards for recording and auditing trade. Relevant authorities have already instituted improved procedures that guard against fraud. The accounting of flow and financial adjustments has been upgraded and will be further developed in this process.

Consistent documentation for transfers is available in the regulations. This should help to streamline administrative arrangements for water trades.

Capital efficiency

In examining the arrangements for capital efficiency in Victoria, the Council notes that leasing is permitted both regulated and unregulated systems. Leases are, however, limited to a single year. A register of water property rights also exists, although it does not provide indefeasibility or surety of title, merely information on the right and the written permission of any person who has an interest in a water right is needed before approval can be given.

Limiting the capital efficiency of water rights in Victoria is the ongoing link between land and water. The Council considers that while Victoria's system where water moves from one land holding to another complies with CoAG requirements to separate water property rights from land title, future development of the market may be constrained by the requirement to own land as a condition of owning a licence.

Agents, brokers, aggregators and speculators are characteristics of mature markets and play an important role in the ongoing management of the market by assuming some of the risk and minimising price fluctuation within and between seasons. The possibility of market manipulation is the downside of allowing the participation of these groups in the market, although the Trade Practices Act protects against unconscionable behaviour.

The Council recognises that there are consequences of pursuing the full separation of land and water and understands that Victoria is committed to pursuing this issue in coming years. The Council will therefore reconsider this issue in future assessments.

²⁹ Further discussion of compensation and other mechanisms to achieve required environmental provisions has been given earlier in the allocations section.

Summary

The vast majority of water entitlements in Victoria are contained within regulated irrigation districts. These irrigation districts are managed by rural water authorities who provide bulk water services to irrigators. Bulk entitlements are given to these authorities, which are required to provide water to irrigators within the districts.

Water rights are transferable in regulated systems, although the right remains attached to land at all times. A transfer detaches the water right from one licence and reattaches it to the licence of the buyer. This has an impact upon the capital efficiency of the right. Water may be transferred into or out of an irrigation district, although only 2 per cent of water (net) can be transferred out of selected irrigation districts in a given year. This level has been reached twice in recent years.

In unregulated systems, streamflow management plans will set the balance between environmental and consumptive water allocations. They will also set, where appropriate, rules for the transfer of water rights.

Transfers may be made in unregulated systems on a similar basis to the regulated systems. Water remains attached to a land holding at all times. A prohibition on trade upstream and a 20 per cent levy on trade downstream, unless it is a winter-fill licence, limit trade in unregulated streams. These restrictions are in place to ensure that the environment is not further degraded until streamflow management plans are implemented.

Assessment

Victoria has had a legislative framework for water trading in place for some time. However, the 2001 assessment is to look at the implementation of this framework in the context of the CoAG water agreement to ensure that water is able to maximise its contribution to national income and welfare subject to given constraints.

The Council considers that Victoria is sufficiently advanced to meet water trading commitments for the 2001 NCP assessment. The Council will revisit progress against this reform commitment, with particular focus on further developments in trade in both regulated and unregulated areas, in future assessments.

Environment and water quality

Jurisdictions must have in place integrated resource management practices, including:

- demonstrated administrative arrangements and decision making processes to ensure an integrated approach to natural resource management and integrated catchment management;
- an integrated catchment approach to water resource management including consultation with local government and the wider community in individual catchments; and
- consideration of landcare practices to protect rivers with high environmental values (clauses 6a and b, 8b and c).

Victoria is implementing regional catchment strategies across 10 catchment and land protection regions that cover the State. One of the primary objectives of the regional catchment strategies is the protection of land and water resources. Regional management plans are being developed by catchment management authorities to implement the regional catchment strategies and provide strategic direction on such issues as waterway management, floodplain management, dryland and waterway salinity, drainage management, groundwater management, water allocation and management, water quality, soil conservation and land management.

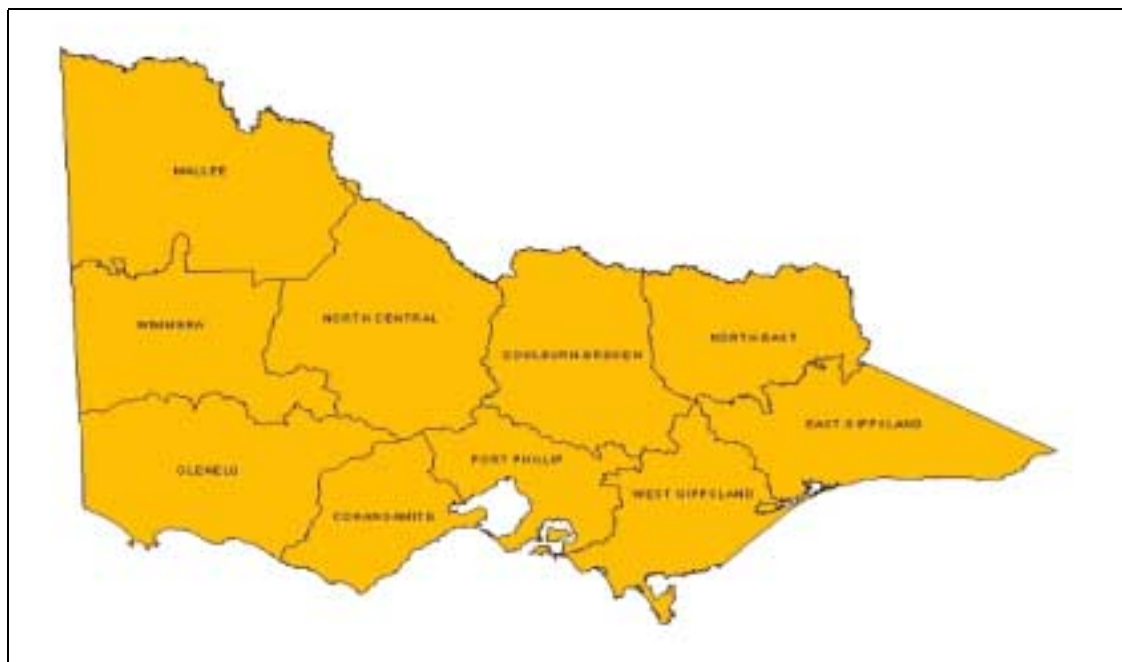
Integrated resource management

Victorian arrangements

The agencies involved in integrated resource management through Victoria include:

- nine catchment management authorities³⁰ in non-metropolitan Victoria, as shown in figure 6 below. The catchment management authorities are responsible for strategic planning for land and water resource management in their region and the provision of integrated waterway and floodplain management. catchment management authorities are responsible for the development of integrated regional management plans under the regional catchment strategies to guide future investment of Government funding in catchments. Each year these plans are submitted to Government as a requirement under the *Catchment and Land Protection Act 1994* and the *Water Act*;

³⁰ Port Phillip is not included as a catchment management authority. The Port Phillip region shown is served by the Port Phillip Catchment and Land Protection Board.

Figure 6: Victoria's Catchment Management Authorities

Source: www.dnre.vic.gov.au

- implementation Committees develop detailed work programs and oversee on-the-ground program delivery for specific sub-catchment issues. These Committees provide advice to catchment management authorities on resource management objectives, and priorities, including developing schedules for the regional management plan;
- the Catchment and Water Division of the Department of Natural Resources and Environment produces regional management plan guidelines which set out the strategic framework for regional management planning and provide specific guidance in the preparation of plans;
- agencies within the Department of Natural Resources and Environment such as:
 - the Catchment and Water Division which advises Government about state-wide natural resource management policies, programs and priorities and acts as the government agent in the purchase of catchment management services from catchment management authorities;
 - Catchment and Agriculture Services which, among other things, works with catchment management authorities and provides professional expertise to achieve catchment management objectives and to develop resource management plans;
 - Agriculture Victoria provides Government research and development services to the industry including all areas of primary industry; and

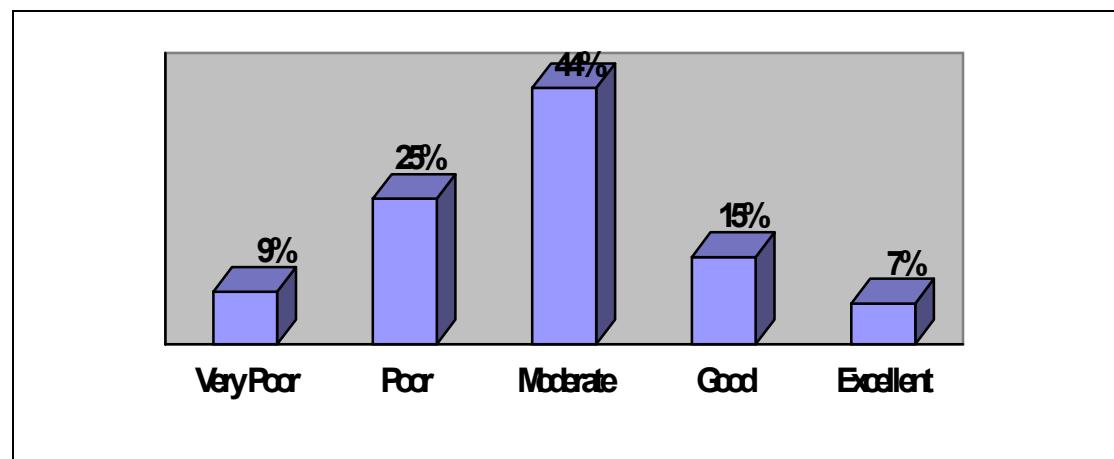
- other regional players such as urban and rural water authorities, local government and landcare groups involved in the implementation and development of approved action plans, such as nutrient and salinity management plans.

The Victorian Government is conducting the following two reviews into the operating framework of catchment management authorities.

- The Catchment Partnerships Review is examining the formal operating partnerships and working arrangements between the two key catchment management service providers — catchment management authorities and the Department of Natural Resources and Environment's regionally based Catchment and Agricultural Services. A draft report is presently under consideration.
- The Governance Improvement Project is a multi-stakeholder review of the existing strategic governance framework in which all catchment management partners operate. The focus is on the institutional and governance structures and processes between all catchment management organisations. The review is presently in the data gathering stage.

The Department of Natural Resources and the Environment in conjunction with the catchment management authorities, Melbourne Water and the Port Phillip Catchment and Land Protection Board, have recently benchmarked the environmental condition of Victoria's major rivers and tributaries. The Index of Streamflow Condition assessed 950 rivers across Victoria looking at hydrology, water quality, riparian and channel condition and instream biota. The results are shown in figure 7. The Index of Streamflow Condition was developed to assist in assessing river condition and will be used by catchment management authorities together with regional communities to set management objectives, determine priorities and measure the effectiveness of long term programs for rivers in catchments.

The Index of Streamflow Condition benchmarking is a snapshot of river conditions during 1999. The 950 rivers that represent 18 000 kilometres of Victoria's major rivers and tributaries were surveyed by the catchment management authorities. River flow, water quality, and macroinvertebrate communities were also monitored. The resulting database is very comprehensive. Results are available at the reach, catchment and Statewide scale. The Index of Streamflow Conditions results are publicly available through the State internet data warehouse (www.vicwaterdata.net).

Figure 7: Results of River condition

Source: www.vicwaterdata.net

Assessment

Victoria is in the process of improving the planning and administrative arrangements by which catchment management authorities operate. In particular, Victoria has developed regional management plan guidelines and initiated a review of corporate governance arrangements. The purpose of regional management plans are to plan and integrate Government investment in catchment management, in support of the longer-term regional catchment strategies.

The Council has reviewed the regional management plan guidelines for 2001-02 provided to all catchment management authorities to assist in the preparation of plans. These guidelines have been revised to clarify roles and responsibilities and to improve consultation arrangements. They also communicate Victoria's vision for natural resources and the environment and identify policy and strategic priorities. Victoria is also in the process of reviewing governance arrangements to clarify and improve existing frameworks.

The Council was also provided with the five year regional catchment strategy for the Corangamite Catchment Authority, and annual regional management plans for the Corangamite and North Central Catchment Management Authorities.

Catchment management authorities continue to work towards achieving objectives stated in the five-yearly regional catchment management strategies produced in 1997. The current plans³¹ provided to the Council show the ongoing commitment to implementing integrated catchment management.

³¹ Annual regional management plans for the Corangamite and the North Central Catchment Management Authorities.

The Council will continue to monitor the implementation of integrated catchment management arrangements in future assessments.

The Council applauds Victoria's development of the Index of Streamflow Condition. This is the first time that such a consistent and comprehensive study of the environmental condition of rivers has been carried out anywhere in Australia. However, there are some figures contained in this data that are a cause of concern. Of the river data obtained, only one quarter of Victorian streams were in a good or excellent condition with flow stress being a key ecological impact. For example, in the highly degraded Goulburn River, 16 reaches were found to be in good or excellent condition, but 53 reaches were in a marginal, poor or very poor condition.

The Council is satisfied that Victoria is meeting this commitment. It is noted that the proposed River Health Strategy is likely to result in further developments with regard to integrated catchment management.

National Water Quality Management Strategy

Jurisdictions agreed to support ANZECC and ARMCANZ in developing the National Water Quality Management Strategy, through the adoption of market-based and regulatory measures, water quality monitoring, catchment management policies, town wastewater and sewage disposal, and community consultation and awareness.

Jurisdictions are to demonstrate a high level of political commitment and a jurisdictional response to ongoing implementation of the principles contained in the National Water Quality Management Strategy guidelines, including on-the-ground action to achieving the policy objectives. (clause 8b and d)

Victoria is implementing the National Water Management Strategy through catchment management strategies and the state environmental protection policies. Nutrient management plans are also being implemented to manage nutrient levels in waterbodies and minimise the development of algal blooms, particularly blue-green algae. In areas where it is considered a priority to develop water quality and nutrient management action plans, these are included as regional schedules in the state environmental protection policies.

Salinity, both groundwater and river, is a major issue for Victoria. Targets have been set by the Murray-Darling Basin Commission and these are expected to affect land and water management throughout the north of the state (MDBC 2000). The Victorian Government is committed to achieving a real reduction in the environmental and economic impacts of salinity by 2015 by focussing on the need for land-use change in the future, the role of Government and the community, the skills of landholders and efficient water use. The National Land and Water Resources Audit estimates that Victoria currently has 670 000 hectares affected by dry land salinity and that this may grow to 3 million hectares by 2050 (NLWRA 2000).

Victorian arrangements

Implementation of the National Water Quality Management Strategy

Victoria has continued to implement the National Water Quality Management Strategy through a range of mechanisms. As reported in the second tranche report, the strategic directions of the national strategy are implemented through the development of regional catchment strategies and action plans, and in the regional schedules of the state environmental protection policies.

The setting of all regional water quality objectives use the ANZECC *Australian Water Quality Guidelines for Fresh and Marine Waters* as the minimum standard. In many cases, regional water quality objectives are more stringent than these.

Drinking water

The regional catchment strategies will also be used to guide the development of a new Statewide regulatory framework for drinking water quality. The framework will adopt new drinking water quality standards and risk management requirements, and ensure standards are set in a transparent manner with community benefits and costs of particular strategies clearly identified. Standards will be based on the National Water Quality Management Strategy *Australian Drinking Water Guidelines 1996*. A consultation paper released in August 2000 has been prepared on establishing the new regulatory framework. The paper proposed that the regulatory framework will have four key features:

- enforceable and achievable health and non-health-related standards for drinking water quality;
- flexibility for agreed local community-based variations to standards for drinking water quality;
- public disclosure of water quality information; and
- general obligations placed on service providers that are based on public health risk analysis, due diligence, hazard management and third party auditing.

At this stage, the Victorian Government is proposing to introduce the new legislation in January 2002.

Water quality

In December 2000, the Environment Protection Authority released a background paper for discussion on the revision of the *State Environment*

Protection Policy (Waters of Victoria). The policy dates back to 1988 and is to be revised to better enable the Victorian community to achieve sustainable water resources. The purpose of the Policy as stated in the paper is:

...to better protect, and where necessary, rehabilitate the health of Victoria's water environments to protect its environmental values and beneficial uses and associated social and economic values, to meet the needs of current and future generations. (EPA 2000, p.3)

A draft Policy will be released for public comment. Completion of this process will lead to the updating of the statutory framework with revised goals and approaches to protect and sustain the environmental qualities of Victoria's streams, lakes and estuaries based on community values.

A draft State environmental protection policy for *The Waters of Western Port Bay and Catchments* was released in June 2000 and is expected to be recommended to government by mid 2001. The environment protection policy sets water quality targets for the Bay and its waterway inputs. Victoria is also working on a State environmental protection policy for all Victorian groundwater.

Nutrient management

There are currently 16 catchment-based nutrient management plans in various stages of development and implementation in priority catchments in Victoria. Of these, the Corangamite Regional Nutrient Management Plan and Ovens Basin Water Quality Strategy have been finalised and endorsed by Government in 2000. A further two covering the Upper North East and Werribee river have been submitted to government, and a further four (the Goulburn-Broken, Campaspe, Loddon and Central Gippsland Catchments) are being finalised after public comment. The Glenelg-Hopkins plan has been released for public consultation. The release of a further five plans as drafts for public comment is anticipated in 2001-02.

Victoria has provided the Council with a copy of the Corangamite Regional Nutrient Management Plan and the Ovens Basin Water Quality Strategy prepared by the respective water quality working groups. These strategies describe water quality concerns in the region's water resources and outline programs to address concerns. The programs identify costed actions, the body responsible for implementing those actions, and timeframes. Monitoring and evaluation requirements are also described.

National land and water resource audit

The National Land and Water Resources Audit reported on surface water quality against the standards contained in the 1992 ANZECC *Australian Water Quality Guidelines for Fresh and Marine Waters*.

Table 9: Exceedance of water quality guidelines for Victoria

	<i>Number of basins assessed</i>	<i>Major Exceedances</i>	<i>Significant Exceedances</i>
Nutrient: total nitrogen	25	17	6
Nutrient: total phosphorus	25	18	4
Salinity: electrical conductivity	21	8	6
Turbidity	23	17	2
PH	19	1	1

Note: total of 29 river basins

Source: NLWRA (2000).

The national audit found that water quality monitoring in Victoria is more intensive and has a greater coverage than in any other state. The audit found that water quality was generally 'fair' across the state although a majority of basins found high levels for turbidity, total nitrogen and phosphorous concentrations. Only two less developed basins in the east (Snowy, Mitchell) met the guidelines for both nitrogen and total phosphorus. The national audit report notes that the Victorian nutrient exceedance guidelines are under review and may be relaxed for nitrogen levels to better reflect the variability of surface waters.

The National Land and Water Resources Audit found a significant proportion of Victorian basins exceeded guidelines for salinity, including most western basins in the Murray-Darling and South east coastal drainage divisions. High levels of turbidity were widespread across Victoria with only eastern basins such as Latrobe, Thomson, Mitchell and the Snowy showing good results.

WSAA Facts

WSAA Facts 2000 reported on water quality compliance for 1999-2000 for the Melbourne metropolitans against the 1987 National Health and Medical Research Council Guidelines.

- Melbourne Water, 99.7 per cent compliance with bacteriology standards, and an average of 99.8 per cent compliance with physical-chemical (turbidity/colour/ph) standards.
- City West Water, 97.7 per cent compliance with bacteriology standards, and an average of 98.3 per cent compliance with physical-chemical standards.
- Yarra Valley Water, 99.1 per cent compliance with bacteriology standards, and 99.9 per cent compliance with physical-chemical standards.
- With regard to wastewater treatment and discharge standards set in licences, all Metropolitan providers continue to be operating with 99.9 or 100 per cent compliance (WSAA 2000).

The Non-major urbans recorded the following results:

- For Barwon Water, 88.9 per cent compliance with bacteriology standards, and an average of 82.1 per cent compliance with physical-chemical (turbidity/colour/ph) as set out in the 1984 World Health Organisation standards (WHO 1984).
- Central Gippsland Water, 98 per cent compliance with bacteriology standards, and an average of 94.6 per cent compliance with physical-chemical (turbidity/colour/ph) as set out in 1984 World Health Organisation standards.
- Central Highlands Water, 67 per cent compliance with bacteriology standards, and an average of 86 per cent compliance with physical-chemical (turbidity/colour/ph) as set out in 1996 Australian Drinking Water Guidelines.
- Coliban Water, 92 per cent compliance with bacteriology standards, and an average of 98.3 per cent compliance with physical-chemical (turbidity/colour/ph) as set out in 1996 Australian Drinking Water Guidelines.
- Goulburn Valley Water, 96 per cent compliance with bacteriology standards, and an average of 90.3 per cent compliance with physical-chemical (turbidity/colour/ph) as set out in the 1997 Memorandum of Understanding guidelines; and
- With regard to wastewater treatment and discharge standards set in licences, compliance as reported by WSAA was 87.2 per cent for Barwon Water, 43.8 per cent for Central Gippsland Water, 94.0 per cent for Central Highlands Water, 88.0 for Coliban, and 85.5 per cent for Goulburn Valley (WSAA 2000).

Assessment

Victoria continues to progress reforms in this area including ongoing implementation of nutrient management plans, the development of a new drinking water quality regulatory framework. There are active measures to improve water quality where this is identified as a priority, and ongoing support and implementation of the objectives identified in the National Water Quality Management Strategy through revision and development of State environmental protection policies.

The Council also notes the salinity targets identified by Victoria in the context of the Murray-Darling Basin Commission, including drainage management, to be addressed by catchment management authorities in the development of Regional Management Plans. The Council is satisfied that Victoria continues to support and implement policies that support the

objectives of the National Water Quality Management Strategy, and will continue to monitor the development of programs in future assessments.

Public consultation and education

Jurisdictions must have consulted on the significant CoAG reforms (especially water pricing and cost recovery for urban and rural services, water allocations and trade in water entitlements). Education programs related to the benefits of reform should be developed.(clauses 7a to e)

Victoria has widespread public consultation and education mechanisms throughout its water industry. Customer consultative committees in the urban sector and water service committees in the rural sector ensure adequate consultation takes place. Substantial stakeholder involvement is also a key part of the process to develop bulk water entitlements and environmental flows.

Victorian arrangements

Public consultation

Victoria continues to engage and actively consult the community through significant programs and communication strategies accompanying all major reform initiatives to ensure the full benefits of the reforms are understood and achieved.

In particular, there has been extensive consultation with stakeholders and the community in the following reform initiatives:

- the review of farm dams. The Farm Dams (Irrigation) Review Committee held a number of public hearings across Victoria and the catchment management authorities coordinated 42 meetings to discuss the issues involved. A discussion paper was released for comment and some 356 submissions received. A draft report was subsequently released seeking further comment from stakeholders and the community;
- the 2001 price review of water, drainage and sewerage services. Consultation included the release of an issues paper and 20 consultation sessions to ensure all relevant issues were identified and exposed for public scrutiny. Some 46 written submissions were received in response to the public consultation rounds;
- proposals for establishing the Essential Services Commission. In July 2000, Victoria released a consultation paper entitled *Essential Services Commission, Improving Utility Services for all Victorians*;

- proposals for a new drinking water quality regulatory framework. A consultation paper was released in August 2000; and
- National Competition Policy review of water legislation. An issues paper was released for public comment in June 2000.

Extensive public consultation continues to be a feature of the implementation of natural resource management programs. In particular, the development and implementation of bulk water entitlements, streamflow management and river restoration plans, and nutrient management plans, are subject to ongoing consultation of all relevant stakeholders.

As reported in the second tranche report, Victorian water businesses have extensive customer consultation and education mechanisms. These are provided by customer consultative committees in the urban sector and water service committees in the rural sector.

In September 2000, Victoria's Department of Natural Resources and Environment held a water industry community engagement workshop entitled "Engaging Customers and the Community—Achieving Water Industry Leadership in Consultation". The outcome of this workshop has been a commitment by the water industry to develop a code of best practice for customer consultation which will include performance measures, targets and outcomes.

Public education

In the second tranche report, the Council identified a potential conflict of interest where service providers determine the level of ongoing public education on water conservation while having a financial interest in increased water consumption. To address this conflict and meet public education commitments, Victoria has implemented the following reforms:

- developed a Statewide water conservation initiative;
- clarified the roles and responsibilities for government, water authorities and regulators; and
- continued to deliver a range of public education programs.

Statewide conservation initiative

To address the conflict of interest, the Victorian Government is working with business to provide a better understanding of the Government's expectations in this area including, where possible, translating well understood policies into explicit obligations and targets for water businesses. Victoria maintains that provided water businesses have a clear understanding of Government's expectations of them, water authorities are best placed to undertake public education campaigns on water conservation in their communities.

In October 2000 during National Water Week, Victoria announced a Statewide water conservation initiative. The main features of the initiative are:

- a Statewide education campaign to raise community awareness of the need for water conservation through an extensive media campaign;
- establishing clear goals and targets for water conservation over the short and long term; and
- clearly identifying the roles and responsibilities of the various agencies in the water industry.

Victoria has advised that the outcomes of the clarification of roles and responsibilities identified under Statewide water conservation initiative will further feed into further Victorian institutional reforms such as the structure of water service agreements and the development of the new water regulatory framework to accommodate the introduction of the Essential Services Commission.

Other programs

Victoria continues to implement a range of other programs aimed at water conservation. These include National Water Week, the WaterWise Program and Waterwatch. Waterwatch, in particular has continued to expand significantly since the second tranche report. It now has 11 000 participants working through 575 groups. These groups regularly monitor more than 2000 sites for water quality and in some areas, river environmental condition.

In partnership with government, the metropolitan and non-metropolitan urban water businesses have launched a Statewide water conservation education and awareness campaign which includes a series of television advertisements, the provision of education materials to customers and schools, and other forms of advertisements in newspapers, billboards, brochures and press statements.

The Victorian Water Industry Association has formed an industry working group to assist with active demand management during Victoria's longest drought. Victoria's non-metropolitan urban and rural water authorities will be required to develop water conservation strategies, including goals and targets, as part of their water service agreements. The metropolitan licences already require metropolitan retail businesses to have plans in place and work is underway to include specific water conservation targets in these plans.

Assessment

The Council is satisfied there is a genuine commitment by Victoria to ongoing public consultation in the implementation of water reform. The Council has

reviewed the information provided by Victoria and believes the implementation of reforms in such areas as the ongoing conversion of existing water rights to bulk entitlements, the setting of streamflow management plans on overallocated rivers, and the findings of the Farm Dams Review have been subject to considerable consultation.

With regard to public education, the Council is impressed by the vision shown in the development of the Statewide water conservation initiative. It is the Council's view that the features of the initiative should minimise the potential for any conflicts of interest in the roles of water service provision and public education. The initiative will ensure the Department of Natural Resources and Environment plays a greater role in coordinating water conservation and public education in Victoria. This will be achieved by setting clear obligations and targets in water service agreements with water businesses to meet Government expectations in this area.

Attachment 1: Full cost recovery in the rural sector 2000-01 forecasts

	First Mildura Irrigation Trust		Gippsland and Southern		Goulburn Murray		Sunraysia		Wimmera Mallee	
Revenue										
Bulk, service and usage	3,600		12,908		54,692		10,822		13,096	
Other	220	3,820	999	13,907	22,710	77,402	1,831	12,653	2,062	15,158
Expenses										
Operations, maintenance and administration	2,550		9,410		67,945		8,717		10,379	
Finance charges	0		0		240		0		326	
Other	480		0		2,524		262		943	
Renewals Annuity	950	3,980	2,724	12,134	13,763	84,472	2081	11,060	2,353	14,001
Surplus		(160)*		1,773		(7,070)*		1,593		1,157

Attachment 2: Progress on bulk entitlement program

Year 1999

Bulk entitlements finalised and granted

- All Murray Bulk Entitlements to Urban and rural water authorities - *Completed*
- Campaspe System Bulk Entitlements - *Completed*
- Maribyrnong - *Completed*
- Central Highland major urbans – *Negotiations finalised*

Conversion process actively progressed

- Thomson/Macalister Bulk Entitlements – *Negotiations finalised*
- Melbourne – *Actively progressed*
- Tarago System– *Actively progressed*
- Barwon River– *Actively progressed*
- Ovens River– *Actively progressed*
- Broken River– *Actively progressed*

Management of entitlements

- New data base completed and populated - *Completed*
- Basin accounts published (for completed systems) – *Accounts published for major completed systems*
- Progress documentation of model runs – *Data updated and documented. Specification reports to be prepared.*

Year 2000

Bulk entitlements commenced and/or continuing

- Thomson/Macalister Bulk Entitlements– *Negotiations finalised*
- Melbourne -*Awaiting review of approach to conversion – environmental assessment continuing.*
- Tarago System -*Awaiting review of approach to conversion – environmental assessment continuing.*
- Barwon River– *Actively progressed*
- Ovens River– *Actively progressed*
- Broken River– *Actively progressed*

Conversion process not yet commenced

- Loddon River – *not commenced*
- Birch Creek – *not commenced*
- Wimmera-Mallee D&S System – *Process commenced late 2000*
- Grampians urbans – *Process commenced late 2000*

Management of entitlements

- Basin accounts published (for completed systems) – *Accounts published for major completed systems*
- Resource Management arrangements reviewed – *Reviews undertaken for Resource Manager appointments*
- Progress documentation of model runs– *Data updated and documented, Specification reports to be prepared.*

Year 2001

Bulk entitlements finalised and granted

- All remaining major systems – *Remaining major systems will commence at the completion of Ovens and Broken Systems – expected completion 2003.*
- Progress documentation of model runs

Attachment 3: Progress on streamflow management plans

1. Criteria for Setting Priorities for streamflow management plans

In developing the work program for the development of streamflow management plans, the following criteria were used to set priorities:

- level of consumptive use (that is, ecological impact due to changed flow regimes);
- conservation value;
- demand for new licences;
- frequency of rosters/restrictions;
- history of management problems;
- recreational value; and
- community expectations of the need for a streamflow management plan.

2. Three year work program

Progress against the agreed second tranche implementation program is set out in the Table below. The current status of each streamflow management plan is presented in terms of the key milestones:

1. development of background reports from collation of existing information on environmental values, hydrology and water use;
2. commencement of an environmental flow study;
3. establishment of a steering committee from key water use, environmental and recreational stakeholders;
4. development of a hydrologic model;
5. development of a draft plan;
6. Release of the draft plan for public comment; and
7. submission of the final plan to Government.

STREAMFLOW MANAGEMENT PLANS FOR UNREGULATED RIVERS

<i>Second Tranche Estimated Timing</i>	<i>River</i>	<i>Current Status (Milestones Achieved)</i>	<i>Revised Timetable</i>
In preparation <i>Completion date:</i> Dec 1999 Dec 1999 Jun 2000 Jun 2000 Dec 1999 Mar 2001 Mar 2001	Merri River (draft plan prepared) Gellibrand River (draft plan prepared) Moorabool River Upper Maribyrnong River Upper Latrobe River Kiewa River Hoddles Creek	1, 2, 3, 4, 5, 6, 7 1, 2, 3, 4, 5, 6, 7 1, 2, 3, 4, <u>5</u> (under develop't) 1, 2, 3, 4, <u>5</u> 1, 2, 3, 4, 5, 6, 7 1, 2, 3, 4, <u>5</u> 1, 2, 3, 4, 5, <u>6</u>	Completion Date June 2001 June 2001 June 2001 June 2001 June 2001 Dec 1999 June 2001 June 2001
To commence in 1999	Avon/Valencia/Freestone Creeks Barwon/Leigh Rivers Hopkins River Mitchell River	1, 2, 3, 4, <u>5</u> <u>1</u> (under development) <u>1</u> <u>1</u>	June 2001 June 2002 June 2002 June 2002
To commence in 2000	Morwell River Tarra River Narracan Creek Snowy River Tambo River	<u>1</u>	June 2002 June 2002 To commence in 2001
To commence in 2001	Bunyip/Tarago River Moe River Albert River Dandenong Creek Fitzroy River	(Now under bulk entitlement) 1, 2, 3	To commence in 2001
To be commenced by 2001	Ovens River above Myrtleford Yea River King Parrot Creek Seven Creeks Delatite River Nariel Creek Loddon above Cairn Curran Diamond Creek Plenty River Woori Yallock Creek Badgers Creek Watts River Stringy Bark Creek Wandon Yallock Creek Little Yarra Steels Creek Merri Creek	1, 2, 3, 4 1, 2, 3, 4, <u>5</u> 1, 2, 3, 4, <u>5</u> 1, 2 1, 2 1 1, 2, 3, 4	Completed by June 2002 June 2001 June 2001 June 2002 June 2002 June 2001 June 2002 Dec 2001 June 2002 To commence in 2002 or later

Underline - milestone partly achieved

Attachment 4: Development categories for surface water management areas

Surface Water Management Area	Development Category		Comment
	Diversion	Allocation	
East Gippsland – Vic	1	1	
Snowy River – Vic	2	3*	Categorisation pending outcome of Snowy Water Inquiry
Tambo River	2	3**	Categorisation pending outcome of Gippsland Lakes environmental study
Mitchell River	2	3**	Categorisation pending outcome of Gippsland Lakes environmental study
Avon River	3	3*	Categorisation pending outcome of Gippsland Lakes environmental study
Thomson – Macalister Rivers	3	3**	Categorisation pending outcome of Gippsland Lakes environmental study
LaTrobe River	2	3**	Categorisation pending outcome of Gippsland Lakes environmental study
South Gippsland	1	1	
Bunyip River	1	2	
Yarra River	3	3*	Categorisation pending outcome of streamflow management plan
Maribyrnong River	1	2 ⁺	
Werribee River	3	3 ⁺	
Moorabool River	2	3**	Categorisation pending outcome of streamflow management plan
Barwon River	2	2 [#]	
Lake Corangamite	3	3*	Categorisation due to water quality constraint
Otway Coast	1	1	
Hopkins River	2	3*	Categorisation due to water quality constraint
Portland Coast	1	1	
Glenelg River	3	3	
Millicent Coast – Vic	3	3	Categorisation because of lack of information about sustainable yield for this area – flows are intermittent and not in defined water courses.
Upper Murray – Vic	3	3**	Categorisation due to MDB Cap
Mitta Mitta River	3	3**	Categorisation due to MDB Cap
Kiewa River	3	3**	Categorisation due to MDB Cap
Ovens River	3	3**	Categorisation due to MDB Cap
Broken River	3	3**	Categorisation due to MDB Cap

Surface Water Management Area	Development Category		Comment
	Diversion	Allocation	
Goulburn River	3	3* ⁺	Categorisation due to MDB Cap
Campaspe River	3	3* ⁺	Categorisation due to MDB Cap
Loddon River	3	3*	Categorisation due to MDB Cap
Avoca River	3	3*	Categorisation due to MDB Cap
Mallee – Vic	3	3* ⁺	Categorisation due to MDB Cap
Wimmera-Avon Rivers	4	4 [#]	Categorisation recognises the substantially altered condition of the Wimmera River and terminal lakes and inadequate security of supply to irrigators.
Mid-Murray – Vic	3	3*	Categorisation due to MDB Cap

The four categories are defined as follows:

- Category 1:* Low level resource development: Developed Use/Allocation <30% of SY
- Category 2:* Medium level resource development: Developed Use/Allocation 30% to 70% of SY
- Category 3:* High level resource development: Developed Use/Allocation 70% to 100% of SY
- Category 3*:* Fully developed: Developed Allocation at 100% of SY. Includes cases where sustainable yield has been nominally set at current allocation because of some specific constraints.
(Opportunity for further development through trading, and efficiency gains.)
- Category 4:* Over developed resource: Developed Use/Allocation >SY.
(Requires management intervention to bring allocations and use within sustainable limits)

Additional Notes:

⁺ In SWMAs flagged as ⁺, allocations have been determined via a full consultative process, in the context of establishing either Bulk Entitlements and/or developing Streamflow Management Plans. This consultative process involves consideration of environmental, social and economic values. Consequently, environmental allocations for these SWMAs may not involve the full amount considered to be desirable for the environment, but represent the volume of water that can currently be made available to the environment after consideration is given to current users' rights and related social and economic impacts. As discussed in the excerpts presented in Attachment 2, there may be further scope for improving environmental regimes where necessary via improvements in distribution and use efficiency. Other options for improving environmental regimes will also be considered as part of the River Health Strategy.

[#] In SWMAs flagged as [#], the consultative processes described above are currently underway.

Attachment 5: Groundwater management plans

<i>Groundwater Supply Protection Areas</i>	<i>Declared</i>	<i>Consultative Committee</i>	<i>Management Plan (Target)</i>	<i>Current Status</i>	<i>Revised Targets</i>
Completed					
Kooweerup Dalmore	Long established	NA	In place	Completed	NA
Shepparton Irrigation Area	September 1985	NA	In place	Completed	NA
Underway					
Denison	November 1998	Established	December 2001	Initial Draft plan	July 2001
Campaspe Deep Lead	December 1998	Established	December 2001	Draft plan released for public comment	December 2001
Katunga	December 1998	Established	December 2001	Draft plan to be released for public comment by mid Feb	December 2001
Spring Hill	December 1998	Established	December 2001	Draft plan released for public comment	May 2001
Murrayville	December 1998	Established	December 2001	Draft plan released for public comment	April 2001
Neuarpur	February 1999	Established	December 2001	Draft plan submitted for approval	April 2001
Yangery	February 1999	Established	December 2001	Draft plan released for public comment	April 2001
Nullawarre	February 1999	Established	December 2001	Draft plan released for public comment	April 2001
Sale	April 1999	Established	December 2001	Initial Draft plan	July 2001
Wy Yung	May 1999	Established	December 2001	Draft plan released for public comment	April 2001
Deutgam	January 2000	To be established	December 2002	Consultative Committee submitted for approval	December 2002
Warrion	August 2000	Established	December 2002	Initial meetings held	December 2002
Telopea Downs	January 2001	To be established	December 2002	Consultative Committee to be established by April 2001	

Table 2**Three year program for new Groundwater Supply Protection Areas**

<i>Groundwater Management Areas</i>	<i>Current Status</i>
Alexandra	New proposal
Apsley	New proposal
Barnawartha	New proposal
Bungaree	Application for GSPA submitted
Condah	New proposal
Ellesmere	New proposal
Gifford	New proposal
Kaniva	New proposal
Kinglake	New proposal
Lang Lang	Modelling under way
Mid Loddon	Data Collection phase
Mullindolingong	New proposal
Nagambie	Data Collection phase
Murmungee	Data Collection phase
Orbost	New proposal
Rosedale	New proposal
Seacombe	New proposal
Upper Loddon	Data Collection phase
Wa De Lock	New proposal
Wandin	New proposal

Attachment 6: Management of stressed rivers - river restoration plans

River restoration plans are being developed for priority flow stressed rivers where the environmental provisions made through the bulk entitlement process are considered to be insufficient to meet environment objectives. River restoration plans build on the current environmental provisions. They set clear environmental objectives, and priorities for any additional water. They identify mechanisms to provide additional water, and complementary instream and riparian habitat works that will maximise environmental gains and establish agreed cost-sharing for implementation.

Key milestones in the river restoration plan process include:

1. collation of existing information on environmental values hydrology and water use;
2. commencement of environmental flow study;
3. establishment of a Steering Committee from key water use, environmental and recreational stakeholders;
4. development of a draft plan;
5. release of the draft plan for public comment; and
6. submission of the final plan to Government.

Progress against work plan

Victoria is, in general, on target to meet the river restoration plan work plan as outlined in the NCP second tranche assessment report. However, there have been some minor changes to the scheduling for the agreed rivers and several new inclusions to the list of priority rivers. These are a result of three key factors:

- changes in the level of community interest in particular rivers due to severe drought in some regions of Victoria;
- an increased commitment by the Victorian Government to comprehensive community consultation processes; and
- a strong commitment by the Victorian Government to the rehabilitation of the Snowy River.

The Victorian Government is currently formalising its approach to management of waterways through the development of the River Health Strategy. The method for assessing environmental flows is also being reviewed. The outcomes from these processes, when completed, will have further implications for the development of river restoration plans and the future work plan.

VICTORIA'S WORK PROGRAM FOR RIVER RESTORATION PLANS

River	June- Dec 1999 Milestones						Dec – June 2000 Milestones						June – Dec 2000 Milestones						Dec – June 2001 Milestones						June – Dec 2001 Milestones						Dec – June 2002 Milestones					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Thomson R d/s Cowwarr Weir	✓	✓							✓							✓																				
Avoca R	✓	✓																																		
Loddon R																			✓	✓																
Glenelg R																			✓	✓																
Broken R																			✓	✓																
Lerderderg R																			✓	✓																
Badger Ck																									✓	✓										
Maribynong R																									✓	✓										
Macalister R*	✓	✓							✓							✓																				
Wimmera R*																			✓	✓																
Snowy R*	✓	✓	✓	✓																																

☐ - Milestone to be completed by June 2002.

✓ - indicates that the Milestone has been achieved or is expected to be achieved before June 2001.

* - Additional Rivers not in original work Plan

NOTE – the proposed timetable is subject to change as a result of outcomes from the River Health Strategy and the Farm Dams Review.

Source: Victoria (2001)

Attachment 7: The Victorian River Health Strategy

Objective

The Victorian River Health Strategy will be developed as a key component of the Victorian Government's River and Catchment Restoration Program. This document sets the directions for all the major management functions that affect the health of rivers and their associated floodplains and wetlands.

The Victorian River Health Strategy will:

- articulate Government's goals for river health and restoration;
- identify Statewide targets to be met over the short and longer term;
- provide a Statewide integrated planning framework under which regional waterway health, water quality and floodplain management strategies are undertaken;
- provide policy principles and approaches for the integrated management of river health and for particular issues associated with the management of river health including:
 - water allocation and environmental flows;
 - river frontage management;
 - management of river water quality;
 - aquatic biodiversity and habitat;
 - management of river erosion; and
 - preserving linkages with floodplains associated wetlands, estuaries and terminal lakes systems.
- provide principles for the allocation of Government funding for waterway and floodplain management;
- outline the institutional arrangements for the management of river health; and
- indicate how community involvement in the management of river health will occur.

Process for Development

The consultation program for the strategy is aimed at getting input, ownership and commitment from the key regional implementing agencies and their regional

community networks as well as from key Statewide conservation and other relevant groups. It involves:

- A **Reference Committee** of relevant stakeholder groups and key Divisions within the Department of Natural Resources and the Environment. The Reference Committee provides comment on the Strategy at key points in its development and oversees the consultation program. It is chaired by an independent Chair.
- A **Scientific Panel** which ensures that the scientific basis of the Strategy is sound and that it should meet its ecological objectives. This involves eminent academics in the areas of ecology, water quality, geomorphology, hydrology, and channel hydraulics.
- The establishment of an internal department Contact Group to ensure that there is appropriate coordination of relevant work across relevant department Divisions.
- Undertaking issue workshops to develop the policy principles and future activities for each of the major chapters. These involve practitioners from relevant implementing agencies.
- Liaison at key points in the development of the Strategy with forums of implementing groups (for example, the catchment management authority chief executives, regional waterway coordinators, regional nutrient management coordinators, Environment Victoria environmental water network). This is seen as crucial, firstly to ensure that the Strategy is based on relevant on-ground experience, and secondly to ensure that the people within organisations who will actually be implementing it have been consulted and do have some ownership of the Strategy.
- Putting the draft Strategy out for a two-month consultation period.

Attachment 8: Victoria's 3-year stressed rivers program

River	Waterway Health Plan*	Flow Component of WHP	Habitat Component of WHP	Water Quality Component of WHP
Thomson River	December 2002	<ul style="list-style-type: none"> - Thomson Bulk Entitlement: increased minimum flows at Wandocka from 25 ML/day to 125 ML/day Implemented Provided for specific passing flows between the Thomson Dam and Cowwarr Weir varying between 150ML/d and 245ML/d depending on the month. Implemented Taskforce to review the flow provisions (October 2003) - Thomson Dam flow translucency study (Aug 2002) - Flow Monitoring Trial: Investigating loss of river flow to groundwater (December 2002) - Gippsland Lakes Rescue Package provides for improvement of on farm water efficiencies. (June 2003) - Blue Rock Dam review of unallocated water. The requirements of the wetlands at the confluence of the Latrobe and Thomson Rivers will be considered. (August 2002) 	<ul style="list-style-type: none"> - Investigation of a fishway for Cowwarr Weir. (August 2003) - Assessing the effectiveness of the fishway on the Thomson Weir at Cowwarr. (March 2002) - Install Fish Passage at Horseshoe Tunnel. (March 2002) - Survey to assess the quality of wetlands and riparian area and determine their watering requirements. (August 2002) - Survey of fish and aquatic vegetation in the Thomson River (March 2003) - Survey of levees and their impact on flooding of important wetlands (December 2002) - Lake Wellington Waterway Management Plan. (#Draft Completed) 	<ul style="list-style-type: none"> -Nutrient Management Program for the Macalister Irrigation District. (Plan completed Implemented by December 2005) -Prime Development Zones in Central Gippsland reducing nutrient loads to Rivers and the Gippsland Lakes. (December 2003) -Regional West Gippsland Water Quality Management Plan. (*March 2003)
Avoca River	December 2003	<ul style="list-style-type: none"> - Avoca Streamflow Management Plan. (December 2002) - Environmental flow Study. (September 2001) - TEDI modelling to identify impact of farm dams on flow. (April 2002) - Confirmation of flow requirements of Lake Bael, the Marshes, Lake Tyrell and Lake Lalbert. (July 2002) - Design a Catchment Dam that can pass summer flushes. (December 2002) 	<ul style="list-style-type: none"> - Investigate the removal of Levees to improve floodplain and wetland watering. (August 2003) - Investigate management options to improve watering regime of terminal lakes. (December 2003) - Avoca River Health Strategy. (#Completed) 	<ul style="list-style-type: none"> -Improve the Water Quality of the Avoca River, in particular the water quality of refuge pools. (December 2003) -Nutrient Management Plan. (*June 2002)

<i>River</i>	<i>Waterway Health Plan*</i>	<i>Flow Component of WHP</i>	<i>Habitat Component of WHP</i>	<i>Water Quality Component of WHP</i>
Loddon River	December 2004	<ul style="list-style-type: none"> - Loddon River Bulk Entitlement to commence. (December 2001) - Environmental flow study (August 2002) - Investigate the timing and quantity of water released from Cairn Curren and Tullaroop. - Assess the environmental values of the Loddon and their flow requirements. (December 2003) - Upper Loddon Stream Flow Management Plan. (Commenced) - Sustainable irrigation project from new allocation of Ground Water in the mid Loddon Catchment. (December 2003) - Feasibility study: Additional supply to prime development zone and to Kerang Lakes by expansion of the Torrumbarry No 2 Channel. (December 2002) 	<ul style="list-style-type: none"> - Provide fish passage past Loddon Weir. (December 2003) - Develop a Water Management Strategy for the Kerang Wetlands. (Completed) - Loddon River Health Strategy. (#December 2001) 	<ul style="list-style-type: none"> - Nutrient Management Plan. (*June 2002)
Glenelg River	December 2003	<ul style="list-style-type: none"> - Wimmera/Glenelg Bulk Entitlement (Commenced April 2001) - Environmental flow Study (September 2001) <ul style="list-style-type: none"> - Assess the environmental values along the Glenelg and their flow requirements. - Northern Mallee Pipeline implementation. 35 000 ML/year environmental water to be shared between the Glenelg and the Wimmera Rivers. (Complete Stage 6 of 7 July 2001) - Monitoring and decision support system to manage environmental allocations. (Underway) - Investigation into timing and releases of major flows from Rocklands reservoir. (December 2002) - Extension of the Northern Mallee Pipeline: feasibility study. Identified potentially 80 000 ML of environmental water. (August 2001) 	<ul style="list-style-type: none"> - Investigation into sediment management to protect the pools habitat. (August 2003) - Survey to Identify valuable riparian and wetland habitat, and determination of their watering requirements. (August 2003) - Regional Waterways Management#. (Draft complete. Final December 2002) 	<ul style="list-style-type: none"> - Nutrient Management Plan* (December 2001)

<i>River</i>	<i>Waterway Health Plan*</i>	<i>Flow Component of WHP</i>	<i>Habitat Component of WHP</i>	<i>Water Quality Component of WHP</i>
		- Streamflow Management Plan for the Wannon River, a tributary of the Glenelg River (Commencing August 2002)		
Broken River	December 2003	<ul style="list-style-type: none"> - Bulk Entitlement (December 2001) - Environmental Flows study (August 2001) - Investigate the quantity and timing of releases from Nillahcootie (August 2001) - Investigate ongoing options for the management of Lake Mokoan. (December 2002) - Finalise the flow regime for the upper Broken Creek, including consideration of the Tungamah pipeline. (December 2002) 	<ul style="list-style-type: none"> - Install fish passage/ weir removal at Gowangardie Weir. (December 2002) - Investigate and install Fish Passage past Holland's Weir (December 2003) - Install fish passage past Benalla Weir. (Completed) - Install fish passage past Rice's, Kennedy, Sheir's weirs on lower Broken Creek. (Completed) - Mid Goulburn and Broken Riverine Implementation Plans. (#Completed) 	- Nutrient Management Plan.* Draft available
Lerderderg River	December 2002	<ul style="list-style-type: none"> - Bulk Entitlement (Completed) - Passing Flow rules established at two points: <ul style="list-style-type: none"> - Lerderderg Diversion Weir: <ul style="list-style-type: none"> - Maximum diversion rate 10% of inflows, 30ML/d Dec-June, 50ML/d July-Nov and 80ML/d during Aug-Oct if downstream flows are less than 80ML/d. - Minimum passing flows below confluence with Goodman Creek: <ul style="list-style-type: none"> - 38 ML/d Dec – June, 60 ML/d July-Nov and 100 ML/d Aug- Oct - Environmental Flow Study (Completed) - Review of the Environmental Flow Provisions (August 2002) 	- Upper Maribyrnong and Werribee Catchments Waterway Management Plan.# (Completed)	- Werribee Catchment Nutrient Management Plan.* (December 2001)
Badger (Correnderrk) Creek	December 2002	<ul style="list-style-type: none"> - Bulk Entitlement. (December 2001) - Environmental Flow Study (Complete) 	- Waterway Activity Plan	<ul style="list-style-type: none"> - Yarra Care Catchment Plan (Completed) - Port Phillip SEPP Environmental

<i>River</i>	<i>Waterway Health Plan*</i>	<i>Flow Component of WHP</i>	<i>Habitat Component of WHP</i>	<i>Water Quality Component of WHP</i>
		- Review town Supply for Healesville (2010)		Management Plan. (December 2001)
Maribyrnong River	December 2002	<ul style="list-style-type: none"> - Bulk Entitlement (Completed) - No passing flows prior to bulk entitlement. - bulk entitlement Passing flow provisions: <ul style="list-style-type: none"> - 3,10 and 5 ML/d at Gisborne, Sunbury and Keilor respectively. - Passing flow not to fall below 1 ML/d at Gisborne and Sunbury Townships - When Rosslynne Reservoir does not spill, caps on entitlements and a spring flush of 20ML/d for 10 days in November. - Upper Maribyrnong streamflow management plan (December 2002) - Environmental Flows Study (Completed) 	<ul style="list-style-type: none"> - Fish passage Installed past all barriers on Maribyrnong River. (Completed) - Upper Maribyrnong and Werribee Catchments Waterway Management Plan.# (Completed) 	- Port Phillip SEPP Environmental Management Plan. (December 2001)
ADDITIONAL STRESSED RIVERS				
Macalister River	December 2002	<ul style="list-style-type: none"> - Macalister River Bulk Entitlement - Increased minimum flows from 15ML/d to 60ML/day (30 ML/day in drought years) - Taskforce to review the flow provisions. (October 2003) - Lake Glenmaggie Flow translucency study. (March 2002) - Gippsland Lakes Rescue Package, improving on farm water saving efficiencies. (Being implemented) 	<ul style="list-style-type: none"> - Survey to assess the quality of wetlands and riparian area and determine their watering requirements. (August 2002) - Survey of fish and aquatic vegetation in the Thomson River. (March 2003) - Lake Wellington Waterway Management Plan.# (Draft Completed) 	<ul style="list-style-type: none"> - Nutrient Management Program for the Macalister Irrigation District. (Plan completed Implemented by December 2005) - Investigation of options to manage Cold Water Pollution from Lake Glenmaggie. (December 2002)
Wimmera River	December 2003	<ul style="list-style-type: none"> - Wimmera/Glenelg Bulk Entitlement. (Commenced April 2001) - Environmental flow Study. (September 2001) - Assess the environmental values along the 	<ul style="list-style-type: none"> - Fishway Strategy being developed. (December 2001) - Waterway Management Strategy.# (Draft completed.) 	- Nutrient Management Plan. (June 2002)

River	Waterway Health Plan*	Flow Component of WHP	Habitat Component of WHP	Water Quality Component of WHP
		<p>Glenelg and their flow requirements.</p> <ul style="list-style-type: none"> - streamflow management plan (Water Resource Management Plan) for the Upper Wimmera River. (December 2001) - Design a Catchment Dam that can pass summer flushes. (August 2002) - SFMP (Water Resource Management Plan) for the Mt William Creek (Tributary of the Wimmera River). (December 2002) - Northern Mallee Pipeline implementation. 35 000 ML/year environmental water to be shared between the Glenelg and the Wimmera Rivers. (Underway) - Monitoring and decision support system to enable how pipeline water is allocated. (Underway) - Extension of the Northern Mallee Pipeline: feasibility study. Identified potentially 80 000 ML of environmental water. (Completed) 		
Snowy River	December 2003	<ul style="list-style-type: none"> - Environmental Flow Study Completed - Expert Panel 1996 - Snowy Water Inquiry 1998 - streamflow management plan (to be integrated with Snowy Rehabilitation Project) (December 2003) - Water Savings Project Scoping Studies - Distribution System (Completed) - Bulk Supply System Headworks (December 2001) 	<ul style="list-style-type: none"> - Snowy River Rehabilitation Concept Plan (Completed and Rehabilitation Project Manager appointed) - Scoping Study to review structural rehabilitation options (August 2001) - \$2 million committed to pre-rehabilitation work, Ie. modelling, surveys etc. - Scientific Panel established to oversee rehabilitation (Convened) 	-East Gippsland Water Quality Strategy. (July 2003)

* Water Quality/Nutrient Management Plan. Nutrient management plans focus specifically on nutrients whereas Water Quality Management Plans have a broader scope. Both establish priorities, cost sharing, targets and time-lines.

#Waterway Management Plans: These plans, developed by Catchment Management Authorities, identify the problems and issues, activities to address those problems, priorities and generally cost sharing arrangements for waterways at a regional or sub regional level.

Source: Victorian Government (2001)

Attachment 9: Trading Irrigation areas and districts

<i>Areas and districts within which transfers are permitted</i>	<i>Areas and districts to which transfers are permitted (Numbers refer to items of column 1)</i>
1. Murray Valley irrigation area (other than Broken Creek)	3, 12, 13, 14, 18, 19, 20
2. Shepparton irrigation area	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
3. Murray Valley irrigation area (Broken Creek)	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
4. Rodney irrigation area	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
5. Tongala irrigation area (other than Wyuna System)	1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
6. Tongala irrigation area (Wyuna System)	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
7. Rochester irrigation area (east of Campaspe River)	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
8. Rochester irrigation area (west of Campaspe River)	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 18, 19, 20
9. Pyramid Hill irrigation area (other than Serpentine Creek)	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 18, 19, 20
10. Pyramid Hill irrigation area (Serpentine System)	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 18, 19, 20
11. Boort irrigation area	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 18, 19, 20
12. Cohuna irrigation area	1, 3, 13, 14, 18, 19, 20
13. Kerang irrigation area	1, 3, 12, 14, 18, 19, 20
14. Swan Hill irrigation area	1, 3, 12, 13, 18, 19, 20
15. Campaspe irrigation district	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19, 20
16. Tresco irrigation district	
17. Nyah irrigation district	
18. Robinvale irrigation district	1, 3, 12, 13, 14, 19, 20
19. Red Cliffs irrigation district	1, 3, 12, 13, 14, 18, 20
20. Merbein irrigation district	1, 3, 12, 13, 14, 18, 19
21. Macalister irrigation district	
22. Werribee irrigation district	23
23. Bacchus Marsh irrigation district	22

Source: Water (Permanent Transfer of Water Rights) Regulations 1991

Appendix A: Third tranche assessment framework

Note: originally released in February 2001

Water reform highlights the multifaceted nature of NCP. The reform package put in place by CoAG in 1994 encompasses urban and rural water and wastewater industries and includes economic, environmental and social objectives. The reform program is aimed at improving the efficiency and effectiveness of water service providers and instituting water management planning such that the effect of all water use (by agriculture, industry, households and the environment) is taken into account.

Significant second tranche reform matters included: urban water pricing; approaches to determining the economic viability and ecological sustainability of new investment proposals; timetables for providing environmental allocations in stressed river systems; and frameworks to allow for appropriate institutional structures and the allocation and trading of water.

The third tranche program extends these commitments. It focuses on the 'on-the-ground' outcomes of the reform process in such areas as rural water pricing and cost recovery, environmental allocations or provisions for the environment, water quality issues, trading arrangements and further institutional reforms.

The Council's second tranche assessment for water reform focused on the establishment of the legislative systems and structures to deliver the CoAG water reforms. A key focus of the third tranche and future assessments will be seeking information from jurisdictions that the reforms, structures and systems are generating real benefits. The 1994 CoAG strategic water reform framework (the CoAG Framework) and related documents subsequently endorsed by CoAG provide the basis for the Council's assessments of water reform progress. The CoAG documents provide generally very broad descriptions of the water reform obligations. Because of this, the third tranche framework developed by the Council provides more detailed explanation and interpretation of the water reform obligations. The framework does not redefine the commitments determined by CoAG, but aims to:

- provide a clear, transparent basis for assessment particularly in relation to matters not considered in previous assessments;
- identify the type of information that jurisdictions should provide to demonstrate compliance; and

- provide a basis for early identification and bilateral discussion of areas where achieving reform outcomes is proving difficult.

The Council's interpretation is based on the experience of earlier assessments, discussions with States and Territories and other stakeholders, and other work by the Council and other relevant organisations.

Jurisdictions have also provided input into the material presented in this chapter. The comments made by governments ranged from the need to be more specific in some areas on how the NCC might assess an item, to the view that the approach in areas is too prescriptive. The Council has sought to accommodate specific comments wherever possible.

Jurisdiction-specific matters arising from the CoAG Strategic Framework

The Council recognises that the reforms may be applied in different ways depending upon the specific circumstances faced by jurisdictions. For example, effective resource management is important for all jurisdictions but the manner in which it is applied may vary according to a range of factors including the level and number of stressed river systems within the jurisdiction. Also, some reforms may not be relevant for some jurisdictions. For example, the ACT does not have a rural water sector and hence these reforms are not required.

In the same way it conducted its second tranche assessments, in the lead up to the third tranche water assessment the Council will hold bilateral discussions on jurisdiction-specific matters and any differences in interpretations relevant to the implementation of the 1994 Strategic Framework. Any remaining concerns can be dealt with through bilateral discussions.

Further NCC Background Papers on Aspects of CoAG Water Reforms

In addition to the guidance on each reform commitment provided in this framework, the Council is separately releasing several additional background papers providing more detailed discussion on a number of issues covered by this framework.

These papers provide background information on the rationale underlying some of the Council's interpretations of the CoAG water reform commitments in a number of *hot spot* areas. However, these papers are provided as background material for reference by jurisdictions and interested parties. They do not form part of this assessment framework.

The Papers have been provided to the Commonwealth and all States and Territories and will be available shortly after the release of the third tranche assessment framework. Copies of the papers will be available from the water section of the Council's website at www.ncc.gov.au.

The papers are listed in Box A.1.

Box A.1: Background information papers on water reform commitments

- **Rural water pricing.** This paper covers full cost recovery in the rural sector including CSOs and positive rates of return.
- **New investment in rural water infrastructure.** This paper discusses a methodology to assess the economic viability and ecological sustainability of new investments in this area.
- **Institutional reform issues in the water industry.** This paper discusses why regulation is important and examines the potential for conflicts of interest between regulation and service provision and arrangements to deal with these.
- **Environmental requirements of the CoAG Water Reforms** (paper prepared with the assistance of Environment Australia). This paper outlines the national agreements on the environment that may be useful as a guide in reporting progress against the environmental requirements of the water framework.
- **Implementing the National Water Quality Management Strategy** (paper prepared by Environment Australia and the Department of Agriculture Fisheries and Forestry Australia in consultation with State and Territory government agencies). The Commonwealth, after consultation with States and Territories, has proposed that implementation of the guidelines should be assessed through a two yearly review process. This paper provides a list of the component modules of the National Water Quality Management Strategy (NWQMS) guidelines and their current status. The Council will be looking to jurisdictions to show how the guideline principles have been adopted in the third tranche and subsequent assessments.
- **Defining water property rights.** This paper will discuss the specification of water property rights so as to promote efficient and sustainable investment and trade.
- **Water reform and legislation review.** This paper will outline the status of legislation reviews of relevant water legislation for each jurisdiction based on a stocktake report conducted by Marsden Jacob consultants.

The 1994 CoAG Strategic Framework

Reform commitment: pricing and cost recovery

In relation to pricing:

3(a) in general –

(i) to the adoption of pricing regimes based on the principles of consumption-based pricing, full-cost recovery and desirably the removal of cross-subsides which are not consistent with efficient and effective service, use and provision. Where cross-subsides continue to exist, they be made transparent,

Queensland, South Australia and Tasmania endorsed these pricing principles but have concerns on the detail of the recommendations;

(ii) that where service deliverers are required to provide water services to classes of customer at less than full cost, the cost of this be fully disclosed and ideally be paid to the service deliverer as a community service obligation (CSO);

3(b) urban water services –

(i) to the adoption by no later than 1998 of charging arrangements for water services comprising an access or connection component together with an additional component or components to reflect usage where this is cost-effective;

(ii) that in order to assist jurisdictions to adopt the aforementioned pricing arrangements, an expert group, on which all jurisdictions are to be represented, report to CoAG at its first meeting in 1995 on asset valuation methods and cost-recovery definitions; and

(iii) that supplying organisations, where they are publicly owned, aiming to earn a real rate of return on the written-down replacement cost of their assets, commensurate with the equity arrangements of their public ownership;

3(c) metropolitan bulk-water suppliers –

(i) to charging on a volumetric basis to recover all costs and earn a positive real rate of return on the written-down replacement cost of their assets;

3(d) rural water supply –

- (i) that where charges do not currently fully cover the costs of supplying water to users, agree that charges and costs be progressively reviewed so that no later than 2001 they comply with the principle of full-cost recovery with any subsidies made transparent consistent with 3(a)(ii) above;
- (ii) to achieve positive real rates of return on the written-down replacement costs of assets in rural water supply by 2001, wherever practicable;
- (iii) that future investment in new schemes or extensions to existing schemes be undertaken only after appraisal indicates it is economically viable and ecologically sustainable;
- (iv) where trading in water could occur across State borders, that pricing and asset valuation arrangements be consistent;
- (v) where it is not currently the case, to the setting aside of funds for future asset refurbishment and/or upgrading of government-supplied water infrastructure; and
- (vi) in the case of the Murray-Darling Basin Commission, to the Murray-Darling Basin Ministerial Council putting in place arrangements so that, out of charges for water, funds for the future maintenance, refurbishment and/or upgrading of the headworks and other structures under the Commission's control be provided;

3(e) groundwater –

- (i) that management arrangements relating to groundwater be considered by Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) by early 1995 and advice from such consideration be provided to individual jurisdictions and the report be provided to CoAG;

NCC interpretation and benchmarks for third tranche

Consumption-based pricing (clauses 3(a), 3(b) and 3(c))

Governments have committed to the principle of consumption-based pricing. For urban water providers using surface or groundwater, two-part tariffs (comprising a fixed access component and a volumetric cost component) are to be introduced where cost effective.

Most governments have made progress against commitments for urban water providers to implement two-part tariffs where cost effective. Where the deadline was not achieved at the time of the second tranche assessment, the

Council in its third tranche assessment will look for substantial subsequent progress.

The third tranche assessment will look for assessments of the cost effectiveness of two-part tariffs, to be completed for service providers with greater than 1000 connections. Jurisdictions are asked to provide copies of any reviews which show that implementation is not cost effective, particularly where this involves large service providers.

Where these assessments show two-part tariffs to be cost effective, the Council is looking for jurisdictions to commit to timely implementation. A strong net public benefit justification will need to be provided where implementation is to be phased beyond 2001.

Metropolitan bulk water suppliers should establish internal and external charges that are volumetrically based or are comprised of a two-part tariff with an emphasis on the volumetric component. Metropolitan wastewater charges should reflect the level of services received (volume and pollutant load) where practicable (for example, through effective trade waste charges). Similarly, the Council supports rural water prices including an appropriate volumetric component wherever practicable.

Ideally, all free water allowances should be removed, as these can lead to cross-subsidisation, inhibit incentives for economical water use and undermine the principle of consumption-based pricing. In any instances where low level free water allowances are retained or are to be phased out over time, jurisdictions should provide evidence that a significant proportion of customers and water supplied still face a strong volumetric signal.

Charges based on property values do not necessarily reflect cost of services provided to different customer classes. Where property values are used the Council will look to ensure that they do not undermine the principle of consumption-based pricing.

Full cost recovery – in general (clauses 3(a)(i), 3(b)(iii) and 3(c)(i) 3(d)(i), 3(d)(ii), 3(d)(v) and 3(d)(vi))

Compliance with the CoAG pricing guidelines developed through the Standing Committee on Agriculture and Resource Management (SCARM) Taskforce on CoAG Water Reform and endorsed by ARMCANZ and Senior Officials (see Box A.2) will form the basis of the Council's assessment of progress against CoAG commitments in this area.

Jurisdictions are asked to provide information on the degree to which each aspect of the CoAG guidelines has been met. This should involve, among other things, information on methodologies for assets valuation and provision for asset consumption, as well as information on the treatment of taxes and tax-equivalent regimes (TERs), externalities, dividends and return on capital. Information should be provided on water and wastewater services separately.

Box A.2: Guidelines for the application of Section 3 of the Strategic Framework and Related Recommendations in Section 12 of the Expert Group

1. Prices will be set by the nominated jurisdictional regulators (or equivalent) who, in examining full cost recovery as an input to price determinations, should have regard to the principles set out below.
2. The deprival value methodology should be used for asset valuation unless a specific circumstance justifies another method.
3. An annuity approach should be used to determine the medium to long term cash requirements for asset replacement/refurbishment where it is desired that the service delivery capacity be maintained.
4. To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs [tax equivalent regime], provision for the cost of asset consumption and cost of capital, the latter being calculated using a WACC [weighted average cost of capital].
5. To be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement (as noted in (3) above). Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.
6. In applying (4) and (5) above, economic regulators (or equivalent) should determine the level of revenue for a water business based on efficient resource pricing and business costs. Specific circumstances may justify transition arrangements to that level.
7. In determining prices, transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, and tax equivalent regimes.

Source: NCC (1998)

Jurisdictions will need to demonstrate that urban and non-metropolitan urban (NMU) water and wastewater providers are recovering costs consistent with the agreed guidelines and CoAG commitments. For vertically integrated providers, processes should be in place to establish the contribution to total cost of major functional areas such as headworks, bulk water, reticulation and retail services.

In regard to rural water pricing¹, consistent with the outcomes of the 14 January 1999 tripartite meeting,² the Council will assess jurisdictions as having complied with the pricing requirements where jurisdictions:

¹ The Council has defined this to include all water supply services other than those supplied to urban or non-major customers.

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- have achieved full cost recovery;
 - have established a price path to achieve full cost recovery beyond 2001 with transitional CSOs made transparent; or
 - for schemes where full cost recovery is unlikely to be achieved in the long term, have made the CSO required to support the scheme transparent; and
 - have made cross-subsidies transparent.

In applying the outcomes of the tripartite meeting to rural water providers, the Council will look for a substantial proportion of schemes to be recovering at least the lower band of the agreed guidelines. Consistent with CoAG commitments, the Council will look for schemes to, wherever practicable, be earning a positive rate of return on assets.

As with its assessment of urban water providers, the Council will look for rural service providers to establish an annuity for upgrading or refurbishing water supply infrastructure but will also accept other approaches where consistent with the objectives of this aspect of the CoAG Framework.

The Council will look for a sound public benefit justification for those schemes that are unlikely to attain the lower bound even in the long run. The Council will also look for the number and materiality of these schemes to be small.

The CoAG water pricing principles call for regulators to take into account externalities in the setting of prices. The Council would consider a proxy for environmental externalities as the costs to water agencies of mitigating environmental problems. While the approach is not ideal, it is the best the Council can do at this stage of the reform process given the embryonic nature of mechanisms for addressing externalities including problems in trying to identify, quantify and attribute externality costs into individual prices.³

Cross-subsidies (clause 3(a)(i))

Clause 3(a)(i) of the CoAG Framework states that cross-subsidies should be transparently reported and ideally removed where they are not consistent

² In January 1999, a tripartite meeting was held between representatives from the NCC, the High Level Steering Group on Water Reform (augmented with representatives from ARMCANZ and ANZECC) and the Committee on Regulatory Reform to discuss concerns surrounding the implementation of the CoAG water reform framework. The recommendations arising from the meeting were subsequently endorsed by CoAG.

³ The reality is there will be environmental costs that will not be reflected in pricing. Of course, another way of approaching the problem is for governments to establish some form of property rights over the environment and establish environmental allocations or contingencies.

with efficient service provision and use. In response to the 14 January 1999 tripartite meeting, governments subsequently agreed that:

In making its assessment the NCC shall not seek to make its own assessment of the adequacy of the justification of any individual CSOs or cross-subsidies but jurisdictions will provide explanations of the intent of the CSOs and cross-subsidies and the NCC will examine how in totality they do not undermine the overall policy objectives of the strategic framework for the efficient and sustainable reform of the Australian water industry.

The Council's third tranche assessment will look for governments to demonstrate that they have identified and transparently reported the objectives and size of all cross-subsidies. Furthermore, where a cross-subsidy has efficiency or effectiveness implications that are sufficient to undermine the overall policy objectives of the CoAG Framework, the Council will look for jurisdictions to justify the rationale for the retention of the cross-subsidy. This information should include the objectives of the cross-subsidy and discussion of why these objectives could not be achieved more effectively by another means. The Council will also consider the mechanisms in place to ensure ongoing effective treatment of cross-subsidies in the future (for example, guidelines, independent regulation, future reviews).

An economic measure which looks at cross-subsidies outside of a Baumol band (which sets prices between incremental and stand alone cost), is consistent with the CoAG objective of achieving economically efficient water usage and investment outcomes. Thus, CoAG commitments do not preclude differential pricing within the bounds of incremental and standalone cost. However, where prices are below incremental cost, any shortfall in total revenue recovered through prices above standalone cost should be transparently reported. Further, where inconsistent with efficient and effective service provision and use, cross-subsidies should ideally be removed or replaced with a transparent CSO.

Community Service Obligations (clause 3(a)(ii))

Where service deliverers are required to provide water and wastewater services to classes of customers at less than full cost, this must be fully disclosed and, ideally, be paid to the service deliverer as a CSO.

As noted above, as a result of the January 1999 tripartite meeting, governments agreed that the Council would not make its own assessment of the appropriateness of any individual CSOs. However, it was also agreed that the Council would review information on CSOs provided by governments in totality to ensure that these CSOs do not undermine the objectives of the agreed water reform framework.

Thus, the third tranche assessment will look for governments to provide information on the size and objectives of CSOs provided by State and local government water businesses. In considering this information the Council

will look for State and local government CSOs to be provided via an effective framework for identifying, costing, funding, delivering and reporting CSOs. The Council will also look for evidence that the application of this framework is leading to CSOs that are clearly defined, have an explicit public benefit objective, are transparently reported and are consistent with the aims of CoAG pricing reforms.

New rural schemes (clause 3(d)(iii))

This provision commits jurisdictions to conducting robust, independent appraisal processes to determine *economic viability* and *ecological sustainability* prior to investing in new rural schemes, existing schemes and dam construction. Jurisdictions are to assess the impact on the environment of river systems before harvesting water. Legislative provisions, institutional arrangements as well as policies and procedures must be in place to ensure the economic viability and ecological sustainability of new investments in rural schemes prior to development.

In undertaking its third tranche assessment the Council will review developments since the second tranche assessment. This will include:

- revisiting matters raised for further consideration;
- review any changes to arrangements since July 1999; and
- ensuring that the viability and sustainability of any new projects has been established prior to their construction.

In considering the above matters the Council will look for assessment processes to provide for appropriate independence and public consultation and scrutiny. Arrangements should also be flexible enough to match the depth of analysis with the size and significance of the project. For large developments in particular, assessments should be based on the best information available with any assumptions and limitations clearly stated.

For assessments of economic viability the Council will look for all relevant economic, social and environmental costs and benefits to be factored into the analysis.⁴ For large developments the Council suggests that a robust cost benefit analysis is an effective way of meeting CoAG commitments.

For assessments of ecological sustainability the Council is interested in information on the nature of the assessment and decision making processes as well as mechanisms to monitor the impacts of the development and compliance with environmental standards.

⁴ Viability assessments should also discount cash flows using an appropriate rate such as a project specific weighted average cost of capital.

Reform commitment: institutional reform

In relation to institutional reform:

6(c) to the principle that, as far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision be separated institutionally;

(d) that this occur, where appropriate, as soon as practicable, but certainly no later than 1998;

(e) the need for water services to be delivered as efficiently as possible and that ARMCANZ, in conjunction with the Steering Committee on National Performance Monitoring of Government Trading Enterprises, further develop its comparisons of inter-agency performance, with service providers seeking to achieve international best practice;

(f) that the arrangements in respect of service delivery organisations in metropolitan areas in particular should have a commercial focus, and whether achieved by contracting out, corporatised entities or privatised bodies this be a matter for each jurisdiction to determine in the light of its own circumstances; and

(g) to the principle that constituents be given a greater degree of responsibility in the management of irrigation areas, for example, through operational responsibility being devolved to local bodies, subject to appropriate regulatory frameworks being established;

NCC interpretation and benchmarks for third tranche

Institutional role separation (clause 6(c), 6(d))

As far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision should be separated institutionally. The Council will look for jurisdictions, at a minimum, to separate service provision from regulation, water resource management and standard setting. Jurisdictions will need to demonstrate adequate separation of roles to minimise conflicts of interest.

The January 1999 tripartite meeting found that, while separate Ministers would be an acceptable form of separation, it is not the only acceptable form to demonstrate adequate separation of service provision from other roles to minimise conflicts of interest. If the regulator and service provider are responsible to the same Minister, the Council would require information about how the resulting potential conflict of interest has been effectively

addressed. The CPA gives implicit support to the desirability of independent regulators in its clause 2 provisions concerning independent prices oversight.

Performance monitoring and best practice (clause 6(e))

Jurisdictions have established national processes for inter-agency comparisons and benchmarking. Benchmarking systems have recently been put in place for the NMU and rural sectors while the Water Services Association of Australia reports annually on progress with major urban providers.

The Council views active participation in these initiatives as demonstrating compliance with this aspect of the reform framework. The Council recognises the first reports for the NMU and rural sectors are likely to be a rough cut in the initial years.

Commercial focus (clause 6(f))

Metropolitan service providers must have a commercial focus, whether achieved by contracting out, corporatisation, privatisation, etc, to maximise the efficiency of service delivery. The Council will look for appropriate structural and administrative responses to the CPA obligations, covering legislation review, competitive neutrality and structural reform.

Irrigation scheme management (clause 6(g))

Jurisdictions endorsed the principle that constituents be given a greater degree of responsibility for the management of irrigation areas citing, as an example, the potential devolution of operational responsibility subject to the establishment of an appropriate regulatory framework.

In conducting the third tranche assessment, the Council will look for all impediments to devolution to have been removed and local management arrangements identified in the second tranche assessment to have been implemented. The Council will also look for decisions to be made in regard to whether devolution of irrigation scheme management takes place and, if so, advice on when this will occur. Where reform has been undertaken, evidence should be provided demonstrating that an appropriate regulatory framework has been put in place.

Reform commitment: allocation and trading

In relation to water allocations or entitlements:

4(a) the State government members of the Council, would implement comprehensive systems of water allocations or entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality;

(b) where they have not already done so, States, would give priority to formally determining allocations or entitlements to water, including allocations for the environment as a legitimate user of water;

(c) in allocating water to the environment, member governments would have regard to the work undertaken by ARMCANZ and Australian and New Zealand Environment and Conservation Council (ANZECC) in this area;

(d) that the environmental requirements, wherever possible, will be determined on the best scientific information available and have regard to the inter-temporal and inter-spatial water needs required to maintain the health and viability of river systems and groundwater basins. In cases where river systems have been over-allocated, or are deemed to be stressed, arrangements will be instituted and substantial progress made by 1998 to provide a better balance in water resource use including appropriate allocations to the environment in order to enhance/restore the health river systems;

(e) in undertaking this work, jurisdictions would consider establishing environmental contingency allocations which provide for a review of the allocations five years after they have been determined; and

(f) where significant future irrigation activity or dam construction is contemplated, appropriate assessments would be undertaken to, inter alia, allow natural resource managers to satisfy themselves that the environmental requirements of the river systems would be adequately met before any harvesting of the water resource occurs;

In relation to trading in water allocation or entitlements:

5(a) that water be used to maximise its contribution to national income and welfare, within the social, physical and ecological constraints of catchments;

(b) where it is not already the case, that trading arrangements in water allocations or entitlements be instituted once the entitlement arrangements have been settled. This should occur no later than 1998;

(c) where cross-border trading is possible, that the trading arrangements be consistent and facilitate cross-border sales where this is socially, physically and ecologically sustainable; and

(d) that individual jurisdictions would develop, where they do not already exist, the necessary institutional arrangements, from a natural resource management perspective, to facilitate trade in water, with the provision that in the Murray-Darling Basin the Murray-Darling Basin Commission be satisfied as to the sustainability of transactions;

NCC interpretation and benchmarks for third tranche

Water allocation (clause 4(a))

Governments have agreed to establish comprehensive systems of water entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality.

The Tripartite meeting considered 'comprehensive' required:

...A 'comprehensive system' of establishing water allocations to be put in place which recognises both consumptive and environmental needs. The system is to be applicable to both surface and ground water. However, applications to individual water sources will be determined on a priority needs basis (as determined by an agreed jurisdiction-specific implementation program.)

The legislative and institutional framework to enable the determination of water entitlements and trading of those entitlements should be in place. The framework should also provide a better balance in water resource use including appropriate allocations to the environment as a legitimate user of water in order to enhance/restore river health. The Council will also look for appropriate treatment of overland flows.

Water Property Rights

The Council will look for evidence that jurisdictions have in place the necessary legislation, policy, administrative systems and institutional arrangements to implement comprehensive systems of entitlements backed by separation of property rights from land title and clear specification. These arrangements should set:

- the rights and responsibilities of the Crown, users and the environment;
- provide for consultation, community involvement and public education;
- provide a methodology for determining and reviewing a sustainable balance between competing uses (including the environment); and
- deal with intra and interstate consistency where necessary.

The Council is aware there have been some recent concerns by stakeholders concerning what constitutes a water property right for the purposes of the water framework. The Council notes the work done by ARMCANZ in the 1995 paper 'Water Allocations and Entitlements: A National Framework for the Implementation of Property Rights in Water', and by the High Level Steering Group on Water (HLSGW)⁵ in the 2000 paper 'National Approaches to Water Trading' which has recently been released for public consultation.

All jurisdictions have passed legislation to define water rights more clearly, separate water entitlements from land title and establish resource management and trading regimes to promote more efficient and sustainable water use. One of the outcomes of separating water rights from land title has been a perception by financial sector participants that these changes will lead to an increase in risk profiles and lending rates. The HLSGW report has concluded that this effect has the potential to undermine the benefits from the broader water reform agenda.

In reviewing the efficacy of arrangements established in legislation the Council will look for a system of property rights that strikes an effective balance between water users' need for security and the environments need for adaptive resource management. Water property rights regimes should maximise efficient water trade and investment subject to environmental needs.

Factors the Council is considering in relation to water property rights regimes include:

- water property rights should be well specified so as to promote efficient trade within the social, physical and ecological constraints of catchments;
- to achieve the above, property rights should be in demand, well specified in the long term sense, exclusive, enforceable and enforced, transferable and divisible and provide for sustainability and community needs;
- in establishing rights that are well specified in the long term sense there is a need to ensure water users get the highest possible level of security in regard to the nature of the property right, and absolute security on the issue of ownership;
- in relation to ownership, while a 'lease in perpetuity' maximises security, it is not required to meet minimum CoAG commitments;
- compensation may be payable, for instance, where reductions in reliabilities and other relevant parameters are capricious or disproportionate but this is not a CoAG requirement and is the purview of governments;

⁵ The High Level Steering Group on Water (HLSGW) is responsible for intergovernmental coordination of the water reform agenda.

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- Part IV of the Trade Practices Act could potentially be applied if the acquisition of water property rights results in a substantial lessening of competition;
 - the Council will be examining the efficacy of water property rights systems for the third tranche assessment;
 - water rights should be linked to a robust adaptive resource planning system; and
 - any constraints on water rights and trade should be based on a sound public benefit justification and be implemented in a way that minimises impacts on efficient trade.

Provision for the environment (clauses 4(b),4(c), 4(d),4(e), 4(f))

Jurisdictions must develop allocations for the environment in determining allocations of water and should have regard to the relevant work of ARMCANZ and ANZECC. The Council will be looking for progress in implementing jurisdictional programs to be consistent with the ARMCANZ and ANZECC *National Principles for the Provision of Water for Ecosystems* (ARMCANZ/ANZECC 1996).

Best available scientific information should be used and regard had to the inter-temporal and inter-spatial water needs of river systems and groundwater systems.

The CoAG Framework requires that where river systems are over allocated or deemed stressed, there must be substantial progress by 1998 towards the development of arrangements to provide a better balance in usage and allocations for the environment.

The tripartite meeting further clarified the requirements and timeframes:

For the second tranche, jurisdictions submitted individual implementation programs, outlining a priority list of river systems and/or groundwater resources, including all river systems which have been over-allocated, or are deemed to be stressed and detailed implementation actions and dates for allocations and trading to the NCC for agreement, and to Senior Officials for endorsement. This list is to be publicly available.

For the third tranche, States and Territories will have to demonstrate substantial progress in implementing their agreed and endorsed implementation programs. Progress must include at least allocation to the environment in all river systems which have been over-allocated, or are deemed to be stressed.

By 2005, allocations and trading must be substantially completed for all river systems and groundwater resources identified in the agreed and endorsed individual implementation programs.

The Council will therefore look to States and Territories to provide information demonstrating that they have:

- considered environmental contingency allocations, including the planning process (allocation, management, operation implementation, and use), monitoring and review mechanisms (the maximum timeframe allowed before review and identification of triggers prior to this time elapsing) after initial determination;
- established a sustainable balance between the environment and other uses, including formal water provisions for surface and groundwater consistent with the ARMCANZ and ANZECC national principles;
- determined and specified property rights, including the review of dormant rights;
- instituted a statewide process in setting environmental allocations, and when issuing new entitlements, have provided for environmental allocations; and
- progressed the implementation of the endorsed allocation programs as published in the Council's second tranche assessment, providing:
 - a report on which river systems (including stressed, and other overallocated systems) identified in the second tranche have fully delivered/ partially delivered/ not yet commenced allocations to the environment, as well as for river systems; and
 - a report on the status of identified stressed rivers which were not addressed in a jurisdiction's endorsed 'roll-out' plan.

The Council agreed to the implementation programs provided by jurisdictions in its second tranche assessment while noting the following relevant matters:

- The National Land and Water Resources Audit, funded under the National Heritage Trust, is currently being undertaken and will provide valuable information to jurisdictions and the Council as to any relevant systems not included in the programs or requiring a higher priority.
- The High Level Taskforce on Water Reform may, prior to the third tranche assessment, undertake to identify some relevant criteria for classifying stressed river systems. This process may result in a modification to implementation programs.
- The implementation programs, by their nature, may need to be amended depending on proposed new developments and other significant events. In particular, the ongoing assessment of unregulated subcatchments may

result in additional High Stressed Catchments being included in the timetable.

The Council therefore concluded that implementation programs may change over time, subject to agreement between the Council and a jurisdiction.

For the third tranche assessment, the Council is seeking information on progress against implementation programs which demonstrates the following outcomes.

1. Regard to the work of ARMCANZ and ANZECC

In their approaches to water planning, allocations and use, jurisdictions will have had regard to the twelve principles embodied in work of the ARMCANZ and ANZECC *National Principles for the Provision of Water for Ecosystems* (ARMCANZ and ANZECC 1996). These are provided in Box A.3.

Box A.3: ARMCANZ National Principles for the Provision of Water for Ecosystems

Principle 1 - river regulation and/or consumptive use should be recognised as potentially impacting on ecological values.

Principle 2 - provision of water for ecosystems should be on the basis of the best scientific information available on the water regimes necessary to sustain the ecological values of water dependent ecosystems.

Principle 3 - environmental water provisions should be legally recognised.

Principle 4 - in systems where there are existing users, provision of water for ecosystems should go as far as possible to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users.

Principle 5 - where environmental water requirements cannot be met due to existing uses, action (including reallocation) should be taken to meet environmental needs.

Principle 6 - further allocation of water for any use should only be on the basis that natural ecological processes and biodiversity are sustained (that is, ecological values are sustained).

Principle 7 - accountabilities in all aspects of management of environmental water should be transparent and clearly defined

Principle 8 - environmental water provisions should be responsive to monitoring and improvements in understanding of environmental water requirements.

Principle 9 - all water uses should be managed in a manner which recognises ecological values.

Principle 10 - appropriate demand management and water pricing strategies should be used to assist in sustaining ecological values of water resources.

Principle 11 - strategic and applied research to improve understanding of environmental water requirements is essential.

Principle 12 - all relevant environmental, social and economic stakeholders will be involved in water allocation planning and decision-making on environmental water provisions.

Source: (ARMCANZ and ANZECC 1996)

2. Stressed or over-allocated rivers or aquifers

Jurisdictions will need to show that they have achieved substantial progress in meeting the commitments with regard to stressed or over-allocated systems within the timelines provided in the implementation programs as published in the second tranche assessment.

The Tripartite meeting identified that '*significant progress*' is required for the third tranche assessment and was defined to include at least allocations to the environment in all river systems which have been over-allocated, or are deemed to be stressed. Jurisdictional programs in this area must be substantially complete by 2005.

The issue of environmental allocations in stressed or over-allocated systems will be carefully scrutinised by the Council in the third tranche assessment. Jurisdictions will need to demonstrate progress in setting allocations that are adequate to meet the environmental requirements of water sources and dependent ecosystems. Jurisdictions will also need to demonstrate that there are adequate monitoring and review arrangements in place, such that allocations are able to be revised should monitoring reveal current allocation arrangements are inadequate.

The Council accepts that some jurisdictions have only recently enacted legislation which provides for full recognition of the environment's right to a share of the water resource necessary to maintain ecological values. For third tranche compliance, the Council will expect that planning and implementation mechanisms are substantially in place such that allocations to the environment can be implemented as per a jurisdiction's timetable.

In the second tranche assessment, the Council noted that implementation programs may change over time, provided there is agreement between a jurisdiction and the Council.

3. Systems not defined as stressed or over-allocated

Jurisdictions will need to demonstrate both the capacity and intention to formally provide and use scientifically based environmental allocations for all water dependent ecosystems (as defined in the ARMCANZ and ANZECC principles), thus recognising the environment as a legitimate user of water.

The Council considers that, for all rivers and aquifers not presently declared over-allocated or hydrologically stressed, there should be no impediment to developing a formal allocation for the environment if required. The Council will therefore look for evidence in future assessments that jurisdictions have forward looking mechanisms in place and operating effectively for adaptive natural resource management.

In short, the Council seeks evidence of progress for the third tranche and subsequent assessments to ensure that allocations and trading will be substantially completed for all river systems and groundwater resources by 2005 as identified in the agreed and endorse individual implementation programs.

4. *Review of allocations*

While jurisdictions may have used the best available scientific information to determine initial allocation decisions, they will also need to demonstrate that they have not locked in allocations which over time and in the light of better information, could be seen as being inadequate to meet environmental water requirements.

The Council expects jurisdictions to have in place a clear pathway for review of allocations within the timeframe called for in the CoAG Framework.

Water trading (clause 5)

The objective of water trading is to ensure water is used to maximise its contribution to national income and welfare, subject to the physical, social and ecological constraints of catchments. The CoAG Framework originally looked for trading arrangements in water entitlements to be instituted once the entitlement arrangements have been settled and that this should occur no later than 1998.

Jurisdictions should establish a framework of trading rules, including developing necessary institutional arrangements from a natural resource management perspective to eliminate conflicts of interest, and remove impediments to trade. The Council will consider the adequacy of trading rules to ensure that the scope for efficient trade is maximised. Where restrictions on trade exist, information should be provided on the physical, social or ecological reasons for the restrictions.

The Council will be looking for impediments to trade to be addressed and the further development of interstate trade in water. For the third tranche assessment, the Council is looking for States and Territories to:

- provide information on developments since the second tranche assessment including current trading rules, the legislative and institutional arrangements, as well as the value, volume, location and nature (for example, permanent versus temporary trades, transfers from lower to higher value uses) of inter and intrastate trades;
- Where cross-border trade is possible, trading arrangements must be consistent between jurisdictions and facilitate trade. Where trading across State borders can occur, relevant jurisdictions must review pricing and asset valuation policies to determine whether there is any substantial distortion to interstate trade. Jurisdictions should develop proposals for further extending interstate trading in water, given the framework requirement for cross border trade to be as widespread as possible (for example, the second tranche assessment calls for interstate trade between: New South Wales and Queensland as a priority; the ACT and New South Wales; and Western Australia and the Northern Territory for the Ord system); and

- demonstrate that, where restrictions remain, the benefits of the restriction outweighs the costs (for example, show that mechanisms in place for water trading do not adversely impact on river health where surface waters are traded, or in the case of groundwater, do not result in demands on aquifers that are ecologically unsustainable).

Reform commitment: environment and water quality

In relation to institutional reform:

6(a) that where they have not already done so, governments would develop administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management;

(b) to the adoption, where this is not already practiced, of an integrated catchment management approach to water resource management and set in place arrangements to consult with the representatives of local government and the wider community in individual catchments;

In relation to the environment:

8(a) that ARMCANZ, ANZECC and the Ministerial Council for Planning, Housing and Local government examine the management and ramifications of making greater use of wastewater in urban areas and strategies for handling stormwater, including its use, and report to the first Council of Australian Governments' meeting in 1995 on progress;

(b) to support ARMCANZ and ANZECC in their development of the National Water Quality Management Strategy, through the adoption of a package of market-based and regulatory measures, including the establishment of appropriate water quality monitoring and catchment management policies and community consultation and awareness;

(c) to support consideration being given to establishment of landcare practices that protect areas of river which have a high environmental value or are sensitive for other reasons; and

(d) to request ARMCANZ and ANZECC, in their development of the National Water Quality Management Strategy, to undertake an early review of current approaches to town wastewater and sewage disposal to sensitive environments, noting that action is underway to reduce accessions to water courses from key centres on the Darling River system. (It was noted that the National Water Quality Management Strategy is yet to be finalised and endorsed by governments.);

NCC interpretation and benchmarks for third tranche

Integrated resource management (clause 6(a), 6(b) 8(b), and 8(c))

Jurisdictions should have in place integrated resource management practices, including:

- demonstrated administrative arrangements and decision making processes to ensure an integrated approach to natural resource management and integrated catchment management;
- an integrated catchment management approach to water resource management including consultation with local government and the wider community in individual catchments; and
- consideration of landcare practices to protect rivers with high environmental values.

The Council will examine the programs established by jurisdictions to improve approaches for integrated resource management. Programs should desirably address such areas as government agency coordination, community involvement, coordinated natural resource planning, legislation framework, information and monitoring systems, linkages to urban and development planning, support to natural resource management programs and landcare practices contributing to protection of rivers of high environmental value.

Integrated catchment management

It is important that jurisdictions demonstrate that the catchment management planning process is free from domination by narrow sectoral interests to ensure decisions reflect the balance of interests within the wider community. Genuine stakeholder participation in catchment planning requires agreement to the principles underpinning the plan such as cost sharing arrangements, acceptable basin impacts, and allowable tradeoffs amongst water users. Appropriate institutional arrangements should ideally have a statutory underpinning.

The Council is aware that there has been little guidance developed to date to address issues of integrated catchment management. The Council notes the House of Representatives Standing Committee on Environment and Heritage is conducting an inquiry into catchment management practices in Queensland, New South Wales, South Australia, Western Australia, ACT and Victoria, and is expected to report its findings shortly.

The Council proposes to review the process followed by each jurisdiction to ensure effective implementation of catchment management practices. Further, the Council will also take account of any reviews by jurisdictions in this area and whether the findings of these reviews are being implemented.

Information provided by jurisdictions could include:

- a description of the overall coordinating body including its composition and functions relating to natural resource management and links to regional/local government bodies;
- a description of the process whereby catchment management bodies (trusts, committees, councils, or groups) are formed including how the local community, local government, and state agencies are involved;
- a description of the statutory basis of catchment management plans/strategies and capacity and mechanisms to enforce actions identified in the plan;
- a description of the framework used to assist catchment managers to evaluate/review the effectiveness of a catchment management process; and
- a description of landcare practices (including extent of coverage) that protect areas of river which have a high environmental value.

National Water Quality Management Strategy (clauses 8(b) and 8(d))

The National Water Quality Management Strategy (NWQMS) aims to deliver a nationally consistent approach to water quality management. It is being developed in response to growing community concern about the condition of the nation's water. The policy objective is *'to achieve sustainable use of the nation's water resources by protecting and enhancing their quality while maintaining economic and social development.'*

The Council is proposing to take the following approach for the third tranche assessment.

- Each jurisdiction should be able to demonstrate a high level of political commitment and a jurisdictional response to ongoing implementation of the principles contained in the NWQMS guidelines, including to achieving the policy objectives. Such commitment should include the development of practical on-the-ground action, which might involve the use of legislation, policy instruments, programs or plans. These should contain provisions which are consistent with the guidelines, and scope for review.
- Each jurisdiction should have a publicly stated commitment to implementing the principles identified in the Strategy and have implemented an approach for adopting the scientific framework outlined in the *Australian Water Quality Guidelines for Fresh and Marine Waters* (ANZECC 1992). There should be an appropriate statewide approach to water quality management.
- Each jurisdiction should have in place a water reform program that integrates water quality and quantity management requirements in their

approaches to land-use planning. In relation to water quality, this program should target the attainment of the ambient environmental quality objectives set in consultation with the community.

- All relevant legislative, regulatory and policy measures to protect water quality should, where practicable, be consistent with the *Implementation Guidelines for the NWQMS* (ARMCANZ and ANZECC 1998). In particular, they should include measures to promote:
 - integrated resource management;
 - identification of environmental values and associated water quality objectives; and
 - catchment, coastal and groundwater management planning.

Each jurisdiction should be able to demonstrate use of the relevant national guidelines. Where necessary, jurisdictions should have produced local guidelines or codes of practice consistent with the national guidelines so far completed for those industries covered under the NWQMS. The national guidelines seek adoption of local guidelines to underpin the regulation of each of the activities covered.

The strategy for the achievement of sustainable water quality management should build on a full mix of approaches including, but not limited to, regulatory and market based approaches, education and guidance. This is supported by CoAG. Market-based approaches should play a complementary role in achieving protection and enhancement of water quality where appropriate.

Where modules have been finalised, jurisdictions must have finalised their approach and initiated market-based and regulatory activities and measures such as water quality monitoring, catchment management policies, town wastewater and sewerage disposal and community consultation and awareness to give effect to the NWQMS.

Jurisdictions should support ANZECC and ARMCANZ in the development of the remaining modules of the NWQMS.

Reform commitment: public consultation and education

In relation to consultation and public education:

- 7(a) to the principle of public consultation by government agencies and service deliverers where change and/or new initiatives are contemplated involving water resources;

(b) that where public consultation processes are not already in train in relation to recommendations (3)(b), (3)(d), (4) and (5) in particular, such processes will be embarked upon;

(c) that jurisdictions individually and jointly develop public education programs in relation to water use and the need for, and benefits from, reform;

(d) that responsible water agencies work with education authorities to develop a more extensive range of resource materials on water resources for use in schools; and

(e) that water agencies should develop individually and jointly public education programs illustrating the cause and effect relationship between infrastructure performance, standards of service and related costs, with a view to promoting levels of service that represent the best value for money to the community;

NCC interpretation and benchmarks for third tranche

Consultation prior to change (clauses 7(a) and 7(b))

Jurisdictions must have consulted on the significant CoAG reforms (especially water pricing and cost recovery for urban and rural services, water allocations and trade in water entitlements). The Council will examine the extent and the methods of public consultation, with particular regard to pricing, allocations and water trading.

Public education programs (clauses 7(c), 7(d) and 7(e))

Education programs related to the need for and benefits of reform should be developed. Evidence should also be provided of agencies working individually and jointly to develop public education programs that illustrate the need for reform, and general awareness of water related issues. This could include the relationship between infrastructure performance, standards of service and related costs. These programs should promote levels of service that represent the best value for money to the community.

The Council will look for evidence that responsible agencies are working with education authorities to develop a more extensive range of resource materials for use in schools.

The Council noted in the second tranche assessment that there is a potential conflict in the service provider being responsible for determining the level of ongoing public education on water conservation when it has a financial

interest in increased water consumption. The Council is interested in information on measures used by jurisdictions (for example, an effective purchaser provider split) to address this issue, including programs offered by service providers as 'good corporate citizens'.

Reviewing and reforming water legislation: the CPA commitment

As well as implementing the CoAG Framework, governments agreed to ensure the water industry is subject to clause 5 of the CPA. This commits governments to ensuring that legislation does not restrict competition unless the benefits of the restriction to the community as a whole outweigh the costs and the objectives of the legislation can only be achieved by restricting competition.

Legislative reform was important for meeting a number of second tranche water reform commitments in relation to, for example, water allocations and trading, institutional separation and resource management. Until recently a key third tranche issue was the risk that jurisdictions may not have implemented amendments to legislation by the year 2000 deadline, in line with the CPA legislation review commitments.

However, in November 2000 CoAG agreed that the 2000 deadline for the full completion of all jurisdictions' legislation review programs should be extended to 30 June 2002. Accordingly, the Council will continue to monitor progress and look for full implementation by 30 June 2002, with a robust public interest justification provided for any delays beyond this date.

For the third tranche, the Council is looking for jurisdictions to provide a status report on reviews of water legislation including whether a piece of legislation has been repealed by passage of new legislation. Where a government chooses to continue a restriction on competition, or not to apply recommended reforms, the Council will require evidence in the annual report of the public interest justification or why non-implementation benefits the community.

Appendix B: Water trading

Governments have agreed that water trading arrangements should be in place to so as to maximise water's contribution to national income and welfare, within the social, physical and ecological constraints of catchments.

Consistent with commitments under Clause 5 of the CoAG framework, the objective of water trading is to ensure water is used to maximise its contribution to national income and welfare, subject to the physical, social and ecological constraints of catchments. The Council's view is that, as far as possible, water rights regimes should facilitate trading that maximises the value of the resource with any restriction on trade being transparent and based on a sound public benefit.

In assessing compliance with Clause 5 of CoAG framework, the Council has looked for the following matters to be given due consideration:

- a clear definition of sustainable water rights; (ie what is being traded)
- clear water trading zones and rules; (ie where and how trade can occur)
- robust markets and trading procedures; (clearance and facilitating trade)
- a number of market choices;
- accessible and equitable market information;
- certainty, confidence and timeliness; and
- capital efficiency.

This approach is consistent with the High Level Steering Group on Water report 'A National Approach to Water Trading' (2000).

In making its assessment the Council recognises that the means through which each of the above issues are addressed will vary from jurisdiction to jurisdiction. That said, as trading in most jurisdictions is still in its infancy, the assessment has focussed on the establishment of mechanisms, policies and information that provide a sound foundation for efficient water trading. Particular focus in this assessment has therefore been extended to:

- the clear definition of property rights;
- adequate specification of appropriate trading rules and zones;
- appropriate market procedures; and

- accessible and equitable market information.

In future assessments, the Council will look for evidence of effective trade in areas of demand and measures to be in place to increase the depth of water trading markets.

Definition of water entitlements

Well-defined property rights are essential for efficient water trade. Efficient trade in water rights requires that market participants are able to form a reasonable expectation about the magnitude and distribution of the benefits likely to be provided by the water right and the likelihood that those benefits will be realised. That is, water rights must be well defined in terms of both:

- *the nature of the right* – the benefits promised by holding the water right; and
- *ownership* – the right holders ability to realise those benefits.

In addition, transitional mechanisms that allow for the movement to a system of sustainable property rights should be open and transparent so that potential market participants understand the impact upon their water rights.

Discussion on the definition of water entitlements has been given in the allocations section. Therefore, the focus in this chapter will be solely upon the impact of these issues on the efficacy of inter- and intra- state trading markets.

Nature of the right

Efficient water trade, consistent with the clause 5 objective of maximising water's contribution to national income, requires that buyers and sellers have a clear understanding of exactly what they are trading. This includes clear specification of the volume, ownership, reliability and, if appropriate, quality of the water provided by the right over time. Poorly defined rights increase the risks associated with holding a water right, which is likely to discourage beneficial trade and investment that would have otherwise occurred.

Ownership

Uncertainty about the individual right holder's security of tenure can impede efficient trade and investment. Rights covering only a short time or which have significant risk of uncompensated reductions in the share of the available resource provided for the duration of the water right mean that water users are more uncertain about whether they will have access to the water in the future. This can be a significant issue, particularly when considering major investments in assets with long lives with little or no resale value. Key issues in ensuring that water rights' security of ownership of

water rights is maximised include the duration of the right, ensuring that the right is enforced, the quality of the title and establishing rights that are transferable and divisible.

Water trading zones and rules (where and how people can trade)

Efficient and effective trading requires clearly defined trading zones and rules. Uncertainty about where and under what conditions trading can take place can discourage mutually beneficial trades. Where trading rules and zones are used to pursue environmental or community objectives, this should be done in a way that minimises the impact on efficient trade.

Markets and trading procedures

As noted by the High Level Steering Group on Water's Report, any financial transaction involves risk to the participants (including payment to the seller and delivery to the buyer). However, water trade involves an important set of additional risks relating to environmental impacts and third party effects. If water trading is to maximise water's contribution to national income and welfare, transparent and efficient clearance procedures must be in place to address risks to both market participants and third parties.

Where precautionary measures are put in place, it is important to:

- separate legitimate from illegitimate reasons for restricting trade;
- recognise that social impacts should not be ignored but should be addressed in their own right;
- examine and improve the efficacy and efficiency of legitimate restrictions; and
- balance the need for appropriate protection for buyers, sellers and third parties, generally through buyer and seller checks, with the need for timely processing of trade applications.

Ideally, sufficient information should be provided to allow potential buyers and sellers to shop around and compare water prices, transaction fees and services offered by water brokers and water exchanges.

Market choices

The HLSGW Report notes that it is important for potential market participants to have a wide choice in the manner in which their trade is conducted. There are three main mechanisms for trade:

- Private trade;
- Water brokers; and
- Water exchanges.

While it is not essential to have all of these options available for all trades, a variety of mechanisms for trade will only benefit trading markets. A variety of trading mechanisms usually results in the wider public availability of information regarding trading mechanisms, availability and price and encourages participation in the market as buyers and sellers can make a reasonable estimate of the value of their water. As well as providing a mechanism for trade, a water exchange is one way in which market information can be provided effectively. Evidence suggests that these exchanges also facilitate trade by providing a price-setting function for private sales in the region

Market information

Water trading will only maximise the resources contribution to income and welfare when actual and potential market participants have enough and equal information to make and informed decision about a particular trade. As noted by the HLSGW Report an effective market depends on buyers and sellers having access to timely and relevant quality information on the key questions of:

- what is being traded;
- where can water be traded to and from;
- how trades can be executed;
- what are the procedures; and
- what are the risks and can these be managed.

The Report also notes the value of water exchanges as a forum for the dissemination of market information and price information. Evidence suggests that exchanges also serve a price setting function for private sales.

Certainty, confidence and timeliness

It is important for potential market participants to fully understand the risks involved with participation in the market and that these risks be minimised. As such, the High Level Steering Group on Water report notes that:

Governments should ensure that trading is as open and transparent as possible and should seek to minimise any artificial impediments to trade.

Market transparency could be accomplished through easily available market information and information on trading rules, practices and procedures. This would include clear specification of water property rights, especially in terms of the nature of the right and ownership. Governments should work to remove any impediments to effective trade, and ensure that remaining impediments are based on sound public benefit and be the least distortionary means possible.

Capital efficiency

Improved capital efficiency of water entitlements and property rights is a key outcome of the better specification of property rights and the development of trading markets. Water entitlements are valuable capital assets, and in many areas, are more valuable than the land they used on. A water user with a water entitlement of 5000ML could potentially own a resource with a value in excess of \$5million.

As such, water users need flexibility in the methods of managing water as a capital asset. These methods may include:

- Mortgage security;
- Leased for one or many years in the same manner as vehicles and equipment, rather than purchased outright;
- Sold to a financier and leased back; and
- Subject to conditional sale, purchase or lease contracts and other forms of options.

It should be noted that mechanisms to improve capital efficiency as described, particularly the latter two, are generally found only in developed, or mature, markets. As water markets are generally still in their infancy, the Council will not be requiring a specific suite of these mechanisms in its third tranche assessment. Instead, the Council has looked for the appropriate basis to exist for the development of these options, and consideration by Governments of how markets may be improved in future assessments.

Appendix C: List of submissions

Australian Conservation Foundation

Mr Jon Neville

World Wide Fund for Nature

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