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

NEW SOUTH WALES WATER REFORM

June 2001

NATIONAL COMPETITION COUNCIL

ISBN 0-9578892-1-6

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An appropriate citation for this paper is:

National Competition Council 2001, *Assessment of Governments' Progress in Implementing the National Competition Policy and Related Reforms: New South Wales, June 2001*, AusInfo, Canberra.

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.

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Abbreviations

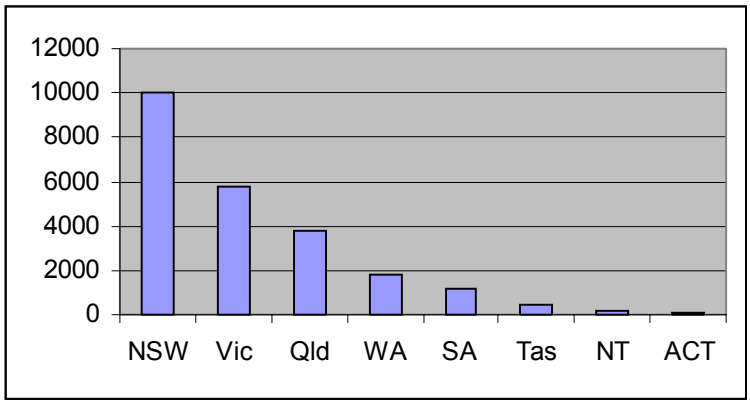
ANCID	Australian National Committee on Irrigation and Drainage
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
CoAG	Council of Australian Governments
CSO	Community Service Obligation
DLWC	Department of Land and Water Conservation
HLSGW	High Level Steering Group on Water
HRC	Healthy Rivers Commission
HWC	Hunter Water Corporation
IPART	Independent Pricing and Regulatory Tribunal
MDBC	Murray-Darling Basin Commission
NCC	National Competition Council
NCP	National Competition Policy
NLWRA	National Land and Water Resources Audit
NWQMS	National Water Quality Management Strategy
REP	Regional Environment Plan
SWC	Sydney Water Corporation
WSAA	Water Services Association of Australia
WSP	Water Sharing Plans

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.

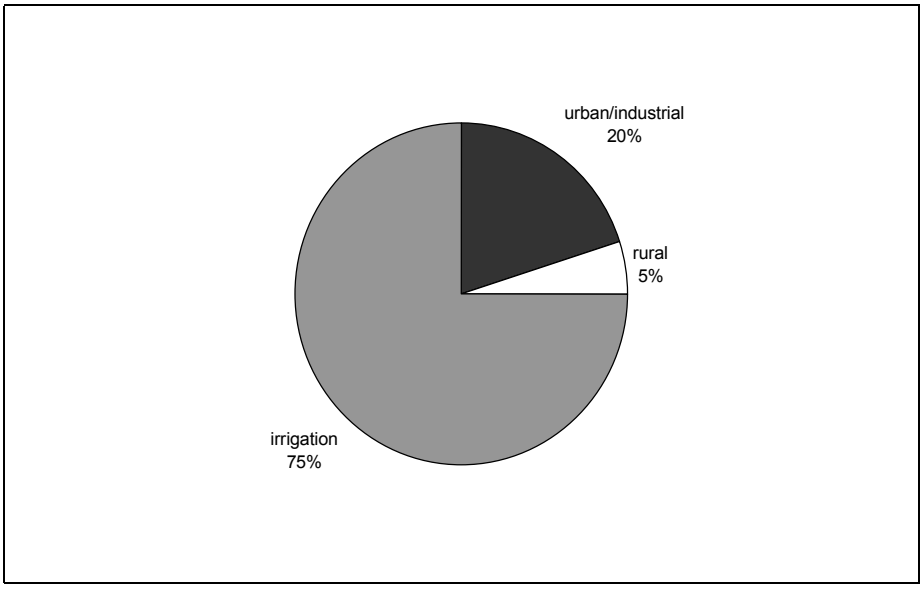
- Regional planning processes on natural resource management issues have started in all States and Territories and communities are heavily involved in consultation on these processes.

- 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.

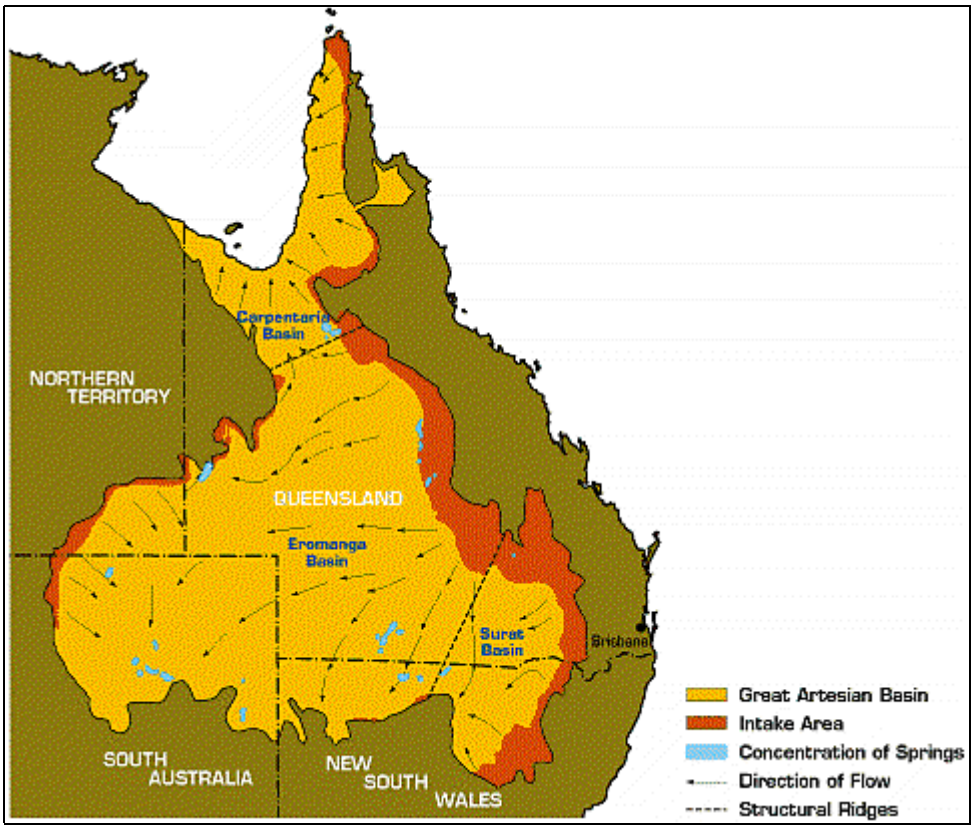
Managing groundwater basins cooperatively

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.

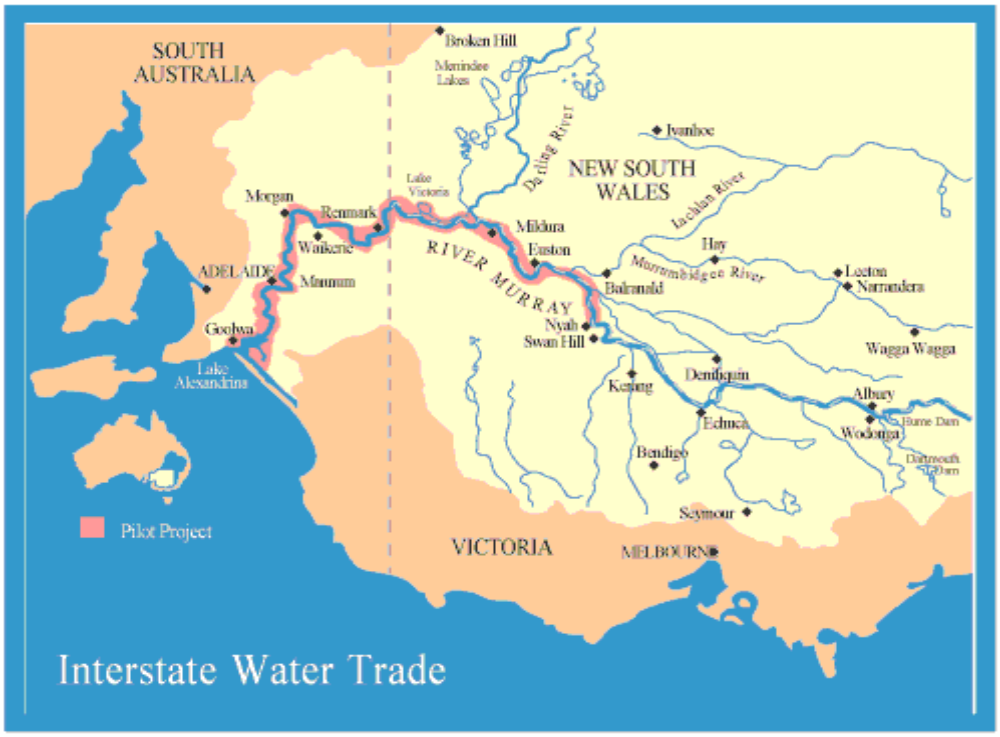
This Great Artesian Basin Strategic Management Plan is expected to be implemented over the next 15 years at a cost of $286 million.

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 gigalites) 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.

New South Wales

New South Wales is the largest water user in Australia. Around 90 per cent of the State's water use is sourced from surface water resources with the balance from ground water. New South Wales also has stressed river systems; the most of any State and Territory.

There are four major metropolitan service providers in New South Wales - Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Council. The Sydney Catchment Authority provides bulk water to Sydney Water.

State Water, a ring-fenced commercial business entity within the Department of Land and Water Conservation provides bulk water to irrigators, riparian users, local governments and industrial customers. State Water is also responsible for managing infrastructure assets including 18 major dams and 300 weirs. Further, it provides river operations, and metering and billing services. Another division of the Department of Land and Water Conservation undertakes water resource management. All irrigation districts and areas are privatised companies in New South Wales.

There are a number of regulatory agencies. The New South Wales Environmental Protection Authority has regulatory functions as regards pollution and licensing of discharges. The Independent Pricing and Regulatory Tribunal (IPART) regulates pricing. The Department of Land and Water Conservation provides water licensing, permits and regulation. The Healthy Rivers Commission provides independent advice on water quality and river flow objectives for critical coastal catchments.

Water and wastewater services to non-metropolitan urban areas, such as country towns and regional centres, are a local government responsibility. There are 124 non-metropolitan urban water utilities in New South Wales.

Progress on reforms

Pricing and cost recovery

Urban water services

All four major urban water providers achieve levels of cost recovery consistent with the agreed CoAG water pricing guidelines. However, neither Gosford nor Wyong have made provisions for recovering tax or tax equivalents as recommended by the guidelines. The Council is concerned that no progress has been made on this matter over the last two years, and will look for progress in the 2002 NCP assessment.

Consumption-based pricing is also being introduced by the major urban water service providers in New South Wales.

The rate of return earned by the Sydney Catchment Authority in 1999-2000 is significantly above that earned by the State's major retail and distribution services and is very high compared with all other large metropolitan service providers. The Council will continue to monitor this issue.

In regard to accounting for externalities such as environmental impacts, the Council notes that the potential for a catchment management levy was considered in the 2000 Sydney Catchment Authority price determination. IPART determined in the 2000 determination that a catchment management charge was not appropriate at this stage. The Council expects this matter to be reassessed in the future as the arrangements for pricing and costing water services are refined.

In the non-metropolitan urban sector, most of the service providers with greater than 1000 connections are earning a positive real rate of return. The Council will look for continued progress in the non-metropolitan urban sector in relation to the recovery of tax equivalents and improved approaches to accounting for asset consumption and the cost of externalities.

There has been continued progress on pricing, particularly in relation to the elimination of free water allowances by the urban providers. Cross-subsidies are being reduced by location specific pricing and developer charges. The Council will look for further progress by these providers in the 2002 NCP assessment; in particular phasing out charges based on property values.

In progressing consumption-based water pricing among non-metropolitan urban service providers, New South Wales has adopted a targeted approach with priority given to the areas where the State expects reforms to result in the greatest gain. The Council has concerns that Tweed Shire, one of the State's largest non-metropolitan urban service providers, has not conducted a

robust assessment of the cost effectiveness of two-part tariffs. However, given the information provided by New South Wales indicates that Tweed Shire has been improving its pricing arrangements, and a commitment by New South Wales that if local governments do not voluntarily commit to reviewing two-part tariffs the government will ensure the reform commitments are met, the Council will reconsider this issue in the 2002 assessment. In future assessments, the Council will look for progress to be extended to the smaller service providers. Thus, future assessments will look at remaining property value based charges and free water allowances and the potential for these to result in cross-subsidies. It will also review trade waste charging regimes among the non-metropolitan urban service providers.

Rural water services

As with rural water services in most States, past bulk water charges in New South Wales have been heavily subsidised and have not recovered the costs associated with service provision and water use. IPART has made price determinations since 1996. While State Water has gradually improved both its level of cost recovery and the structure of its charges, at the time of the 2000 price determination most systems were not forecast to be recovering full cost by July 2001. The Department of Land and Water Conservation's submission to IPART's next price determination proposes prices for the three years to 2003-04. The submission indicates that current prices recover 54 per cent of costs attributable to customers and that the proposed price paths will result in this figure increasing to 82 per cent by 2003-04.

Two-part tariffs have been, or are being, introduced for bulk water services provided by State Water. The Council does not have sufficient information to assess the transparency of reporting CSOs in the rural water sector. This is an issue that it will consider in the 2002 NCP assessment.

The Council is satisfied that, for the 2001 NCP assessment, New South Wales has complied with water pricing and cost recovery commitments in the urban and non-metropolitan urban water sectors. However in the rural water sector, New South Wales has not formally met its commitment to provide a timetable for when the water schemes will reach full cost recovery. Nonetheless, the price determinations by the IPART provide a rigorous assessment of the extent of cost recovery and a mechanism for moving to full cost recovery in the future. The Council will reassess New South Wales's progress towards cost recovery objectives in the 2002 NCP assessment.

Institutional reform

The *Water Management Act 2000* has played a key role in setting up the broader institutional framework for managing water resources in New South Wales.

Since the second tranche NCP assessment there has been some progress in reforming institutional structures for local government non-metropolitan urban water service providers. Currently, for example, there is an independent complaint mechanism through the State Ombudsman. Also there is reporting of standards in New South Wales's (publicly available) benchmarking report.

For non-metropolitan urban water service providers there are still outstanding issues relating to the standards for water service and water quality. To provide an appropriate level of transparency the Council considers that New South Wales needs some mechanism to inform water and wastewater customers of their rights and obligations. The Council will pursue this matter with New South Wales prior to the 2002 NCP assessment.

In regard to the rural bulk water sector, there is a question about whether there is sufficient separation between State Water and the Department of Land and Water Conservation. The Council has in the past suggested that a greater degree of separation may be necessary. More recently, IPART suggested several measures to ensure that State Water is adequately separated from the Department of Land and Water Conservation (IPART 2000).

New South Wales argued that State Water's operating licence, statement of corporate intent and access licence will improve transparency and the level of separation from the Department of Land and Water Conservation. These instruments are still being finalised. Thus, the Council was unable to consider them as part of this assessment. The Council will monitor this issue in the 2002 NCP assessment.

While there has been a small reduction in the number of State water service providers involved in benchmarking projects, New South Wales is still benchmarking water utilities against each other. In future assessments the Council will continue to monitor the involvement of New South Wales service providers in national benchmarking projects.

New South Wales has a high level of devolution of local irrigation management. The last of the New South Wales irrigation schemes was converted to local ownership in June 2000.

The Council is satisfied that New South Wales has complied with institutional reform commitments for this assessment

Allocation

The New South Wales water allocation process is implemented through the development of water management plans that deal with water sharing (known as water sharing plans) for catchments and basins. Water sharing plans are designed to establish environmental flows, water allocations and the conditions under which trading can take place.

The *Water Management Act 2000* clearly defines the types of rights by specifying several categories. It specifies that the rights will provide the holder with a share of the water declared available for consumption. Under the Act, the environment has first priority, followed by holders of basic landholder rights and then all other consumptive water uses. All water users (excluding basic landholder rights which include native title rights) must be licensed. The new licensing and approvals provisions are not expected to commence until mid to late 2002.

The Council has reviewed the efficacy of property rights under the New South Wales system and has identified questions concerning some aspects of water allocations, water property rights and trading. In particular, it is difficult to be certain of property rights and ownership, due to the staged nature of implementation of property rights. New South Wales argued that by focusing on the high priority water sources, 80% of licensed water use could be given a more clear and secure water right by mid to late 2002.

Under the *Water Management Act 2000*, New South Wales expects to develop bulk access regimes on the priority water sources, including appropriate environmental flows by December 2001. These will be released as 51 water sharing plans.

Water sharing plans will determine how much water will be available for extraction by licensed water users. They will cover environmental water provisions, requirements for basic landholder water rights and various rules on operation and transfers. The plans will have effect for 10 years and are subject to compensation provisions with review and audit provisions. While it is important for bulk access regimes to be established without delay, they must also be done thoroughly. In particular, it is important to ensure that the basis for determining environmental flows for the regulated systems are set properly given they will be statutory plans in place for 10 years.

New South Wales argued that the security of ownership of property rights will be addressed in a registry system, which records the nature of the right and the share of the available water to which the licensee is entitled. New South Wales is developing a registry system database to be in place by December 2002, with an interim system established by June 2002.

The Water Management Act links the right into the water planning process. It is the combination of the water access licence including its share component and its reliability (to be determined in water sharing plans) that will provide for effective property rights.

The Council has found that the New South Wales system of water property rights does not meet the requirements for this assessment. New South Wales irrigators will not know the water sharing rules until December 2001, although they know what their likely volumetric licence entitlement will be, and administrative systems will not be in place until June 2002.

This, combined with a lack of detail on the registry and a number of transitional issues that are concerning stakeholders means that the Council

considers there is insufficient information to determine that New South Wales's system of water property rights meets the requirements for this assessment. In accordance with the CoAG agreements and recommendations of the tripartite meeting, this should have been in place at least on stressed and overallocated rivers for this assessment. However, during the course of this assessment, New South Wales has provided a property rights action plan. The Council is of the view that this property rights action plan should provide a sufficient level of surety and that the issues identified are likely to be transitional concerns only.

Therefore, the Council intends to conduct a number of further assessments for New South Wales on this issue. First, the Council will conduct a supplementary assessment in December 2001 in accordance with the New South Wales property rights plan to consider the outcomes from public consultation on this issue including the ability of third party interests listed on the register to have priority over non-registered interests. New South Wales has advised that, at a minimum, the register will provide information on ownership of property rights and on third party interests. It is the Council's view that the introduction of a registry system that provides evidence of ownership and third party interests, and priority accorded to registered third party interests over non-registered interests should be able to be accommodated. In the supplementary assessment, the Council will look at how public consultation was managed and how New South Wales has responded to the issues raised in this consultation. Second, progress against the property rights timetable including development of the interim register will be a key area for the 2002 NCP assessment.

The Council considered suspending part of New South Wales's NCP payments for 2001-02 in this assessment, given the importance of property rights and the delays to date by New South Wales in finalising arrangements. However, the timetable provided by New South Wales and the detail on how property rights are expected to unfold, including consultation on the registry, have given the Council confidence that New South Wales intends to give these issues high priority and deal with them constructively. Hence, the Council will monitor developments closely in the December 2001 supplementary assessment and June 2002 NCP assessment. If, by the time of the 2002 assessment, New South Wales has achieved insufficient progress with implementing its action plan, the Council will recommend an ongoing reduction in New South Wales' NCP payments.

Further environmental allocations for stressed rivers in New South Wales have been delayed and will not be completed until December 2001. In the Council's second tranche report, New South Wales advised that it had 86 stressed or overallocated unregulated streams across seven regional catchments.

It is the Council's view that the determination of final water allocations for the environment is a question of timing rather than a lack of political commitment by New South Wales. Under the *Water Management Act 2000*, New South Wales has committed itself to water sharing plans for high stress or conservation areas by December 2001, including environmental flow

requirements for the regulated rivers. The development of water sharing plans in New South Wales is a significant undertaking. New South Wales has been active in seeking ways to improve approaches to developing understanding of relationships between flows and ecological health.

The Council has taken into account the fact that New South Wales has interim environmental allocations already in place for all the regulated systems. These allocations are in year three of the original five year flow settings. As a result, the Council is of the view that New South Wales has implemented action on stressed rivers for the regulated systems which account for 80 per cent of all water use in New South Wales. In setting these existing allocations to the environment, New South Wales has demonstrated that it is taking into account the national principles developed by ARMCANZ and ANZECC.

Information provided to the Council indicates that the state water management outcomes plan is to set the overarching policy context, targets and strategic outcomes for the development, conservation, management and control of the State's water resources. The plan is to provide clear direction for water management action and is to ensure that interim water quality and river flow objectives are specifically addressed in water resource management action. It is currently anticipated that a draft of the plan will be available for consultation in July 2001.

The Council also understands New South Wales is proposing a range of environmental flow targets in the State Water Management Outcomes Plan. The targets, if adopted, will be referred to water management committees to ensure that draft water sharing plans comply with the targets. The New South Wales government intends that water sharing plans will be implemented from 1 July 2002 at the beginning of the 2002-03 water year. Should the targets be adopted, the Council would need to be convinced in future assessments that there was a scientific basis for the levels chosen as the targets.

It has been the Council's concern for this assessment to ensure the process being employed to determine environmental flows for the December 2001 deadline is being developed in a rigorous and appropriate manner. On the issue of environmental flows, concerns have been expressed by environmental interests regarding the pace and potential outcomes for the water sharing plans to be set in December 2001. In particular, there is a real fear that there is inadequate knowledge to set these allocations that will be locked away for 10 years. There are concerns that the time between the commencement of the public consultation and finalisation of the plan is unlikely to be sufficient to resolve any contentious issues. To ensure the integrity of the process, the Council has obtained from New South Wales government a list of the information components to be provided to water management committees.

The prime concern the Council has with the New South Wales system, is to ensure that while it is important for bulk access regimes to be established quickly, they must also be done properly including the basis for determination of environmental flows to reflect the new 10 year timeframe under the Act.

Otherwise, if the bulk access regimes and environmental flow requirements are poorly addressed, the issues for the environment will not be addressed for another 10 years. Given the system New South Wales has adopted, and the extent of the problems, the Council is of the view that where a review of the implementation of a plan identifies the environmental objectives are not being met, there should be a change within the 10 year life and compensation (as required under the Act) paid where the identified change is significant.

The Council has insufficient information to make an assessment of New South Wales progress on stressed rivers against the ARMCANZ/ANZECC national principles for the provision of water for ecosystems. The Council will examine the progress of New South Wales against these principles in the June 2002 assessment in terms of the timeliness and quality of the reforms achieved.

However, given New South Wales already has interim environmental flows in place on all regulated rivers, the Council is satisfied that New South Wales has met minimum commitments in relation to the provision of water for the environment for the 2001 NCP assessment.

Trading

In terms of water trading in New South Wales, the *Water Management Act 2000* Act is a clear improvement on the previous arrangements. However, the Act was proclaimed only in January 2001 and there has been little time for implementation. Provisions in the Act relating to licences and approvals are yet to commence. In the period until these provisions come into effect, the existing statutory framework for the transfer of water rights will continue.

Despite the improvements in the new Act, there are still several transitional issues. In particular, the water sharing plans are not finalised and the registry is not established. Consequently, trading rules are still to be further developed. Also, the uncertainty in property rights created by the transition could discourage trade. The limitation of trade out of regulated irrigation districts is also an impediment to both interstate and intrastate trade, especially as these irrigation districts are concentrated in the south of the State where the majority of water in New South Wales (and indeed the Murray-Darling Basin) is used. New South Wales is working with the irrigation districts to resolve this issue.

As the new arrangements are progressively implemented, the Council will examine through further NCP assessments that New South Wales fully implements its commitments for water trading. The Council will review New South Wales' response to consultation on the registry system in a supplementary assessment in December 2001. The 2002 NCP assessment will focus on property rights and their effect on trade, and the roll out of water management plans and the embodied trading rules. The Council will also look for progress in resolving the limitation of trade out of regulated systems.

Environment and water quality

New South Wales devoted considerable resources to addressing the issue of integrated catchment management at the State, regional and local planning level. The State Government has statutory catchment management plans, vegetation management plans and water management plans. New South Wales is currently reviewing a series of proposals to ensure a more consistent framework among these different levels of plans.

The Council reviewed a number of these plans and considers that they indicate an ongoing commitment by New South Wales to implement integrated catchment management. Therefore, New South Wales has met the commitments related to integrated catchment management for this assessment. The Council will continue to monitor developments in the implementation of integrated catchment management arrangements in future assessments.

New South Wales continues to progress reforms to water quality management through the interim water quality and river flow objectives involving the Healthy Rivers Commission and a range of other programs at the State level. There have been significant achievements through projects developed under the Stormwater Trusts Grants scheme. New South Wales has also demonstrated a commitment to managing waste through developing market-based mechanisms and promoting effluent and biosolid reuse. The Council is satisfied that New South Wales continues to implement policies that support the objectives of the National Water Quality Management Strategy.

The Council is satisfied that New South Wales has complied with environment and water quality reform commitments for this assessment.

Consultation and education

New South Wales continues to actively consult the community through programs and communication strategies accompanying all major water reform initiatives to ensure the full benefits of the reforms are understood and achieved. For example, the Government consulted extensively regarding the *Water Management Act 2000*. This involved consultation across government, with peak stakeholder groups and through regional public meetings. Examples of consultation forums include the New South Wales Water Advisory Council, State working groups with agency and key stakeholder representatives, catchment management boards and water management committees. New South Wales is also devoting considerable resources to public education on water reform.

The Council is satisfied that New South Wales has complied with public education and consultation reform commitments.

Assessment

The Council is satisfied that New South Wales has met minimum reform commitments required for the 2001 NCP assessment.

The New South Wales system of water property rights does not meet the requirements for this assessment. However, the action plan on property rights provided by New South Wales should provide a sufficient level of surety such that the issues identified are likely to be transitional concerns only. The Council will conduct a December 2001 supplementary assessment on the issue of the form of the registry system following public consultation by New South Wales on this issue. It is the Council's view that a third party listed on the register should have priority over non-registered interests. In this way, the benefits of a Torrens system model will be put in place. The Council will also continue to monitor further developments in accordance with the New South Wales property rights timetable in the 2002 NCP assessment. The Council considered a suspension for this issue. Given the seriousness and lateness of the issue, if insufficient progress is made the Council would recommend a permanent penalty in a future assessment.

The Council will also conduct a full assessment in 2002 of environmental allocations for stressed rivers to be implemented in the December 2001 water sharing plans.

The Council acknowledges the substantial degree of commitment and progress of water reforms in New South Wales.

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. (clauses 3a, b and c)

New South Wales arrangements

Metropolitan

IPART has regulated the prices of Sydney Water Corporation, Hunter Water Corporation, Gosford City Council and Wyong Shire Councils since 1992. Since the second tranche NCP assessment, the tribunal has released:

- a 2000-03 price path for Sydney Water Corporation, Hunter Water Corporation, Gosford and Wyong;
- a 2000-05 price path for Sydney Catchment Authority; and
- a price determination requiring the four metropolitans to have new development servicing plans in place by 1 July 2001. These plans detail the basis on which developer charges will be calculated.

Commercial viability

Each of the four major urban water service providers is earning sufficient returns to meet the commercial viability lower bound as defined by the CoAG pricing guidelines. In 1999-2000, the Sydney Water Corporation recorded pre-tax earnings of $346 million for the corporation and $385 million for the

consolidated entity respectively (SWC 2000). Over the same period, the Hunter Water Corporation recorded pre-tax earnings of $50.1 million for the corporation and $47.8 million for the consolidated entity respectively (HWC 2000). Both Gosford and Wyong earned positive real economic returns in 1999-2000 (DLWC 2001). The Sydney Catchment Authority earned a positive return in its first full year of operation (IPART 2000e).

Taxes

Both the Sydney Water Corporation and Hunter Water Corporation are subject to New South Wales competitive neutrality provisions and must therefore recover tax equivalents, including tax on income earned. Sydney Water Corporation made tax equivalent payments of $69.8 million for the consolidated entity in 1999-2000 (SWC 2000). Neither Wyong nor Gosford are subject to the State's tax equivalent regime nor do they make explicit provision for tax equivalent payments in the Council's general fund (IPART 2000c, 2000d). The Sydney Catchment Authority also pays tax equivalents to the State Government (IPART 2000e).

Externalities

A 5 cent per kilolitre catchment levy to be used to fund improved catchment management was considered as part of IPART's 2000 Sydney Catchment Authority determination. However, IPART concluded that the determination provided sufficient revenue for the Sydney Catchment Authority to undertake its current and known future activities.

All Hunter Water Corporation customers (with the exception of pensioners) pay an environment improvement charge of $40 per year. The charge assists with the funding of the Hunter Sewerage Project (IPART 2000b).

Assets

In assessing the asset recovery basis required, IPART uses an optimised deprival valuation. According to this approach, the following bases must be considered:

- replacement cost - the cost of replacing the existing assets with identical assets in the same condition (after allowing for depreciation). This value is called the depreciated optimised replacement cost;

- recoverable amount - the future revenue stream minus cash operating costs that the assets will generate. This figure is then adjusted to today's dollars (present value) to allow for the time value of money (or interest cost). This is the 'line in the sand' methodology which has been used in previous determinations for Sydney Water and Hunter Water; and

- net realisable value - if the assets are surplus to requirement, the value is the price the assets could be sold for in the open market.

Using this methodology, Sydney Water Corporation has assets worth $5.4 billion. Hunter Water Corporation controls assets of $810 million while Wyong's water and sewerage assets were $186 million in 1999-2000 (IPART 2000a 2000b, 2000c). Gosford controls water and sewerage assets of $227 million. (IPART 2000d). The Sydney Catchment Authority assets are valued at $669 million (IPART 2000e). Straight-line depreciation is the primary means of accounting for asset consumption.

Rate of return

Each of the four major metropolitan urban service providers is earning a positive rate of return. Sydney Water Corporation earned a return on assets of 3.5 per cent on water assets and 4 per cent on wastewater assets. Hunter Water Corporation earned a return of 5 per cent on water assets and 4.3 per cent on wastewater assets (WSAA 2001). Gosford and Wyong earned positive real economic rates of return in 1999-2000 (DLWC 2001). All four entities are expected to continue to earn returns below the ceiling of their estimated weighted average cost of capital as shown in table 1.

Table 1: Forecast returns to major metropolitan urban services, 2000-01 to 2002-03 (per cent)

	WACC (pre real tax)	*Return on assets (real, pre tax)*			
		2000	*2001*	*2002*	*2003*
Sydney Water	4.8 to 7.8	4.9	6.5	6.3	6.1
Hunter Water	4.8 to 7.8	6.6	6.4	6.1	6.0
Wyong Council	4.8 to 7.8	6.8	5.4	5.6	5.6
Gosford Council	4.8 to 7.8	6.6	5.8	5.5	5.5

Source: IPART (2000a 2000b, 2000c, 2000d)

In 1999-2000, the Sydney Catchment Authority earned a nominal return on assets of 17.4 per cent (WSAA 2001). IPART has set a real pre-tax WACC for the period to 2005 of between 5.1 per cent and 7.1 per cent (IPART 2000e).

Dividends

Sydney Water Corporation, Hunter Water Corporation and the Sydney Catchment Authority pay dividends to shareholders. The Sydney Water Corporation provided an after-tax dividend of $129.3 million (or 34 per cent of pre-tax earnings) in 1999-2000 compared to $91.7 million (or 44 per cent of pre-tax earnings) the preceding year (SWC 2000). For 2000-01, the forecasted dividend is $42 million.

The Hunter Water Corporation paid a dividend of $45 million (or 99 per cent of pre-tax earnings) in 1998-99, and $28 million (or 56 per cent of pre-tax

earnings) in 1999-2000 (HWC 2000). Wyong and Gosford do not pay dividends.

Non-metropolitan urban services

In 1999-2000, local government non-metropolitan urban service providers had assets valued at $9.1 billion and provided services to 1.7 million customers. These services were provided by 124 local government utilities. Of these, 107 provide both water and wastewater services, seven provide water services only and 10 only provide wastewater services (DLWC 2001).

IPART has developed guidelines for pricing which are currently being applied by the State's non-metropolitan urban service providers. Information on the financial performance of non-metropolitan urban services is included in an annual benchmarking report released by Department of Land and Water Conservation. Financial performance is also assisted through the preparation of 30 year strategic business plans by local government service providers. Guidelines and a financial model have been prepared to assist this process.

The 2001 Department of Land and Water Conservation benchmarking report stated that the median economic real rate of return for 1999-2000 was 2.5 per cent for water services and 2.8 per cent for sewerage services.

In regard to combined water and wastewater services, all non-metropolitan urbans with greater than 10 000 connections earned a positive rate of return although most were below 5 per cent. Of the 34 service providers with 2000 to 10 000 connections Inverell, Muswellbrook, Cootamundra, Armidale Dumaresq, and Lithgow made negative returns. None of the service providers with more than 10 000 connection earned returns greater than 10 per cent.

All water services with greater than 10 000 connections made positive returns with the exception of Goldenfields reticulated services, which made a loss of 2.9 per cent. For service providers with 2 000 to 10 000 connections, all but five achieved a positive economic rate of return. The highest return was made by Lower Clarence unfiltered services (14 per cent) and the lowest return by Lithgow Council (-4.1 per cent).

In regard to wastewater services, all services with greater than 10 000 connections made a positive economic return.[1] For 2000 to 10 000 connections, 12 of 37 service providers reported negative returns.

The Department of Land and Water Conservation benchmarking report suggests that asset values based on current replacement cost are available for most business activities. No information was provided on the degree to which these activities have been optimised or how asset consumption is provided for.

[1] All were below 10 per cent.

Discussion

Metropolitan

The four major urban water businesses all operate between the upper and lower band of the CoAG pricing guidelines, and are commercially viable businesses. This means that each of the water businesses recovers operational, maintenance and administration costs, provides for future asset refurbishment and replacement, pays appropriate taxes or tax equivalents, provides a dividend back to Government where appropriate and earns a rate of return on the value of assets.

The second tranche NCP assessment noted that neither Gosford nor Wyong made provision for tax equivalent payments as recommended by the CoAG guidelines. The Council is concerned that no further progress has been made on this issue over the last two years. It will look for implementation of tax equivalents or a clear public benefit justification for the lack of action in the 2002 NCP assessment.

The 1999-2000 rate of return earned by the Sydney Catchment Authority is significantly above that earned by the State's major retail and distribution services and is very high compared with all other large metropolitan service providers participating in the WSAA Facts benchmarking report. The Sydney Catchment Authority also has a real economic rate of return that is almost twice the national trend. The Council does not have sufficient detail to compare the rates of return reported in WSAA Facts with the Sydney Catchment Authority's weighted average cost of capital. However, given the information that is available, the returns earned by the Catchment Authority appear to be high. The Council will continue to monitor this issue and will look to the IPART process to consider it further.

In regard to externalities, IPART determined that a volumetric catchment management levy was not appropriate at the time of its 2000 Sydney Catchment Authority determination. The Council suggests that this matter could be revisited in the future at which time potential arrangements for passing through such costs to final customers could be considered. As noted by the High Level Steering Group on Water (2000), externalities need to be addressed using a 'portfolio of decision tools'. In addition to charging regimes these 'decision tools include well-defined property rights, subsidies and standards.

Non-metropolitan Urban Services

For this assessment, the Council has focused on the largest service providers. Most service providers with greater than 1000 connections are earning a positive real economic rate of return. However, the pricing guidance to the non-metropolitan urban providers includes limited advice on asset consumption and externalities. In future assessments, the Council will look

for tax equivalents to be included in cost recovery targets and whether services with high returns are operating above the upper band of the CoAG guidelines.

New South Wales has supported smaller service providers through the reform process. However, the non-metropolitan urban guidelines were released in 1996 before the release of the CoAG pricing guidelines. While the IPART guidelines are consistent with the intent of the CoAG water reforms, the Council suggests that there may be advantages in updating these guidelines. This could include an expanded discussion and practical guidance on how to identify and report cross-subsidies.

Assessment

The Council is satisfied that New South Wales has met its 2001 NCP commitments in relation to full cost recovery. In undertaking future assessments, the Council will look for evidence of continued compliance with CoAG principles. This will include continuing to monitor the high returns earned by the Sydney Catchment Authority and progress in relation to the non-metropolitan urban sector, including the implementation of tax equivalents and further advice on approaches to asset consumption and provisions for externalities.

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 3 a, b and c)

New South Wales arrangements

Metropolitan

Retail and distribution water charges

IPART has adopted a policy of two-part tariff pricing and the phasing out of property value based charges. Implementation has significantly reduced the scope for inefficient cross-subsidisation within the New South Wales water industry.

New South Wales states that between 1992-93 and 1999-2000, property based charges have fallen by 90 per cent. The proportion of revenue from non-residential fixed charges fell by 28 per cent and the proportion of usage based

revenue increased from 20 to 46 per cent. New South Wales advise that, on current projections, revenue from property based charges will decrease to $12 million for Sydney Water Corporation and $1 million for Hunter Water Corporation by 2003.[2]

Residential and non-residential customers of Sydney Water Corporation currently pay a two-part tariff. In 1999-2000, the fixed portion of this charge was $80, with a $0.90 per kilolitre volumetric charge for water use. There is no free water allowance.

Hunter Water Corporation customers also pay a two-part tariff, with fixed charges of $24.60 per annum and volumetric charges of $0.922 per kilolitre for the first 1000 kilolitres, decreasing to $0.849 per kilolitre above 1000 kilolitres. Again there is no free water allowance.

Until 30 June 2000, Gosford Shire Council customers did not have a full two-part tariff. Instead, a fixed charge of $153 per annum was paid, which included a free water allowance of 200 kilolitres. Water use above this level was charged at $0.65 per kilolitre.

Similarly, in 1999-2000, the Wyong Shire Council charged a fixed charge of $176 per property, with a volumetric charge of $0.60 per kilolitres for water consumed above the 200 kilolitre free allowance.

Bulk water

Bulk charges from the Sydney Catchment Authority to Sydney Water Corporation are based on a two-part tariff comprised of a fixed availability charge of $4.8 million per month and a volumetric charge of $104 per megalitre.

The Council does not have any information on the level of ring-fencing of the Bulk water services provided by Hunter Water Corporation, Gosford and Wyong. This issue will be reviewed in the Council's 2002 NCP assessment.

Stormwater

Similar to sewerage charges, stormwater charges for Sydney Water Corporation customers contain a property values component. In 1999-2000 these charges were $16 per annum for residential properties and $56.80 for non-residential properties, with a property-based charge of $0.00313 per dollar of assessed annual value above $2500 per quarter.

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[2] This compares to IPART's estimate of total revenue needs for 2002-03 of $1.2 billion for Sydney Water Corporation and $123 million for Hunter Water Corporation respectively.

Similarly, in Hunter Water Corporation, an annual service charge of $24.30 was levied on all residential customers in 1999-2000. Over the same period, the charges for non-residential customers were:

- $15.75 per annum for 700 non-residential customers who opened accounts after March 1991 (new customers or via redevelopment); and

- an annual service charge of $15.75 plus property valuation-based charges based on the assessed annual value of the property for 2800 non-residential customers who opened their account before March 1991.

The Hunter Water Corporation believes the existing valuation-based charges are inequitable in a number of cases, and should be phased out. The Corporation considered an area-based (user/polluter pays) stormwater price structure but, due to conceptual and implementation problems, it has proposed an interim reform to its stormwater charges for the coming regulatory period.

Gosford Shire Council used a $40 per annum drainage charge in 1999-2000 to cover stormwater costs. Wyong Shire Council does not have an itemised charge for stormwater. Instead, capital expenditure on stormwater is funded through sewerage charges.

Wastewater

Sewerage charges for the Sydney Water Corporation in 1999-2000 were based partly on property values. This will continue until property based prices are phased out of sewerage charges. For 1999-2000, the Sydney Water Corporation sewerage customers were charged a fixed rate of $290.40, plus a volumetric charge of $0.96 per kilolitre. The property based charge was $0.00313 per dollar of assessed annual property value above $2500 per quarter.

Hunter Water Corporation charges both a fixed service charge for sewerage services and a volumetric charge. In 1999-2000, the fixed charge for residential properties was $202.58 per year, with small commercial and other non-residential properties being charged $405.15 per year. Volumetric charges for sewerage services was $0.476 per kilolitre for residential properties and $0.405 per kilolitre for non-residential properties.

Gosford City Council's fixed charge for sewerage service costs for residential properties was $371 in 1999-2000. In 2000-01, this charge will drop to $341. The non-residential bill also fell from $276 to $254.

Wyong sets a flat rate for sewerage services. In 1999-2000, residential properties were charged $347. Non-residential properties paid a fixed charge of $125, plus a volumetric charge of $0.60 per kilolitres. This rate increases if the customer is a trade waste customer.

Trade Waste

New arrangements for trade waste for the Sydney Water Corporation will take effect from 1 July 2001. These new arrangements will be based on the 'polluter pays' principle and are intended to recover the costs associated with treatment of discharges. These charges will comprise a fixed component, a variable component (reflecting mass-based quality charges) and a 'wastesafe' charge to recover grease trap waste.

In the Hunter Water Corporation, trade waste charges are designed to recover the full cost of supplying the service. Charges are calculated on the basis of the total cost of treating trade waste per kilogram of load.

In Gosford, non-residential customers are classified as trade waste dischargers and pay a trade waste charge in addition to sewer usage charges, that varies depending on the quality of the discharge. Wyong also recovers trade waste costs through sewerage charges. The charge consists of a fixed sewerage charge and a volumetric rate based on estimates of water discharged into the sewerage system and the category of trade waste.

Non-metropolitan urbans

Water

IPART's non-metropolitan urban guidelines provide advice as to the structure of water prices.

Information provided by New South Wales indicates that 60 of the 112 local governments that operate water services will apply two-part tariffs as shown in table 2. Of these, the Department of Local Government has advised that 69 will have adopted a two-part tariff for 2001-02. The department also states that the remaining 43 local governments are actively considering pricing reforms of water services.

Only five local government water businesses with turnover greater than $2 million have free water allowances. These are Kempsey, Orange, Bathurst, Parkes and Tweed. For Orange, Bathurst, Parkes and Tweed, free water allowances increase for larger water users, and property values are used to determine access charges.

There are 13 small local government water businesses with annual revenue of less than $500 000. For most of these, technical or economic factors suggest that introducing two-part tariffs would be of very marginal benefit.

Table 2: Progress with two-part tariffs, 2000-01

Local government group	*Number of local governments in group*	*Example of service provider and its annual turnover*	*Percentage who introduce two-part tariff*
County councils	6	Mid North Coast $15 million	100
		Central Tablelands $2.6 million	
Provincial city councils	23	Shoalhaven $42 million	85
		Deniliquin $2 million	
Very large rural councils	19	Forbes $1 million	79
		Parkes $5 million	
Large rural councils	25	Cootamundra $1.2 million	40
		Quirindi $500 000	
Medium rural councils	34	Bogan $1 million	47
		Severn $75 000	
Small rural councils	2	Jerilderie $300 000	0
		Nundle $100 000	

Source: DLG (2001) (unpublished)

Wastewater charges

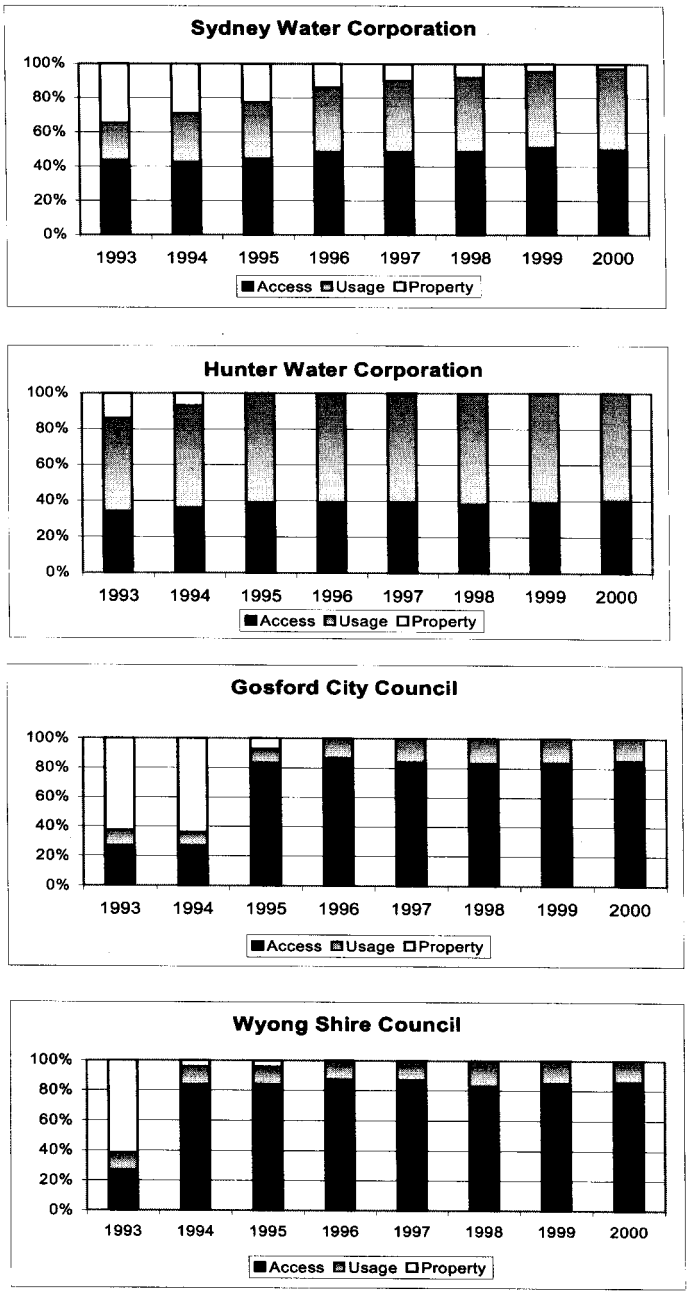
The 2001 benchmarking report (DLWC 2001) suggests that property values are included in residential charges for 36 of the 117 service providers for which data was provided. Fourteen service providers include a usage charge in non-residential charges.[3] A further 46 non-metropolitan urban service providers levied trade waste charges.

Discussion

Consumption based pricing is being introduced to New South Wales major urban water service providers as shown in figure 3. In setting prices, IPART has adopted the view that it is more efficient and equitable if customers are charged according to the amount of services they consume.

[3] Usually by applying a discharge factor to water use.

Figure 3: Source of revenue (water and wastewater including trade waste), 1993 – 2000.



Source: IPART (2001)

The Council notes that both Sydney Water Corporation and Hunter Water Corporation have two-part tariffs with no free water allowance. In the case of Sydney Water Corporation, water usage revenue as a proportion of total water revenue has increased from 21 per cent in 1989 to 80 per cent in 2000. Usage charges are projected to make up some 91 per cent of Hunter Water Corporation's water revenue over the current price path from 2000 to 2003.

Prices in 1999-2000 for Gosford and Wyong Councils' water and sewerage businesses were not consistent with consumption based pricing principles. However, IPART removed the prepaid water allowance and these Councils adopted a two-part tariff structure in the 2000 pricing reviews. The introduction of two-part tariffs will move the usage charge closer to the marginal cost of supply.

Non-metropolitan urbans

New South Wales have advised that a targeted approach has been adopted focusing firstly on the large water service providers. The Council supports this approach as it gives priority to the areas where reform can be expected to result in the greatest community gain. Consistent with this, the Council has in this assessment also looked for substantial progress among the State's large service providers. That said, the Council has also looked for continued progress among smaller services particularly given the CoAG pricing commitments were originally due by the end of 1998. The Council is of the view, however, that reform is unlikely to be cost effective for those services with less than 1000 connections.

Given the above, the Council has concerns with the rate of progress by Tweed Shire Council, in particular. Tweed Shire currently has a 250 kilolitre free water allowance which increases with consumption above the minimum amount. Therefore, many water customers do not face a volumetric charge for water. Tweed Shire has reported a turnover of $11.9 million in 1999-2000, making it the seventh largest non-metropolitan urban provider in the State.

Significant free water allowances dilute incentives to use water economically and therefore undermine the principle of consumption based pricing agreed to in the CoAG water reforms. In addition, free water allowances provide potential for non-transparent cross-subsidies which are also inconsistent with the water agreements. The Council's concerns in regard to the tariff structures levied by Tweed Shire are compounded by the inclusion of land values in charges.

The New South Wales Government has argued that the Tweed Shire Council has made substantial changes to prices over the past several years with an increase in access charges and reduction in the level of the free water allowances. On the basis of a cost-benefit analysis, Tweed Shire Council has reduced its free water allowance from 390 kilolitres per annum to 250 kilolitres per annum. Tweed Shire argues that the new level for the free water allowance is appropriate and will result in a substantial proportion of customers (43 per cent or more than 8 000 connections) being subject to excess water charges.

New South Wales is continuing to approach Tweed Shire Council with a view to a more appropriate pricing mechanism being adopted. Such negotiations may raise the possibility that external regulation of prices may be imposed if a more appropriate pricing mechanism is not adopted in the near future.

The fee setting cycle means that charges for 2001-02 have now been set. Further negotiation will now take place in advance of the next management plan cycle with public exposure of intended pricing not needed until March 2002. In terms of pricing, this could be either a further reduction of the free allowance or a move to pure two-part tariff pricing.

While smaller than Tweed Shire, Bathurst, Kempsey, Orange and Parkes are still large service providers. The presence of free water allowances and property value based charges in Orange and Parkes have the potential to encourage overuse of scarce water resources. However, the Council notes that:

- the minimum allowance provided by Orange has fallen from 455 kilolitres in 1996-97 to 305 kilolitres; and

- Parkes has resolved to implement a water pricing review.

New South Wales has advised the Council that if local governments do not commit to reviewing the cost effectiveness of two-part tariffs in the next two to three months the Government will write to those local governments advising that if they do not conduct such a review New South Wales will legislate to require them to implement reform. In considering its response, the Council has taken into account this commitment and New South Wales' general efforts to promote pricing reform across all non-metropolitan urban providers. These efforts include software soon to be rolled out which will assist with the evaluation of different reform options and assessments of cost effectiveness. The Council also notes the evidence of continued general progress with on-the-ground reform, although this is being achieved outside the timeframes originally envisaged for this reform commitment.

Given the above, the Council does not recommend any changes to competition payments for non-compliance with consumption based water pricing commitments at this stage. Instead the Council will look for substantial progress particularly in relation to a robust assessment of cost effectiveness and commitment to action if reform is cost effective on the part of Tweed in the 2002 NCP assessment.

The Council has also found that trade waste charges are not extensively used in New South Wales. The absence of trade waste charges reduces the incentives for people to minimise waste and can lead to non-transparent and inefficient cross-subsidies between large and small discharges. The Council is also concerned that property values are still used in determining trade waste charges. The Council will look for further progress in regard to the above matters in the 2002 NCP assessment.

Assessment

Given the level of progress achieved in relation to consumption based pricing overall, and the commitment by New South Wales to ensuring that local

governments implement reform, the Council is satisfied that 2001 NCP commitments have been met.

However, given the CoAG commitment in relation to two-part tariffs was originally due for completion by the end of 1998, the Council's 2002 NCP assessment will look for one of the State's largest non-metropolitan urbans, Tweed Shire, to have conducted a robust assessment of cost effectiveness of two-part tariffs and a commitment to action if progressing reform is found to be cost effective. If Tweed Shire does not objectively consider the introduction of pricing reform, the Council will expect the New South Wales Government to take action to ensure that the water reform commitments are met.

The Council will also look for further progress on the elimination of free water allowances and property values from charges set by smaller service providers and the potential for more extensive use of trade waste regimes. For metropolitan services, the Council will look for further progress in relation to the elimination of property values in determining water charges by Sydney Water Corporation when it undertakes its next assessment.

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 3 a, b and c).

New South Wales arrangements

Under the New South Wales social policy program, CSOs are defined as non-commercial activities which are carried out pursuant to a government directive, have a clear social benefit and are funded from the State Budget. In circumstances where service providers are required by the Government to provide such services to consumers at less than the full cost of the service, this must be disclosed and made transparent. Ideally, the service should be paid as a CSO, equivalent to the difference between the charge paid by consumers and the full price of the service.

The social policy program provides for costing of CSO payments for subsidised operations using the avoidable cost method.

The metropolitan agencies receive CSO payments from the State Budget, primarily for pensioner rebates and exemption of certain categories of properties from payment of access charges (for example, charities and schools).

The 1999-2000 Productivity Commission report on financial performance of Government Business Enterprises (PC 2001) notes that the Sydney

Catchment Authority also provides non-commercial activities (such as monetary or in-kind payments to groups such as National Trust and Landcare for catchment protection and improvement projects).

Sydney Water and Hunter Water have well-established rebate programs to assist pensioners and special needs groups such as the disabled.[4] The cost of these rebate programs are made transparent through the IPART process, and annual statements of corporate intent negotiated with New South Wales Treasury. All rebates and concessions are paid as a fully costed and funded CSO in accordance with the social policy program. The Sydney Water Corporation 2000 annual report identifies State and Commonwealth grants for this purpose of $67 million and $40 million respectively.

In relation to non-metropolitan urban providers, the *Local Government Act 1993* requires local governments to reduce water supply and sewerage charges for eligible pensioners by 50 per cent, up to a maximum reduction of $87.50 per annum for each service. The Department of Local Government then reimburses local governments. The New South Wales Government also provides funding to local governments under its country towns water and sewerage program. These funds are directed to 'backlog' works required to meet public health, environmental standards, and reasonable levels of service for present populations. Local councils are responsible for meeting the full cost of works to meet growth needs and renewals.

Discussion

The second tranche NCP assessment concluded that metropolitan and non-metropolitan urban CSO arrangements were consistent with CoAG commitments. There do not appear to be any substantial changes since then.

Information was sought on whether local governments pay any additional CSOs to their water and wastewater businesses. New South Wales has advised that they have not found any instances of such payments, and that they are extremely unlikely to occur for the following reasons. Councils' general rates are restricted through rate pegging the total tax revenues raised through rates. Any use of CSOs to support water and wastewater businesses would need to be within the pegged limit, leaving councils far less scope to lift general rates for other purposes. Water and wastewater rates, by contrast, are not pegged. These are more likely to be lifted by councils for the purposes of supporting water and wastewater businesses.

[4] Hunter Water Corporation also exempts some property holders, for example, schools, churches and nursing homes.

Assessment

New South Wales has met 2001 NCP commitments in relation to urban CSO commitments.

Cross-subsidies

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

New South Wales arrangements

The New South Wales 2000 NCP Annual Report notes that it is desirable to use one or more of the following approaches to reduce the likelihood of inefficient cross-subsidies:

- location specific costing and pricing arrangements;
- appropriate structural and/or accounting separation; and/or
- use of developer charges designed to ensure that charging for new developments reflects the true cost of providing water and wastewater services in those areas.

New South Wales also notes that phasing out the use of property values in pricing significantly reduces the potential for cross-subsidies.

Discussion

Considerable progress has been made towards eliminating cross-subsidies in the New South Wales metropolitan sector. Sydney Water Corporation's remaining non-residential property value based charges are being phased out, with only $12 million in revenue estimated for 2003. Developer charges are being used to recover the full costs of providing water and sewerage infrastructure to new development areas. These charges have reduced the scope for cross-subsidies in relation to new developments.

Both Sydney Water Corporation and Hunter Water Corporation have location specific developer charges, which aim to address locational cross-subsidies. Hunter Water Corporation has also introduced a location-based water usage charge for customers with usage exceeding 50 000 kilolitres per year.

For non-metropolitan urban providers, the IPART guidelines note that property based charges and free water allowances provide the greatest potential for cross-subsidies. Therefore, in future assessments, the Council will look for continued progress with removing property based values and free

water allowances from service charges. Alternatively, evidence would need to be provided that these allowances and values do not lead to non-transparent cross-subsidies.

As discussed above, the non-metropolitan urban guidelines were released in 1996. A lot has happened in this area over the last five years, including the release of the CoAG pricing guidelines. While consistent with the intent of the guidelines, the Council suggests these guidelines would benefit from an expanded discussion and practical guidance on how to identify and report cross-subsidies.

Assessment

Given the level of progress in implementing reforms that reduce the potential for non-transparent cross-subsidies, the Council is satisfied that 2001 NCP commitments have been met. However, the reforms are not complete and therefore, the Council will continue to monitor progress in future assessments.

Rural water services

All irrigation systems in New South Wales are provided by private companies. State Water, a ring-fenced division of the Department of Land and Water Conservation, provides rural bulk water and licensing services to irrigators, riparian users, local governments, the environment and industrial customers. In providing these services, State Water is responsible for managing infrastructure assets (including 18 major dams and 300 weirs valued at over $2 billion) as well as river operations, metering and billing services.

IPART has provided price regulation for this sector since 1995. The tribunal's role is to set the maximum prices for services relating to the supply of bulk water.

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 regime, 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 (as noted in (3) above). 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 b)

New South Wales arrangements

Commercial viability

As with rural water services in most States, past bulk water charges in New South Wales have been heavily subsidised and have not recovered the costs associated with service provision and water use. While State Water has gradually improved both its level of cost recovery and the structure of its charges, at the time of the 2000 price determination most systems were not forecast to be recovering full cost by July 2001 as shown in tables 3,4 and 5.

Table 3: Forecast rural cost recovery in regulated valleys ($million)

	Efficient costs	*Projected revenues*	*Shortfall*
		2000-01	
Border	1.71	1.68	0.03
Gwydir	2.74	2.7	0.04
Namoi/Peel	3.57	3.07	0.50
Macquarie	4.15	4.15	0.00
Lachlan	4.01	3.28	0.73
Murrumbidgee	7.45	7.45	0.00
Murray	8.77	8.56	0.21
Toonumbar	0.32	0.03	0.29
Hunter	2.88	1	1.88
Brogo	0.54	0.1	0.44
Total regulated	**36.14**	**32.02**	**4.12**

Source: IPART (2000f)

Table 4: Forecast rural cost recovery in unregulated valleys ($million)

	Efficient costs	*Projected revenues*	*Shortfall*
		2000-01	
Barwon	0.27	0.27	0.00
Barwon Darling	0.59	0.2	0.39
Intersecting Streams	0.11	0.03	0.08
Central West	0.28	0.1	0.18
Murrumbidgee	0.23	0.17	0.06
Murray	0.05	0.07	0.02
North Coast	0.63	0.38	0.25
Hunter	0.22	0.22	0.00
Sydney/south Coast	0.71	0.37	0.34
Total unregulated	**3.09**	**1.81**	**1.28**

Source: IPART (2000)

Table 5: Forecast rural cost recovery in groundwater ($million)

	Efficient costs	*Projected revenues*	*Shortfall*
		2000-01	
Barwon	0.54	0.53	0.01
Far West	0.45	0.26	0.19
Central West	0.36	0.36	0.00
Murrumbidgee	0.28	0.28	0.00
Murray	0.3	0.3	0.00
North Coast	0.18	0.07	0.11
Hunter	0.21	0.08	0.13
Sydney/south Coast	0.71	0.05	0.66
Total groundwater	**3.03**	**1.93**	**1.10**

Source: IPART (2000)

Next steps

IPART's 2000 determination set prices for the 2000-01 financial year. IPART has provided a timetable for the 2001 bulk water determination (see attachment 1) The final determination is not expected until November 2001.

However, the Department of Land and Water Conservation's submission to IPART, which is a primary input into the determination process, was publicly available at the time of writing. The department's submission proposes prices for the three years to 2003-04 that incorporate the following principles:

- prices should yield full cost recovery (consistent with CoAG commitments);

- the cost of services should be borne by those benefiting from those services; and
- changes should be spread over time to minimise dislocation.

Current bulk water charges include a share of operating costs, a renewals annuity (representing the consumption of assets), and the Department of Land and Water Conservation's bulk water service resource management costs.

For the 2001 determination, the department has proposed that future charges should also include provision for:

- a return on new capital investment;
- an annuity for environmental and safety compliance costs;
- water use compliance costs;
- a share of water management planning and annual implementation programs and reporting;
- metering and monitoring costs for unregulated rivers; and
- capital costs associated with unregulated areas.

The department's submission states that current prices recover 54 per cent of costs attributable to customers and that inclusion in the price paths of the additional components outlined will result in recovery of 82 per cent of costs by 2003-04 (see table 6).

Table 6: The Department of Land and Water Conservation's Projections for cost recovery by 2003-04

	Regulated rivers	*Unregulated rivers*	*Groundwater*	*All services*
Total costs ($000)	77 604	17 673	9144	104 421
Full cost recovery (customer share of total costs) ($000)	53 083	9300	6637	69 020
Revenue 2003-04 ($000)	49 118	4696	2934	56 748
Shortfall ($000)	3965	4604	3703	12,272
Cost recovery (percent)	92.5	50.5	44.2	82.2

Source: DLWC (2001)

The $69 million forecast of full costs attributable to customers is based on price paths developed for each river valley in consultation with customers service committees. The department's submission notes that the department originally proposed that full cost recovery be achieved by 2003-04. However, this figure was lowered to 82 per cent following consultation with customers service committees. In general, a ceiling on price increases of 20 per cent per

annum has been applied although the amount of the recommended increases varies from valley to valley.

Tax Equivalent Regimes

In the 2000 price determination, IPART considered the potential impact of the goods and services tax (GST) on State Water consistent with guidelines issued by the Australian Competition and Consumer Commission. Water and sewerage services are GST free. This means that State Water is not required to pay GST and it will be able to claim goods and services tax credits on its purchases. State Water does not make a profit. As such, no income tax is payable.

Externalities

In New South Wales, the cost of externalities is internalised through passing on a share of relevant natural resource management costs. The 1998 IPART determination advocated the use of cost-sharing ratios, with the Government to pay all costs where the benefits relate to the broader community or where there is no current charging mechanism.

The 2001 Department of Land and Water Conservation submission to IPART has accepted the existing cost sharing ratios previously applied by the Tribunal, but has argued for their extension to a number of additional costs not yet factored into the full cost recovery level.

Assets

Asset costs are primarily represented by an annuity to determine funding requirements and to ensure the asset's service capacity is maintained over its useful life. In addition to the renewals annuity for State Water's infrastructure assets, the costing profile includes:

- a compliance annuity for other infrastructure components reflecting raised standards and environmental requirements;
- a renewals annuity for Murray Water and Dumaresq-Barwon Border Rivers Commission assets;
- depreciation charges for other bulk water assets (e.g. monitoring bores and mobile plant and equipment); and
- a return on capital for State Water assets acquired since July 1997.

Following an independent review of costs provided to IPART in 1995, the tribunal recommended that a total asset management plan be developed to facilitate a deeper understanding and better management of the assets

involved. A total asset management plan — covering 30 years — has now been established.

Rate of Return

New South Wales has concerns with the use of the written down replacement cost of assets as a basis for charging a rate of return, and does not provide for a rate of return on existing infrastructure. However, a rate of return on new infrastructure is allowed (where the infrastructure has been constructed on the basis that beneficiaries are willing to pay the full economic cost). IPART is expected to follow this approach in determining 2001 bulk water prices.

The 2000 IPART determination advocated the use of a "line in the sand" approach requiring a return on all investments since 1 July 1997. The 2001 Department of Land and Water Conservation submission proposes that this rate should be set at an industry average of 7 per cent, arguing that this figure represents a reasonable approximation of the Department's cost of capital for a medium term price path.

Dividends

State Water does not pay dividends.

Discussion

State Water has not achieved full cost recovery. Currently, the Department of Land and Water Conservation estimates that prices recover 54 per cent of costs. Under the price path proposed in the department's submission to IPART, this would increase to 82 per cent in 2003-04.

The Council has received several submissions on the approach that should be taken with regard to cost recovery in New South Wales. For example, both the World Wildlife Fund and the Australian Conservation Foundation argue that the move to full cost recovery is too slow and that many environmental costs are not included in prices. A contrasting view was provided by Macquarie River Food and Fibre who provided the Council with a copy of its submission to the IPART process. The submission argued that:

- contributions to environmental costs should be based on a beneficiary pays approach and, therefore, many of these costs should be funded by the broader community; and

- the question of whether full cost recovery should be pursued should be subject to a public benefit tests in each region, which could also identify community service obligations based on impacts rather than on beneficiaries. IPART should provide clear guidance on whether a user pays approach or a beneficiary approach should apply.

Within New South Wales it is IPART who is the independent Regulator that considers these issues. The tribunal conducts a public process that is transparent and provides all stakeholders with an opportunity to present their views. As the tribunal is currently considering conducting hearings prior to making its determination, the Council considers that it is in the best position to take account of the full range of stakeholder views in formulating the next price path. The Council is of the view that the tribunal process is comprehensive and consequently the Council has not analysed all aspects of the New South Wales pricing approach.

There is, however, one outstanding issue with regard to rural full cost recovery. The water reform commitments require the Council to assess jurisdictions as having complied with the CoAG pricing requirements in the 2001 NCP assessment where they:

- have achieved full cost efficiency; or
- 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.

New South Wales has not provided the Council with a timetable on when full cost recovery will be achieved. It is argued that it would compromise the independence of the IPART process if the Government pre-empted the outcome of the price determination that is due to be released in November 2001.

New South Wales has stated that:

> *NSW is pursuing full cost recovery in the pricing of water to bulk rural, non-metropolitan urban, and metropolitan urban water users in all practicable cases, except in relation to those systems where capital infrastructure cannot reasonably be funded by small numbers of water users. Full cost recovery will continue to be dealt with through the water pricing process based on the referral of water pricing to IPART.*
>
> *The State Water Management Outcomes Plan is due to be finalised by the end of July 2001. It is proposed that it will include wording to reflect the above.*

The Department of Land and Water Conservation's proposed price path being considered by IPART is expected to result in most of the regulated system achieving close to full cost recovery in the next three years. As part of its determination, the tribunal will report on a valley-by-valley basis how far each system is away from full cost recovery and identify those systems that are unlikely to achieve full cost recovery.

Assessment

While New South Wales has not formally met its commitment to providing a timetable for when schemes will reach full cost recovery, the Council recognises the independence and rigour in the IPART process. Therefore, it will reassess this issue again in the 2002 NCP assessment when it will expect clear guidance to be available on New South Wales' price path for achieving full cost recovery in for rural water.

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 and b)

New South Wales arrangements

Two-part tariffs have been, or are being, introduced for bulk water services provided by State Water. The charges for the regulated rivers are shown in table 7.

Table 7: Charges for regulated rivers 2000-01

Region/River Valley	*Fixed Charge ($/ML of entitlement)*		*Usage Charge ($/ML of water usage)*
	High Security Licences	*General Security Licences*	
Murray and Lower Darling	4.18	3.79	1.02
Murrumbidgee	3.39	3.22	0.84
Lachlan	5.20	3.46	3.97
Macquarie	4.37	3.36	4.54
Namoi (including Peel)	7.53	5.02	6.01
Gwydir	4.26	2.83	3.30
Border	4.53	3.03	3.53
Hunter	5.36	3.83	3.81
Toonumbar	6.85	5.27	3.51
Brogo	6.85	5.27	3.51

Source: IPART (2000)

The IPART determined charges for the unregulated rivers are outlined in table 8.

Table 8: Charges for unregulated rivers 2000-01

Region/River Valley	*Area-based licence ($ per hectare)*	*Volumetric licences ($/ML of usage)*
Barwon Darling	6.58	0.91
Barwon	5.95	0.83
Intersecting Streams	6.58	0.91
Central West	6.58	0.91
Murrumbidgee	6.58	0.91
Murray	3.75	0.47
North Coast	6.58	0.91
Hunter (excluding HWC)	5.7	0.79
Sydney/South Coast (excluding SCA)	6.58	0.91

Source: IPART (2000)

The IPART determined charges for groundwater are outlined in table 9.

Table 9: Charges for groundwater 2000-01

Region/River Valley	*Fixed charge ($/ML of entitlement)*	*Usage charge ($/ML of usage)*
Murrumbidgee	0.41	0.2
Murray	0.66	0.33
Central West	0.67	0.34
Far West	0.73	0.37
Barwon	0.42	0.21
Sydney/South Coast	0.73	0.37
Hunter	0.73	0.37
North Coast	0.73	0.37

Source: IPART (2000)

The Council notes that licence fees in New South Wales have not increased since 1996-97. Approximately 80 per cent of current surface water licences are for irrigation. Issue and renewal fees for irrigation licences on unregulated rivers range from $113 to over $878 (usually for five years). Similar fees are charged on regulated rivers but based on entitlement volumes.

The remaining 20 per cent of current licences are for extraction by industry, town water supply, stock and domestic use, farming, recreation or mining. The licence issue and renewal fees for non-irrigation licences range from $113 to over $271 based on maximum water diversion rates. In the case of dams, fees for a five-year licence range between $60 and $117. Groundwater licence issue and renewal fees are $151 for five years (IPART 1998).

The charge for temporary transfer of a water right is $25, plus $1 per megalitre of water being traded. This charge is capped at $75.

Discussion

Consumption based pricing is well established in New South Wales. All of State Water's bulk supply is priced on a volumetric basis.

IPART has discussed the issue of licence fees in both the 1998 and 2000 bulk water price determinations. That discussion recognised that licence fees are complex and that the Department of Land and Water Conservation was intending to review the efficiency of renewal and review processes. New South Wales is in the process of implementing major reforms to licences particularly for unregulated and groundwater licence holders (see section on allocations). These changes are also likely to have contributed to delays in considering licence fees.

Assessment

The Council has concluded that New South Wales has met its 2001 NCP commitments for volumetric pricing of rural water. The Council will reconsider the structure of licence fees in future NCP assessments.

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)

New South Wales arrangements

As noted in the section on cost recovery, bulk water services do not meet the lower band of the agreed pricing guidelines. Bulk water charges alone are $6.5 million below the full-cost recovery level.

New South Wales has advised that CSO payments are not currently provided to State Water. However, payments are made from the State Budget to rectify backlog maintenance (as agreed between the Government and the respective privatised and corporatised irrigators) and to assist with the implementation of land and water management plans.

Other subsidies to the rural water industry that are unrelated to the supply of bulk water are paid through the Department of Land and Water Conservation's water programs. This funding currently covers the cost of most resource management and regulatory activities as well as the balance of State Water's operational and capital costs that are unrecovered from users.

Discussion and assessment

To provide full transparency of costs and income, New South Wales has published its water-related costs, fully disaggregated by function (operator, regulator, resource manager), regional location (the 35 State Water valleys and areas) and water source (regulated surface water, unregulated surface water and groundwater).

However, the Council does not have sufficient information to conclude that CSOs are transparently reported in the rural sector. New South Wales' 2000 NCP annual report notes that:

> *The ongoing process of reform within New South Wales water industry, particularly the rural sector, is expected to further enhance the transparency of current funding arrangements and the separation of commercial and non-commercial activities.* p.17 (New South Wales) (2001).

However, CSO payments are not provided to State Water and because State Water is a ring-fenced unit within the Department of Land and Water Conservation, it is difficult for the Council to be sure that there is full transparency in the relationship between the Department and State Water (see section on institutional reform).

Consequently, this is an issue that the Council will need to look at more closely in its 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)

New South Wales arrangements

The IPART process provides sufficient transparency in pricing to identify subsidies and each user's share of attributable operation, regulation and resource management costs. In addition, bulkwater is charged on a volumetric rate, which means that water bills will more closely reflect the cost of providing services.

Discussion and assessment

As noted above, the arrangements for transparency in New South Wales provide identifiable costs for each region, water source and function. This minimises the risk of cross-subsidisation between districts or water sources.

Volumetric charges for water use also minimise the risk of cross-subsidies between users who use the same water resource within the same district.

The Council is satisfied that the arrangements in New South Wales minimise risk of cross-subsidisation.

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)).

New South Wales arrangements

The New South Wales 2001 NCP annual report argues that procedures are in place to ensure that Government investment in new rural water infrastructure is based on appraisal indicating that the project is both economically viable and ecologically sustainable. These arrangements were considered in the Council's second tranche assessment when it was concluded that New South Wale's processes met the reform commitment. In brief, New South wales' arrangements are outlined below.

Economic Viability

In New South Wales, an economic appraisal is a prerequisite for government funding of capital projects above $0.5 million. This requirement applies to both new investments and capital works on existing structures. The economic appraisal must meet certain guidelines, which include:

- identifying various options for the capital investment (including 'do nothing');
- identifying all the benefits and costs associated with the options, both quantitative and qualitative;
- undertaking sensitivity analysis; and
- assessing the net beneifts (including a rate of return).

The New South Wales Weirs Policy was examined as a part of the second tranche assessment. Under the Weirs Policy a proposal is not approved unless it maintains the essential social and economic needs of the affected community.

The environmental assessment required under the Environment Planning and Assessment Act may also include the costs and benefits of the proposed structure.

Ecological Sustainability

The Environmental Planning and Assessment Act 1979 provides for environmental impact assessments of new water infrastructure. The Water Management Act also helps to promote ecological sustainability by requiring new investments to be consistent with the environmental planning processes included in the Act.

The Commonwealth Environment Protection and Biodiversity Conservation Act may also come into effect if the proposed new development impacts upon a matter of national environmental significance, such as wetlands of international importance or endangered species.

Proposed Developments

The Council is not aware of any new rural development proposals in New South Wales.

Discussion and assessment

The Council has again concluded that New South Wale's arrangements for assessing economic viability and ecological sustainability are consistent with its NCP commitments.

As the requirements to assess economic viability and ecological sustainability only come into effect once the Governments have committed to funding (or partial funding) a new rural development, there are no projects to be assessed in New South Wales as a part of this assessment. As such, New South Wales has met the reform commitments of the 2001 NCP assessment. However, the Council will make further assessments as necessary to ensure that any future developments are ecologically sustainable and economically viable.

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)

New South Wales arrangements

Service provision

There are four metropolitan water services suppliers in New South Wales:

- the Sydney Water Corporation is Australia's largest water supplier. It is responsible for water supply, sewerage services and wastewater disposal within Sydney, Illawarra and the Blue Mountains;
- the Hunter Water Corporation provides services to people from Newcastle, Lake Macquarie, Maitland, Cessnock and Port Stephens; and
- in Wyong and Gosford, the local government owns and operates the water businesses.

In the non-metropolitan urban sector water supply and wastewater services are the responsibility of Local Government. There are 124 non-metropolitan urban water utilities (including Gosford and Wyong).

Rural retail services are primarily privatised in New South Wales. State Water is a ring-fenced commercial business utility within the Department of Land and Water Conservation, which conducts other bulk water operations. State Water commenced operations in September 1997 and is responsible for operating water delivery systems and maintaining water infrastructure.

General initiatives

New South Wales passed the *Water Management Act 2000* in November 2000. The Act establishes the regulatory framework for managing water resources in the state. In addition, New South Wales has progressed several initiatives since the Council's second tranche NCP assessment. These involve the implementation of institutional reforms for local government water services providers and State Water.

Non-metropolitan urban services

Local government water supply and sewerage services have been separated (financially ring-fenced) from the planning and regulatory functions in each council. All New South Wales local councils are required to separate their water service revenue and expenditure from general revenue and expenditure and are specifically restricted from allocating water service revenue for other purposes. Local government regulations have been amended so that provisions relating to the operation of council water utility services are located in a separate regulatory instrument from the provisions relating to regulation of plumbing and drainage on private land. There is full procedural separation between councils' planning and land development regulation and their service provision functions.

Local governments set customer service standards through business planning processes. Some have service charters but this is optional. Internally, each government has performance targets and reports the number of customer complaints. A customer with a complaint must approach the local government first. If the complaint is not resolved they have recourse to the State Ombudsman. The New South Wales benchmarking report includes information on the performance of each local government water business against a range of customer service standards.

State Water

In its report on bulk water prices, IPART noted the Department of Land and Water Conservation claims that it has significantly advanced the separation of its water delivery services from resource management functions by establishing:

- State Water as a separate business unit within Department of Land and Water Conservation and recording it as a separate company within Department's accounts; and

- service contracts for the key functions provided by the Department.

Also the Department of Land and Water Conservation is developing an operating licence, statement of corporate intent and access licence for State Water. Relevant parts of the Environment Protection Authority discharge licence will be included in State Water's operating licence.

Drinking water quality

Following the Sydney Water Corporation's water quality incidents in 1998, Peter McClellan QC conducted the Sydney Water Inquiry. Since that inquiry New South Wales has implemented a range of changes to the regulatory and structural arrangements for metropolitan water services. These include:

- The *Sydney Water Catchment Management Act 1998* was passed and included the establishment of the Sydney Catchment Authority as a bulk water supplier to Sydney Water. The Sydney Catchment Authority is responsible for managing water supply and protecting catchments to improve water quality, protect public health and the environment.

- In 2000, an operating licence was created for the Sydney Catchment Authority, and a revised licence was implemented for the Sydney Water Corporation. This followed a public issues paper and review of the terms of the operating licences by IPART.

- New South Wales has moved to bring the Sydney Water Corporation under closer Ministerial supervision by enacting the *Water Legislation Amendment (Drinking Water and Corporate Structure) Act 1998*. Under this Act, the Sydney Water Corporation was changed from a company to a

statutory State-owned corporation. This change was intended to make the corporation more accountable to its shareholder Minister and, through this, make the Minister more accountable to the Parliament for the actions of the corporation.

- The shareholder Minister of the Sydney Water Corporation has been given greater powers to access information and direct the Sydney Water Corporation on the grounds of urgency, public health or safety.

- The regulatory powers of the Director-General of New South Wales Health have been strengthened.

Water quality guidelines for non-metropolitan urban service providers in New South Wales are based on the 1996 Australian drinking water guidelines. Whilst the performance of local governments is monitored and reported in the non-metropolitan urban benchmarking report, compliance with the guidelines is not compulsory. Currently, 95 per cent of the samples tested by non-metropolitan urbans comply with these guidelines.

Discussion

In its assessment of structural reform, the Council has focussed on whether the arrangements in each State and Territory are accountable, transparent and deal effectively with conflicts of interest.

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

- economic regulation and service standards;

- resource allocation, water management and environmental regulation; and

- health regulation.

The Council's second tranche NCP assessment concluded that, based on the information available, New South Wales had met its second tranche reform commitments for institutional arrangements, but it also raised several issues that the Council would monitor or consider in the 2001 NCP assessment. These issues covered:

- whether there is full separation of local government regulation from their water businesses;

- the separation of State Water from the Department of Land and Water Conservation;

- regulation of water quality in Sydney, and the implementation of the recommendations of the Sydney Water Inquiry; and

- whether further reform of Hunter Water Corporation is necessary to address water quality issues.

Economic regulation and service standards, resource allocation, water management and environmental regulation

The Council's second tranche NCP assessment recognised the moves by New South Wales to ensure separation of service provision, from regulation and standards setting in local government non-metropolitan urban water businesses. The Council noted that it would review progress as part of its 2001 NCP assessment.

Since the second tranche assessment, there has been progress in reforming institutional structures for local government water businesses. However, because it has been decided that independent regulation is not appropriate for smaller service providers, it is difficult to achieve full separation in this sector. As a result the Council is looking for transparency in standards and reporting to place pressure on local governments to improve their service standards. Currently, there is an independent complaints mechanism, through the State ombudsman, and reporting of standards in New South Wales' non-metropolitan urban benchmarking report. This report is publicly available through state libraries and on the department's website. The Minister also issues a press release when the report is released.

However, there is no requirement for a customer service charter or other mechanism to inform customers of the obligations of their service provider or how they can make a complaint.

In regard to bulk rural water the Council's second tranche NCP assessment looked at the proposal for ring-fencing State Water within the Department of Land and Water Conservation. At that time many of the systems for structural separation were still being developed. While the Council noted that the current arrangements were probably sufficient to meet New South Wales water reform obligations it expressed some reservations and suggested that a greater degree of separation may be necessary. The Council concluded that it would pursue this issue with New South Wales prior to the 2001 NCP assessment.

More recently, stakeholders have raised questions with the Council about the extent of separation between the Department of Land and Water Conservation and State Water. Macquarie River Food and Fibre has stated that:

> *…it is very clear to us that DLWC retains the clear power of authority over most aspects of State Water's business. We suggest to NCC, that State Water be permitted to have its own voice and make its own submissions separate to DLWC would be a first step towards demonstrable separation.* (Macquarie River Food and Fibre 2001)

The Australian Conservation Foundation has also argued that:

> *State Water remains part of DLWC in New South Wales and continues to answer to both the same Minister and the same Director-General. There remains a lack of transparency in State Water's operations and performance, whilst the relationship between the resource management and resource operation roles of DLWC remain indistinct. An example of how this may compromise the delivery of environmental allocations occurred recently where a State Water staff member refused to release environmental water allocations as specified in the environmental flow rules established through consensus amongst all stakeholders for the Gwydir River. Due to a lack of independent monitoring and auditing of State Water activities, neither the resource manager within DLWC (including senior State Water staff) nor Environmental Protection Authority staff were aware of the failure to implement environmental flows. The situation persisted for as long as three years.* (Australian Conservation Foundation 2001)

In its report on bulk water pricing, IPART indicated that further measures were necessary to ensure that State Water is adequately separated from the Department of Land and Water Conservation: In particular:

- *State Water's accounts should be separately audited on a valley basis, and a full set of financial statements reported;*
- *Services agreements should cover services currently supplied to State Water by DLWC, where appropriate, and these services should be subject to open tender wherever possible; and*
- *State Water's operating licence should specify its water delivery functions and any resource management obligations and include a customer contract, with performance against key indicators audited and published.* (IPART 2000)

The views expressed by IPART arose from its consideration of pricing issues. Given the Department of Land and Water Conservation's responsibility for natural resource regulation and management there is equally likely to be issues of potential conflicts of interest and a lack of transparency arising between the areas of natural resource regulation and the commercial interests of State Water. In the case of natural resource regulation, there is no independent regulator and, therefore, the transparency problems identified by IPART (in the context of pricing) are likely to be more acute.

Drinking water quality

The Council's second tranche NCP assessment noted that the Sydney Water Inquiry discussed a number of weaknesses in the regulatory and structural settings around the Sydney Water Corporation. The second tranche NCP assessment outlined the key issues relevant to the Council's consideration of the structure of urban water institutions that were identified by the Sydney Water Inquiry.

Since that inquiry, New South Wales has acted on most of its recommendations. Consistent with the discussion in the Sydney Water Inquiry, New South Wales has:

- established the Sydney Catchment Authority;
- IPART has reviewed the operating licences for both Sydney Water Corporation and Sydney Catchment Authority and new licences have been finalised; and
- the ability of the Minister to require Sydney Water Corporation to provide information has been strengthened.

However, some changes are not consistent with the recommendations of the Inquiry. For example, the Council understands that the board of the Sydney Water Corporation has decided to re-integrate its Australian Water Technologies business back into the Corporation, further reducing the level of separation between the water business and the body responsible for monitoring and testing water quality.

New South Wales has argued that:

> *The 1998 and 1999 Operational Audits of Sydney Water showed that Sydney Water was effectively implementing the recommendations of the McClellan Report. Sydney Water's new Operating Licence specifically includes key recommendations made by Mr McClellan relating to drinking water quality, the management of incidents and reporting, as well as the establishment of an independent dispute resolution scheme.*
>
> *Nearly all 91 recommendations have been implemented. The outstanding recommendations relate to the completion of the Regional Environment Plan (REP) for the catchment. The REP is being developed by the Department of Urban Affairs and Planning, and is expected to be completed by December 2001.*

New South Wales has indicated to the Council that water quality regulation issues for Hunter Water Corporation are being considered as part of the re-negotiation of its operating licence.

Assessment

The Council considers that the involvement of IPART in price regulation provides some transparency and separation in economic regulation for bulk rural water. However, the concerns raised by stakeholders and by IPART about the level of integration at present between the Department of Land and Water Conservation and State Water are significant issues for New South Wales compliance with water reform commitments. While New South Wales has argued that State Water's operating licence, statement of corporate intent and access licence will improve the level of separation and transparency these

documents are still being finalised and, therefore, the Council could not consider them as part of this NCP assessment. The Council asked the New South Wales government to provide information on its response to the IPART recommendations on State Water.

New South Wales argues that:

> *The IPART requirements for information on the adequate separation of State Water have been addressed by DLWC as part of its April 2001 pricing submission to IPART. That submission incorporates the following.*
>
> - *The State Water operating authority and water access authority are similar to the operating and access licences issued to other large operators (copies of the extant drafts were supplied, but these are now being finalised for issue by the Director-General, DLWC).*
> - *The operating authority separates the operational role of State Water from that of the resource manager.*
> - *State Water has been established with separate company financial accounting records. The submission provided financial reports to the Tribunal.*
> - *A folder was provided to IPART containing State Water strategic and commercial policies and procedures. This included service agreements between State Water and DLWC for the provision of services.*

The changes proposed by IPART are necessary not only to maintain the integrity of independent prices oversight but also to assist in the separation between the Department of Land and Water Conservation and State Water on natural resource management and regulation. While State Water is within a division of the department the mechanisms that provide for separation need to be highly transparent and accountable to avoid real and perceived conflicts of interest. The approach outlined by New South Wales may assist IPART in undertaking its pricing review. However, because much of the information appears to be confidential between State Water, the department and the Tribunal it does not assist in dealing with broader structural reform issues that have been raised by the Council.

In order to meet its reform commitments, New South Wales will need to demonstrate to the Council that decision making in State Water is sufficiently separate from decision making on regulatory issues so as to avoid conflicts between regulation and service provision. The Council will again look at this issue in detail in its 2002 NCP assessment.

For local government non-metropolitan urban service providers there are still outstanding issues for setting service standards and water quality. To provide an appropriate level of transparency, the Council considers that there is a need for some mechanism to assist in informing water and wastewater

customers of their rights and obligations. The Council will pursue this issue with New South Wales prior to the 2002 NCP assessment.

While the changes made to the structure of Sydney Water Corporation do represent a reduction in its level of separation from the New South Wales Government the Council considers that the current arrangements are still sufficient to meet New South Wales water reform commitments.

Performance monitoring and best practice

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

New South Wales arrangements

In all water service sectors, performance management systems are in place and are continually being progressed. IPART reviews performance indicators and service standards as an integral part of price determinations in all sectors. For metropolitan and some non-metropolitan urban service providers this included water reliability, water continuity, supply adequacy, water quality and sewer surcharge.

For non-metropolitan urban water utilities, the Government reviews and reports on performance comparisons against a range of indicators.

In 1997, Sydney Water Corporation became the first non-United Kingdom water entity to participate in benchmarking with the United Kingdom water companies through the United Kingdom water regulator, Ofwat.

New South Wales is continuing to support the national benchmarking processes. Sydney Water Corporation, Sydney Catchment Authority, Hunter Water Corporation and Gosford City Council all participate in *WSAA facts* benchmarking.

Twenty four non-metropolitan urbans are involved in the Australian Water Association's non-metropolitan urban benchmarking. This has fallen from 25 because Kempsey Shire Council did not participate in the 1999-2000 report.

In the rural sector the number of irrigation districts involved in benchmarking has fallen from six to five with Western Murray Irrigation not involved in the 1998-99 Australian National Committee on Irrigation and Drainage project.

Assessment

While there has been a small reduction in the number of New South Wales service providers involved in benchmarking projects, New South Wales is still

benchmarking it's water utilities against each other. Therefore, the Council has concluded that New South Wales has met its reform commitments for this assessment. In future assessments the Council will continue to monitor the involvement of New South Wales service providers in national benchmarking projects.

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)

New South Wales arrangements

In its second tranche NCP assessment, the Council concluded that Sydney Water Corporation and Hunter Water Corporation had a commercial focus. This was achieved by corporatisation and contracting out consistent with the CoAG water agreement requirements. They also appeared, on the whole, to have been subjected to other Competition Principles Agreement obligations such as competitive neutrality.

More recently, Sydney Water Corporation has been changed from a company to a statutory state-owned corporation. This means that the Sydney Water Corporation and the Hunter Water Corporation are both corporatised entities under the *State Owned Corporations Act 1989*. The Act requires State-owned corporations to have the principal objective of being a successful business. It also limits Ministerial intervention in the affairs of the corporation.

Discussion and assessment

The Council has again concluded that Sydney Water Corporation and the Hunter Water Corporation 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)

New South Wales arrangements

In June 2000 the last of New South Wales irrigation areas and districts were converted to local ownership.

Discussion and assessment

As concluded in the Council's second tranche NCP assessment, New South Wales has a high level of devolution of local irrigation management and the Council has now concluded that New South Wales has fully met its reform commitment on devolution of irrigation system management.

Allocation

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)

The New South Wales water allocation process is being addressed through the development of water management plans for catchments and basins. Water management plans are designed to establish environmental flows, water allocations and the conditions under which trading can take place.

Under the *Water Management Act 2000*, New South Wales is committed to developing bulk access regimes on the priority water sources, including appropriate environmental flows by December 2001. These will be released as 51 water sharing plans. These are a particular type of water management plans specified in the Act. Water sharing plans will determine how much water will be available for extraction by licensed water users. They will cover the environmental water provisions, and identify requirements for basic landholder water rights, as well as various rules on operation and transfers. The December 2001 plans will be released as Minister's plans under the Water Management Act. They will not include other matters that could be included in a water management plan such as catchment management and water quality issues. Water sharing plans will have effect for 10 years and are subject to compensation, review and audit provisions.

New South Wales arrangements

Water property rights

The Council considered New South Wales property rights against second tranche commitments as part of the January 2001 supplementary

assessment. A brief summary of the features of the New South Wales system are provided in table 10.

Table 10: New South Wales-water property rights

Key Item	*New South Wales*
Entitlements/Rights	
Nature of water entitlement	There is a hierarchy of rights in the Act. First priority is given to environmental water, then basic landholder rights, followed by all other consumptive uses. Basic landholder rights include stock and domestic use for normal household purposes, harvestable rights (10 per cent of rainfall run-off from land captured in a farm dam), and recognition of native title rights. Towns have a statutory right to water. These rights include the current level of water use and provision for growth (excess water). Towns receive the highest priority of licensed use under the Act. The Act provides for the establishment of bulk access regimes for remaining consumptive use. All water uses other than basic landholder rights require an access licence.
Nature of water right	The current licensing system provides for licences for 5 years. Licence types include unregulated and regulated river water licences, high yield bore licences, mining companies and corporate water licences, water licences for the Sydney and Hunter Water Corporations, and water licences for irrigation trusts and corporations. This system will be phased out starting late 2002. The new licensing system under the Act provides for access licences issued for 15 years. Water utility licences are issued for 20 years. There is a presumption of renewal under the Act. The licences are separate from land title, transferable, divisible and enforceable. All licences are volumetric for the regulated rivers (megalitres per day). The unregulated rivers are in the process of conversion to volumetric licences including annual volumes and daily flows. By December 2001, all town water will have volumetric licences. For regulated rivers, reliability classes are specified in licences as high security, general security and supplementary water. Reliability information is to be specified in plans. Water management plans are 10 years in duration. The Act requires water management plans to be reviewed and audited every 5 years and annual reports on the implementation program for the plans. Any change to the bulk access regime to ensure the objectives of the Act are achieved during the life of a plan is subject to compensation. Appeals on the quantum and timing of compensation can be made to the New South Wales Land and Environment Court. The validity of plans is also subject to appeal within three months of gazettal.

Further details on these issues including a full discussion of the *Water Management Act 2000* may be obtained from the Council's January 2001 supplementary assessment.

Water for the environment as a priority

A significant requirement of the *Water Management Act 2000* is that water for the fundamental health of the environment be protected as a priority in

the sharing of water resources. The Act explicitly provides for water to be set aside for the environment as well as provisions to control land-based activities that can impact on the quantity and quality of water resources.

Environmental protection is to be achieved through a number of mechanisms. The Act sets out general and specific water management principles relating to water sharing, water use, drainage management, floodplain management, controlled activities and aquifer interference activities. The focus of these principles is ecological sustainability. The Act states that it is the duty of all persons under the Act to take all reasonable steps to promote these principles.

Landholders' basic rights

The *Water Management Act 2000* secures water for the basic needs of rural landholders. These basic rights do not require an access licence and fall into three categories.

- Basic water rights for landholders for domestic and stock use (both surface water and groundwater). Water can be extracted from a river or an aquifer without an access licence to meet basic domestic and stock water needs. If a dam or a bore is used, a works approval will be required. Basic landholder rights are tied to the property and cannot be transferred or sold. During drought periods, basic landholder rights are to be afforded priority over other uses.

- Harvestable rights (a percentage of rainfall run-off from land captured in a farm dam). Landholders can capture water on their land by the construction of small farm dams without having to obtain an access licence. This is commonly known as a harvestable right and allows the capture of 10 per cent of the average regional rainfall run-off.

- Recognition of native title rights and interests. Native title holders[5] will be entitled to water as per basic landholder rights for domestic and traditional purposes and will not require a licence.

The Act also allows these basic landholder rights to be limited in critical situations to protect the environment or overcome a threat to public health.

Classification of waters and setting initial bulk access regimes

The Act provides for the classification of water sources in terms of their degree of risk, stress or conservation value. These classifications will enable priorities to be set for action, including the development of water management plans.

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5 A native title holder is a person who holds native title rights as recognised under the *Commonwealth Native Title Act 1993*.

Since the passage of the Act, work in New South Wales has been dominated by classifying water resources and implementing an initial bulk access regime by December 2001. The bulk access regimes are focussing on water resources that are assessed as high risk, high stress or high conservation values.

The bulk access regime is the water available for extraction after provision has been made for environmental water and basic landholder rights. Classification of water sources for the purposes of setting the initial bulk access regime has been completed. The Minister, on advice of water management committees, will be setting the initial bulk access regimes, via Minister's water sharing plans.

In December 2001, bulk access regimes will be established in 51 water sharing plans in phase one of the rollout and will cover the seven regulated rivers, 32 unregulated subcatchments, and 12 groundwater systems.

A list of the water sharing plans covered in phase one is provided at attachment 2.

State water management outcomes plan

A State water management outcomes plan will set the over-arching policy context, targets and strategic outcomes for management of the State's water resources including promoting the water management principles of the Act, and implementation of any government policy relating to salinity strategies. It will also be consistent with inter-governmental and national obligations such as the Murray–Darling Basin Agreement.

It is expected that the state water management outcomes plan will set targets and provide clear direction for the water management committees in New South Wales to determine the water sharing plans. The plan will address key aspects including: water-use; water sharing; drainage and floodplain management; environmental protection; and aquifer interference. The plan is expected to set both short and long term outcomes and targets focussing on ecological and operational aspects, and to address matters such as achieving healthy, productive and diverse water dependent ecosystems and protecting the communities' basic rights to water. In addition, it is expected that targets and outcomes will also focus on licensing floodplain water harvesting, metering and reporting licensed pumps and bores, per capita water use in country towns, effluent reuse in country towns, water markets, and specification of daily flow shares.

A draft state water management outcomes plan is expected to be released in July 2001 and to be provided to all water management committees. The final plan will be in effect for five years.

Access licences

The New South Wales reforms contained in the *Water Management Act 2000* will result in an improved licensing and trading system that provides greater flexibility and opportunities for water users.

Under the Act, all water users (excluding those taking water for basic landholder rights and native title rights) are required to be licensed. The Act makes major changes to the water-licensing framework which will provide greater flexibility and opportunities for water users in New South Wales.

New licensing and approvals provisions will not commence until mid to late 2002. This will allow time for the systems and processes to be established to convert the 130 000 or so existing water licences.[6] New South Wales has begun the process of verifying legal ownership of all current water licences, and splitting the licences into their access (quantity or share) and use (approval) components. New application and renewal processes will be needed, plus a centralised system for management of the information, particularly the public register of all licences and approvals.

All unregulated river irrigation licence holders (10 000) were notified of their annual volumes in February 2001. New South Wales is now going through a process of dealing with any complaints, and correcting anomalies. The same process has begun for towns and industry so that these volumes can be factored into water sharing plans.

Currently almost no licensed river pumps in unregulated streams are metered and water usage estimates are therefore unavailable. The volumetric conversion of licenses, the introduction of daily flow shares and an active water transfer market mean that the measurement of water usage will be essential to ensure equity and compliance with licences. It is anticipated that all licensed pumps in unregulated rivers will be metered over the next three years or so.

In the period of transition to the new licence system, New South Wales is updating the property references in licences, mapping old licences, confirming who is the holder of the licences, resolving any disputes, and establishing the registry system.

The priority will be conversion of licences where there are water sharing plans. At this stage it is not certain how the current five-year licences will be converted to 15-year licences.

The Act provides specifically for access licences which are separate from a water user's approvals for their works or their business activities. Water access licences for private enterprises, such as irrigators (including irrigation

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[6] There are approximately 6500 regulated river licences, 12 000 unregulated river licences, 15 000 groundwater customers, and 100 000 stock and domestic users.

corporations) and industries, will now be issued for 15 years providing a longer time frame in which to plan business activities. Water utilities (for example, Sydney or Hunter Water Corporation, local councils) will have 20-year licences.

Current licences will be rolled over for these new terms once the new licensing system is in place.

Any person can hold an access licence and it entitles its holder to:

- shares in the available water from a specified water source (the share component); and
- take water at specified times, rates or circumstances, and in specified areas or locations (the extraction component).

The separation of the access licence from the use approval will streamline the process for water trading as it is the access licence and its components that are the tradeable commodities. For most areas of New South Wales, new commercial water licences cannot be granted. The trading of water access licences will therefore be the major means by which new developers can obtain water, or existing developers can expand their production.

Separation of the access licence also gives the holder greater flexibility in individual financial arrangements. The water access licence can be managed like other business assets.

The Act provides greater powers for the Department of Land and Water Conservation to ensure compliance with licence conditions. This is an important part of protecting the rights of all water users.

Town licences

All local water utilities like other licensed water users will be subject to a maximum volume which they can extract, although town supply (together with major utilities and domestic and stock licences) is accorded the highest priority of licensed use. Town licences are issued for 20-year periods.

The volume per year in the local water utility licences will be set based on one of the following:

- the existing volume allocation (many towns already have a volume entitlement specified on their works licence or in a legal agreement or contract);
- a volume of water calculated by reference to the demographic and geographic characteristics of the city or town, assuming reasonable demand management strategies are in place; or
- a volume of water calculated on the basis of the current yield of the water management works.

The access licences of local water utilities are to be reviewed every five years and varied according to changes in population and associated commercial activities resulting from increased population. Where a town is experiencing rapid growth, the utility can apply to the Minister for a review of its licence at any time.

Demand for water for new industries within a town can be met via:

- the defined licence volume;
- water efficiency gains;
- the town's surplus - this will apply to industries connected to the town's reticulation providing the criteria for the town's water use approval are met; and
- the industry obtaining their own access licence through the normal water trading processes.

Any additional water sought for new or expanded industries within the town water supply system will not be provided through the population adjustment process. This will put industries within a town on a similar footing to industries outside of town systems.

Once local water utility licences are converted to a volume limit they will be able to trade any unneeded water on a temporary one-year basis. Previously, local utilities could not trade water.

Registry

New South Wales is yet to establish a register of licences. The New South Wales Government has advised that when the register is created it will provide:

- free access to public information on licences;
- details on ownership, conditions, duration, applications, surrenders, suspension and cancellation;
- details on how much water is available and therefore will provide information on how much the share is worth; and
- information on third party interests and anyone can register a legal or equitable interest.

Banks can use contractual arrangements to deal with any residual issues. New South Wales consulted with the Australian Bankers Association and others in the lead up to the development of the Act. The Government has concluded that the current arrangements provide an appropriate balance of risk. New South Wales also argues that it has not seen any competitive impact from the operation of similar registry systems in other States. For

example South Australia and Tasmania have registries that do not offer security to third party interests and the banks are still lending to the irrigation sector.

The final register will be operational by end 2002, when the new licensing system and conversions are finalised. Third parties will have a period of time to register their interest. New South Wales is proposing to develop an interim register that will be used to build up the database. The interim registry is expected to come on line in July 2002. The registry system would be reviewed in 5 years when New South Wales is required to review its regulation.

New South Wales is about to begin consultation with key stakeholders, including the banking sector, concerning the form of the proposed register.

Compensation

Compensation is claimable by access licence holders if water allocations are reduced as a consequence of the variation of a bulk access regime during the term of a management plan, or where water licences are compulsorily acquired. Any reductions in water extractions which arise as a consequence of changes to flow management, such as an increase in environmental allocations, may require compensation to be paid to extractive users.

The New South Wales government will decide whether changes will be made to a Plan and, therefore, whether compensation will be paid. Even if the objectives of the plan are not being met, the government may decide against change. The government can buy water as an alternative, but it is not required to do so. If it is decided that compensation will be paid the Valuer-General sets the level.

Overallocation

The National Land and Water Resources Audit assessment of water resources 2000 has provided data on surface water resource use for the regulated rivers in table 11. No data presently exists for the unregulated systems.

Table 11: Surface water areas where allocation exceeds sustainable and developed yield

Surface water area	*Developed yield*	*Water use (ML)*	*Sustainable yield*
Gwydir River allocation (529 007)	402 768	359 923	359 923
Hunter River allocation (205 128)	Not available	113 041	113 041
Lachlan River allocation (664 526)	270 081	258 769	258 769
Macquarie River allocation (673 611)	464 027	406 840	406 840
Murrumbidgee River allocation (2 789 721)	2 186 325	2 144 271	2 144 271
Namoi River allocation (263 977)	239 352	226 164	226 164

Source: NLWRA (2000)

New South Wales disputes whether there is overallocation on surface water. On regulated rivers, all licences including sleepers and dozers, are allocated a share of the available water. Therefore, it is argued that it is not possible for the allocations to be greater than the level of available water.

There is a debate about whether surface water systems are overallocated or not. For example, the *Economic Impact Assessment of Water Charges for the Peel Valley* stated that:

> *Between 1981 and 1996 irrigators received their full allocations in 80 per cent of years. Up until 1997 the announced allocation was calculated using a utilisation factor reflecting less than 100 per cent entitlement usage. Since 1997 the Department of Land and Water Conservation have changed the method used to calculate allocations which is based on full utilisation of entitlement through temporary trading. As a consequence, allocation announcements will now be lower than previously and more active irrigators may now have to use the temporary trading market to maintain water usage. (NSW Agriculture 2000, p.6)*

In a report to the Department of Land and Water Conservation on *Economic Assessment of Water of Water Charges in the Lachlan Valley* it was stated:

> *The Lachlan Valley has a licensed water entitlement of 665 GL (50 GL high security and 615 GL general security) although overall usage is usually around just 40 –50 per cent of this. While the annual average allocation for general security licences has been in the vicinity of 80 per cent over recent years (LIRAC, 1997), this is likely to decline as currently inactive licences are activated within the constraints of the Murray Darling Basin Commission (MDBC) Cap. The long term cap diversion target for the Lachlan is 254 GL, just 40 per cent of licensed entitlement.* (NSW Agriculture 2001, p.3)

The New South Wales Healthy Rivers Commission in discussing the management of water access in its May 2000 report on its inquiry on the Bega River system made the following statements in relation to overallocation:

> *'In summary, the total demand for water cannot be met by the river system at the times when water is most required. That is, the 'face value' of existing water entitlements exceeds the real available supply..*
>
> *In the Bega catchment, because of the overallocation of water in most streams, the annual volumetric allocations (which are set out according to crop type in the DLWC) are important, but are not the most crucial issue. Whatever the conversion rate, most users will only be able to extract a percentage of their nominal allocation during dry weather.*
>
> *The crucial limitation on irrigators is thus access to water during low flows. For example, if an existing user with a high annual allocation and a former sleeper with a lower annual allocation could still both extract water at the same rate in dry weather, then the inclusion of sleepers in initial entitlements would effectively halve the volume of water available to extractors in low flow periods, regardless of the annual conversion rates, and hence reduce the 'value' of active users' entitlements.*(HRC 2000, pp. 195 and 196)

For the unregulated systems, New South Wales has provided the Council with a copy of a March 2001 document entitled 'Daily Flow Sharing in Unregulated Rivers' (New South Wales 2001, unpublished). This document estimates that approximately 25 per cent of unregulated subcatchments across the state have been assessed as hydrologically stressed.[7]

Murray-Darling Basin Commission cap compliance

In 1997, the New South Wales Government agreed to implement the Murray-Darling Basin Ministerial Council cap, and to limit total development of water resources in New South Wales to 1993-94 levels. Each year, New South Wales monitors its performance against the cap in each regulated valley and the Barwon-Darling River. The cap will be incorporated into the water sharing plans for the inland river systems including appropriate adjustment mechanisms if the cap is being exceeded.

The report of the independent audit group on cap compliance noted that New South Wales has adopted a series of water management and allocation rules for the purpose of managing the level of diversions within the cap. These new management rules include lower allocation announcements, reduced access to off-allocation water and the gradual introduction of carryover to reduce late season 'use it or lose it' diversions. These rules are estimated to reduce

[7] Defined as between 60 per cent and 100 per cent of low flows as extracted.

diversions by irrigators by a long-term average of around 4 per cent against the 1993-94 benchmark. The independent audit group concluded that these rules along with the environmental flow requirements will keep New South Wales diversions within the cap, notwithstanding that there may be movement around the long term cap average on a year-to-year basis.

For 1999-2000, New South Wales exceeded the cap for the Gwydir River, Border Rivers and Barwon-Darling Rivers.[8] Exceedance of the cap in the Barwon-Darling is balanced by the below cap results for the lower Darling. Because the cap is now a Schedule attached to the Murray-Darling Basin Agreement, in those regions where New South Wales is over the cap it will need to come back into balance over the next year, so that on average it complies with the cap.

National Land and Water Resources Audit groundwater

The National Land and Water Resources Audit assessment of 2000 has provided data on groundwater use (see table 12) including where the resource is approaching full allocation, is fully allocated or over allocated in relation to the sustainable yield.[9]

The New South Wales Government has a groundwater quality management policy that sets targets for dealing with groundwater overallocation and phasing in sustainability. Targets for total licensed water entitlements based on the long-term average diversion limit on groundwater systems are also expected to be included in the State water management outcomes plan.

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8 The Murray-Darling Basin Commission has decided the Barwon-Darling and the lower Darling should be combined.

9 New South Wales defines sustainable yield as that proportion of the long-term average annual recharge which can be extracted each year without causing unacceptable impacts on the environment or other groundwater users. The definition of sustainable yield applied for groundwater dependent ecosystems includes rainfall recharge, river recharge estimates and any other available information.

Table 12: Summary of data for groundwater management units which are at/or approaching full allocation or overallocated

Groundwater management unit	*Total abstraction (megalitre)*	*Total allocation (megalitre)*	*Sustainable Yield (megalitre) and Reliability*[*]
Miscellaneous tributaries of the Namoi River (alluvium)	4 321	14 906	5 000d
Peel River alluvium	8 000	33 000	10 000c
Hunter Valley alluvium	34 491	104 529	57 000d
Maules Creek alluvium	665	8 833	7 000c
Tomago/Stockton/Tomaree sandbeds	34 816	52 616	45 000c
Upper Namoi alluvium	81 800	279 176	118 000b
Belubula River alluvium	3 000	19 152	6 000c
Cudgegong Valley alluvium	3 200	15 769	12 000c
Lower Macquarie alluvium	34 006	154 021	48 200c
Mudgee Limestone	510	2 459	2 000d
Upper Macquarie alluvium	11 000	43 127	30 000c
Young Granite	7 095	18 010	15 500d
Lower Lachlan alluvium	28 011	237 452	94 000c
Lower Murray alluvium	102 870	331 646	136 000c
Lower Murrumbidgee alluvium	184 063	384 376	226 000b
Upper Murray alluvium	13 093	39 476	30 300c
Great Artesian Basin – Central New South Wales	6 580	6 580	5 750d
Great Artesian Basin – Southern Recharge	11 580	36 490	10 100d
Great Artesian Basin – Surat New South Wales	70 780	70 780	53 640d
Great Artesian Basin – Warrego New South Wales	44 390	44 390	38 770d
Lower Gwydir alluvium	40 762	99 032	35 000c
Lower Namoi alluvium	43 849	213 264	95 000a

* sustainable yield reliability assessment – a = highest reliability to d = lowest reliability

Source: NLWRA (2000)

Submissions

The Council has received a submission from Macquarie River Food and Fibre expressing continued concern with regard to the security and tenure of water rights created under the Act. The main concerns raised are:

- an allocation to users should only be reduced by the government entering the market and buying the entitlement;

- linking water property rights to adaptive natural resource management is not a CoAG requirement;

- property rights dependent on water management plans and the Minister having final say are problematic;

- there should be clearly defined property rights with title to water established and resource security for that right in legislation;

- the Council should provide direction on who should pay for environmental water otherwise irrigators pay by default through lack of property rights;

- the Council should require a level of security for property rights that is greater than when land and water titles were tied to maximise water's contribution to national income. There is a need to separate management (access) and establish ownership (property rights) to provide certainty;

- the Council should make a call on appropriate timeframes for property rights that can only be reduced via purchase; and

- in relation to the issue of overallocation, the Council should indicate where there might be a need for structural adjustment or compensation to be paid by State governments in regions or industries impacted by reform, and for reductions in entitlements. The Council should verify whether public benefit tests have been undertaken in rectifying overallocations and the State is mitigating impacts on individuals, regions and industries.

Aspects of the submissions made by the Australian Conservation Foundation also address elements of the property rights debate. In particular, the Foundation argues that:

- in discussions with river and environmental agencies on the matter of compensation, the New South Wales Treasury has firmly indicated that it will not pay compensation arising out of a change in irrigation allocations during the ten-year period. Accordingly, no improvement in environmental allocations is likely even in the most stressed rivers within the ten years;

- the interpretation of compensation means that New South Wales is 'placing the requirements of water users for greater security above that of enhancing and restoring the health of river systems';

- Given the compensation provisions in the Act, there is little if any chance that environmental allocations will be enhanced in light of integrated monitoring of environmental flows findings during the ten years. Water sharing plans should be interim until 2003 to provide for necessary changes to flows without compensation for reductions in irrigator's allocations;

- water sharing plans should contain caveats to provide for enhancing and restoring the health of river systems without compensation. This should include commitments under the interstate Murray environmental flows process, recovery of threatened species, the protection of RAMSAR-listed wetlands and the dilution of saline water under the national action plan

on salinity and water quality. These caveats could be provided in the state water management outcomes plan; and

- for the Council to suspend NCP payments for New South Wales until environmental water requirements and adaptive natural resource management are afforded equal priority to irrigators' security of supply under the Act.

Discussion

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.

- 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 need to be payable.

The Council has reviewed the efficacy of property rights under the New South Wales system and has considered further the provisions of the new *Water Management Act 2000* since the January 2001 supplementary NCP assessment. The Act clearly defines the types of rights by specifying several categories. It specifies that the rights will provide the holder with a share of the water available for consumption. New South Wales has provided a

comparison between the property rights under the former system (the *Water Act 1912)*, and the new system (*the Water Management Act 2000)* in table 13.

Table 13: Comparison of Water Rights

CHARACTERISTIC	WATER ACT 1912	WATER MANAGEMENT ACT 2000
Ownership	Possession of physical licence reflected in a computerised database Owner of right is occupier of land Related to Parish maps Only a single owner of all aspects of licence	Entry on a public register Owner of rights to be clear, regardless of occupier of land Extraction rights and works licences based on locations specified through Deposited Plans Each element of access and use can be owned separately
Tenure	Term of licence generally five years. No commitment to renew	Minimum term of 15 years specified - Explicit expectation of renewal
Universality	Surface water, groundwater treated differently Regulated and unregulated surface water systems treated differently Some systems embargoed, others open, trading only in some systems	All systems managed on the same basis All systems subject to a volumetric access limit Open trading in all systems
Divisibility	Regulated and groundwater systems quantities divisible Quantities separable from works only in regulated systems. Works not separable from use conditions Unregulated systems not divisible until 2000	All systems with divisible entitlements, and daily flow shares where relevant Quantities, works and use conditions separable
Exclusivity	Unused rights regularly re-allocated to others by administrative decision. Costs and benefits not internalised. Accounts by administrative action and few instances of controllable account management.	Unused rights to be re-allocated through trading only Costs and benefits to be clearly allocated and internalised Allocations limited to 100 per cent. Statutory provision for water accounts and enhanced account management
Enforceability	Adequate in theory, difficult in practice – directions and suspension available but penalties low and no culture of compliance Very limited appeal rights	Improved in theory and in practice – any person can take action, penalties more realistic, and strong culture of compliance Broad appeal rights
Tradeability	Good for regulated systems, poor for unregulated and groundwater, none for off allocation Extremely limited trading between systems	Good for all systems, possible for supplementary water, public register to support trading Possible expanded trading between systems
Clarity/Reliability/ Attenuation	New shares continually created until embargoes were put in place Rules not clear or predictable in advance	Total allocation known, reliability predictable because rules known and predictive models available Clear trading principles and rules, and clear water accounting rules

Source: New South Wales Government (2001) (unpublished)

For New South Wales, the Council is not yet satisfied that commitments on water rights for both regulated and unregulated systems have been met. New South Wales has issued approximately 130 000 water licences. While the vast majority of these are for stock and domestic use only, which are not a priority in terms of defining property rights, of the others, about 5 000 licences are for regulated rivers, 13 000 licences are for unregulated rivers and about 8 000 licences are for groundwater systems.

The Water Management Act links the right into the water planning process. It is the water sharing plans in combination with the new licence system that will determine the water available to licence holders over the life of the plan. The specifications and reliability of the property right will be determined in the plans. While New South Wales recognises this, it also argued that users on the regulated systems, like the Murrumbidgee, already know the reliability of water allocations.

For the regulated rivers (80 per cent of all water used in New South Wales), licence embargoes and trading have been in place since the 1980's. There is strong customer involvement in a mature market. There are detailed daily flow models, and information on usage levels is very good. Users are accustomed to dealing with outcomes and making investment decisions based on reliability.

Hence, New South Wales argues that for the regulated rivers, the system of property rights is well understood and the issue is one of refinement at the margins.

There is, however, less certainty for unregulated and groundwater users. The unregulated rivers account for 5-10 per cent of water. Most of these rivers are stressed and further allocations were placed under embargo in the early 1990's. Trading is allowed but there are high hurdles to ensure the systems are not further stressed. There is no cohesive group representing users for unregulated systems, and there is little history of contact with users. The conversion to volumetric allocations was only commenced 12 months ago, and daily access shares will not be determined for another 12 months. Water management committees will address property rights as part of the water sharing plans. There are no analytical tools for unregulated systems presently available. There is no metering, and no history of usage, environmental flows, or consideration of other values, for example, aboriginal heritage issues.

For groundwater, water use in New South Wales is estimated to be 10 per cent of total water usage. There have been embargoes on further allocations for some time, and there has been little need for trade. While there is good information on water usage and monitoring, there is little information on environmental values.

For the unregulated systems and groundwater, property rights are being established by the water sharing plans process. The issues are therefore transitional at present. For the unregulated systems and groundwater, the December 2001 water sharing plans will remove the angst with regard to

water property rights as quantities will be specified by the bulk access regime in terms of consumption and the environment. Water sharing plans will lock in the rules for the next 10 years.

The submissions have identified concerns with aspects of water allocations, water property rights and trading. Irrigators are arguing the water rights they are likely to get are very different from the traditional water rights they are used to receiving. It is the Council's view that a lot of the concern is a product of the transition between systems and that, in net terms, irrigators are unlikely to lose and hence the case for compensation is limited. However, the creeping nature of the introduction of property rights in New South Wales means that irrigators will assign the future values of potential rights to existing rights as specificity and trading increase, leading to claims for compensation. The Council is concerned that it is difficult to be sure of the certainty of property rights and ownership due to the creeping nature of implementation and the impact this has on the expectations of irrigators.

New South Wales argues the property rights debate has three aspects. These are: the security of ownership which New South Wales argues will be addressed in a registry system; the nature of the right; and the overall quantities for consumptive use. New South Wales argues the debate is not about the nature of the property right or the registry system, but the quantity of the right for consumptive use and that irrigators understands that the water sharing plan process will protect their rights in a 10-year-statutory plan.

In terms of ownership, New South Wales argues that a 'water access right' is a share of whatever water is available and that this is widely understood. New South Wales is developing a registry system database to be in place by December 2002, with an interim one established by June 2002. To do this, New South Wales has to convert the existing licences from areas related to Parish maps to lot deposited plans, and verify ownership for existing licences. At this stage, it is proposed that the registry will be a public database and third party interests will be accommodated. Over time, it will be developed toward an internet system for users.

The New South Wales Government believes that it is for the banks to determine the basis for lending. New South Wales argues that in no other industries — for example, fishing and taxis — does the government guarantee security for licences. The New South Wales Government has provided a commitment to consult with key stakeholders on the development of the register. In particular, New South Wales will consult with the NSW Irrigator's Council, the Australian Banker's Association, the NSW Property Institute, and the Nature Conservation Council. These consultations will occur between July and October 2001. The register will be established as computer software by the end of 2001, and formally established in regulations by July 2002.

With regard to the form of the registry and timetable for establishment, it is the Council's view that it is the length of the property right, and the adequacy of the registry system that are needed to create the ability for third party

interests to hold a mortgage. Therefore, while irrigators will know what their new licence will look like at the end of December 2001 the new licensing system will not be operational until December 2002.

To assure the Council that there are goals and timeframes in place to realise good quality property rights, the Council requested New South Wales provide a best endeavours timetable of when the component parts will be put in place. This timetable is at attachment 3. The timetable deals with the development of water sharing plans, the state water management outcomes plan, and the conversion of licences from the *Water Act 1912* to the *Water Management Act 2000*. In relation to the registry, public consultation will occur between July and October with key stakeholders and the New South Wales government will determine the form of the register by November 2001.

Assessment

New South Wales irrigators will not know the water sharing rules that will determine the reliability of their entitlements until December 2001 and administrative systems will not be in place until June 2002. This, combined with a lack of detail on the registry and the number of transitional issues that are concerning stakeholders means that the Council considers there is insufficient information to determine that New South Wales's system of water property rights meets the requirements for this assessment. In accordance with the CoAG agreements and recommendations of the tripartite meeting, this should have happened at least on stressed and overallocated rivers by 2001. However, the Council believes that the property rights action plan provided by New South Wales should provide a sufficient level of surety and that the issues identified are likely to be transitional concerns only. Therefore, the Council intends to conduct a number of further assessments for New South Wales on this issue.

- First, the Council will conduct a supplementary assessment in December 2001 in accordance with the New South Wales property rights table to consider the outcomes from public consultation on this issue including, for example, third party interests listed on the register to have priority over non-registered interests. New South Wales has advised that, at a minimum, the register will provide information on ownership of property rights and on third party interests. It is the Council's view that the introduction of a registry system that provides evidence of ownership and third party interests, and priority accorded to registered third party interests over non-registered interests should be able to be accommodated without the New South Wales government needing to guarantee title. In the supplementary assessment, the Council will look at how public consultation was managed and how New South Wales has responded to the issues raised in this consultation.

- Second, progress against the property rights timetable including development of the interim register will be a key area for the 2002 NCP assessment.

The Council considered suspending part of New South Wales's NCP payments for 2001-02 in this assessment, given the importance of property rights and the delays to date by New South Wales in finalising arrangements. However, the timetable provided by New South Wales and the detail on how property rights are expected to unfold, including consultation on the registry, have given the Council confidence that New South Wales intends to give these issues high priority and deal with them constructively. Hence, the Council will monitor developments closely in the December 2001 supplementary assessment and June 2002 NCP assessment. If, by the time of the 2002 assessment, New South Wales has achieved insufficient progress with implementing its action plan, the Council will recommend an ongoing reduction in New South Wales' NCP payments.

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 inter-temporal and inter-spatial water needs of river systems and groundwater systems.

For the 2001 assessment, 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 New South Wales, water allocations for the environment continue to be addressed through water management plans. Interim water quality and river flow objectives for all rivers across New South Wales were set in 1998. Interim environment flow rules were established for five years on all regulated rivers. For the unregulated systems, the objectives for 31 catchments across New South Wales were approved by Government in October 1999 and released to water management committees. The Healthy Rivers Commission inquiries into specific catchments is recommending longer term environmental objectives.

By December 2001, bulk access regimes and environmental flow requirements are to be set in the water sharing plans for all water sources which have been assessed as high risk, high stress or have high conservation values for the next 10 years. Phase one plans include seven regulated rivers, 32 unregulated subcatchments and 12 groundwater systems. The initial focus will include about 8 000 water licences, covering approximately 80 per cent of water use in New South Wales.

New South Wales arrangements

Water Management Act 2000

There are three classes of environmental water recognised under the Act. They are:

- *environmental health water* for fundamental ecosystem health at all times;
- *supplementary environmental water*, to be used for environmental purposes at specific times. Outside of these times, the water may be used for non-environmental purposes; and
- *adaptive environmental water* is subject to an access licence but is used for environmental purposes.

Rules for the identification, establishment and maintenance of the different environmental classes for all water sources in the State will be contained in water sharing plans.

Water sharing plans

As discussed in the property rights section, attachment 2 contains a list of the 51 systems identified for phase one water sharing plans to be established.

Of the nine regulated rivers, seven will be subject to phase one water sharing plans. The Border Rivers is not included because of the process underway with Queensland. The Barwon-Darling will be considered in phase two after issues with the cap are addressed.

As the 12-month timeframe is set by the Act, New South Wales has had to reduce the number of unregulated rivers that are to be covered in phase one. This was done by considering whether enough information was available to establish daily flow shares and whether towns had existing environmental flow provisions. water management committees were involved in identifying the priorities.

The existing interim environmental flows on the regulated rivers will apply until June 2002 when the water sharing plans are expected to become operational. water sharing plans will not include all of the issues that would be addressed in a water management plan, for instance other catchment management issues.

Water management committees

Water management committees have been established under section 388 of the Water Management Act to prepare the first round of water sharing plans and to advise the Minister for Land and Water Conservation.

There are 30 water management committees. These committees were required by the end of May to provide the Minister with a statement of the objectives they intend to include in their respective water sharing plans. The Minister has provided feedback on these draft statements highlighting any deficiencies. The plans are to be drafted by end August including environmental flow rules and bulk access regimes. It is also proposed to refer the draft plans to the Water Advisory Council. The plans will be put on public exhibition in September, and then finalised by the end of November for the Minister to make a decision and produce Ministers plans for specified water sources by early December 2001. The plans must be endorsed by both the Minister for Land and Water Conservation and the Minister for the Environment.

Information provided to water management committees

New South Wales has provided the Council with a list of the information water management committees are receiving to formulate the water sharing plans. This information is shown at attachment 4.

Where Cabinet has made decisions on the Healthy Rivers Commission reports these decisions will be given to the water management committees as an approved Government decision and it will provide the starting point for setting the water management committee's terms of reference for developing a water management plan.

Flows for unregulated systems

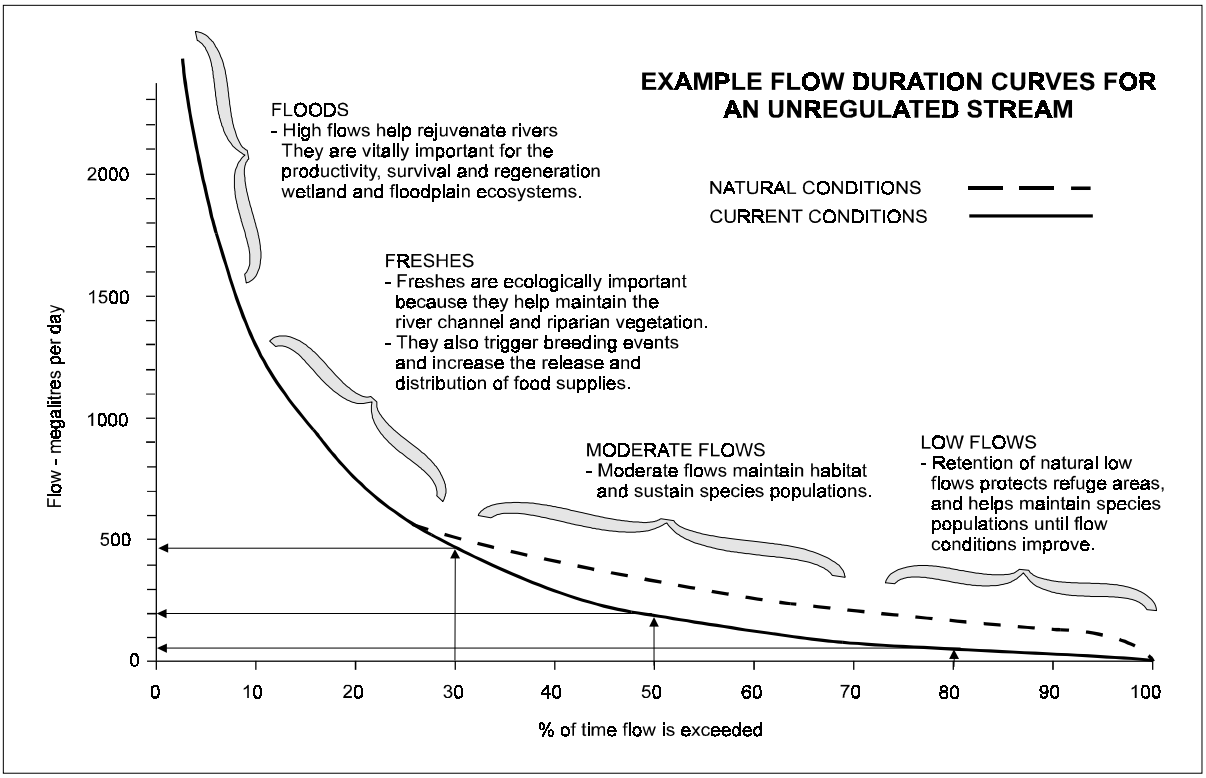
In the unregulated systems, protection of the low flood periods is seen as the major requirement for safeguarding environmental needs. Rural towns will have environmental flow components built into plans. In the second tranche NCP assessment, New South Wales indicated that it was always intended that environmental flows were to be implemented on the unregulated systems once the process of volumetric conversion was completed.

For the unregulated rivers, there is often a problem with the availability of scientific evidence in which to base environmental flows. Consistent with the precautionary principle, New South Wales is proposing to allocate 70 per cent of water to the environment and 30 per cent to extraction. The rivers will then be audited to build the information base. Priority is to be given to defining environmental health water allocations.

With improved information the water in unregulated systems will be divided into three flow classes (A, B and C) and then daily flow shares will be allocated based on a daily flow regime. Irrigator's licences will specify which category of water they receive and establish extraction limits. The approach describe below is needed to protect water access rights for irrigators, to address stressed rivers, manage water transfers, and meet river flow objectives.

The daily flow share procedure proposed is intended to take into consideration important features of the flow regime which play a critical role in the ecological functioning and condition of a regulated river including high flow events, small flow pulses and low flow periods. New South Wales is proposing to, as far as possible, standardise flow classes across subcatchments to simplify management and operation of the water market. Examples of the flow classes that might be recommended are in figure 4.

Figure 4: Proposed flow classes



Source: New South Wales (2001)

A class – very low flows between the 'commence to pump' threshold and the 80th flow percentile.[10] This class would only exist in the permanently flowing streams.

B class – low to median flows between the 80th percentile and 50th percentile. This class may not exist in the more ephemeral streams.

C class – median to high flows above the 50th percentile. This class may be further subdivided depending on water demand.

[10] When considering flows, it can be convenient to refer to a level of stream flow in terms of the percentage of time in which that flow is exceeded. Thus the 80th percentile flow is a *low* level of flow that only occurs 20 per cent of the time and which is exceeded 80 per cent of the time.

After determining flow classes, bulk extraction volumes are then used to establish the total amount of water that can be extracted each day from each flow class by all users in a subcatchment. These limits will be important in ensuring an appropriate level of protection for the environment, meeting basic rights requirements, end of system flows and downstream water supplies, and are critical to determining whether water transfers can be made into the subcatchment. Bulk extraction volumes must be determined for priority subcatchments by August 2001 as part of the drafting of bulk access regimes. Bulk extraction volumes on other unregulated subcatchments will be progressively established over the next five years.

In considering the proportion of flow that can be made available for extraction, New South Wales notes that it is important to take into account the current production needs. The approximate proportions of flow in each flow class that are currently being extracted in hydrologically stressed, moderately and unstressed subcatchments is shown in table 14.

Table 14: Proportions of flow currently being extracted

	Hydrologic Stress Category		
Flow Classes	*Highly stressed*	*Moderately stressed*	*Low stressed*
A	>60 per cent	between 30-60 percent	<30 per cent
B	Many >60 per cent some <60 per cent	Some >30 per cent most <30 per cent	<30 per cent
C	Some >30 per cent most <30 percent	Mostly 30 percent	<30 per cent

Source: DLWC (2001)

New South Wales is considering using the interim bulk extraction volumes indicated in table 15 below to minimise economic impacts while achieving some improvement in flow in stressed systems. The proposal would allow peak daily demands to be met in low and most moderately stressed subcatchments. Water extraction would be moderately reduced during A and sometimes B class flow periods in most stressed systems. In adopting this approach New South Wales will take into account local environmental features and sensitivity, domestic and stock requirements, and contribution of the subcatchment to downstream water supply and environmental flows.

Table 15: Proposed bulk extraction limit in relation to daily demand

Daily demand	*Interim bulk extraction limits*
Peak daily demand < 40 per cent of flow	30 per cent of flow
Peak daily demand = 40-70 per cent of flow	Sum of peak daily demand minus 10 per cent of flow
Peak daily demand > 70 per cent of flow	60 per cent of flow

Source: DLWC (2001)

New South Wales is proposing that the interim bulk extraction limits be set consistent with table 15 above for high conservation value subcatchments

which are also stressed so that some improvement in low to moderate flows are achieved. It is also proposed that no growth in use should be permitted in unstressed high conservation value subcatchments in the interim.

New South Wales is in the process of volumetric conversions for licences. All irrigation licence holders (10 000) were notified of their annual volumes in February 2001. The State is now going through a process of dealing with any complaints, and correcting anomalies. The same process has begun for towns and industry so that these volumes can be factored into Water Sharing Plans.

Water management committees are still to consider how they will deal with developing daily flow shares for those unregulated systems not included in the current round of plans. Some Committees will develop their own plans for these systems. Others may adopt a generic process for setting allocations.

New South Wales has indicated a likely implementation path for finalising this process for priority subcatchments. By December 2001, bulk extraction volumes will be established as part of a bulk access regime. By May 2002, license-holders will be notified of extraction entitlements. By June 2002, all operational gauging stations and meters will be installed, as well as the commencement of flow monitoring, announcements, and compliance auditing.

Monitoring

Water management in New South Wales is based on an adaptive management approach which retains sufficient flexibility to incorporate new information (scientific, social and economic) and appropriate assessment over time. Although plans will be for 10-year periods there are requirements for mid term audit and review. A program of monitoring of environmental responses is under way in the regulated rivers and will be established for the unregulated river and groundwater systems.

The interim environmental flows were set in early 1998 in accordance with the integrated monitoring of environmental flows interagency monitoring program. The New South Wales Department of Land and Water Conservation established the integrated monitoring of environmental flows to provide additional understanding of the flow responses of river and wetland ecosystems, and to evaluate the environmental performance of the flow rules for the seven regulated river valleys. The monitoring program has been implemented over 1997 to 2000 and has three objectives:

- to investigate relationships between water regimes, biodiversity and ecosystem processes in the major regulated river systems and the Barwon–Darling River;

- to assess responses in hydrology, habitats, biota and ecological processes associated with specific flow events targeted by environmental flow rules; and

- to use the results to estimate likely long-term effects of environmental flow rules and provide information to assist in future adjustment of rules.

The monitoring program will continue to release results on an annual basis.

Progress since the second tranche NCP assessment

In the second tranche assessment, the Council found that the requirement for comprehensive systems of allocations including allocations for the environment had been met for the regulated rivers in New South Wales.[11]

Environmental flow rules have been in place since 1998 for all the regulated river systems and in some areas for much longer. For example, environmental allocations for the Macquarie have been in place since 1986. The regulated rivers water management committees have been refining their environmental flow rules each year since the introduction of the initial flow rules. New South Wales has provided information on the benefits to the environment generated to date from the establishment of the interim flows (see box 2).

Box 2: Environmental outcomes from the interim flows on the regulated rivers

In 1998-99 the New South Wales Government introduced environmental flow rules into the regulated Murrumbidgee, Namoi, Lachlan, and Hunter Rivers. Environmental flow rules have been in place in the Gwydir Valley since 1995 and for the Macquarie River since 1986.

The effectiveness of the environmental flow rules is the subject of ongoing monitoring through the recently developed 'Integrated Monitoring of Environmental Flows' program being conducted by the Department of Land and Water Conservation. Although environmental flow rules need to be in operation and subject to ongoing monitoring for a number of years to adequately assess whether there has been any significant improvements to the environmental health of a river system, some early positive results have already been identified in the Gwydir Murrumbidgee, Namoi, and Lachlan valleys.

For much of the spring and early summer of the 1998-99 year natural flooding dominated water flow Gwydir, Namoi, and Lachlan rivers. This flooding inundated important wetlands and stimulated significant water bird breeding. In the Namoi River the environmental flow rules are designed to protect these high flow events.

In the Lachlan River the environmental flow rules were applied to complement the natural flows to extend the benefits of the natural flood event. Additional water was released in the form of an environmental contingency allowance form late December to February 1999, which ensured the successful completion of the water bird breeding event.

In the Macquarie River the main benefit of the environmental flow rules was that the natural flooding allowed the environmental allocation to be accumulated and carried over into the following year for environmental use if needed.

For the Murrumbidgee River the environmental flow releases made from Burrinjuck Dam were successful in filling wetlands along the river. Large areas of red gum forest were inundated giving young seedlings a good watering and thereby promoting growth. In addition the flows encouraged the growth of reed, rushes and other aquatic plants providing important habitat for a wide variety of native fauna.

[11] This excluded the Murray and Border Rivers for which environmental flow provisions are subject to interstate negotiations through the Border Rivers Commission and the Murray – Darling Basin Commission respectively.

New South Wales have advised that environmental flows are now a requirement in the licences for the Sydney Catchment Authority, Delta Electricity, Macquarie Generation and for the Lower Clarence County Council water supply scheme. Every augmentation for a water supply system contains a requirement for low flow protection and other environmental flow requirements. Sydney Water has established an environmental flow for the Hawkesbury–Nepean River of five megalitres per day over the Nepean Weir.[12] Environmental flow components have been built into the licences for the Sydney Water Corporation and the Hunter Water Corporation.

The major development since the second tranche NCP assessment has been the Snowy River initiative as outlined in box 3.

Box 3: 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 a 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 water saving capital 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.

Groundwater plans

In the second tranche NCP assessment, New South Wales provided a priority list of 14 groundwater systems based on an 'Aquifer Risk Classification Report' of April 1998. The Report classified the State's aquifers in terms of the risk to quantity and quality of water.

The 14 groundwater systems identified were where it was clear that current allocations exceed the sustainable yield of the system. Groundwater

[12] The Sydney Catchment Authority is concerned with environmental flows and security of supply. Per capita water consumption is falling but the population is increasing and with increased environmental flows this may put pressure on the need for new dam development.

management committees were established in these systems to monitor and advise on mechanisms and timeframes to reduce allocations to within sustainable yields. This advisory process was completed in December 2000.

As discussed in the property rights section, sustainable yields were assigned to all aquifers in New South Wales during 2000 and reported on by the National Land and Water Resources Audit. Sustainable yield calculations build in an explicit proportion of recharge to be set aside as an environmental provision. This proportion ranges from 50 per cent to 90 per cent, but has been set for most systems at 70 per cent of recharge. Thus, the audit assigns a nominal 30 per cent of annual recharge to ecosystem maintenance (according to application of the precautionary principle).

New South Wales has advised that there will be 12 groundwater sharing plans in Phase one to be set in December 2001. Draft groundwater plans are currently being reviewed by the committees against the requirements of the Water Management Act. These areas largely correlate with those identified by the national audit.

Other submissions

The Council received submissions from the World Wide Fund. The main concerns raised are:

- interim environmental flow rules were not reviewed for five years, and therefore New South Wales is in no position to implement new bulk access regimes;
- a lack of confidence in adaptability and planning for bulk access regimes;
- specific allocations to the environment need to be further recognised (the Barmah–Millewa allocation is seen as a positive example);
- a concern that current consultative mechanisms have not resulted in environmental allocations based on sound science, for example interim flows in New South Wales;
- governments argue that environmental allocations are too costly in socio-economic terms without doing socio-economic studies;
- timelines are not stated for environmental outcomes;
- the need for a better balance of science and basin-wide perspectives rather than local perspectives; and
- the capacity for informed non-government participation is limited.

The Council also received submissions from the Australian Conservation Foundation that argued the following points.

- there should be prioritisation of environmental allocations with regard to the interstate Murray environmental flows process, to which New South Wales is a party. Given this is several years from completion, any provision for increased environmental allocations to the Murray would require a caveat to be included in the New South Wales water sharing plans to increase environmental flows without attracting compensation;

- water sharing plans should be interim until the end of 2003 to provide for changes to flows based on integrated monitoring of environmental flows findings. Clause 4(e) of the CoAG water agreement requires jurisdictions to consider establishing environmental contingency allocations which provide for a review of allocations five years after they have been determined. Interim environmental flows were set in early 1998 in New South Wales in accordance with the integrated monitoring of environmental flows interagency monitoring program. This program is due for completion in 2003. Data emerging from the integrated monitoring of environmental flows is showing that environmental allocations are insufficient in several valleys.

- The 10 year water management plan with no reduction in allocations guaranteed is contrary to the principle of adaptive natural resource management in the New South Wales Act, the CoAG five year review of allocations, and principle 8 of the national principles for the provision of water for ecosystems which requires 'environmental water provisions to be responsive to monitoring and improvements in understanding.'

- Environmental allocations are frequently afforded a lower priority than irrigation water orders despite having exactly the same security and this is contrary to principle 3 of the national principles.

Discussion and assessment

For this assessment, the Council is looking for governments to demonstrate 'substantial progress' against their implementation programs on the ground. Substantial progress includes at least allocations in all river systems which are overallocated or deemed to be stressed. The implementation programs are to be substantially completed by 2005 for all river systems and groundwater nominated.

Environmental allocations for stressed rivers in New South Wales have been delayed and will not be completed until December 2001. In the Council's second tranche report, New South Wales advised that it had 86 stressed or overallocated unregulated streams across seven regional catchments.

It is the Council's view that the determination of final water allocations for the environment is a question of timing rather than a lack of political commitment. Under the *Water Management Act 2000*, New South Wales has committed itself to water sharing plans being determined by December 2001, including environmental flow requirements for the regulated rivers.

The Council has taken into account the fact that New South Wales has interim environmental allocations already in place for all the regulated systems. These allocations are in year three of the original five year flow settings. As a result, the Council is of the view that New South Wales has implemented action on stressed rivers for the regulated systems. In setting these existing allocations to the environment, New South Wales has demonstrated that it is taking into account the national principles developed by ARMCANZ and ANZECC.

The development of water sharing plans in New South Wales is a significant undertaking. New South Wales has been active in seeking ways to improve approaches to developing their understanding of relationships between flows and ecological health.

Information provided to the Council indicates that the state water management outcomes plan is to set the overarching policy context, targets and strategic outcomes for the development, conservation, management and control of the State's water resources. The plan is to provide clear direction for water management action and is to ensure that interim water quality and river flow objectives are specifically addressed in water resource management action. It is currently anticipated that a draft of the plan will be available for consultation in July 2001.

In relation to the current water sharing plan process, New South Wales has advised that the initial plans will only cover water quantity issues and hence the term water sharing plans. Water quality will only be addressed to the extent that it is incorporated in irrigators rights to access water.

It has been the Council's concern for this assessment to ensure the process being employed to determine environmental flows for the December 2001 deadline is being developed in a rigorous and appropriate manner. To ensure the integrity of the process, the Council requested the New South Wales Government provide a list of the information components to be provided to water management committees. This list is reproduced as attachment 4. There are concerns that the time between the commencement of the public consultation and finalisation of the plan is unlikely to be adequate to resolve any contentious issues and that the consultation period for the water sharing plans does not meet the consultation period requirements specified under the Act.

It is proposed that flow percentiles will be used as a basis for setting allocations to the environment and to licence holders. The New South Wales Healthy Rivers Commission has provided the following commentary on the use of flow percentiles in its inquiry report on the Bega River system:

> *'The Commission is persuaded by expert advice that there is no certain physical relationship across different types of streams between a given percentile flow and a given degree of environmental protection. Therefore the Commission considers that environmental flow requirements and restrictions on extraction should not ultimately be determined by application of a given percentile flow. Rather, where possible,*

environmental flows should be based on scientific and socio-economic assessment of each situation.

Nevertheless, reference to flow percentiles is useful, for the following purposes.

- *It is a convenient and quick means of indicating a level of flow and the likely impact of restrictions on water users.*
- *Comparisons of percentile flows at different locations can be a useful part of the initial assessment of environmental flow requirements by facilitating extrapolation of conclusions from one catchment to another region.*
- *In locations where water usage is low but increasing, setting a percentile flow as a limiting threshold that triggers more detailed consideration of environmental flow requirements may be a useful management tool.*
- *In making initial assessments of priorities, the level of water use relative to a given percentile flow (as was done in the stressed extraction.'* (HRC p 130)

On the issue of environmental flows, concerns have been expressed by environmental interests regarding the pace and potential outcomes for the water sharing plans to be set in December 2001. In particular, there is a real fear that there is inadequate knowledge to set these allocations that will be locked away for 10 years.

The Council also understands New South Wales is considering a 10 per cent increase in environmental flows across the Board to be implemented in plans. The targets, if adopted, will be referred to water management committees to ensure that draft water sharing plans comply with the targets. The New South Wales Government intends that water sharing plans will be implemented from 1 July 2002 for the beginning of the 2002-03 water year. Should the 10 per cent target be adopted, the Council would need to be convinced in future assessments that there was a scientific basis for the level chosen as the target. The Council is also concerned that while it is important the plans be put in place quickly, New South Wales needs to ensure they will also be done in a robust manner.

The prime concern the Council has with the New South Wales system, is to ensure that while it is important for bulk access regimes to be established quickly, they must also be done properly including the basis for determination of environmental flows to reflect the new 10 year timeframe under the Act. Otherwise, if the bulk access regimes and environmental flow requirements are poorly addressed, the issues for the environment will not be addressed for another 10 years. Given the system New South Wales has adopted, and the extent of the problems, the Council is of the view that where a review of the implementation of a plan identifies the environmental objectives are not

being met, there should be a change within the 10 year life and compensation (as required under the Act) paid where the identified change is significant.

The Council has insufficient information to make an assessment of New South Wales progress on stressed rivers against the ARMCANZ/ANZECC national principles for the provision of water for ecosystems. The Council will examine the progress of New South Wales against these principles in the June 2002 assessment in terms of the timeliness and quality of the reforms achieved.

However, given New South Wales already has interim environmental flows in place on all regulated rivers, the Council is satisfied that New South Wales has met minimum commitments on action on stressed rivers for the 2001 NCP assessment.

Trade

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)

Water trading is an active and highly important water management tool in New South Wales, particularly within regulated systems. With an embargo on new entitlements in many systems, trading is now the primary mechanism through which new enterprises can obtain allocations and existing water users can expand their activities or achieve the security of supply needed by their business. Trading also allows water users to trade excess entitlements and encourages the efficient use of water.

In 1997-98, over 10 per cent of consumptive entitlement was temporarily traded, with temporary trades dominating the market. For this same period, Marsden Jacob Associates (1999) conservatively estimated that the value added by trade in New South Wales was somewhere between $60 and $100 million. The majority of these trades occurred within the regulated rivers, as trading arrangements in unregulated and groundwater systems is highly restricted.

Trading within New South Wales

Legislative base

The Act was passed by the New South Wales Parliament on 30 November 2000, with most provisions to come into effect on 1 January 2001. The Act is

the principal legislative mechanism for the allocation and transfer of water entitlements in New South Wales.

As noted in the allocations section, the Act provides for the separation of the 'share' or volumetric component from the 'extraction' component of an access licence. The Act also makes provision for the independent transfer of these components. By separating the share component from the extraction component, water can be traded without the complex environmental assessments required for approving extraction and use. Basic landholder rights, including stock and domestic rights, are tied to land and are not transferable.

The New South Wales 2001 NCP Annual Report notes that the trading (and other) provisions of the Act are unlikely to become operational until 2002 pending the development of regulations, rules, computer systems etc. Until that time, the licensing provisions, including trading, of the *Water Act 1912* remain in operation.

Most access licences are provided to water users for 15 years and can be transferred for the duration of the licence or for part of this time. This provides for the longer-term lease of water entitlements. New South Wales have advised that it has been publicly stated that these licences will be renewed unless there has been a significant breach of the conditions of the licence.

A water management plan may be created to address a variety of issues such as water sharing and use, drainage and floodplain management and any other matter the Minister may decide upon. This may include local rules for the transfer of water. Under the Act, an application to trade must be in accordance with any local transfer rules established by water management plans. At the time of writing, no water management plans or trading rules were available.

The Act also provides for the establishment of a register of access licences, including financial interests. Any request to transfer water should be accompanied by documentation from any person with a claim on the licence noting their support for the proposed transfer.

Towns now have the potential to buy and sell water entitlements. The sale of water is restricted to temporary trades of one-year duration. Actual trades will be possible once the process of converting town water licences to a volumetric allocation is completed.

For irrigation schemes, the board generally holds an access licence. The board provides an irrigation allocation for each of the landholders within the irrigation district. These allocations are freely transferable within the irrigation district, however the board must approve trades out of the district.

Institutions and policies

New South Wales is currently in a transitional period between the commencement of new administrative and regulatory arrangements surrounding water management. The New South Wales 2001 NCP Annual Report notes that trading provisions of the Act will not come into force until 2002 and that in the interim, existing provisions (largely from the *Water Act 1912*) will remain in force. Some provisions, such as the public register and new water licenses and approvals are not due to be completed until December 2002.

The Council commends New South Wales on the progress made to improve these arrangements, including arrangements relating to the transfer of water. However, until the new arrangements come into effect, the existing provisions will remain in place. While better than having no trading, these arrangements have a number of limitations which restricted the efficacy of trading arrangements in New South Wales. These limitations include:

- the time taken to conduct trades, especially permanent trades or those interstate or inter-valley;
- neither the current system of water rights or approval processes provided an easy process for prior approval;
- temporary trade is encouraged over permanent trade because it did not require environmental assessment if the transfer is under five years;
- permanent trade is constrained by uncertainty in the current changes in water policy and concerns over the future security of the entitlement;
- trade on unregulated streams is constrained by the prohibition on temporary transfers and by the interim trading guidelines which require a case-by-case assessment of proposed permanent trades; and
- trade in groundwater is highly restricted (Marsden Jacob Associates 1999).

The Marsden Jacob report also suggested that the gains associated with the introduction of a new trading framework are substantial, and have been conservatively estimated at between $7 million and $15 million in present value terms plus the unquantified benefits from the creation of more sustainable resource management practices.

The Department of Land and Water Conservation has produced interim guidelines for water trading on unregulated rivers (see box 4).

Box 4: Interim guidelines for water trading on unregulated rivers

1. The assessment of transfers will be based on the risk to river health and other users.
2. At this stage, only permanent transfers can be approved.

3. Generally transfers will be confined to within sub-catchments.
4. Water transfers will be for water that was associated with an irrigated area at the end of 1997.
5. For more high risk (stressed) sub-catchments, transfers are more likely to be approved if they are:

- within or out of such sub-catchments;
- into such sub-catchments but with access only to high flows; or
- in a downstream direction.

6. For high conservation value sub-catchments, transfers will be assessed for their impact on the identified conservation value(s), but are more likely to be approved if transfers are within or out of such sub-catchments.
7. For low risk (unstressed) sub-catchments, approved transfers can be:

- within, into or out of such sub-catchments; and
- in a downstream or upstream direction.

8. Generally a farm water management plan will be required with the transfer application.
9. While town water licences enjoy special status, they cannot be traded.
10. Trading between irrigation uses will be on an equal area basis.
11. Trading between irrigation and non-irrigation uses will be determined by the Department of Land and Water Conservation on a case by case basis.
12. Trading from regulated rivers to unregulated rivers will be assessed on a case by case basis, taking into account the risk level of the receiving unregulated river and its identified conservation values, and the different security levels of the two rivers.

Source: DLWC (2001)

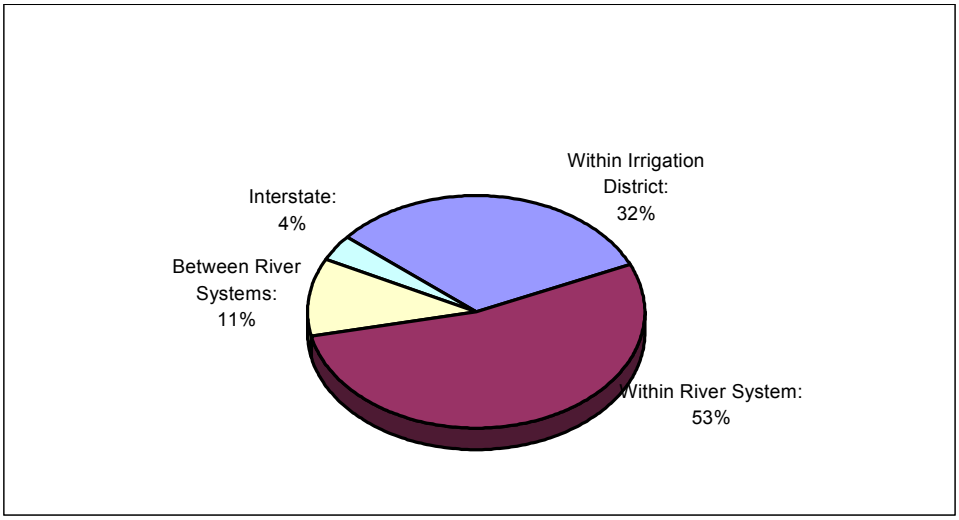
Trading to date

During the 1997-98 irrigation season, some 863 gigalitres of water was traded in New South Wales, of which 96 per cent was traded within the state. Total sales (intrastate trade and exports of water) represented 11 per cent of the total water entitlement. The vast majority of water trades have occurred within regulated systems where trading has been permitted for many years.

More than 95 per cent of the 863 gigalitres of water traded in the 1997-98 season occurred as temporary trade. Permanent trades in the same year accounted for only 39 gigalitres (Marsden Jacob Associates 1999). According to Marsden Jacob Associates, the growth in temporary trade since 1994 has been driven by:

> *… a combination of factors including the reduction in the level of water 'off-allocation' which resulted from the series of drought years at the end of an El Niño sequence. The rise also reflected the availability of unused water, through sleeper and dozer licences, and the imposition of a cap on allocations.* (Marsden Jacob Associates 1999,p.19)

Figure 5: Trade within and between systems and states 1997-98.



Source: Marsden Jacob Associates (1999)

The majority of trade in New South Wales is within the local region or valley. 32 per cent of total trade in the State is within the boundaries of the irrigation corporations, with a further 53 per cent within the valley (see figure 5). Inter-valley and interstate trade accounted for only 11 per cent and 4 per cent respectively of total trade in water in 1997-98.

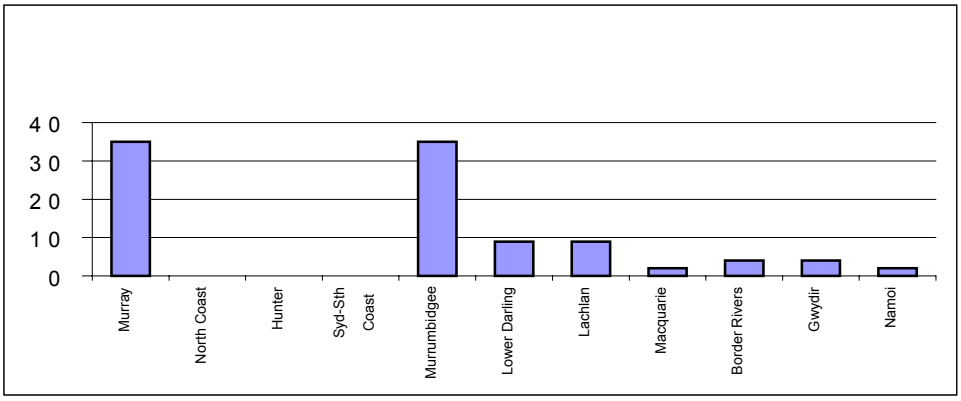
Unregulated

The conversion of unregulated licences from an area to a volumetric base is largely completed, with only around 1500 of approximately 11 500 licences still to be converted. This conversion will allow for the more efficient transfer of water in unregulated systems. The New South Wales 2001 NCP annual report notes that revised interim guidelines for permanent trading in unregulated rivers have been introduced, with rules for temporary trade expected to be completed within 12 months. As such, there has not been any temporary trade in unregulated systems in New South Wales to date.

Regulated

Water trading is concentrated in main centres of irrigation in the southern region of New South Wales (including the Murray, Murrumbidgee and lower Darling systems). In 1997-98, 75 per cent of water traded was in these areas. Figure 6 shows the relative proportions of trade in New South Wales irrigation districts.

Figure 6: Trade in New South Wales Irrigation Districts (1997-98) (per cent).



Source: New South Wales (2001)

Interstate trade

Legislative base

Under the Act, interstate trades are subject to the same provisions that govern intra-state trade. In addition, the New South Wales Minister may enter into an agreement with a Minister of another State or Territory for the transfer of water access licences or their equivalent. Water trading regulations will be developed prior to the commencement of the new legislative arrangements.

Institutions and policies

Both temporary and permanent interstate trade has been possible in New South Wales for some time. A major initiative for interstate trade involving New South Wales (and Victoria and South Australia) is the Murray-Darling Basin interstate water trading pilot project. The pilot project operates along the Murray River downstream from Nyah, involving high-security allocations supplied from the Murray in this region and licences that are supplied from the Lock 10 weir-pool (see Murray-Darling Basin Commission assessment).

The Council is also aware of the potential to expand interstate trade between New South Wales and Queensland in the Border Rivers region and New South Wales and the ACT. However, neither the ACT nor Queensland have yet implemented the Murray-Darling cap on diversions water management plans and rules need to be developed in the regions in question. As such, interstate trade is not yet occurring in these regions. However, it is likely that these issues will be resolved in the short to medium term and trading will be possible.

Private interstate trade is also available in New South Wales. Under the new Act, access licence holders can buy or sell water interstate subject to the

restrictions outlined in the Act and those that will be developed under the water management plans. At the time of writing, no water management plans had been released.

In 1999, the Victorian Government implemented a ban on late-season temporary trades between Victoria and New South Wales. This ban was established due to differences in the carry-over characteristics of water rights between the two states. In New South Wales, up to 20 per cent of a water right can be 'banked' and used 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.[13]

Interstate trading to date

During the 1997-98 irrigation season, New South Wales was a net importer of water. Some 16 282 megalitres of water was transferred from Victoria and South Australia, while 14 714 megalitres of water was transferred from New South Wales to those States.

In the context of the pilot project, New South Wales has been a net exporter of water since the inception of the scheme in 1998. To September 2000, New South Wales had participated in 37 trades, with only three trades entering New South Wales (see the Murray-Darling Basin assessment for more information on the volume and direction of trades conducted under the Pilot).

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

[13] This issue is further considered in the discussion on the Murray-Darling Basin Commission.

in each jurisdiction against a common set of key criteria, which are consistent with recent work by the High Level Steering Group on Water.[14]

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 in areas of demand and measures to be in place to increase the depth of water trading markets.

Even though the new arrangements provide potential for addressing the problems of the existing system, the new arrangements are still being implemented. At the time of writing, the following documents were not available:

- principles for water trading (provided for under the Act);
- regulations providing for the establishment of a property rights register; and
- local trading rules (provided under the water management plans).

These documents are essential if the Council is to fully examine the efficacy of trading arrangements in New South Wales.

Definition of water entitlements

The progress of New South Wales 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 inter- and intra- state trading markets.

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

Nature of the right

The Council has concerns given the relatively long period until the registry and water sharing plans come into effect. The January 2001 second tranche supplementary assessment suggests that:

> *…rights need to be well specified in the long term sense to ensure water users get the most certainty they can about the nature of the property right.* (NCC 2001)

Without clear specification of property rights, trade is likely to be significantly impeded and entitlement holders will not have the required certainty to encourage their participation in the market. The Council views the development of register of property rights and water management plans as mechanisms to provide this certainty. As such, the development of these instruments should be considered a key priority. Without clear specification, a right holder or potential purchaser cannot get an understanding of the long-term value of the right. Without this understanding, trade cannot be maximised.

Ownership

Trade will not maximise the value of the water resource unless the water right is well defined in terms of ownership. Property rights are currently not well defined in New South Wales, which impacts on trade. Trade is less likely if rights are not clearly specified and the owner or potential purchaser cannot get a appreciation of the value of possessing the right. Further specification of the right will be part of the water management plan process and as a result of the establishment of a register of property rights. While the duration of the right is expected to provide a good basis for investment, a number of surface and groundwater systems are overallocated and are likely to require a reduction in allocations to become sustainable. Compensation is provided for reductions to rights within the life of a plan. The availability of information on the likelihood of reductions in water entitlements is necessary for entitlement holders to fully understand the risks associated with their property rights.

The Council is not satisfied that property rights are sufficiently well defined in New South Wales and that, as a result, the potential for trade is not maximised. New South Wales is dealing with these issues as a priority and the Council will again consider progress in June 2002.

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

The Act will have the effect of changing some of the rules that surround water trading. For example, it will be possible to make temporary transfers in unregulated river systems where it was not previously possible. However, the

local transfer rules that are permitted under the Act have not yet been developed. However, interim guidelines are available for water trading on unregulated rivers.

As the focus of this criterion is primarily upon the problems associated with a lack of understanding about trading rules and zones, the Council will be looking for New South Wales to clearly specify trading rules, restrictions and zones following their development as part of the water management plan process. Given the significant changes that have been made to the allocation regime in New South Wales, this is very important.

Constraints on trade:

In the 2001 NCP annual report, New South Wales noted that:

> *With one exception, restrictions on trade in New South Wales are in place to deal with water delivery issues, environmental issues and/or potential adverse impacts upon other water users.* (New South Wales 2001, p. 52)

The exception in question is the prohibition on net trade out of some irrigation districts by the irrigation corporations. This is not an absolute ban on permanent trades but a requirement that all trades must be made by the Board on behalf of the shareholders. There have been permanent trades out of the Murray Irrigation area. in 1999-2000 there were 811 permanent trades into the scheme and 1342 permanent trades out of the schemes. In 2000-01, there were 40 trades in and 73 trades out of the area. While some limited trading is occurring, there is no doubt that the requirement for the consent of the Board is restrictive.

This restriction is in place due to concern that trade out of the district will 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.[15]

The Council considers that such restrictions can impede the expansion of water trading both within New South Wales and interstate. In an ideal market, there would be no restrictions on the transfer of water from such districts. However, the Council recognises that this is a genuine concern for many areas, but contends that this issue is usually broader than simply the

[15] Also known as 'stranded assets'.

effect of water trading. In fact, water trading may be a mechanism that allows land that is not viable to be taken from production, with the associated water used elsewhere.

The New South Wales 2000 NCP annual report also suggests that the Department of Land and Water Conservation has no powers to forcibly remove this restriction, but is working with the corporations to resolve the problem. New South Wales argues that the privatisation of irrigation schemes was a New South Wales reform commitment that did not contain any constraints on the memorandum and articles of association in relation to trading. The Murray Irrigation memorandum and articles were approved at a plebiscite of licence holders to establish the company. The shareholders were fully informed of the consequences of the proposal in relation to trading.

While the Council supports the devolution of irrigation management, appropriate regulatory controls should be kept to ensure that the irrigation areas function effectively. This should include, in the Council's opinion, the ability to intervene if the actions of the irrigation district severely constrain the efficient use of irrigation water.

The use of exit fees or capacity share contracts for water supply infrastructure may provide mechanisms to resolve this problem. The Council supports action by New South Wales to explore options in order to resolve this issue. This issue will be reconsidered in the 2002 NCP assessment.

Markets and trading procedures

Measures have been put in place in New South Wales to minimise the risk for buyers, sellers and third parties, including the environment. Given that a relatively large amount of water is traded in New South Wales, it is important to minimise risk for market participants. Buyer and seller checks in New South Wales include the register of water property rights that is to be developed.

In terms of managing impacts on third parties and the environment, the following clearances are in place.

- A water use approval must be obtained prior to the use of water, excluding basic landholder rights.[16] The approval allows water to be used at a certain site for a certain reason and is valid for ten years.

- The Minister must not grant a water use approval unless satisfied that adequate arrangements are in force to ensure that minimal harm will be done to any water source, or its dependent ecosystems, as a consequence of

[16] Basic landholder rights include domestic and stock rights, harvestable rights and native title rights.

the proposed use of water. The Minister may set conditions on water use approvals.

- Regulations may prescribe that applications must be accompanied by a management plan for the land to which the application relates and the manner in which an application to the Minister may be made.

- The register will allow third parties to register a financial interest in a right, and the permission of third parties must be gained prior to approval of an application to trade.

Market choices

Water trading in New South Wales occurs through formal exchanges, stock and station agents or brokers and informal agreements. Marsden Jacob (1999) found that the majority of trades take place directly between water users, often based on handshakes. Also the efficiency and effectiveness of these trades is heavily dependent on the buyer and seller, but particularly the seller, being informed about the value of the water entitlement. On this basis, a number of formal exchanges for trade have been established. The Water Exchange[17] and the temporary exchange operated by the Southern Riverina Irrigators District Council are examples. These exchanges tend to be limited to the developed irrigation districts in the regulated rivers of northern New South Wales

Market choices are well developed in New South Wales, with brokers, exchanges and private sales all proving viable choices through which to effect trades.

Market information

Areas covered by water exchanges tend to have more information available than those areas that are not covered. In New South Wales, the Water Exchange allows for the transfer of entitlements temporarily, permanently (both high and standard security), and the longer term leasing of water entitlements. Depending upon the region, groundwater and unregulated water entitlements may be traded.

The Water Exchange performs an important role in price disclosure within New South Wales. There are strong concerns among States about the disclosure of price due to the thinness of the market. However, it is important that potential traders have sufficient information to make an informed decision about a potential trade. Equitable access to up to date information will encourage their participation in the market. The Council notes that this

[17] www.waterexchange.com.au

information will need to be provided in a way that protects the commercial interests of traders, such as through indicative or average prices.

The Water Exchange allows participants to see the price of the last trade and information on the prices paid and quantity sold over previous years. The most recent price paid is also available. The Council commends the development of this exchange in terms of its contribution to the availability of market information in New South Wales. The temporary exchange operated by the Southern Riverina Irrigators District Council and Murray Irrigation also performs similar services, but on a smaller scale. As noted by Bjornlund and McKay (2001), water exchanges can also play an important role as a price setter for private trades, with many private trades being based on the price set in the exchange in a given week.

Areas not covered by exchanges, such as the Border Rivers region of New South Wales, are at a major disadvantage. Information availability in these regions is limited and acts as a deterrent to market participation.

The other aspect of market information is the availability of details on what can be traded, where it can be traded to, and importantly how to trade it. As the trading provisions have not yet come into effect, it is difficult for the Council to make an accurate assessment of the degree to which New South Wales has provided this information.

Information is also required on the likelihood of renewal or variation of an access licence. The level of information should reflect the likelihood of clawback or reduction of rights. In New South Wales, the water management plans will contain provisions with respect to the kinds of monitoring and reporting requirements that should be imposed as conditions of approvals having effect within the area. At the time of writing, no water management plans had been completed.

New South Wales is substantially advanced in terms of market information. This is largely due to the water exchanges providing a wide range of easily accessible market information, particularly regarding the prices paid for trades. The Council will revisit the remaining issues as the new administrative arrangements for water trade are introduced, to ensure that sufficient information is disseminated to potential market participants.

Certainty, confidence and timeliness

In the 2001 NCP annual report, New South Wales noted that:

> … *management of water access rights and use approvals through a planning framework leading to greater levels of certainty and efficiency in decision making processes;* (New South Wales 2001, p. 49)

The balance between the need for certainty for water allocation holders and environmental requirements is to be achieved through the ongoing

monitoring process for water management plans. However, the Council is concerned that many systems in New South Wales are overallocated and that a reduction in the quantum of allocations is needed in these areas. While the Council strongly supports the move towards sustainability in all systems, ongoing uncertainty about the future of allocations serves to impede the trading market.

New South Wales's provision for compensation in the Act goes some way to resolving this ongoing concern. However, these provisions are really in place for the ongoing maintenance of the system once Water management plans are in place. Uncertainty over the changes necessary to develop and then implement these plans will continue to be an impediment to trade until finalised. The Council will consider progress on this issue in future assessments.

A strong register of property rights can also facilitate confidence in the trading system. New South Wales has committed to consultation on its registry and its response to that consultation will be the subject of a supplementary assessment in December 2001.

With regard to the timeliness of transactions, the High Level Steering Group on Water report found that in New South Wales:

> *Under current legislation* [Water Act 1912], *permanent trades have typically taken six to twelve months to complete and temporary trades, if interstate or intervalley, up to three weeks to approve. Temporary trades other than interstate or intervalley are normally approved within one week. In part, the delays for permanent trading and temporary trading associated with interstate or intervalley transfers reflect a more thoroughgoing level of environmental assessment, but they also reflect the lack of prior approval mechanisms and the cumbersome nature of current arrangements;* (HLSGW 2000, p.5)

This has been confirmed by the findings of the Murray-Darling Basin two-year review of interstate water trading, which found that brokers in the pilot region recommended that the pilot scheme not be expanded until administrative arrangements are significantly improved. They cited the example that trade documents could spend 32 days in the post alone, moving from one location to another.

New South Wales has acknowledged that the time taken to process trades has been a problem in the past. Under the current system, before trade can be allowed the government needs to check the effect of the trade on the environment and on other water users. Under the new arrangements, this will change because of the split between the share (allocation) component and extraction (licence) component will streamline the process. The new registry will also facilitate the identification of existing water users.

To improve the time taken to conduct a trade, a number of changes have occurred.

- The development of an internet-based water exchange which accelerates the process of trade;

- Access licences have been separated from water use approvals to streamline the consideration of whether water trade will impact on the environment.

- A register of water property rights will be established to assist with identifying existing users and persons with an interest in an access licence.

However, until these arrangements are in place and operating, it will be difficult to determine how effective these changes have been in streamlining trade arrangements. As these arrangements are not due to start until 2002, the timeliness issues can be expected to remain in place for some time. The Council will revisit this issue in future assessments to determine if timeliness is an impediment to water trading.

Capital efficiency

Leasing is an integral part of trading in New South Wales and other options could be expected to develop. To improve the capital efficiency of water rights in New South Wales:

- water entitlements have been separated from land rights;

- area based licences have been converted to volumetric access licences;

- access licences have been separated from water use approvals;

- a register of property rights is to be established, which will allow third parties to register their interest in an allocation;

- legislative provisions have been made to allow for leasing of water entitlements up to 10 years. Leasing is also available in the Water Exchange; and

- any person or corporation may own an access licence.

The Council also notes that shareholders, including the Australian Banking Association, will be involved in the development of the register.

The capital efficiency of water rights in New South Wales is not significantly impeded and will improve with the roll out of the new Act's provisions.

Summary

Significant volumes of water are transferred in New South Wales each year. The new Water Management Act will streamline this process and remove a number of key impediments. In terms of trading, the Act is a clear improvement on the previous arrangements which contain a number of impediments to trade.

However, the Act was only proclaimed in January 2001 and as such, there has been little time for implementation. Provisions relating to licences and approvals have yet to commence. In the period until these provisions come into effect, existing arrangements for the transfer of water rights will continue.

The Act will improve water trading through:

- the separation of the share component from the extraction or entitlement component;
- specific provision for leasing and other improvements to capital efficiency ; and
- the establishment of a register of property rights.

However, there are still a number of problems with trade in New South Wales. Many of these are likely to be transitional, for instance, the development of water management plans is expected to improve the specification of the right, and the establishment of the register of property rights will improve certainty of ownership. The limitation of trade out of regulated irrigation districts is also an issue in both inter and intrastate trade.

Assessment

As the new arrangements are progressively implemented, further assessments will be necessary to ensure that New South Wales fully complies with NCP commitments. The Council will assess New South Wales' response to consultation on the registry in a supplementary assessment in December 2001. The assessment in June 2002 will focus on property rights and their effect on trade, and the roll out of water management plans and the embodied trading rules. The Council will also look for progress in the resolution of the limitation of trade out of regulated systems.

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, and 8b and c)

New South Wales water reforms are regionally focused and based on the implementation of Statewide principles. This allows for recognition of regional differences in terms of resource condition and the industries and communities dependent upon resources, while ensuring a consistency in the approach taken.

In May 2000, New South Wales replaced the 43 existing catchment management committees with 18 catchment management boards. These boards identify major natural resource management issues and options for action to achieve targets in such areas as waterway management, floodplain management, dryland and waterway salinity, drainage management, groundwater management, water quality, soil conservation and land management.

In southern New South Wales, land and water management plans are being implemented as large subcatchment action plans to help overcome natural resources degradation and provide for the long term sustainability of rural industries.

Local councils are preparing stormwater management plans for townships with populations greater than 1000 people by mid 2001.

Integrated catchment management

Passage of the *Water Management Act 2000* has provided integrated and consolidated water legislation covering all water sources of the State. The Act adopts the principles of ecological sustainable development, makes provision to license Sydney Water Corporation and Hunter Water Corporation, updates provisions for groundwater management to introduce comparability with surface water management, and facilitates interstate water trading. This whole-of-government approach will continue to be the basis for implementation of water reforms in New South Wales.

Integrated catchment management in New South Wales covers all natural resources, environmental protection and planning agencies. Catchment

management plans are the main mechanism through which integration and coordination is achieved.

New South Wales arrangements

Total catchment management was endorsed as New South Wales Government policy in 1987 and a framework put in place under the *Catchment Management Act 1989*. A major review of total catchment management in May 2000 recommended improving the existing program and strengthening partnerships between government and community.

As a result of the total catchment management review, New South Wales has established 18 new catchment management boards[18] to replace the 43 existing catchment management committees. The boards will strengthen the involvement of local government, primary producers, environment organisations and aboriginal communities.[19]

The new boards will be allocated a budget to ensure that on ground projects address targets. These boards will work with groundwater, regulated and unregulated river management committees.

The boards will produce draft catchment management plans. The plans will set the strategic direction for the management of natural resources in the catchment. This work will need to be submitted for consideration by the New South Wales Government within the first 12 months of a board's operation.

Land and water management plans

In southern New South Wales, land and water management plans are now being implemented as large subcatchment action plans to improve natural resource condition and provide for ongoing sustainable farms. In the Murray valley, the community has developed and is now implementing four land and water management plans. Plans for Berriquin, Cadell, Denimein and Wakool were released in January 2001. All four plans are integrated, interdependent and compatible. Implementation of the plans will improve the environment of the Murray-Darling Basin by improving the way irrigators use and manage water. Each plan is an integrated package including:

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18 The new boards are Border Rivers Catchment, Central Coast Catchment, Central West Catchment, Gwydir Catchment, Lachlan Catchment, Lower Murray Darling Catchment, Lower North Coast Catchment, Mid North Coast, Murray Catchment, Murrumbidgee Catchment, Namoi Catchment, Northern Rivers Catchment, South East Catchment, Southern Catchment, Southern Sydney Catchment, Sydney Harbour Catchment, Upper North Coast Catchment, and Western Catchment.

19 There will be 17 members on each board. The majority of members will be landholder users. Other interests represented include local government, nature conservation, state government agencies and Aboriginal groups.

- education leading to better farming practices;
- structural adjustment;
- protection of remnant vegetation;
- controlling water seepage from supply channels;
- better irrigation water use and fertiliser management;
- agroforestry and/or alternative crops; and
- monitoring and review.

There are many benefits expected from implementation of the plans. Benefits for users include improved farm viability, more efficient use of water, and an increased awareness of problems and controls. The benefits for the environment are expected to include improved health of the Murray River (due to improved quality of water runoff finding its way into the river), lower water tables, increased biodiversity, and reduced salinity levels due to increased proportion of land planted to trees.

Land and water management plans are funded on a 'beneficiary pays' basis. Farming communities will contribute more than 70 per cent of the cost of each plan by direct capital investment in farm works.

Regional environment plans

In addition to the catchment management planning process managed by Department of Land and Water Conservation, the Department of Urban Affairs and Planning has responsibility for a wide range of planning aspects through developing regional environment plans. A regional environmental plan will provide regulatory controls in relation to activities that impact on the environment of the catchment.

Regional environment plans will generally be made within 6 months of completion of land and water management plans. Regional environment plans in progress include:

- for the Georges River Catchment, to focus community and government attention on the need to maintain and improve the environment and sustain healthy, vibrant and productive communities, both now and into the future;
- for the Murray River, to protect the riverine lands, coordinate and implement planning related aspects of the Murray–Darling Basin Commission strategies, and promote consistency in planning between New South Wales and Victoria in relation to the river and its floodplain;

- for the Williams River in the City of Newcastle, to incorporate total catchment management principles for drinking water to coordinate decisions and control development; and

- for the Hawkesbury-Nepean catchment area within Sydney, to cover environmentally sensitive areas, water quality and quantity, scenic beauty of the river area, and agriculture and residential development. The regional plan is supported by an action plan that outlines what is necessary to improve the existing conditions.

Healthy Rivers Commission

The terms of reference for the Healthy Rivers Commission include consideration of administrative and management issues to address catchment-wide natural resource degradation problems. The Commission makes recommendations to Government on a broad range of matters which can address aspects of river health including wetlands and estuaries. The New South Wales Government responds to the Commission's recommendations through a statement of intent, and a public commitment by the Government for its agencies to deliver outputs and outcomes in specific timeframes. The statement of intent actions are audited by the Healthy Rivers Commission after two years and the audit report is considered by the water subcommittee of New South Wales Cabinet.

Other programs

The Sydney Catchment Authority and New South Wales National Parks and Wildlife Service are developing plans of management for 'special areas'[20] for all water storage catchment areas in the Sydney-Illawarra area. These plans aim to ensure the provision of clean water and to protect the ecological values of the inner catchments.

Department of Land and Water Conservation has produced a draft policy and framework document on integrated urban water cycle planning to complement the new Water Management Act. This is being used to encourage non-metropolitan urban service providers to make better use of all water resources including stormwater and effluent reuse. Several pilot studies have been carried out to demonstrate the effectiveness of this approach. The New South Wales 2000 NCP annual report cites as an example the town of Finley, where the approach resulted in a reduction in capital expenditure from $3 million to $300,000.

The Environmental Protection Authority issued local councils with a direction under the *Protection of the Environment Operations Act 1991* to prepare stormwater management plans for urban areas for townships with

[20] Land surrounding the dams managed by the Authority.

populations greater than 1000 people by mid 2001. A stormwater management trust has been established to provide funding to local councils for on-ground works. As part of the water reforms, local councils are also preparing integrated water supply, stormwater and sewerage strategies.

Discussion and assessment

New South Wales has devoted considerable resources to addressing issues of integrated catchment management at the State, regional and local planning level. Catchment management plans, vegetation management plans and water management plans are all statutory plans.

New South Wales provided the Council with land and water management plans for Berriquin, Denimein, Cadell, and Wakool, and the recommendations of the Healthy Rivers Commission for the Shoalhaven and Bega inquiries. The plans provided to the Council show the ongoing commitment to implementing integrated catchment management.

New South Wales is currently reviewing proposals for change to ensure a more consistent framework among these different levels of plans. The proposed planning reforms will improve integration of agency efforts. The Council will continue to monitor developments in the implementation of integrated catchment management arrangements in future assessments.

The Council is satisfied that New South Wales has met the commitments related to integrated catchment management for this assessment.

National Water Quality Management Strategy

Jurisdictions agreed to support ANZECC and ARMCANZ in developing the National Water Quality Management Strategy (NWQMS), 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 NWQMS guidelines, including on-the-ground action to achieving the policy objectives. (clause 8b and d)

New South Wales is implementing the National Water Quality Management Strategy through various programs at the State level, including the setting of water quality objectives, an urban stormwater program and the groundwater quality protection policy.

Water quality issues in New South Wales include salinity, environmental flows and algal blooms. Salinity is a major issue involving drainage from irrigation, saline groundwater and river salinity. The National Land and Water Resources Audit estimated that dryland salinity currently affects 180 000 hectares of New South Wales and this may grow to 1 300 000 hectares by 2050 (NLWRA 2000). Targets have been set for salinity levels in

each major river by the Murray–Darling Basin Commission and these are expected to affect land and water management practices for the western part of New South Wales.

New South Wales arrangements

Implementation of the National Water Quality Management Strategy

New South Wales has been implementing and actively supporting the development of the National Water Quality Management Strategy within various programs at the State level. These include the setting of water quality objectives based on both the management and scientific framework of the water quality guidelines under the national strategy.

New South Wales has actively participated in the development of all national guidelines completed to date. The various national guidelines are used as key documents for defining water quality goals or for providing direct guidance to industry. For some key sources such as urban stormwater and sewage management, New South Wales is implementing programs which are more advanced than the national guidelines. New South Wales has conducted assessments on how the national guidelines will impact on industries and economic development and the best methods for implementation.

The *Protection of the Environment Operations Act 1997* consolidates, streamlines and strengthens the framework for environmental regulation by a more integrated approach to environmental protection licensing. New South Wales has made considerable progress with developing market based mechanisms such as load based licensing to provide pricing incentives for polluters to perform beyond minimum compliance standards. The load based licensing scheme commenced in July 1999.[21]

New South Wales is actively supporting the development of remaining modules (guidelines for sewer overflows and biosolids) through active participation in the National Contact Group, and providing technical and policy assistance to the Commonwealth in finalising these guidelines. New South Wales has also contributed to the National Water Quality Management Strategy pilot programs which will provide a firm basis for reviewing current approaches to town wastewater sewage disposal. The deepwater ocean outfalls study off Sydney has already provided a substantial research base for such a review.

[21] Under the Protection of the Environment Operations (General) Regulation 1998.

Healthy Rivers Commission

In October 1999, the New South Wales Government approved the release of interim environmental objectives for 31 New South Wales catchments, as guidelines to local water management committees based on the tools within the framework of the National Water Quality Management Strategy.

The interim objectives are the first stage of a two-stage process for setting environmental objectives. The second stage involves the Healthy Rivers Commission inquiries which will recommend longer term environmental objectives. These recommendations will be given to water management committees for determining the initial water sharing plans in December 2001. The Healthy Rivers Commission has completed final reports on the Williams, Hawkesbury-Nepean, Shoalhaven, Clarence and Bega catchments.[22] The Commission has also completed a report on strategic issues arising from inquiries into coastal catchments.

Water quality monitoring

New South Wales has a Statewide approach to water quality management which targets ambient environmental objectives (for both water quality and river flow) through water management planning.

New South Wales has developed a Statewide strategy for monitoring water quality. The strategy provides for broad performance monitoring, and special studies and these, together with state of environment reporting (at local and state levels), are useful tools for monitoring the effectiveness of the National Water Quality management Strategy.

Surface water quality monitoring in New South Wales is conducted under the key sites program. The program targets phosphorus levels. Other monitoring programs include the central and north west water quality project which covers the Macquarie, Gwydir, Namoi, and Border Rivers and the provisions of the integrated monitoring of the environmental flows program.

The New South Wales State groundwater policy (1997) aims to manage the State's groundwater resources to sustain environmental, social and economic uses. The policy has three components. First, the New South Wales groundwater quality protection policy, was adopted in December 1998. New South Wales is in the process of finalising the remaining components on groundwater dependent ecosystems and groundwater quantity management.

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[22] A draft regional plan for the drinking water catchments of Sydney and adjacent regional centres builds on and implements the findings of the Healthy Rivers Commission inquiries into the Hawkesbury Nepean River and the Shoalhaven River as well as drawing on findings in the draft Woronora River report. This draft plan was exhibited for public comment from October 2000 to March 2001.

Department of Land and Water Conservation manages groundwater quality issues in New South Wales. Other agencies such as the Environmental Protection Authority and local governments may have a role in issues relating to groundwater pollution, and the National Parks and Wildlife Service retains responsibility for managing groundwater dependent ecosystems. Further developments on groundwater quality monitoring are expected to be outlined in the State water management outcomes plan.

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 (see table 14).

Table 14: Exceedance of water quality guidelines for New South Wales

	Number of basins assessed	*Major Exceedances*	*Significant Exceedances*
Nutrient: total nitrogen	3	1	2
Nutrient: total phosphorus	27	16	7
Salinity: electrical conductivity	16	2	5
Turbidity	21	11	4
pH	2	0	2

Note: total number of river basins = 34

Source: NLWRA (2000)

The National Land and Water Resources Audit assessed nutrient exceedances in New South Wales in terms of total phosphorous in both inland and coastal regions. In the Murray-Darling Basin, high levels of nutrients and turbidity were recorded. Increasing trends in phosphorus were identified for both coastal basins (Tweed, Macquarie-Tuggarah Lakes) and inland basins (Macquarie-Bogan). Decreasing phosphorus trends were observed for three inland basins (Murray-Riverina, Upper Murray, Namoi) and one coastal basin (Clarence).

Salinity exceedances were not widely recorded within New South Wales. However, chronic exceedances were recorded within the Murray–Riverina basin and, to a lesser extent, within other areas of the Murray-Darling Basin. Observed salinity trends are remaining steady or decreasing. Several areas of the Murray–Darling Basin (Lachlan, Murray-Riverina, Namoi) showed decreasing salinity trends. Areas with increasing trends included the Manning and the Horton River within the Gwydir.

High levels of turbidity are widespread throughout inland New South Wales. They include most basins within the Murray–Darling Drainage Division. They are less common in coastal New South Wales with exceedances only recorded in three basins (Hawkesbury, Macquarie–Tuggerah Lakes, Hunter).

Regulating environmental impacts of water use activities

New South Wales regulates the impacts of works and activities related to water use to limit environmental impacts. The *Water Management Act 2000* provides for the following new approvals:

- *Water use approvals* authorise the use of water at a specific location for a particular purpose for up to 10 years;

- *Water management work approvals* authorise the construction and use of works for water supply, drainage or flood management and may be issued for up to 20 years;

- *Controlled activity approvals* authorise the holder to carry out a controlled activity in, on or under waterfront land. Controlled activity approvals may be issued for up to three years. A 'controlled activity' refers to the construction of a building, the carrying out of a work, removal of material, or any other activity that affects the quantity or flow of water in a water source; and

- *Aquifer interference activity approvals.* This approval authorises the holder to conduct activities that affect an aquifer and is intended for activities that intersect groundwater, other than the construction and operation of bores. These approvals may be issued for up to 10 years.

For controlled activities and aquifer interference activities, the Act requires that the activities avoid or minimise the impact on the water resource and land degradation and, where possible, the land must be rehabilitated.

In addition to the water approvals process, a water management plan may also contain environmental protection provisions that:

- identify zones in which identified development should be controlled;

- identify provisions to which State agencies and local authorities (including local councils) should be subject when taking action;

- identify development that requires the Minister's concurrence to the granting of the development to proceed; and

- require the establishment of action plans to minimise or alleviate any harm caused to water resources by the continuance of existing uses.

These environmental protection provisions are to be included in regional environmental plans.

Landcare

The New South Wales Government has developed a broad suite of policies to guide landcare programs to protect rivers of high environmental values and

sensitivities. The Native Vegetation Conservation Act recognises sensitive areas, as does the stressed rivers classification developed within the New South Wales water reforms. A number of wetland management policies and guidelines are assisting the protection of these sensitive areas.

Stormwater and wastewater management

New South Wales is encouraging the greater use of wastewater with a number of pilot projects such as Rouse Hill, Shoalhaven Heads, Albury Wodonga, the Quaker's Hill Water Factory, and the lower Hunter. In the Hunter, all the treated effluent from Hunter Water Corporation's Dora Creek treatment plant is reused by the nearby Eraring power station.

In country New South Wales, integrated urban water cycle planning is encouraged in all water infrastructure projects and is a condition of the country towns water supply and sewerage backlog subsidy program. In this planning process, councils must consider all water sources and uses and match these with other users in catchments. The Act now allows for effluent credits for future schemes, whereby non-metropolitan urban water providers can free up their water allocation for trading by returning higher quality effluent to rivers.

In May 1997, New South Wales launched a $3 billion waterways package to address urban waste water and stormwater problems covering Sydney, Blue Mountains, Hunter and Illawarra regions. The package establishes a 20-year action plan with its goals to be realised by 2020. A new sewage storage tunnel was also announced to minimise and capture wet weather sewerage overflows from the north of Sydney and prevent pollution of Sydney Harbour.

Technical and financial assistance is given to councils to develop integrated strategies for water supply, sewerage and stormwater management. These strategies are a pre-requisite for State Government financial assistance and need to comply with broad catchment planning and environmental objectives. Department of Land and Water Conservation has prepared a draft policy on integrated urban water cycle planning to assist councils to prepare integrated strategies on a catchment and total water cycle basis. There is a five-year program for development of strategies by country councils.

In September 1997, the Government announced funding of over three years to tackle stormwater pollution throughout New South Wales. The funds have been administered through a stormwater trust to help implement high priority projects, to assist local councils to prepare and implement catchment-based stormwater management plans and for a stormwater education program. One of the key initiatives is the development of partnerships between local councils and the private sector to implement innovative, cost-effective stormwater management technologies. New South Wales is presently considering a second phase for the stormwater program.

A wastewater reuse initiative is underway in the Shoalhaven area. The scheme will manage all effluent on a regional basis through a major upgrade

of treatment and reticulation systems to allow up to 70 per cent of all wastewater to be reused. The New South Wales Government's SepticSafe Program also provides financial and technical assistance to councils for the development of better on-site sewage management strategies.

Sydney Water Corporation has been exploring possibilities of supplying different qualities of water for different purposes including commercial opportunities for non-potable supply. Approximately 23 million megalitres of wastewater is currently being recycled from Sydney Water Corporation sewerage treatment plants. This is equivalent to around 2 per cent of the Sydney region's daily demand for water. Hunter Water Corporation has an established track record of wastewater reuse with major industry in the lower Hunter region. In 1999-2000 over 4000 megalitres of effluent was reused, which is around 10 per cent of average dry weather wastewater flows.

Drinking water guidelines

Through the New South Wales Government's country towns water supply and sewerage program, Department of Land and Water Conservation provides technical and financial assistance to non-metropolitan water utilities for best practice provision of water supply and sewerage services in country towns. This includes development of water supply sources that meet the Australian Drinking Water Guidelines and regular audits of the utilities.

Since the second tranche NCP assessment, New South Wales water utilities have been reporting their water quality compliance against the 1996 National Health and Medical Research Council and ARMCANZ Australian drinking water guidelines.[23] For 1999-2000, the following level of compliance with the guidelines has been reported:

- ninety-three per cent of samples comply for microbiological water quality;
- ninety-seven per cent of samples contain no faecal coliforms;
- ninety-five per cent of all samples tested complied with physical water quality; and
- ninety-five per cent of samples complied with chemical water quality.

WSAA facts

WSAA Facts 2000 reported on water quality compliance for 1999-2000 for the New South Wales metropolitans against the 1996 Australian drinking water guidelines.

[23] Previous reporting was based on the 1987 Guidelines

- Sydney Water, 98.4 per cent compliance with bacteriology standards, and an average of 98.6 per cent compliance with physical-chemical standards (turbidity/colour/ph).

- Hunter Water, 99.2 per cent compliance with bacteriology standards, and 100 per cent compliance with physical-chemical standards.

- Gosford City Council, 93.5 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, Sydney Water continue to be operating with 98.74 per cent compliance, whilst Hunter and Gosford are 100 per cent compliant. (WSAA 2000).

Assessment

New South Wales continues to progress reforms in this area through the interim water quality and river flow objectives and a range of programs at the State level. There have been significant achievements through projects developed under the stormwater trusts grants scheme. New South Wales has also demonstrated a commitment to managing wastes through developing market-based mechanisms and promoting effluent and biosolid reuse.

The Council is satisfied that New South Wales continues to be at the forefront of developments in implementing policies that support the objectives of the National Water Quality Management Strategy. The Council is satisfied that New South Wales has met all commitments for this assessment and will report on further developments in future assessments.

Public education and consultation

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)

The New South Wales Government is committed to the principle of comprehensive public consultation and public education mechanisms throughout its water industry.

State Water has established customer service committees to give customers a direct say in operational and asset management decisions on their rural bulk water delivery service. Hunter Water Corporation and Sydney Water Corporation have established mechanisms for public consultation, including customer councils, focus meetings and customer surveys. Sydney Water

Corporation surveys customers annually on a range of issues and publishes the results of these surveys. Substantial stakeholder involvement is also a key part of the process to pricing reforms through open public hearings, workshops, representations and written submissions to Independent Pricing and Regulatory Tribunal.

Public consultation continues to be a feature of natural resource management reform including the determination of environmental flows. The Healthy Rivers Commission conducts independent public inquiries into the health of selected rivers in New South Wales and consults through discussions with interest groups, public hearings and written submissions.

New South Wales arrangements

Public consultation

New South Wales 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. Major forums for consultation for policy and plan making include:

- New South Wales Water Advisory Council - a community and industry body, established in 1996 to advise the Minister for Land and Water Conservation on water issues. The NCC secretariat attended a meeting of this body and observed the forum as a key input for community consultation during considerations of amendments to the *Water Management Act 2000*.

- State working groups with agency and key stakeholder representatives, which have been closely involved in the development with Department of Land and Water Conservation of water reform policies, including the State Rivers and Estuaries Policy (1993), State Wetland Management Policy (1996), State Groundwater Policy (1997) and the *Water Management Act 2000*.

- Catchment management boards with agency and key stakeholder groups which develop catchment management strategies at the catchment level.

- Stakeholder surveys.

- Water management committees have been established with a wide range of interests - including agency, water users, environmental and Aboriginal representatives - to participate in establishing environmental flow rules for each regulated valley and stressed unregulated rivers.

New South Wales has embraced a focus on identifying Aboriginal interests in policy and plan-making and Aboriginal representatives must be included on all boards and committees.

In late 1999, a white paper — a proposal for updated and consolidated water management legislation for New South Wales — was the subject of extensive public consultation. The paper was developed in consultation with other key natural resources agencies and with peak community and industry interest groups, such as the New South Wales Farmers' Association, the New South Wales Irrigators' Council, the Nature Conservation Council, the New South Wales Local Government and Shires Association and the New South Wales Aboriginal Land Council. More than ten thousand copies of the White Paper were distributed and meetings were held in 55 centres, mainly in regional New South Wales. Eight hundred written submissions on the white paper were also received and analysed.

The Council noted in the January 2001 supplementary assessment, the extensive levels of public consultation New South Wales engaged in with regard to the *Water Management Act 2000*. In summary, this involved public consultation across government, with peak stakeholder groups and through extensive regional public meetings. More than 340 written submissions were received from a wide range of water user groups, conservation groups and individuals, local councils and state and federal government agencies.

From 2001, Hunter Water Corporation will replace its annual customer survey with 'perception' and 'satisfaction' surveys to be carried out in alternate years. Hunter Water Corporation has found that, after conducting the annual survey since the late 1980s, year-on-year results now show very little annual change in community perceptions. For this reason, a perception survey will be carried out every second year to monitor changes in trends against the historical data. In the alternate years, a 'satisfaction' survey will be carried out for those community members who have had recent direct contact with Hunter Water Corporation to provide more detailed data on customer and community satisfaction levels with the corporation's services.

Guidelines on community consultation have been provided to non-metropolitan urban water utilities. Appropriate community consultation is a pre-requisite for financial assistance for capital works projects.

In October 1999, the Minister for the Environment announced the release of the interim environmental objectives for 31 New South Wales catchments. These were based on a discussion paper on proposed interim environmental objectives for New South Wales Waters released in 1997, and a series of workshops, coordinated by the Environmental Protection Authority, held across New South Wales during 1998 to discuss the setting of water quality and river flow objectives. During the consultation period, 810 written submissions were received.

Public education

New South Wales is undertaking major community education programs. It is envisaged that these will be further expanded. Specific New South Wales programs include:

- *Water reform and legislation* - an ongoing series of publications explaining the water reforms, progress to date and the Water Management Act were publicly released. A booklet explaining the Water Management Act has been widely distributed and more specific fact sheets were distributed in April 2001. Stakeholders also regularly receive newsletters on key initiatives. This information is placed on the Internet.

- *Waterwatch* - involves over 450 schools, 80 community groups and 70 councils. Emphasis is on environmental auditing and related aspects of water quality, flow and environmental degradation within a catchment.

- *WaterWise* - promotes water conservation practices. Program elements include WaterWise in the catchment, urban WaterWise and WaterWise on the farm. It focuses on local government, irrigators and landowners.

- *RiverCare 2000 Accreditation and Awards* - a program acknowledging best practice in riparian management and rehabilitation, includes water quality and conservation practices for all sectors of the community.

- *National Water Week* - annual event involving government agencies, nongovernment groups and the broader community in a program of activities. In 2001 New South Wales will release information to support the six-month consultation process for water quality and river flow objectives, including the release of 25 publications and a video.

- *Exploring the Nardoo* - a CD-Rom for secondary to tertiary students, explaining water and the environment, focusing on water management within a catchment.

- *Stormwater* - The New South Wales Government's $4 million urban stormwater education program employs mass media, community and school education, vocational education and training and partnership projects with key sectors. Phase one of the project finished in June 1999 and established the theme 'the drain is just for rain'. The second phase of the program continues this theme through to June 2001.

- Internet - this has a large range of water-related information, including state of the environment report mapping, electronic versions of the interim water quality and river flow objectives and information on the stormwater trust. In addition New South Wales has created website community access to natural resources information bringing together key environmental information from government agencies and other organisations (http://www.canri.nsw.gov.au/).

- *Formal curriculum resources* - have been developed and will continue over the next three years.

- *Environmental Protection Authority Pollution Line* - this is a Statewide freecall number that provides information on the water reform process, amongst other functions.

Sydney Water Corporation and Hunter Water Corporation also have advertising campaigns designed to attribute value to water and encourage conservation. Each regional office of Sydney Water Corporation has an education officer who visits schools. Sydney Water Corporation is developing a program for school students for inclusion in an internet web site, a CD-Rom, brochures and comprehensive school kits. Hunter Water Corporation has a comprehensive school program involving Streamwatch support, high school and primary school syllabus resource material, water cycle tours, school visits, school environmental awards and WaterWise and education and environment pages on its web site.

Recognising that accurate information about the water reforms (their intent, timing and processes for change) is essential for individuals and industries to adapt to change, considerable effort has been put into the preparation of discussion documents, information sheets and workshops.

Assessment

The Council is satisfied there is a genuine commitment by New South Wales to ongoing public consultation in the implementation of water reform. The Council has reviewed the information provided by New South Wales and believes the consultative mechanisms New South Wales has put in place for water reform and the level of consultation in such areas as natural resource management is highly commendable.

With regard to public education, the Council notes the considerable time and resources New South Wales is continuing to devote in this area.

Attachment 1: IPART's bulk water 2001 review timetable

Item	*Target*
Received Department of Land and Water Conservation submission	3 April
Public submissions due	11 May
Public hearing (Sydney)	22 June
Public hearing/workshop (Armidale)	29 June
Public hearing/workshop (Griffith)	6 July
Release draft report/determination	end September
Public comments on draft determination due	late October
Release final report/determination	mid November

Source: IPART (2001) (unpublished)

Attachment 2: Water sharing plans to be prepared in 2001

Attachment 1: Schedule of Water Sharing Plans to be prepared in 2001**

DLWC Region	Committee	Unregulated Subcatchments	Regulated Rivers	Aquifers
North Coast	Northern Rivers WMC	Upper Brunswick River, Coopers Creek		Alstonville
	Upper North Coast Water Management Committee	Blicks River, Upper Nymboida River Bucca Bucca Creek, Upper, Mid and Lower Orara River		
	Mid North Coast WMC	Apsley River, Commissioners Waters, Torumbee Ck		Stuart's Point
Hunter	Lower North Coast WMC	Karuah		
	Hunter RMC	Wybong	Hunter (incl. Patterson)	
	Kulnura Mangrove GMC			Mangrove Mountain
	Tomago GMC			Tomago-Tomaree-Stockton
	Central Coast Unregulated RMC	Jilliby Jilliby, *Ourimbah**		
Sydney	Shoalhaven/Illawarra WMC	Kangaroo River		
South	South Coast Water MC	Wandella Creek		
Murray	Murray unreg RMC	Upper Billabong		
	Murray reg RMC		Murray	
	Murray GMC			Lower Murray
Murrum-bidgee	Murrumbidgee unreg RMC	Adelong Ck, Tarcutta Ck		
	Murrumbidgee GMC			Lower Murrumbidgee
	Murrumbidgee reg RMC		Murrumbidgee	
Central West	Central West Unregulated Streams Management Committee	Castlereagh above Binnaway		
	Lachlan Unregulated RMC	Mandadgery Creek		
	Macquarie-Cudgegong RMC		Macquarie-Cudgegong	
	Lachlan RMC		Lachlan	
	Lachlan GMC			Lower Lachlan
	Macquarie GMC			Lower Macquarie
Barwon	Border Unregulated River and Groundwater Management Committee	Tenterfield Creek, Tenterfield		
	Gwydir Unregulated RMC	Upper Horton, Cobbodah, Rocky Creek, Lower Horton		
	Namoi unreg RMC	Phillips, Mooki, Quirindi, Warrah		
	Great Artesian Basin Groundwater Advisory Committee			Great Artesian Basin (including intake bed)
	Gwydir GMC			Gwydir aquifers
	Namoi GMC			Upper Namoi, Lower Namoi systems
	Gwydir Regulated RMC		Gwydir	
	Namoi reg RMC		Namoi	

*may be deleted.

Source: New South Wales (2001)

Attachment 3: Action Plan on Property Rights

		Implementation schedule 2001/2002												Implementation Schedule 2002/2003											
Issue	**Component Parts**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**Comment**
Water Sharing Plans	Terms of reference for advice on Water																									Completed
	Sharing Plans for phase 1 to Water																									
Consltn: WMC'c, (Gov. sppt	Management Committees - **March 2001**																									
to WMC's), notification and	Notification of plan development as per S36 of																									Completed
exhibition of plans etc.	the Act - **May 2001**																									
	Draft plan "outcomes / objectives" submitted																									Completed
	by committees - **May 2001**																									
	Ministerial response to draft "outcomes and																									
	objectives" - **June 2001**																									
	Draft recommendations from committees in a																									Dec-01
	draft WSP																									
	Ministerial review and public exhibition of draft WSP's																									
	Committee and Ministerial consideration of																									
	submissions																									

		Implementation schedule 2001/2002												Implementation Schedule 2002/2003											
Issue	**Component Parts**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**Comment**
	Plans for priority systems "made"																									
	by way of a Minister's Plan under the Act																									
	Development of Implementation Programs for																									
	WSP's (s 51 of Act)																									
	Committees review 1st Implementation Program																									
	WSP's in operation																									
State Water	Draft SWMOP approved for consult																									
Management	SWMOP considered by water management																									
Outcomes Plan	Committees plus targeted consultation*																									
	SWMOP to Govt for approval																									
* **Consltn**: scientists, CSIRO,	Relevant SWMOP targets addressed in the first																									
CRCs, social scientists, Coastal	set of WSP's																									
Council, Aboriginal interests etc	Other SWMOP targets addressed as																									Ongoing
	incl via other Water Management Plans																									
License and approval	Define structure, content, application																									
policies and processes	and approvals of licences in detail																									
	Define common assessment process																									

		Implementation schedule 2001/2002												Implementation Schedule 2002/2003												
Issue	**Component Parts**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**Comment**
	Define business processes & procedures																									
	Define structure for fees and charges																									
***Consltn:** Industry Assns,	Initial consultation with key external groups*																									
agencies, local Govt., WAC, etc	Finalise & document processes and procedures																									
	Internal roadtesting																									
Register development	Refine policy on contents and procedures -																									
	internal discussion																									
***Consltn:** Law Society , Aust	**Consultation** with key stakeholder groups *																									
Bankers Assoc, Aust Propty	**Consultation** with Privacy commissioner																									
Inst, NSW Irrig Assn, Nat Consv	Provision of information from existing licence**																									** Subject to
Cncl, Water Advisory Council	records to ABA to assist banks identify																									advice from
and others	interests in existing licences																									Privacy
	Consult Land Titles Office on links - property																									Commissioner
	database with water register																									
	Review policy in light of consultation																									
Develop Information	Development of register in context of review of																									
System, incl Register	information systems as a whole																									

		Implementation schedule 2001/2002												Implementation Schedule 2002/2003											
Issue	**Component Parts**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**Comment**
Sub Components	*Document Business processes*																									
	Identify new process requirements																									
	Design system regulations																									
	Develop functional prototype																									
	Test functionality																									
	Training/Implementation																									
	Evaluation																									
	Pilot test of interim register																									
Develop Regulations	Preparation of regulations and explanatory																									
	documents																									
	Public exhibition of regulations and proposed																									
	processes																									
	Making of Regulation																									
Licence Conversions	Update licence property spatial descriptors																									
(first group of 8000 licences in	Write to property owner and licence holder to																									* Parliament to
priority areas covering about	ascertain legal occupier and verify current																									consider
80% of water use in NSW)	licence details*																									equity issues -

		Implementation schedule 2001/2002												Implementation Schedule 2002/2003											
Issue	**Component Parts**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**Comment**
	Resolve any disputes - owner vs occupier																									owner vs
	Map old licences to new licences & approvals																									occupier
	Write to holders to confirm details of proposed																									
	new licences and approvals																									
	Enter data into register as confirmed by licence																									
	holders																									
	Enter related data ie links to water management plans																									
	Switch on register for initial water sources																									
	3 month period for third parties (eg banks) to																									
	register interests in access licences																									
	Repeat licence conversion steps for other water sources																									Completion
																										Dec-04
	Completion of whole of NSW near																									
	Dec 2004																									

Source: New South Wales (2001) (unpublished)

Attachment 4: Information to committees for water sharing plans

Each Water Management Committee is provided with the following support personnel:

- regional Director as Department of Land and Water Conservation representative on the committee;
- one full time executive officer;
- one administrative officer;
- attendance at all meetings of relevant technical support from the region (hydrologist, hydrogeologist, etc); and
- attendance at meetings by head office policy and technical experts as required

Each Water Management Committee has been, or will be, provided with the following support materials:

- terms of Reference, including statutory requirements of the Water Management Act 2000;
- explanatory notes on water sharing plans;
- a template for water sharing plans (regulated, unregulated and groundwater);
- a stocktake of environmental features and social, economic and cultural uses or values of water in the plan area;
- an assessment of the performance of existing environmental flow rules in the plan area (regulated rivers only);
- access to an integrated quality and quantity model for the plan area, with technical support (regulated rivers only);
- access to a groundwater model, with technical support (groundwater systems only);
- access to an unregulated river model, with technical support (unregulated rivers only);
- socio-economic assessment guidelines for river, groundwater and water management committees (IACSEA);
- materials to assist social and economic considerations in water sharing plans; and

- policy advice covering the following water management issues:

  1. cap management in the inland unregulated rivers;
  2. water extraction volumes and daily flow shares in unregulated rivers;
  3. groundwater quantity management;
  4. groundwater dependent ecosystems;
  5. supplementary water access;
  6. floodplain harvesting;
  7. integrating water quality and river flow objectives in the water sharing plans;
  8. conservation of aquatic and riparian biodiversity and threatened species management;
  9. responding to growth in diversions in the regulated rivers;
  10. responding to growth in diversions in the inland unregulated rivers;
  11. freshwater flows to estuaries and coastal waters;
  12. high conservation value rivers and their management;
  13. incorporation of results of the weir review program in the water sharing plans;
  14. aboriginal issues and cultural heritage protection; and
  15. diversion limits for coastal unregulated rivers.

- a set of generic performance indicators for use or adaptation by each committee; and

- a checklist against which draft plans submitted by committees will be assessed to ensure they meet the statutory requirements of *the Water Management Act 2000* and other relevant legislation.

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 pricing[1], 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.

- 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

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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-subsides 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, interalia, 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;

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5 The High Level Steering Group on Water (HLSGW) is responsible for intergovernmental coordination of the water reform agenda.

- 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 (that is, what is being traded);
- clear water trading zones and rules (that is, 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 (2 submissions)

Inland Rivers Network

Macquarie River Food & Fibre

World Wide Fund for Nature (2 submissions)

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