

# 3 Victoria

The elements of the Council of Australian Governments (CoAG) water reform program that are relevant for Victoria in this 2003 National Competition Policy (NCP) assessment are: water and wastewater pricing (full cost recovery); the provision of water to the environment in stressed and overallocated river systems; intrastate water trading arrangements; the remaining institutional reform requirements (separation of the responsibilities of water industry institutions and integrated catchment management); the implementation of the National Water Quality Management Strategy (NWQMS); and the review and reform of water industry legislation that restricts competition. The National Competition Council assessed Victoria's compliance with the CoAG obligations in these areas in this 2003 NCP assessment. As required by CoAG, the Council also considered public education and consultation activity in the reform areas assessed. In addition, the Council reported on progress by Victoria towards meeting water reform obligations on rural water pricing and converting existing water allocations to new water entitlements (which will be assessed in 2004).

## 3.1 Water and wastewater pricing

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

- To be viable, a water business should recover 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 simulates a competitive market outcome.
- To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities (defined for the purpose of the pricing obligation to be natural resource management costs attributable and incurred by the water business), 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.
- In determining prices, the regulator 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. Cross-subsidies that are not consistent with efficient and effective service, use and provision should ideally be removed.

- Where service deliverers are required to provide water services to classes of customers at less than full cost, the cost of this should be fully disclosed and ideally paid to the service deliverer as a community service obligation.
- Asset values should be based on deprival value 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.
- Transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, tax equivalent regimes and any remaining cross-subsidies.

**Reference:** CoAG water reform agreement clauses 3a, 3b, 3c and 3d, and guidelines for the application of section 3 of the CoAG strategic framework and related recommendations in section 12 of the expert group report (CoAG pricing principles)

## Full cost recovery

### Regional urban water authorities

**Assessment issue:** Victoria is to demonstrate that water and wastewater pricing by regional urban water authorities will achieve full cost recovery, in accord with the CoAG pricing principles. In 2001, Victoria set a three year price path with the objective of ensuring urban water authorities recover costs between the lower and upper bounds of commercial viability by 30 June 2004.

**Next full assessment:** The Council will assess Victoria's implementation of the CoAG obligations on full cost recovery relating to the water industry again in 2004. The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 3(a) and (b); CoAG pricing principles

There are 15 regional urban water authorities (RUWAs) in Victoria: Barwon Water, Central Gippsland Water, Central Highlands Water, Coliban Water, East Gippsland Water, Glenelg Water, Goulburn Valley Water, Grampians Water, Lower Murray Water, North East Water, Portland Coast Water, South Gippsland Water, South West Water, Western Water and Westernport Water. Collectively, these authorities represent some 575 000 property connections (about 30 per cent of the State's connections).

Victoria conducted a review of prices of water, drainage and sewerage services in 2001 (DNRE 2001a), with the objective of establishing minimum price increases for these services to apply from 1 July 2001 to 30 June 2004. The price review culminated in the establishment of a three-year price determination for water, sewerage and drainage services (including those provided by RUWAs) from 1 July 2001 to 30 June 2004. The review sought to establish prices that would fall between a floor price that ensures commercial viability and a ceiling price that avoids monopoly rents, consistent with CoAG pricing principles. Victoria is in the final year of the price determination. Victoria's June 2003 estimates of cost recovery, which represent the

anticipated outcomes of the second year of the price determination, indicate that all 15 RUWAs achieved the lower bound of full cost recovery in 2002-03.

Victoria advised that the RUWA's achievement of long-term viability involves three steps. Step 1 involved each RUWA increasing prices to achieve full cost recovery and financial viability. Price increases differed across the RUWAs, reflecting the different financial circumstances of each authority and the different price outcomes necessary for each to achieve cost recovery. Step 2 involves consideration of structural and pricing issues in the Victorian Government's green paper, *Securing our water future*, released on 27 August 2003 (DSE 2003). Step 3 involves bringing the water industry under the jurisdiction of the Essential Services Commission, which will occur from 1 January 2004 (12 months later than the date Victoria originally intended). The first water and wastewater price review by the Essential Services Commission will take effect on 1 July 2005.

Victoria's objective is to achieve sustainable water and wastewater businesses. Victoria's intention is to use the green paper to develop a set of pricing principles to guide the way that water authorities structure their water and wastewater prices. At a minimum, prices are to recover operating expenditure, a return on past investments to cover the interest cost on debt, provision for asset renewal, the cost of financing new investments and any dividends.

The green paper states that the Victorian Government will ensure that, from 1 January 2004, all water prices are set in accord with the cost recovery pricing principles being developed through the green paper. The mechanism for this will be a water industry regulatory order, which the Government will finalise before 1 January 2004. The Government will also incorporate the cost recovery pricing principles into the arrangements for the Essential Services Commission's economic regulation of the water industry. It will ask the commission to ensure that water prices are consistent with the Government's cost recovery principles when the commission undertakes its first price review.

## Discussion and assessment

Victoria's cost recovery estimates at June 2003 indicate that all RUWAs reached the lower bound of full cost recovery. The Government's green paper, which is investigating pricing principles for achieving sustainable businesses, will help to clarify cost recovery issues, and provide a consistent approach across the water industry. In addition, economic regulation of the water industry by the Essential Services Commission will assist the achievement of appropriate and transparent pricing outcomes by all urban and rural water authorities. Accordingly, the Council considers that Victoria has satisfactorily addressed urban water and wastewater pricing obligations for this 2003 NCP assessment.

## Consumption-based pricing

**Assessment issue:** Prices are to reflect the volume of water supplied, to encourage more economical water use and to defer the need for costly investments, where it is cost-effective to introduce consumption-based pricing. In the 2001 NCP assessment, Victoria indicated that two-part tariffs had been implemented throughout.

**Next full assessment:** The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 3(a)–(c)

In the 2001 NCP assessment, the Council found that the widespread adoption of volumetric charges as part of a two-part tariff and the absence of free water allowances ensured that water users across the State had a strong incentive to use water efficiently. The Council assessed Victoria as complying with its consumption-based pricing obligations.

## Rural water pricing: progress report

**Progress report:** Victoria is to demonstrate significant progress towards achieving full cost recovery for irrigation districts. In the 2002 NCP assessment, the Council found that some irrigation districts in the Goulburn–Murray region were not recovering full costs as defined by the CoAG pricing guidelines. Victoria also proposed to refine approaches to renewals annuities and asset valuations.

**Next full assessment:** The Council will next assess rural full cost recovery and pricing reform in 2004.

**Reference:** CoAG water reform agreement, clauses 3(a) and (b); CoAG pricing guidelines

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

Victoria advised that cost recovery estimates for four of the six irrigation supply services operated by Goulburn–Murray Water (Shepparton, Central Goulburn, Campaspe and Pyramid–Boort Gravity Irrigation Supply Services indicate that they are on track to achieve full cost recovery in 2002-03. The Rochester and Woorinen Gravity Irrigation Supply Services are progressing to full cost recovery, and Victoria expected this service to achieve full cost recovery in 2003-04.

In the 2002 NCP assessment, the Council observed that six irrigation supply services supplied by Goulburn–Murray Water were not recovering costs. Goulburn–Murray has had four consecutive years in which sales revenue was well below normal levels as a result of the drought reducing the amount of water in the Goulburn system. Goulburn–Murray is implementing a tariff reform program, reflecting the findings of the financial review of the Shepparton and Central Goulburn irrigation supply services undertaken by Marsden Jacob Associates during 2001. (The financial review found, among other things, that there are significant opportunities to reform tariff structures to reduce or eliminate revenue volatility.) Goulburn–Murray Water commenced its tariff reform program in 2001-02, by introducing a service fee for all of its services. In 2002-03, it introduced an entitlement storage fee to recover the costs associated with ensuring reliability of water entitlements. The authority will introduce an additional service point fee and infrastructure access and usage fees in 2003-04. This will complete the tariff reforms for irrigation supply services. The implementation of a multipart tariff provides improved signals to customers about the type and costs of services provided and improved business viability by reducing revenue volatility.

Victoria is considering its approach to renewals annuities and asset valuation in the green paper.

## River Murray Water cost allocation: progress report

**Progress report:** The Murray–Darling Basin States are to outline their policy approach to passing on River Murray Water costs to water users.

**Next full assessment:** The Council will assess rural full cost recovery and pricing reform in 2004.

**Reference:** CoAG water reform agreement, clauses 3(a) and (b); CoAG pricing guidelines

The Murray–Darling Basin Commission’s independent audit of cost sharing arrangements (2001) argued that the following actions are necessary to provide clear price signals to water users.

- All River Murray Water costs need to be recognised and all subsidies and community service obligations disclosed.
- Financial and pricing information for River Murray Water should be publicly available.
- State governments should disclose on a per megalitre basis the level of subsidy and/or community service obligation provided to each water business that receives bulk water from River Murray Water.

Disclosure of the level of subsidy is particularly important because the States have different policies on passing on River Murray Water costs to water users. Victoria's share of River Murray Water costs is apportioned between the State Government and Goulburn–Murray Water as the designated construction authority for the River Murray. The approach to apportioning costs is based on distinguishing between costs relating to broad community benefits and those relating to benefits to irrigators from River Murray Water's operations. Under this approach, the Victorian Government bears the costs relating to broad community benefits while the cost of services to irrigators is borne directly by Goulburn–Murray Water's customers. This approach is premised on the principle that Goulburn–Murray Water's customers should be charged a fair and equitable share of River Murray Water costs.

Victoria has developed principles for determining Goulburn–Murray Water's share of the State's contribution to funding River Murray Water, which are applying as an interim measure because of uncertainties regarding the future commercial reform of River Murray Water. Victoria advised that it will refine its approach as River Murray Water's business develops. In 2001-02, under the interim principles, irrigators paid \$6.629 million of Victoria's \$12.917 million share of River Murray Water costs. Irrigators paid \$8.38 million of Victoria's \$14.245 million share of River Murray Water costs in 2002-03.

## **Regional urban water authorities: asset valuation**

**Assessment issue:** For price-setting purposes, Victoria is to apply water and wastewater infrastructure asset values based on the deprival method unless it can justify an alternative approach. In the 2002 NCP assessment, the Council found that the asset valuation method applied in price setting for regional urban water authorities was unclear.

**Next full assessment:** The Council will assess Victoria's implementation of the CoAG obligations on asset valuation again in 2004. The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 3(a) and (b); CoAG pricing principles

Victoria's 2001 price review canvassed two asset valuation methods for application to the water and wastewater industry. The two methods were the 'line in the sand' approach and the optimised depreciated replacement cost method.

- The line in the sand approach involves establishing the appropriate value of each water business's past investment in infrastructure, and setting water and wastewater prices that ensure each business's future cash flows (discounted by the cost of capital) are sufficient to operate and renew existing supply systems and efficiently invest in new systems.

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- The optimised depreciated replacement cost method values water infrastructure on the basis of the capital cost that a competitive new entrant would incur if it entered the market. It reflects the optimal configuration and sizing of the network, so removing the effect of any ‘gold plating’, planning decisions that proved incorrect in hindsight, excess capacity and the consequences of development patterns.

Victoria indicated at the time of the 2001 price review that it would apply the ‘line in the sand’ approach to determine regulatory asset values for pricing purposes. It considered this approach to be appropriate because it reduces the complexity of valuing existing infrastructure when information on the original cost of existing investments may be unavailable, technological change may have altered both the cost and functionality of modern equivalent assets, and prices may have been struck for services without adequate regard to the cost of past investments. Victoria also noted that some water infrastructure assets may never need to be replaced. Victoria indicated that the ‘line in the sand’ approach would better achieve the objective of ensuring consistency between current and future water prices, avoiding a process whereby existing asset values, however determined, become an artificial driver of water prices. The Government also considered that the ‘line in the sand’ approach would be consistent with that adopted by most other infrastructure businesses in Australia for which formal periodic price reviews are undertaken.

The consultants that undertook Victoria’s 2001 pricing review developed regulatory asset values using the line in the sand approach. In estimating the opening regulatory asset values for price modelling purposes, the consultants used the higher of the values from applying the recoverable amounts test<sup>1</sup> and written down historical cost. Because of the Government’s concern about the impact on some consumers of the price increases that would result from using the line in the sand opening regulatory asset value, it set price increases for the three years of the price path at consumer price index (CPI) plus two percentage points, CPI plus one percentage point and CPI. It also provided scope, however, for flexibility to increase prices above these levels to achieve full cost recovery objectives.

Between the 2001 price review and the 2003 NCP assessment, Victoria commenced work to achieve a more consistent application of asset valuation methods across the water sector. In October 2002, Victoria established a working group to review how the accounting standard fair value should be applied to the infrastructure assets of water businesses. The working group released a draft accounting and financial reporting bulletin, *Revaluation of water and rail infrastructure assets*, to water businesses for comment in April 2003. Victoria advised that pending the outcome of this consultation, it would determine the need for a water industry-specific statement on asset valuation and reporting.

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<sup>1</sup> The recoverable amounts test asset valuation is determined by discounting a businesses expected future cash flows by the weighted average cost of capital. The cash flows should only relate to the existing asset base.

The August 2003 green paper considers asset valuation in the context of long-term business viability and businesses' ongoing capacity to deliver services. At a minimum it proposes to ensure that water authorities generate sufficient revenue to undertake the appropriate renewals expenditure required to maintain the serviceability of existing assets.

## Discussion and assessment

The CoAG pricing principles recommend that, for the purposes of setting water and wastewater prices, infrastructure be valued using the optimised deprival value method unless specific circumstances justify using an alternative. The optimised deprival value method values assets at the lower of economic value and optimised depreciated replacement cost.

Victoria will develop its approach to water and wastewater pricing, via the green paper, by 1 January 2004. The green paper indicates that the Government intends to establish an asset valuation method that achieves consistency in pricing across businesses wherever possible. In this regard, the Government proposes to determine a starting asset value for each business, and set prices to ensure that businesses can appropriately maintain existing infrastructure and invest efficiently in water infrastructure. The Government proposes to incorporate these asset values in a water industry regulatory order, which should assist a consistent approach into the future.

## Externalities

**Assessment issue:** Victoria is to show transparently how water and wastewater prices incorporate externalities (defined by CoAG for water pricing to be the environmental and natural resource management costs attributable to and incurred by water businesses). In the 2002 NCP assessment, Victoria reported that costs attributable to natural resource management obligations are included in prices charged by the rural urban water authorities but that the aggregation of the information provided by the authorities means that these costs are not separately identifiable.

**Next full assessment:** The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clause 3(a)(i); CoAG pricing principles; Expert group report on externalities

Victoria advised that wastewater management is the major environmental issue facing the metropolitan and regional urban water businesses. The Government manages wastewater via the issue of wastewater business licences that impose obligations regarding the discharge of treated effluent. The operating licences of the metropolitan urban retail water businesses include, for example, obligations to report to the Environment Protection Authority on compliance with:



- the conditions of any waste discharge licence issued by the Environmental Protection Authority;
- State environmental pollution policy requirements; and
- performance criteria specified in an environmental improvement plan.

The Environment Protection Authority licences for the discharge of treated effluents are public documents. The costs of meeting the licence requirements were included in the financial submissions to the 2001 price review. Accordingly, licence costs were considered in the determination of the revenue required by each urban water business, so are incorporated in prices.

The green paper proposes an increase in water prices so that prices better reflect the scarcity of water resources and the costs related to the impact on the environment of providing water-based services. Victoria considered that bringing the water industry under the jurisdiction of the Essential Services Commission will make the aggregated natural resource management costs more transparent.

## Discussion and assessment

Managing water use to reduce environmental and other externalities is a complex task, often involving a suite of measures, including regulation and pricing. The 2001 price review considered the cost of externalities as part of a building block approach to determining the cost of efficiently delivered water and wastewater services. It did not clarify the effect of externalities on prices, however, so did not address the CoAG obligation that the costs of natural resource management requirements imposed on businesses be made transparent.

Victoria's green paper provides an opportunity to investigate the potential for using pricing to appropriately manage externalities, and to ensure via pricing that the external costs of water use are visible. The approach to externalities signalled by Victoria goes further than the CoAG pricing obligation that prices transparently reflect environmental and natural resource management costs attributable to and incurred by water businesses.

## Taxes and tax equivalent regimes

**Assessment issue:** Victoria is to apply tax and/or tax equivalent regimes for metropolitan and regional urban water and wastewater service providers. In the 2001 NCP assessment, Victoria advised that all metropolitan service providers are subject to the State's tax equivalent regime, and that metropolitan services would also be subject to the national tax equivalent regime from July 2002. Victoria advised that it would introduce a State-based tax equivalent regime for regional urban and rural water authorities in July 2001.

**Next full assessment:** The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clause 3(a)(i); CoAG pricing principles; Expert group report on tax equivalent regimes

Victoria introduced a State-based tax equivalent regime to apply from 2001-02 for all regional urban and rural water authorities. This regime comprises the national tax equivalent regime (previously, income tax) and local government rates. The regional urban and rural water authorities also face local government rates, subject to the general exemptions that apply under the *Local Government Act 1989*.

## Discussion and assessment

Victoria's tax and tax equivalent arrangements are consistent with CoAG water pricing principles.

## Dividends

**Assessment issue:** Dividends, where required, are to be set at a level that reflects commercial realities and simulates a competitive market outcome. In the 2002 NCP assessment, the Council received insufficient information from Victoria to enable it to determine whether Victoria's method of determining dividends (or the actual dividend payments) reflect commercial realities.

**Next full assessment:** The Council will assess Victoria's implementation of the CoAG obligations on dividends relating to the water industry again in 2004. The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 3(a) and (b); CoAG pricing principles

The metropolitan urban retail and wholesale water businesses and the RUWAs operate under the standard government business enterprise dividend framework. Under this framework, dividends are determined by reference to two general benchmarks: dividends equivalent to 50 per cent of net profit after tax, and dividends plus income tax payments equivalent to 65 per cent of pre-tax profit. The dividend level for an individual business may vary from the benchmarks as a result of the liquidity of the business, its capital requirements, and gearing and interest cover.

This commercial dividend arrangement, based on profitability and the government business enterprise dividend benchmark, was introduced to the RUWAs in 1999. In the 2002 NCP assessment, Victoria undertook to work on the details of a commercially-based dividend framework, consulting with the RUWAs and the rural water authorities as part of that process. Victoria's green paper will consider consistent dividend arrangements across the water industry in the context of future corporate governance arrangements for the industry.

## Discussion and assessment

The Council considers that a reasonable interpretation of the level of dividend that accords with 'commercial reality' is the corporations law requirement that dividends be paid only out of profits (the current year's profit as well as accumulated retained profits). This approach provides some safeguard against water and wastewater service providers having insufficient financial resources to properly conduct their businesses. It is also consistent with the competitive neutrality obligations of the intergovernmental Competition Principles Agreement, which require that government-owned businesses face the same costs and pressures as those facing the private sector.

At the time of this 2003 NCP assessment, Victoria had not progressed its undertaking to work on a commercially-based dividend framework for the water industry. The water industry green paper is, however, considering dividend policy. Notwithstanding the absence of a water industry dividend framework, under the standard public sector dividend framework, the level of dividend paid by water businesses is unlikely to exceed the corporations law benchmark. Given that Victoria is considering a dividend policy for the water industry in the green paper, the Council considers Victoria satisfied CoAG pricing obligations on dividends for the 2003 NCP assessment.

## Community service obligations

**Assessment issue:** Victoria is to transparently report the size and nature of community service obligations provided by urban water and wastewater service providers.

**Next full assessment:** The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoaG water reform agreement, clause 3(a)(ii)

Victoria provides several water industry community service obligations (CSOs): concessions to pensioners, rebates to certain not-for-profit organisations and payments under the Rates and Charges Relief Grant Scheme. The annual value of these CSOs is available from both the Victorian Department of Human Services and relevant businesses.

Victoria's Minister for Environment and Conservation issued a Direction under the *Financial Management Act 1994* requiring regional urban and rural water authorities to report CSOs in their annual reports from 2001-02. For the metropolitan water businesses, Victoria advised that it is determining the most appropriate means of specifying treatment of CSOs. It expected metropolitan urban water and wastewater businesses to report CSOs in their 2002-03 annual reports. The annual reports of the metropolitan retail businesses are prepared in accord with the *Corporations Act 2001*; those of the metropolitan wholesaler, Melbourne Water, are prepared in accord with the *Financial Management Act*.

## Discussion and assessment

Victoria's approach to the treatment of CSOs is consistent with the CoAG water pricing principles.

### Cross-subsidies

**Assessment issue:** Victoria is to ideally remove cross-subsidies where they are not consistent with efficient service provision and use or, where they remain, ensure they are transparently reported. In the 2002 NCP assessment, the Council found that Victoria has no guidelines for identifying, measuring and reporting cross-subsidies for the water and wastewater services industry.

**Next full assessment:** The Council will assess Victoria's implementation of the CoAG obligations on cross-subsidies relating to the water industry again in 2004. The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clause 3(a)(i); CoAG pricing principles

Victoria removed water and wastewater charges based on property valuations in 1997. In the metropolitan sector, businesses set volumetric charges based on long run marginal cost, which ensures no one customer or location pays less than the incremental cost of supply for services received. As a result, Victoria considered that there is much less variation between the average price paid by different customers in metropolitan and regional urban areas. In the 2001 NCP assessment, Victoria reported that it had undertaken three regional urban water sector case studies that found no cross-subsidisation among customer classes for the water businesses that participated in the study.

Victoria's green paper, which will refine the State's approach to water and wastewater pricing, and the transfer of the economic regulation of the water industry to the Essential Services Commission from 1 January 2004 will enable further scrutiny of any remaining cross-subsidies between services and/or customers. Victoria anticipated that increased transparency of pricing matters (including any remaining cross-subsidies) will be a major outcome of economic regulation. It undertook to consider issuing its water businesses with a pricing guideline on cross-subsidies if the new regulatory arrangements show evidence of continuing cross-subsidies.

## Discussion and assessment

With all urban water authorities now setting prices on a consumption basis to achieve at least the lower bound of full cost recovery, the likelihood of cross-subsidisation is diminished. In addition, the outcome of the green paper, and economic regulation by the Essential Services Commission, will help to ensure any remaining cross-subsidies are identified and either removed or transparently reported. The Council considers Victoria has met obligations relating to cross-subsidies for this 2003 NCP assessment.

## 3.2 Water management: water rights and provisions to the environment

### Establishment of water rights systems: progress report

**Progress report:** Victoria is to report on progress towards converting existing allocations to new water rights systems, and in implementing mechanisms to support these systems.

**Next full assessment:** The Council will assess the Government's compliance with CoAG obligations on implementing water rights arrangements in 2004.

**Reference:** CoAG water reform agreement, clause 4

Under the *Water Act 1989*, bulk entitlements are issued to rural and urban water authorities and are a legal entitlement to water. A bulk entitlement defines the volume of water that an authority may take from a river or storage, the rate at which it may be taken and the reliability of the entitlement. Bulk entitlements are granted to rural water authorities for the regulated river systems and to urban authorities irrespective of whether they are supplied by regulated or unregulated rivers. When systems of bulk

entitlements are fully implemented, they will cover approximately 95 per cent of diversions from Victorian rivers.

The majority of water entitlements in Victoria are contained within regulated irrigation districts. In these districts, bulk entitlements are issued to the rural water authorities as the basis for providing water to irrigators. Irrigators who pump directly from rivers require a licence to take and use water.<sup>2</sup> Individual water entitlements in the irrigation districts are listed in a schedule to the bulk entitlement. In the unregulated river systems, water entitlements are provided through licences that allow the holder to divert water. In water supply protection areas, diversions are managed via streamflow management plans, which Victoria is developing on a priority needs basis. Streamflow management plans include rules covering the granting of new water licences and flow sharing (including environmental flows) under a range of flow conditions. Lower priority rivers are subject to Statewide management rules rather than a formal plan.

Licences are also required to extract groundwater. Where water allocations exceed 70 per cent of the sustainable yield of an aquifer, the Government establishes a groundwater supply protection area and develops a groundwater management plan.

Following amendments to the Water Act in 2002, a licence is required for the taking and use of water by all irrigation and commercial water users in a catchment (including for farm dams). Water licences are specified in volumetric terms. Water remains attached to a landholding at all times (with a transfer detaching the water right from the seller's landholding and re-attaching it to that of the buyer). While bulk entitlements are held in perpetuity, water licences are issued for 15 years with a presumption of renewal. The Water Act provides for compensation in certain circumstances.<sup>3</sup>

In accord with the Water Act, the Department of Sustainability and Environment maintains a public register of bulk entitlements. Rural water authorities are required to maintain registers of water entitlements in irrigation districts and of licences for diversions from unregulated rivers and use from farm dams. The bulk entitlements and streamflow management plans specify the reliability of supply. Third party interests can be noted on the registers.

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<sup>2</sup> Licences are not required for water extraction for basic domestic and stock rights.

<sup>3</sup> A water management plan can specify compensation payments for losses or expenses incurred as a result of an authority directing works to be carried out or works (other than a private dam) to be removed. If the enforcement of a plan confers a benefit on one person to the detriment of another, then the person suffering the loss is entitled to seek compensation from the other party.

## Reform progress

During 2002-03, Victoria continued the conversion of existing water rights to bulk entitlements. By March 2003, Victoria had granted 18 bulk entitlements, including one during 2002-03. These entitlements cover approximately 85 per cent of the State's total water resources. Progress on the major systems still to be converted to bulk entitlements was slower than Victoria anticipated, principally as a result of the time taken to convert the Melbourne and associated systems and to achieve stakeholder consensus on the Ovens and Broken river systems. (Establishment of bulk entitlements for the Broken River system is close to finalisation.) Work is progressing on the last two major systems, the Wimmera–Mallee and Loddon river systems. With the exception of the Loddon system (and possibly Melbourne), Victoria expected to complete the conversions for all major systems by the end of 2003 and to grant all bulk entitlements by the end of 2004. The status of bulk entitlements is summarised in table 3.1.

**Table 3.1:** Bulk entitlements in Victoria, as at March 2003

<i>Water supply system</i>	<i>Status of bulk entitlement</i>
Barwon	Finalised 2002
Broken	Process complete, order being drafted
Campaspe	Finalised 1999-00
Central Gippsland rivers – urban	Finalised 1997-98
Central Highlands – major urbans	Finalised 2002
Central Highlands – urban (part)	Finalised 1998
East Gippsland rivers – urban	Finalised 1997
Glenelg – urban	Finalised 1997
Goulburn	Finalised 1995
Grampians – urban	Part of Wimmera–Mallee process
Kiewa/Rubicon – Southern Hydro	Finalised 1997
Latrobe	Finalised 1996
Loddon	Process commenced 2002
Maribyrnong	Finalised 2000-01
Melbourne	Awaiting review of approach to conversion (environmental assessment complete)
Moorabool	Finalised 1995
Murray	Finalised 1999
North East – urban	Finalised 1999
Otway rivers – urban	Finalised 1997-98
Ovens	Final stages of negotiation
South Gippsland rivers – urban	Finalised 1997
Tarago	Dependent on Melbourne system
Thomson/Macalister	Finalised 2001
Werribee	Finalised 1997
Wimmera–Mallee	Process commenced late 2000

For the unregulated rivers, three streamflow management plans (of 42 plans) were completed before 2002-03 and are in operation. By March 2003, a further 28 were in progress, of which 10 were either well advanced or completed but not yet in operation. Victoria advised that the 10 plans will commence operation by late 2003. Preparation of 11 plans was still to commence. Progress has been slower than expected due to the complexities of negotiations, because the plans have an impact on the security of supply of existing licences. Victoria expected the rate of progress to improve now that it has developed a standard procedure for preparing the plans (including guidelines to assist the consultative committees). It anticipated that all of the plans will be finished by June 2004 (see table 3.2).

**Table 3.2:** Streamflow management plans in Victoria, as at March 2003

<i>River</i>	<i>Plan completion date / target</i>
Albert*	Under review <sup>a</sup>
Avoca	June 2004
Avon/Valencia/Freestone creeks	June 2003
Avon/Richardson	June 2004
Badger Creek*	June 2004
Barwon/Leigh	June 2003
Bunyip/Tarago*	Under review <sup>a</sup>
Dandenong Creek*	Under review <sup>a</sup>
Delatite*	June 2004
Diamond Creek	June 2003
Fitzroy*	Under review <sup>a</sup>
Gellibrand	June 2001
Hoddles Creek	June 2003
Hopkins	June 2003
Kiewa	June 2003
King Parrot Creek	June 2003
Little Yarra	June 2004
Loddon (above Cairn Curran)	June 2004
Merri	June 2001
Mitchell	June 2003
Moe*	Under review <sup>a</sup>
Moorabool	December 2003
Morwell	June 2004
Mt William Creek	June 2004
Nariel Creek	June 2004
Narracan Creek*	Rescheduled <sup>b</sup>
Olinda	June 2004

(continued)



**Table 3.2** continued

<i>River</i>	<i>Plan completion date / target</i>
Ovens (above Myrtleford)	December 2003
Pauls Steel and Dixon Creek	June 2004
Plenty	December 2003
Seven Creeks	June 2004
Snowy*	Rescheduled <sup>b</sup>
Stringy Bark Creek	June 2004
Tambo*	Rescheduled <sup>b</sup>
Tarra	June 2004
Upper Latrobe	December 1999
Upper Maribyrnong	June 2003
Upper Wimmera	June 2004
Wandon Yallock Creek*	June 2004
Watts	June 2004
Woori Yallock Creek	June 2004
Yea	June 2003

<sup>a</sup> Part of Melbourne bulk entitlement. Schedule to be determined.

<sup>b</sup> Rescheduled to commence in 2003.

\* Plan not commenced.

For groundwater sources, the Government had established 18 water supply protection areas by March 2003 (table 3.3). Declaration was being sought for a further four areas (Apsley, Upper Loddon, Mid Loddon and Yarram). The Government had approved seven groundwater management plans, and a further seven were to be submitted for approval by 30 June 2003. Initial meetings of consultative committees were being held in the remaining four areas.

**Table 3.3:** Groundwater management plans in Victoria, as at March 2003

<i>Groundwater supply protection area</i>	<i>Status of plan / target completion date</i>
Bungaree	To be determined
Campaspe Deep Lead	March 2003
Condah	To be determined
Denison	April 2003
Deutgam	March 2003
Katunga	May 2003
Koo Wee Rup–Dalmore	Completed
Murrayville	Completed
Neuarpur	Completed
Nullawarre	Completed
Sale	April 2003
Shepparton Irrigation Area	Completed
Spring Hill	Completed
Telopea Downs	To be determined
Wandin Yallock	To be determined
Warrion	March 2003
Wy Yung	March 2003
Yangery	Completed

## Provision of water to the environment

**Assessment issue:** Governments are to formally determine allocations or entitlements to water, including appropriate allocations to the environment to enhance/restore the health of river and groundwater systems. In allocating water to the environment, governments are to have regard to the work undertaken by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) and the Australian and New Zealand Environment and Conservation Council (ANZECC). Environmental requirements, wherever possible, are to be determined on the best scientific information available and have regard to the intertemporal and interspatial water requirements that maintain the health and viability of river systems and groundwater basins. Governments needed to have made substantial progress in implementing arrangements to provide water to the environment by 2001, including allocations in all river systems that are overallocated or deemed to be stressed. Allocations must be substantially completed by 2005 for all river systems and groundwater resources identified in each jurisdiction's agreed implementation program.

In the 2002 NCP assessment, the Council was satisfied that the mechanisms contained in Victoria's recently developed river health strategy provide the tools for Victoria to meet its stressed rivers commitment and that Victoria's stressed rivers program was on track against the strategy. The Council indicated it would assess the five priority flow rehabilitation plans (for the Thomson, Macalister, Maribyrnong and Lerderderg rivers and Badger Creek) in the 2003 NCP assessment to ensure they deliver environmental outcomes. The Council indicated it would also look for Victoria to have invested in proposals to improve the environmental health of priority stressed rivers.

**Next full assessment:** The Council will finalise the 2003 NCP assessment of Victoria's progress in implementing CoAG obligations on the allocation of water to the environment in stressed and overallocated rivers in February 2004.

**Reference:** CoAG water reform agreement, clauses 4(b-f)

Victoria allocates water to consumptive uses and the environment through the bulk entitlement regime for regulated rivers<sup>4</sup> and streamflow management plans for unregulated rivers (see box 3.1). For groundwater sources, where allocations exceed 70 per cent of the sustainable yield, Victoria establishes a groundwater supply protection area and develops a groundwater management plan.

**Box 3.1:** Provision of water for the environment through bulk entitlements and streamflow management plans in Victoria

For regulated rivers, water is generally provided for the environment via conditions on the bulk entitlement of the water authority (for example, a requirement on an authority to release a particular environmental flow regime from a storage). In some cases, however, bulk entitlements may be provided specifically for the environment (such as when allocations are required for wetland watering). In stressed reaches of regulated rivers, water authorities are required to review operations to determine whether changes could improve the environmental flow regime without affecting other users, and to develop and implement a demand management program. In these cases, the Government will ensure no further diversions are allowed; consider whether any unallocated water in storages can be used to improve the environmental condition of the reaches before new abstractions are decided; and ensure trading rules facilitate an improvement in the environmental flow regime where possible.

For unregulated rivers, environmental flows are governed by streamflow management plans or, in lower priority rivers, by Statewide management rules. Environmental flows provided through the plans must be sufficient to sustain agreed ecological values and be consistent with Statewide requirements. If achieving the environmental flow requirements is likely to have significant impacts on existing users, then the measures required to meet these flow specifications are to be phased in over a period proposed by the plan.

Where the above processes may not be enough to restore ecological health or may take too long to do so, the relevant catchment management authority and water authority may develop a stressed river proposal in consultation with their communities. The purpose of such stressed river proposals is to achieve further environmental improvement in rivers that are a high priority in the State's regional river health strategy.

*Source:* DNRE 2002e, chapter 6.

In the 2001 NCP assessment, the Council found that Victoria, while it had improved environmental flow outcomes, had not fully addressed the CoAG obligation concerning environmental allocations in river systems that are overallocated or deemed to be stressed. The Victorian Government, however, committed to a comprehensive three-year program for improving the health of its priority stressed rivers by developing an overarching Victorian River Health Strategy. The program contained specific measures, including flow rehabilitation plans for stressed rivers. Other measures, such as waterway management plans and catchment nutrient management plans to address water quality, are considered in the Council's assessment of Victoria's implementation of integrated catchment management (see section 3.4) and National Water Quality Management Strategy (see section 3.5) reforms.

<sup>4</sup> Bulk entitlements are also granted to urban water authorities on unregulated rivers.

The Government developed the Victorian River Health Strategy by the 2002 NCP assessment. The Council was satisfied that the mechanisms contained in the strategy provide the tools for Victoria to meet its stressed rivers commitments and that Victoria's stressed rivers program was on track against the strategy. It indicated that it would assess the five priority flow rehabilitation plans (for the Thomson, Macalister, Maribyrnong and Lerderderg rivers and Badger Creek) in the 2003 NCP assessment to ensure they deliver environmental outcomes. The plans are intended to identify the degree of flow stress, consider options for returning water to the environment, and identify and prioritise work or action that may ameliorate flow stress. Based on the recommendations in the relevant plan, a steering committee of stakeholders considers the most appropriate process for implementing the plan. Under the Victorian River Health Strategy, the Government is committed to funding improvements in the flow regimes in two rivers each year for three years.

## **Reform progress since the 2002 NCP assessment**

Victoria advised the following status for the five priority flow rehabilitation plans.

- Victoria completed the Maribyrnong River plan in June 2002. It adopted the recommended environmental flows in most reaches. For the remaining reaches, Victoria considered the implementation of recommended environmental flows was not a priority at this stage.
  - The plan developed detailed environmental objectives for Jacksons Creek and Deep Creek upstream of the main river channel.
    - For Jacksons Creek, the flow objective is to reduce the impact of irrigation releases during the low flow season to return a more natural low flow regime to the river. The plan identified several options that could achieve this, primarily: managing the timing and volume of releases; selecting alternative storage/distribution options (such as off-stream storage and piping water to irrigators); reducing or relocating demand; and finding alternative supply sources for irrigation. The plan acknowledged that some or all of the options may not be able to be fully implemented due to local constraints and the impact on the social and economic values of the catchment.
    - For Deep Creek, the plan noted that, based on existing information, implementation of the cease-to-divert trigger in the streamflow management plan for the area significantly reduced the flow stress. The flow rehabilitation plan identified, however, that a farm and catchment dam assessment, and further investigation and analysis are required to address data inadequacies before the plan can be completed.

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- Victoria advised that its decision not to address the flow stress in the river at this time was based on three factors:
    - the new environmental flow study undertaken as part of the flow rehabilitation plan indicated that the flow stress in the river is not as severe as anticipated (recommended flows have been mostly met, with passing flows fully met in two locations and slightly lower than recommended in a third location);
    - there is insufficient flow information on some river reaches; and
    - the proposed options for reducing the flow stress in Jackson's Creek are expensive or operationally impractical and, given the marginal ecological gains expected, were assessed as not a priority for further action.
  - As the recommended environmental flows were mostly met, the Government referred the plan to the Port Phillip and Westernport Catchment Management Authority to incorporate specific actions to improve river health into its regional catchment strategy and river health planning. If the authority determines the remaining reaches in the Maribyrnong River to be a regional priority, it will be able to apply for funding to fill the information gaps.
  - The Lerderderg River plan was completed in March 2003. While the recommended flow has been met, there was concern about the need for summer flushes and the extended low summer flow period. The main recommended action to improve the river's flow regime is to modify the Lerderderg Weir to enable it to pass fresher and flushing flows. Following completion of a feasibility study and concept design, Victoria allocated A\$360 000 from stressed river funds to modify the weir. As part of this process, Southern Rural Water's and Western Water's bulk entitlements will be reviewed and amended to accord with the new environmental flow provisions. The new environmental flow regime is expected to be implemented in August 2004.
  - The plans for the Thomson and Macalister rivers were expected to be completed by the end of July 2003. Pending finalisation of the plans, for the Thomson River, the minimum environmental flow recommended in the bulk entitlement process (125 megalitres per day) has been provided. For the Macalister River, the base environmental flow has been improved (from 15 to 60 megalitres per day) but the recommended flow (125 megalitres per day) will not be met at this stage. While the two plans are being developed separately, their proposed actions will be formulated and assessed together because the Thomson, Macalister and Yarra catchments are integrated. Victoria established a Ministerial taskforce to consider the recommendations of both plans in conjunction with the social and economic implications of changing the environmental flow provisions in the bulk entitlements for the Thomson and Macalister rivers. The taskforce is expected to report its recommendations to the Minister towards the end of 2003.
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- Victoria considered that a flow rehabilitation plan for Badger Creek is no longer required, because the cause of and solution to the creek's flow stresses are well understood. Instead, Victoria prepared a report detailing the flow stresses, expected solutions and interim works program. The report indicates that the flow stress is caused by extractions to supply water to Healesville. It also indicates that providing the flows required for the environment would result in an unacceptable impact on Healesville's water supply. The proposed solution is to connect Healesville to an alternative water supply (Melbourne's water supply). An upgrade to achieve this connection is scheduled, but not until 2012. In the interim, Melbourne Water identified a range of works to improve the health of Badger Creek. It committed in the order of A\$200 000 to undertake waterway works that will protect and improve the health of the creek. The work will be undertaken in conjunction with Healesville Sanctuary and will include bed and bank stabilisation, flood protection works and improvements to fish passage via the modification of two in-stream structures.

Given that it considered further implementation of the Maribyrnong plan was not cost-effective for the expected environmental benefits, Victoria committed to implementing the streamflow management plan for King Parrot Creek instead. It considered that the plan for the creek offers greater environmental benefits for the level of commitment required.<sup>5</sup>

As Victoria foreshadowed in the 2002 NCP assessment, it reviewed the timetable for the remaining six flow rehabilitation plans following its completion of the Victorian River Health Strategy. The status of these plans is reported in box 3.2.

**Box 3.2:** Status of the remaining six flow rehabilitation plans in Victoria

**Avoca River**

The streamflow management plan is under way. Initial indications are that the flow requirements will be met. A wetland management study of the lower Avoca has commenced. A hydrogeological study and a vegetation survey are to be completed by December 2003. The streamflow management plan will assess the impact of farm dams and identify the appropriate level of water-related development for the catchment. The outcome of the wetland studies will determine how a water management plan for the lower Avoca is developed.

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<sup>5</sup> Victoria provided A\$280 000 of stressed river funds to the Goulburn Broken Catchment Management Authority to undertake environmental flow projects for King Parrot Creek.

**Loddon River**

The bulk entitlement process is under way. An environmental flow assessment identified the need to review the minimum flows and provisions for fresher flows. It is anticipated that some of the environmental flow recommendations will be met through the bulk entitlement process. The impact of supplying the recommended environmental flows on security of supply is being modelled. Additional work is being undertaken to identify the flow requirements of wetlands. Once the bulk entitlement process is completed, a flow rehabilitation plan will be developed to categorise any ongoing flow stresses and identify actions to address or ameliorate these. Preliminary discussions have commenced with the North Central Catchment Management Authority regarding the development of the flow rehabilitation plan.

**Glenelg River**

The bulk entitlement process is under way. Initial indications are that the minimum flow requirements will be met. Almost 35 gigalitres of water savings from the Northern Mallee pipeline have already been made available for environmental flows to be shared between the Wimmera and Glenelg rivers. The Government committed the following funding: A\$77 million to building the Wimmera–Mallee pipeline; A\$100 000 of stressed river funds to Glenelg Hopkins Catchment Management Authority to undertake a case study to modify the bed of the river to maximise the ecological benefits of the current minimum flows; and A\$30 000 to the Wimmera Catchment Management Authority to investigate the operational impediments and modifications required to the existing infrastructure to provide the environmental flows in the Wimmera and Glenelg rivers. Preliminary discussions with Glenelg Hopkins Catchment Management Authority have commenced on developing a flow rehabilitation plan. The two pipeline projects are expected to save, and return to the environment, in the order of 100–115 gigalitres of water, which is expected to meet most of the environmental flows recommended for the two rivers. Within the bulk entitlement process, development of an environmental bulk entitlement for this water has been discussed.

**Broken Creek**

The bulk entitlement process slowed due to the drought. It is expected to be finished by the end of 2003. The environmental flow recommendations are expected to be met. Additional improvements to flows could be realised from the review of the future of Lake Mokoan and the consideration of pipelining the Tungamah domestic and stock district. Feasibility studies for both of these projects were commissioned. Preliminary discussions with Goulburn Broken Catchment Management Authority have commenced on developing a flow rehabilitation plan.

**Wimmera River**

The bulk entitlement process is under way. Initial indications are that the minimum flow requirements will be met. Further details are provided above for the Glenelg River.

**Snowy River**

Under the Snowy River rescue plan, 21 per cent of the flow (212 gigalitres) will be returned to the river over 10 years.

Victoria advised that the Minister for the Environment and Conservation established a technical audit panel in October 2002 to review the streamflow and groundwater management plans (including those under preparation). The main purpose of the reviews is to consider whether the information and method used were the best available at the time, and whether the assessment of risks (to the environment and to security of supply) was appropriate. Comprising seven academic experts in relevant fields, the panel has met twice and commenced reviewing the plans. The panel's reviews are to be

made publicly available, with the first findings expected to be available in August 2003.

Victoria also advised that the Department of Sustainability and Environment is collating electronic versions of the environmental flow assessments to which it contributed funds. Once collated and checked for quality, these assessments will be placed on the department's web site and in its library. The documents are expected to be available on the department's web site by August 2003. In addition, the department is encouraging the posting of environmental flow studies on regional web sites through either the catchment management authorities or water authorities. Goulburn–Murray Water and Melbourne Water placed all of the relevant studies associated with their completed streamflow management plans on their respective web sites. Southern Rural Water also intends to make its environmental flow studies available on its web site.

## Submissions

Environment Victoria argued that Victoria is 'failing to implement reforms that are consistent with the National Principles for the Provision of Water for Ecosystems' (Environment Victoria 2003, p. 5). It considered that:

- Victoria's performance in protecting and restoring aquatic ecosystems should be measured against the current condition of the State's rivers and wetlands with, for example, only 27 per cent of rivers being in good or excellent condition;
- bulk entitlement and streamflow management planning processes are 'continuing to allocate water in a way that is running down Victoria's ... water resource assets for private and commercial gain' (p. 8);
- Victoria 'is continuing the practice of moving the goal posts for stressed rivers further into the distance and making it difficult to assess progress on commitments on stressed rivers' (p. 17); and
- the Victorian public does not have access to accurate information about the levels of environmental risk being placed on rivers by the Government.

Environment Victoria considered that the Victorian Government should take a range of actions, including:

- making all reports relating to environmental flow studies available on the Internet and in the Department of Sustainability and Environment's library;
- making publicly available information on the scientific methods used to determine all environmental flows and the extent to which each system has achieved scientifically determined environmental flows;



- engaging an independent auditor to annually examine the delivery of environmental flows and assess the ecological health of the river systems;
- transferring responsibility for environmental flows from water authorities to catchment management authorities; and
- changing its policy to ensure the delivery of scientifically determined, rather than negotiated, environmental flows.

## **Discussion and assessment**

The key environmental flow obligation for Victoria for the 2003 NCP assessment was to have in place flow rehabilitation strategies that provide adequate environmental provisions for the five priority stressed systems: the Thomson, Macalister, Maribyrnong and Lerderderg rivers and Badger Creek. Victoria completed flow rehabilitation plans for two of these systems — the Maribyrnong and Lerderderg rivers — and determined a course of action for Badger Creek. It anticipated that the flow rehabilitation plans for the Thomson and Macalister rivers would soon be completed.

Arising from the plan for the Lerderderg River, Victoria committed funding to modify the Lerderderg Weir to enable it to pass fresher and flushing flows. The plan suggests that modification of the weir should meet environmental objectives. The course of action proposed for Badger Creek — the connection of Healesville to an alternative source of supply — is likely to meet environmental objectives. This work is scheduled for 2012. As an interim measure, Melbourne Water committed funding to undertake works to improve the health of Badger Creek.

Given that the recommended environmental flows were mostly met, Victoria decided not to proceed with further implementation of the flow rehabilitation plan for the Maribyrnong River, considering that the Statewide return in terms of environmental outcomes from flow restoration activities would be greater for other rivers. Victoria considered that there is a need (as identified in the plan) for additional information before it commits funds to restoring flows in the Maribyrnong River. The Government referred the plan to the Port Phillip and Westernport Catchment Management Authority to incorporate specific actions to improve river health into its regional catchment strategy and river health planning. The Council has no information on the actions proposed by the catchment management authority. Instead of the remainder of the Maribyrnong plan, Victoria decided to implement the streamflow management plan for King Parrot Creek, which it considered provides greater environmental benefits for the level of commitment required.

A key issue in several jurisdictions, including Victoria, is the nature of the trade-offs made when the amount of water identified for environmental flows is less than the best available science recommends. The CoAG water agreement acknowledges the existing rights of water users, meaning that

reference committees developing environmental flow regimes may recommend a flow regime that does not meet the scientific recommendation in the shorter term. Such decisions imply that the community agreed to accept potential consequences (such as a higher level of environmental risk and/or a certain level of environmental degradation). The Council considers, therefore, that there must be sufficient public information on the environmental risks posed by the negotiated environmental flow regimes to allow the community to understand and comment on the community reference groups' decisions on flow regimes. Moreover, the community reference groups need to be representative of all interests and flow regime and associated river health activities should be likely to deliver recommended environmental objectives within a reasonable period.

Victoria established a technical audit panel to consider whether the information and method used in the development of environmental flows are the best available at the time, and whether the assessment of risks is properly done. The audit panel's reviews are to be made public. Victoria also produced guidelines for the preparation of streamflow and groundwater management plans, which require reference committees to obtain comments from the technical audit panel, including comments on the risks to the environment of the committee's recommended flow regime. The draft plan must incorporate the comments before it is made available for public consultation. In addition, the Department of Sustainability and Environment is making environmental flow assessments and related documentation available in its library and on the Internet.

The audit panel and the information that Victoria proposes to make available should ensure information concerning environmental risks is publicly available as a basis for decisions to accept environmental flows below the scientifically recommended levels. A remaining difficulty, however, is where environmental provisions are decided, or alternative remedial actions are taken, without publicly available information on the extent to which scientifically determined environmental flows will be met and the environmental risks that will arise. In this regard, the Council considers that the Government's public provision of information on stressed or overallocated river systems, such as suggested by Environment Victoria, will help demonstrate compliance with the CoAG environmental flow obligations.

CoAG's proposed consideration in August 2003 of nationally compatible water industry arrangements, including better identification of environmental assets and their water needs, is likely to be relevant to State and Territory decisions on allocations for extractive purposes and on the provision of water for environmental outcomes. The Council proposes to work further with Victoria after the scope of the CoAG work is known, to develop and better understand the necessary flow rehabilitation / river health actions for the five priority stressed rivers, particularly the Thomson, Macalister and Maribyrnong rivers. Consistent with its approach in relation to New South Wales, the Council proposes to defer this 2003 NCP assessment of Victoria's implementation of the CoAG obligation concerning provisions of water for the environment to February 2004.

In the 2004 NCP assessment, the Council will report on all jurisdictions' progress in implementing environmental allocations. Then, in 2005, it will conclude its assessment of jurisdictions' compliance in this area consistent with the timetable established by CoAG. For rivers and groundwater systems that are not deemed to be stressed, under the CoAG timetable Victoria has until 2005 to implement environmental allocations. Despite some delays, the bulk entitlement program appears likely to be completed by December 2004, along with virtually all of the streamflow and groundwater management plans by June 2004.

### 3.3 Intrastate trading

**Assessment issue:** Trading arrangements in water allocations or entitlements are to be instituted to maximise water's contribution to national income and welfare, within the social, physical and ecological constraints of catchments. Any restrictions on trading need to be shown to be in the public interest. According to the CoAG timetable for assessment of reform progress by the Council, arrangements to enable intrastate trade are to be assessed in 2003.

In previous NCP assessments, the Council found that Victoria has a well-established trading market for water. The Council identified, however, constraints on trade, including:

- the fact water rights must remain attached to land, with a transfer detaching the water right from one landholding and re-attaching it to another;
- in regulated systems, the possibility that a transfer may be refused if it would result in more than 2 per cent (net) of the total water entitlement being transferred out of selected irrigation districts in any given year;
- in unregulated systems, the limit on trade to downstream trade only, along with the 20 per cent reduction in the volume able to be traded (unless under a winter-fill licence); and
- distortions in the temporary market for water trading that arise from the current pricing arrangements for bulk water supply (with a differential return on assets charged for water supplied by rural water authorities to regional urban customers and to rural customers).

Victoria has also been developing streamflow management plans for unregulated rivers and groundwater management plans, which may include trading rules.

Victoria needs to remove constraints on water trading or demonstrate that any remaining constraints are in the public interest. Victoria also needs to ensure trading rules in streamflow and groundwater management plans facilitate trading where this is socially, physically and environmentally sustainable.

**Next full assessment:** The Council will assess arrangements for water trading in 2004.

**Reference:** CoAG water reform agreement, clause 5

Victoria has a well-established trading market for high security water, and trading plays an important role in the State's agricultural production. The Water Act and associated Regulations provide the basis for water trading within the State, with different arrangements applying to regulated, unregulated and groundwater systems.

## Regulated systems

The water entitlements of irrigators in the regulated irrigation districts are aggregated under the bulk entitlements held by the rural water authorities. The entitlements are transferable, although they remain attached to land at all times.<sup>6</sup> A transfer detaches the entitlement from the seller's landholding and re-attaches it to that of the buyer.

Water may be transferred into or out of an irrigation district, although a transfer may be refused if it would result in more than 2 per cent (net) of the total water entitlement being transferred out of selected irrigation districts in a given year. Irrigation districts that may employ the 2 per cent rule are: Torrumbarry; the Murray Valley; Shepparton; Central Goulburn; Rochester; Pyramid Hill and Boort; Campaspe; Nyah and Tresco; Woorinen; Merbein, Red Cliffs and Robinvale; and the First Mildura Irrigation Trust. The rule has been invoked twice in recent years.

Trade generally requires the approval of the rural water authorities (and/or the Minister) and is subject to a range of rules and guidelines. The rules are generally designed to minimise any adverse effects of trade on other water users (for example, through physical constraints of the system) and the environment.

Water entitlements cannot be permanently transferred without the approval of any person with a registered interest. The seller is also required to advertise their intention to sell four weeks before applying for a permanent transfer.

Apart from the above constraints on water trading in regulated systems, Victoria's current pricing arrangements for bulk water supply may distort the temporary market for water. The rural water authorities (Goulburn–Murray Water, Southern Rural Water and Wimmera Mallee Water) must incorporate a 4 per cent return on assets in pricing water supplied to regional urban customers but not in pricing water supplied to irrigators. As a result, the charge for supply to country towns is higher than the charge to irrigators for water from the same system. Victoria's review of water industry legislation undertaken by Marsden Jacob Associates (MJA 2001) concluded that this differential in returns creates distortions in the temporary market for water trading. (See also section 3.6, which summarises the review recommendations and the Victorian Government's responses.)

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<sup>6</sup> The Act also permits the permanent or temporary trading of bulk entitlements.

## Unregulated systems

Water trade is permitted in unregulated river systems on a similar basis to the trade permitted in regulated systems. Water remains attached to a landholding at all times. The streamflow management plans that are being developed (see section 3.2) will set the trading rules.

Pending completion of the streamflow management plans, generic trading rules are in place for unregulated systems. North of the Great Dividing Range, there is a prohibition on trade upstream and a 20 per cent reduction in trade downstream (unless under a winter-fill licence). In addition, across the whole State, downstream trade from an unregulated system to a regulated system is limited to the amount of upstream trade. These restrictions are temporary measures aimed at protecting the environment and will be removed when the streamflow management plans are implemented.

## Groundwater systems

Trade in groundwater is legally possible within an aquifer. Victoria advised, however, that it is exercising considerable caution before permitting widespread trading in groundwater because groundwater resources are harder to assess and have been built up over decades (rather than being annually renewed). In general, Victoria requires that a groundwater management plan (see section 3.2) be developed before it allows trade.

## Trading to date

The bulk of water trade (94 per cent in 1999-2000) takes place among irrigators in regulated systems, which account for the vast majority of water rights in Victoria. Almost 90 per cent of all permanent trade occurs in the large regulated systems in northern Victoria. In contrast, unregulated systems account for only around 5 per cent of total water entitlements, and trade is correspondingly smaller. Most of the following data on trading was obtained from the Victorian Government's guide to water trading (DNRE 2001b).

Almost all trading has occurred among farmers. In 1999-2000, 98 per cent of water permanently traded was from one farm to another. At times, irrigators have bought 'spare' water from the Government and rural water authorities (on a permanent basis) and from urban water authorities and the Minister for the Environment (on a temporary basis).

In 2000-01, permanent transfers amounted to just under 25 000 megalitres. This represented almost 1 per cent of the total volume of water entitlements. Permanent transfers increased gradually during the 1990s, rising

significantly in 1997-98 to around the current level. In the 10 years to 2000-01, a volume equivalent to 6 per cent of the total entitlement of irrigators was permanently transferred. Temporary transfers averaged around 25 000 megalitres a year during the early 1990s, but increased substantially to over 200 000 megalitres in 1994-95. Temporary trade has since ranged between 100 000 and 250 000 megalitres each year, representing 3–8 per cent of total water entitlements.

Victoria considers that the higher levels of both temporary and permanent trading since the mid-1990s have resulted from several factors, including:

- the significant widening of the trading rules in 1994 (for example, to permit trade out of irrigation districts);
- the relatively dry conditions since 1994-95;
- the 1995 decision to cap water diversions in the Murray–Darling Basin, and Victoria’s interim steps to implement the cap; and
- the gradual improvement in farmers’ understanding of the opportunities provided by the market and how the market works.

In broad terms, the Victorian data show that permanent trading is moving water away from low return sheep and cattle grazing to higher value dairying and high value horticulture. Victoria considered that temporary transfers have played a crucial role in allowing individual farmers to adjust their water use in drought years. Dairy farmers, for example, have been significant purchasers of temporary water.

Significant trade has occurred into and out of areas, as well as within areas. Of the permanent trade involving Goulburn–Murray farmers until 2000-01, around two-thirds was within the area or was outbound trade that was balanced by trade into the area.

For permanent trades, prices in the Goulburn–Murray region were around A\$700 per megalitre in 2000-01, down from over A\$800 per megalitre in 1998-99. In 2000-01, prices of up to A\$1200 per megalitre were being paid in the more confined Campaspe region. In 1999-2000, prices in the Sunraysia region reached A\$1000 per megalitre but eased somewhat in the following year. In the Goulburn system, prices for temporary water averaged A\$65 per megalitre in 1998-99, A\$56 per megalitre in 1999-2000 and A\$34 per megalitre in 2000-01.

There were about 20 water brokers in Victoria in 2001. The data on temporary trade in the Pyramid–Boort and Torrumbarry areas in northern Victoria indicate that brokers were responsible for almost 30 per cent of contacts between buyers and sellers in 1998-99. In the same year, the Northern Victorian Water Exchange (recently replaced by the Statewide Watermove), then in its first year of operation, accounted for around one-quarter of contacts between traders. Contact was also taking place to a significant extent between neighbours (25 per cent) and through other private

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and informal connections (over 10 per cent). By 2000-01, the Northern Victorian Water Exchange was responsible for 31 per cent of temporary trades in the Goulburn–Murray region, with over 900 farmers buying and 800 selling on the exchange. The prices set each week are published in local newspapers and act as a general guide for traders.

## **Changes in the regulatory environment since 2001**

Since the Council's previous review of trading arrangements in the 2001 assessment, Victoria's water trading market has continued to develop. The release of Victoria's guide to water trading (DNRE 2001b) in December 2001 has also improved the transparency of the water market, including the trading rules.

Victoria has retained the trading constraints previously identified by the Council as likely to be inconsistent with CoAG water trading commitments, although it signalled that it will review some of these and replace them with mechanisms that better achieve social and environmental objectives relating to water use. Victoria provided the following advice on these constraints.

- The Government is considering the existing requirement to attach water rights to land in its green paper review of all areas of the water industry (expected to be finalised in early 2004). In the longer term, there would appear to be a net benefit in being able to hold water entitlements without having to hold land. In the short term, however, there is a strong argument against this reform while there is a significant debate about whether up to 40 per cent of water taken out of rivers in the Murray–Darling Basin should be returned.
- The 2 per cent rule represents a loose rein on the pace of change. It allows three times the extent of permanent trade in the Goulburn–Murray district than takes place across the border. It has been invoked only on two occasions, with the effect of only delaying trade for several weeks. The rule was not invoked in 2001-02 or 2002-03.
- The restrictions in unregulated systems (limiting trade to downstream trade only and setting a 20 per cent reduction in the volume able to be traded unless under a winter-fill licence) are a holding measure, to allow some trade to continue but bias it to downstream or winter-fill outcomes. The aim is to put less strain on summer flows pending the development of the streamflow management plans.

- Also as part of the water industry review, and before the Essential Services Commission issues its first pricing determination for bulk water supplies (for the period from 1 July 2005), the Government is considering the issue of differential returns for bulk water supplies.

Victoria has finalised three streamflow management plans for unregulated rivers, with a further 28 in progress and 11 still to commence. In addition, it has completed seven (of 18) groundwater management plans (see section 3.2). In relation to the trading rules in the plans, Victoria's guide to water trading states:

*... the streamflow management plans that are nearing completion are tending to confirm the interim, general trading rules that have been operating there — no doubt partly because these plans have tended to be carried out for streams that are stressed. Some of the plans are proposing additional, quite detailed constraints on trade. (DNRE 2001b, p. 61)*

The trading rules for the Merri and Upper La Trobe rivers and the Spring Hill groundwater supply protection area, for example, include the following provisions.<sup>7</sup>

- Merri River. Downstream trading is allowed without restriction. Upstream trading is to be decided by Southern Rural Water in consultation with irrigators, within the constraint of no net trading into Spring Creek (a habitat for the vulnerable Yarra pigmy perch) or Drysdale Creek.
- Upper La Trobe River. Downstream trading is allowed without restriction. Trade into four upstream tributaries must not breach specified direct pumping and winter-fill entitlement caps, with winter-fill encouraged (and caps to be adjusted) for two of the tributaries. Trade into all other tributaries is subject to environmental assessment. Up to 500 megalitres can be traded permanently or temporarily from the lower La Trobe system, with a 20 per cent reduction in volume.
- Spring Hill groundwater supply protection area. The seller's bore must be capable of yielding the transferred entitlement. Use of the transferred entitlement may be restricted or prevented if Goulburn–Murray Water considers that such use would interfere excessively with an adjacent bore, or if groundwater levels in the area decline significantly.

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<sup>7</sup> The Council has not examined the individual streamflow and groundwater management plans. The information on the trading rules for the Merri and upper La Trobe rivers was obtained from DNRE (2001b, pp. 62-3) and reflected the rules in the final draft plans (at that time still to be endorsed by the Government). The information on the trading rules for the Spring Hill groundwater supply protection area was obtained from the water trading exchange, Watermove ([www.watermove.com.au](http://www.watermove.com.au)).



One of the draft streamflow management plans that Victoria expected to finalise in mid-2003 (King Parrot Creek) prohibits trading to outside of the catchment, 'reflecting concern that the potential for local economic development may be eroded, given water can no longer trade into the catchment' (DNRE 2001b, p. 62).

Victoria's rural water authorities jointly established Watermove, building on the operations of the existing Northern Victorian Water Exchange, to conduct trading throughout Victoria. Watermove has been accounting for around one-third of all temporary transfers in northern Victoria and will begin catering for permanent transfers from mid-2003. Following interest from Murray Irrigation Limited, Watermove also now caters for temporary trade to and from southern New South Wales above Barmah Choke. Victoria advised that South Australia is also interested in trading on Watermove, and the Murray–Darling Basin Commission provided a small grant to assist the spread of Watermove's operations in the basin. Victoria indicated an intention to explore options for leasing water, to add to the existing arrangements for temporary and permanent transfers (DNRE 2001b).

## **Discussion**

Under the CoAG water reforms, the objective of water trading is to ensure water is used to maximise its contribution to national income and welfare, subject to the social, physical and ecological constraints of catchments.

Victoria's water trading market has continued to develop since the 2001 NCP assessment. Adding to the scope for private trades and the use of brokers, Victoria extended the operations of its water exchange, Watermove, to temporary transfers throughout the State and to and from southern New South Wales. Watermove will begin catering for permanent transfers from mid-2003. Victoria is also considering options for the leasing of water. In addition, through the publication of its guide to water trading in December 2001, and the information available through Watermove (including trading rules and market information on prices and volumes), Victoria significantly improved the transparency of its trading arrangements. Market information and trading mechanisms, therefore, do not constrain water trade in Victoria.

In the 2001 NCP assessment, the Council indicated that it was satisfied that water rights in Victoria are sufficiently specified to allow for efficient trade. While Victoria's registry arrangements do not provide indefeasibility or surety of title, third parties are able to register an interest in a water right. Trades may not be approved without the agreement of these third parties.

Victoria has continued to progress the conversion of the existing rights of water authorities to clearly defined bulk entitlements. Bulk entitlements are in place for approximately 85 per cent of the State's water resources, with all remaining bulk entitlements expected to be granted by the end of 2004. Outside the irrigation districts, the adequate specification of water rights depends on the finalisation of streamflow and groundwater management

plans. While progress with the plans has generally been slower than envisaged, these systems account for only around 5 per cent of water entitlements in Victoria, and almost all of the plans are expected to be completed in 2004.

Victoria's trading arrangements also contain measures to protect the water rights of other users and the environment. Transfer approvals are generally required to account for any likely adverse impacts on existing water uses, waterways or aquifers, and the environment. Within the Goulburn-Murray irrigation district, for example, transfers can be approved only on the basis of supply feasibility, channel capacity, and salinity and drainage criteria.

Victoria has maintained the trading constraints that the Council identified in 2001 as likely to be inconsistent with CoAG water trading commitments. The constraints of greatest concern are:

- the requirement for water rights to attach to land, with a transfer detaching the water right from the seller's landholding and re-attaching it to that of the buyer;
- the differential return on assets incorporated in the price charged for bulk water supplied by rural water authorities to regional urban customers and irrigators, which results in the charge for supply to country towns being higher than the charge to irrigators for water from the same system;
- the 2 per cent rule in irrigation districts, under which a transfer may be refused if it would result in more than 2 per cent (net) of the total water entitlement being transferred out of selected districts in a given year; and
- the restrictions in unregulated systems north of the Great Dividing Range, which prohibit trade upstream and impose a 20 per cent reduction on trade downstream (unless under a winter-fill licence), and the restrictions across the whole State that limit downstream trade from an unregulated system to a regulated system to the amount of upstream trade.

Victoria is considering two of these constraints — (1) the requirement for water rights to attach to land and (2) the differential returns on bulk water supply — as part of the green paper review of the water industry (expected to be finalised in early 2004). As the Council indicated in previous NCP assessments, the requirement for water rights to attach to land is likely to have an impact on the entry and activities of agents, brokers and other potential participants in the water trading market. As a result, the restriction may reduce returns available to holders of water rights and constrain the extent to which water is used for its highest value purpose. Victoria's review of water industry legislation found that the differential returns on assets incorporated in water prices to country towns and irrigators distorts the temporary market for water trading. The water legislation review's proposed solution is to incorporate the same return on assets in prices charged to all water users.

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Victoria's view on the 2 per cent rule is that any constraint is, at most, a loose rein on the pace of change in irrigation districts and does not significantly affect trade. The Council recognises that the rule is in place in response to community concern that excessive water traded out of a district may result in adverse outcomes, including: the diminution of local production and regional economies; a reduction in the rate base for local governments; the loss of economies of scale; and the potential 'stranding' of irrigation infrastructure.

The Council considers that the 2 per cent rule does not substantially impede trade in Victoria's irrigation districts and is less restrictive than arrangements in neighbouring States. The rule has been invoked only twice (when it only delayed, not prevented, trade) and was not invoked in 2001-02 or 2002-03. As trade increases, however, the 2 per cent annual limit is likely to be reached more often and could become a substantial constraint on trading. The Murray–Darling Basin Commission's work on interstate trading arrangements may shed light on the continuing appropriateness of the 2 per cent rule.

For the unregulated rivers, the constraints on trading appear to be aimed at mitigating undesirable environmental effects (particularly by putting less strain on summer flows) until the local circumstances of each river are examined and suitable trading rules are established in the streamflow management plans. Initial indications are that the streamflow management plans nearing completion tend to confirm the interim, general trading rules and that some plans propose additional detailed constraints on trade (DNRE 2001b, p. 61). Given that only three (of around 40) streamflow management plans have been finalised, the Council will consider the trading rules in the plans (and in groundwater management plans) in future NCP assessments as the plans are progressively completed. The Council will look for any trading restrictions in the plans to reflect physical or environmental constraints. Where constraints are in response to socioeconomic concerns (as may be the case in King Parrot Creek), Victoria will need to show a robust net public benefit case if it is to comply with CoAG obligations. The Council is encouraged by Victoria's stated position that:

*In general, plans should have the minimum barriers to trade required to achieve proper protection of the environment. Thus, 'no trade' up into a creek may be unnecessarily restrictive compared with 'no net trade'. 'Downstream only trade' is harder to accommodate on a water exchange than 'trade only within reaches and to a downstream reach'. (DNRE 2001b, p. 63)*

## **Assessment**

Since the 2001 NCP assessment, Victoria's water trading market has continued to develop. The publication of Victoria's guide to water trading and the progressive extension of the operations of Watermove have significantly improved access to, and the transparency of, water trading.

Victoria indicated that it is reviewing two of the remaining constraints on water trading — (1) the requirement for water rights to attach to land and (2) the differential returns on bulk water supply — as part of its green paper review of the water industry. Given that Victoria expects the review to be finalised in early 2004, in the 2004 NCP assessment the Council will look for Victoria to have either removed these constraints or demonstrated that they provide a net public benefit.

The 2 per cent rule currently does not substantially impede trade in Victoria's irrigation districts, but is likely to become a more significant constraint as trade increases. In the 2004 NCP assessment, the Council will consider the continuing appropriateness of the rule in light of the outcome of the Murray–Darling Basin Commission's work on interstate trading restrictions.

Victoria's constraints on trading in the unregulated rivers appear to be transitional measures to mitigate adverse environmental effects pending finalisation of the streamflow management plans. In future NCP assessments, the Council will consider the trading rules in the plans (and in groundwater management plans) against the CoAG obligations on water trading as the plans are progressively completed. Once appropriate provisions are included in the streamflow management plans, the Council expects Victoria to remove the generic constraints on trade in unregulated systems.

The Council considers that Victoria made sufficient progress against its CoAG obligations on water trading for the 2003 NCP assessment.

## 3.4 Institutional reform

### Structural separation

**Assessment issue:** As far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision are to be separated institutionally. In the 2002 NCP assessment, Victoria indicated it would establish an independent price regulator, the Essential Services Commission, which would oversee the water industry from 1 January 2003.

**Next full assessment:** The Council will conduct a full assessment across the entire package of reforms in 2005.

**Reference:** CoAG water reform agreement, clause 6(c) and (d)

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## Essential Services Commission

The Water Legislation (Essential Services Commission and other amendments) Act provides for the commencement of the Essential Services Commission's jurisdiction over the water industry. With some minor exceptions, the Act comes into operation on a day or days to be proclaimed, or if not proclaimed, on 1 July 2005. The Constitution (Water Authorities) Act commenced in June 2003. The Water (Victorian Water Trust Advisory Council) Act will commence on a date to be proclaimed. If not proclaimed, then it will commence on 1 December 2003.

The first reading speech for the Water Legislation (Essential Services Commission and other amendments) Bill states that Victoria is introducing various transitional arrangements to provide for an orderly transition to economic regulation of the water industry by the Essential Services Commission. Under these arrangements, the first price determination by the Essential Services Commission will take effect on 1 July 2005. The metropolitan water businesses currently have provisions under which a pricing Order is made by the Governor in Council. The existing arrangements for price setting for the RUWAs and rural water authorities under the Water Act will apply until 1 July 2004.

## Water services agreements with regional urban water authorities

At the time of the 2002 NCP assessment, the Victorian Government had signed water services agreements with each of the 15 RUWAs. While the agreements have not been publicly released, Victoria indicated that they include obligations relating to:

- service provision, including drought response, emergency response and incident management, environmental management and water conservation;
- accountability, including corporate governance arrangements reflecting the authorities' relationship with the Government as owner; and
- reporting requirements, setting out the content (including key performance indicators and targets) and frequency of reporting to the Minister for Water.

By specifying the authorities' service obligations in the agreements, Victoria intended to clearly and formally articulate the obligations associated with each authority's role as a provider of water and sewerage services to its customers. The agreements clarify that the authorities' role is that of a service provider, not a regulator. Work was progressing on the agreements for the five rural water businesses. Victoria indicated that the obligations in the agreements would be rolled into proposed statements of obligations to be

developed for each water authority. The statements would be publicly available.

Victoria confirmed that it intends to formalise the water services agreements into statements of obligations for the RUWAs. It expects to issue the statements, which will be publicly available, by March 2004. Victoria no longer intends to issue water services agreements for the RUWAs. The authorities' obligations will be clarified in the statements. To assist in developing the statements, in the second half of 2002 Victoria reviewed the existing agreements with the RUWAs. In addition to examining the obligations in the agreements, the review clarified other Government obligations carried out by the authorities that are implied rather than explicitly expressed in legislation or other regulatory instruments.

## Regulation of drinking water quality

Following community and water industry consultation, Victoria introduced the Safe Drinking Water Bill in April 2003. This will establish an Office of the Drinking Water Quality Regulator, within the Department of Human Services, to oversee proposed risk management processes to ensure safe drinking water.

The legislation will also provide for drinking water quality standards to be established by regulation. After a public regulatory impact assessment process, Victoria will set standards, as well as requirements for monitoring and reporting against those standards. Standards will be based on the 1996 Australian Drinking Water Guidelines. Victoria expects to develop the standards during 2003-04 with a view to commencing the new regulatory framework on 1 July 2004. The new framework will be designed to gradually improve drinking water quality in a manner that recognises local community resource capabilities. (See also section 3.5)

## Discussion and assessment

Victoria's introduction of legislation into the Parliament to establish the Essential Services Commission, with responsibility for regulating the water industry from 1 January 2004, addresses 2003 NCP obligations on institutional structural separation. The Council will monitor progress with establishing the Essential Services Commission in the 2004 NCP assessment.

The statements of obligations on the RUWAs, once finalised and publicly released, are likely to articulate clearly the Government's expectations of its water businesses, and provide the transparency and accountability necessary to clarify the role of the authorities as a service provider not a regulator. Given Victoria's proposed timing for finalisation of the statements, the Council will consider this issue further in the 2004 NCP assessment.

The creation of the Office of the Drinking Water Quality Regulator will clearly separate responsibility for water quality standards-setting from responsibility for providing water services.

## Devolution of irrigation scheme management

**Assessment issue:** Constituents are to be given a greater degree of responsibility in the management of irrigation areas, for example, through devolution of operational responsibility to local bodies, subject to appropriate regulatory frameworks being established.

In the 2001 NCP assessment, the Council reported that Victoria was continuing to use rural customer consultative committees as the primary vehicle for local input into the management of irrigation areas. The Council was satisfied that the committees give irrigators sufficient involvement (that goes beyond consultation) in the setting of performance standards, prices and other matters.

Victoria should report on the proposed role of the rural customer consultative committees following the establishment of the Essential Services Commission.

**Next full assessment:** The Council will assess institutional reform in 2005 as part of a full assessment across the entire package of water reforms.

**Reference:** CoAG water reform agreement, clause 6(g)

All of Victoria's rural water authorities have rural customer consultative committees (formerly referred to as water service committees). In the 2001 NCP assessment, the Council reported that Victoria was continuing to use the committees as the primary vehicle for local input into the management of irrigation areas. In addition to providing a point of communication between the authorities and their customers, the committees play an important role in negotiating and agreeing price and service level trade-offs. The Council was satisfied that the committees give irrigators sufficient involvement (that goes beyond consultation) in the setting of performance standards, prices and other matters.

The Council indicated, however, that the rural customer consultative committees would need to maintain an active role in decision-making processes after the establishment of the Essential Services Commission for Victoria to continue to meet its CoAG obligation.

## Reform progress

As a significant example of the role of the rural customer consultative committees, Victoria advised that comprehensive consultation was undertaken with several committees in the completion of a business case review of the options for improving service delivery and upgrading four pumped irrigation districts in the Mallee. The review was undertaken by the Government in partnership with the First Mildura Irrigation Trust and the Sunraysia Rural Water Authority.

Victoria advised that the rural customer consultative committees, following the establishment of the Essential Services Commission, will continue to provide input to determining pricing proposals and service level requirements for the rural water authorities. Victoria indicated that it is committed to strengthening the committees and more effectively involving the broader customer base, to increase the transparency of negotiations on service levels and prices. It has appointed a working group to prepare a statement of best practice for use by the authorities in engaging with their customers. The statement will set out the role, structure and composition of committees and matters to be considered in making decisions. The working group is undertaking consultation with stakeholders.

## Discussion and assessment

Victoria continues to meet its CoAG obligation on the devolution of irrigation scheme management through the rural customer consultative committees.

## Integrated catchment management

**Assessment issue:** Victoria is to:

- develop administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management;
- adopt 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; and
- support the consideration of establishing land care practices that protect areas of rivers that have a high environmental value or are sensitive for other reasons.

In the 2001 NCP assessment, the Council was satisfied that Victoria was meeting its 2001 obligations on integrated catchment management.

**Next full assessment:** The Council will conduct a full assessment across the entire package of water reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 6(a) and (b), 8(b) and (c)

The Victorian Government invests about A\$25 million per year in managing rivers and floodplains, and over A\$150 million per year in general catchment management activities. The State's catchment management framework is based on the development of integrated regional catchment strategies and their implementation by regional catchment management authorities. The *Catchment and Land Protection Act 1994* sets out the statutory basis for these arrangements.

The State environment protection policy, SEPP–Waters of Victoria (developed under the *Environment Protection Act 1970*) provides a framework of objectives for environmental quality. It establishes beneficial water uses,



provides policy direction on activities that pose a risk to beneficial uses and sets Statewide objectives for aspects of river health, particularly water quality. The policy is implemented primarily through catchment and coastal management processes

## Regional catchment strategies

A regional catchment strategy is an integrated framework to manage land and water resources in a particular region, covering management objectives and priorities for action and investment. The first strategies were completed in 1997 in partnership between regional communities and Government agencies. Victoria established nine regional catchment management authorities in 1997 to coordinate and implement the strategies. A tenth authority was created in 2002, covering the Port Phillip and Westernport region.

The catchment management authorities are governed by boards that report to the Minister, with membership drawn from the respective regions. In 2002, Victoria published a guide to catchment management, explaining the authorities' role and statutory basis: *Catchment management in Victoria: explaining Victoria's catchment management authorities* (DNRE 2002a). The authorities are responsible for strategic planning for land and water resources management in their region and the provision of integrated waterway and floodplain management. In particular, they:

- review and coordinate implementation of the regional catchment strategies;
- provide advice on Commonwealth and State resourcing priorities at a regional level;
- provide integrated river health and floodplain-related service delivery;
- develop regional investment approaches to implement each regional catchment strategy;
- consult and work with local government to ensure planning schemes and the regional catchment strategies are consistent and mutually supportive; and
- monitor and report on the condition and management of land and water resources.

Catchment management authorities work closely with rural water authorities, landowners, local government, land care groups, environmental groups and the general community to implement their regional catchment strategies, sub-strategies, action plans and work programs. Action plans include regional river health strategies (see below), floodplain strategies, biodiversity strategies, vegetation management strategies, communication

strategies, nutrient management strategies and land and water salinity management plans.

Victoria is refining its approach to integrated catchment management through a number of initiatives, including:

- the review and renewal of regional catchment strategies; and
- the development of regional river health strategies to coordinate all river-related action plans.

### Review and renewal of regional catchment strategies

The catchment management authorities are currently engaged in community consultation to review and renew their regional catchment strategies for 2002–2007. Victoria published review guidelines to ensure the renewed strategies satisfy national, state and local government legislative and policy requirements (DNRE 2002c). At the State level, the guidelines highlight a shift towards a whole-of-government approach in natural resource management. Victoria plans to create links across State departments, and recognises the importance of engaging local government through committees and informal processes.

At the national level, the renewed strategies will comprise the integrated natural resource management plans required by the Commonwealth for federal funding under the National Action Plan for Salinity and Water Quality and Natural Heritage Trust extension.<sup>8</sup> Victoria signed bilateral agreements with the Commonwealth on the national action plan in October 2001, and on the Natural Heritage Trust extension in December 2002. Under these agreements, Victoria will seek accreditation of regional catchment strategies under both the plan and the trust. The renewed strategies will provide the foundation for all investment decisions by governments and some other investors in regional natural resource management.<sup>9</sup>

Victoria originally proposed that the catchment management authorities conclude their reviews of regional catchment strategies by March 2002, with the renewal phase to be completed by September 2002 (DNRE 2002c, p. 6). In recognition that the strategies required more work to satisfy the national accreditation criteria, Victoria has extended this timeframe, with the Minister's agreement. Victoria is refining its strategies by:

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<sup>8</sup> The Commonwealth Government extended the Natural Heritage Trust to 2006-07 in the May 2001 budget. The implementation framework was endorsed in October 2002 by the Natural Resource Management Ministerial Council and State, Territory and Commonwealth Ministers. A significant focus of the framework is on measures to improve water quality.

<sup>9</sup> The agreed accreditation process, based on the national accreditation criteria, involves about 80 experts and two rounds of assessment and feedback.

- adopting a natural resource management focus to catchment issues;
- applying an assets (values) approach to land and water management;
- using scientific evidence in target-setting and prioritisation; and
- engaging with all key stakeholders in the development process.

Victoria now expects the renewed strategies to be completed between April 2003 and June 2004. The original strategies will remain in place until the new strategies are gazetted. Victoria reported that the Glenelg Hopkins regional strategy, gazetted on 8 May 2003, was the first regional strategy to be accredited in Australia under the national frameworks.

To assist catchment management authorities in undertaking reviews, Victoria has provided assistance and information, including on approaches to community consultation (DNRE 2002c, pp. 13 and 15). The assistance included training, workshops and seminars, one-on-one assistance from experts, manuals and guidelines from the Commonwealth and State, a contacts forum and chat rooms.

### Victorian River Health Strategy

The Victorian River Health Strategy (DNRE 2002e) sets the framework by which Victoria will make future decisions on the management and restoration of rivers, associated floodplains and wetlands. It also outlines Victoria's policy approach on specific management activities affecting river health, including environmental flows and water allocations.

The framework requires each Victorian catchment management authority to develop a regional river health strategy as a substrategy to its regional catchment strategy. The strategy is intended to coordinate all river-related action plans, including those related to flow, water quality, waterway management and floodplain management. Until now, these action plans have been developed in response to specific issues as they arose within the community (DNRE 2002e, pp. 44–48). River health strategies are required to be consistent with integrated catchment management principles, including the setting of five-year and 10-year regional targets, approaches to planning and decision-making, and the development of action plans. Community participation is a feature of these processes.

Victoria expects most catchment management authorities to release draft river health strategies for comment in the latter half of 2003, and to finalise them in early 2004. At January 2003 most catchment management authorities were progressing this work, with the West Gippsland and Wimmera authorities expected to commence in early 2003 (Government of Victoria 2003, p. 319). Victoria informed the Council that the authorities are integrating the development of river health strategies with their concurrent reviews of the regional catchment strategies.

Victoria is engaged in additional initiatives to strengthen its integrated catchment management framework, including:

- the revised State environment protection policy (SEPP)–Waters of Victoria, which establishes the catchment management framework as its primary delivery vehicle (see the National Water Quality Management Strategy);
- the development of a common framework for all investors in regional catchment management programs; and
- improved governance arrangements for catchment management authorities.

Victoria indicated that it will take several years to fully implement the reforms under way in integrated catchment management. In particular, it will take time for regional catchment strategies, river health strategies and other sub-strategies to reflect projected revisions to the SEPP–Waters of Victoria framework. As regional river health strategies are completed, the regional catchment strategies and action plans will begin to incorporate the information as part of an ongoing iterative process of planning, implementation, evaluation and review.

Victoria's integrated catchment management framework recognises interrelationships between water quality and water quantity issues. Victoria provided the following comments on its framework.

- The SEPP–Waters of Victoria provides direction on environmental quality objectives for waterways that, if met, would ensure water quality within a river meets the definition of an ecologically healthy river. Environmental flow assessments are designed to provide the flow required to meet these qualitative objectives (DNRE 2002e, p. 22).
- The Victorian River Health Strategy recognises that water allocations have an impact on river health, and aims for environmental flows that maintain the ecological assets of a river. The strategy also recognises that changes in land and water use within a catchment (for example, the clearance of native vegetation) may put water allocation and environmental flow provisions at risk. Victoria proposes to amend approvals processes to ensure that large-scale land use changes account for the likely impact on water users and the environment (DNRE 2002e, p. 76). In addition, processes under the Victorian River Health Strategy set the priorities for streamflow management plans and priorities for improving environmental flows in flow rehabilitation plans.
- Environmental flow assessments undertaken by the use of FLOWS (the Statewide methodology for assessing environmental water requirements) will take account of any water quality issues that are flow-related.

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## Evaluation and review of catchment management

Victoria evaluates the effectiveness of catchment management through assessment and review mechanisms at the program, regional catchment strategy and substrategy levels. Victoria indicated that it is refining its monitoring and evaluation practices to ensure compliance with the National Standards and Targets Framework and the National Monitoring and Evaluation Framework recently adopted by the National Resource Management Council.

Victoria requires each regional catchment strategy (and supporting action plan, including regional river health strategies) to be formally reviewed and updated every five years. In addition, catchment management authorities report annually on resource condition monitoring at the regional level, while the Victorian Catchment Management Council reports on issues at the State level. The council, which is independent of government agencies and regional management bodies, released a comprehensive five-year report in October 2002 (VCMC 2002). The report found that Victoria has a strong integrated catchment management system and that much has been achieved, but argued that further work was needed to improve coordination. The report stated:

*The range of strategic documents developed by the State to manage specific degradation issues is impressive. However, we are lacking a coherent system for setting priorities and allocating resources between individual management programs at State level. The next step must focus on designing catchments and the landscape for future sustainability. The planning time frame for such an activity will need to be long-term, probably 30-50 years, to allow the community to adapt and adopt new ideas and management paradigms. The ability to make hard long-term decisions would be greatly enhanced through the development of an integrated catchment management strategy across the State. (VCMC 2002, p.vi)*

Victoria acknowledged some of these deficiencies. The Department of Natural Resources and the Environment<sup>10</sup> stated:

*... river-related action plans often recognise the linkages between the issues but do not, at this stage, seek to optimise the linkages between plans, nor recognise cumulative impacts of various issues. They do not formally integrate many of their actions nor focus on an integrated river health outcome. There are no clear mechanisms for setting priorities across plans or to ensure a catchment to coast approach. Integration and priority setting tend to occur somewhat haphazardly at the level of the development of work programs. In addition, the State policy context in which the regional plans are undertaken does not provide clear direction. (DNRE 2002e, p. 48)*

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<sup>10</sup> In December 2002, Victoria transferred responsibilities for water to the Department of Sustainability and the Environment.

Victoria considers that the Victorian River Health Strategy will address some of these issues by establishing an integrated approach to managing particular rivers. The department stated:

*Five and ten year regional targets will be set for river protection and restoration through community-driven regional planning processes. These processes will reflect a balance between regional economic, environmental and social imperatives, and will deal with all the issues affecting rivers, such as flow, water quality, riparian and instream habitat, and catchment management. (DNRE 2002e, p. 48)*

Victoria reported that the catchment management framework will continue to evolve at a rate that is acceptable to regional communities. Nonetheless, the State's approach to integrated catchment management has already received national and international recognition.

- A recent World Bank report stated that water and catchment management in Victoria is world's best practice (World Bank 1999).
- The Organisation for Economic Cooperation and Development (OECD)'s Environment Performance Review of Australia viewed Victoria's institutional arrangements for catchment management as encouraging, and suggested these institutional arrangements be a model for other States (OECD 1998).
- The recent House of Representatives report on coordinating catchment management recognised the operation of the Goulburn–Broken catchment management authority as a model for catchment management authorities in general (Commonwealth of Australia 2000).

## Land care initiatives

The Victorian catchment management framework recognises the importance of volunteer groups (for example, Landcare) in the implementation of regional catchment strategies and substrategies. The catchment management authorities coordinate Landcare groups, which are encouraged to work in areas of high priority identified in the regional catchment strategies and substrategies. The Victorian Action Plan for Second Generation Landcare, *Healthy landscapes, sustainable communities*, sets the direction for Landcare in Victoria for the next 15 years (DNRE 2002d).

At the state level, Victoria has set a goal of reversing the decline in the extent and quality of native vegetation. Land clearing policies are currently under review to give effect to this policy (DNRE 2002e, p. 28).

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## Salinity

Salinity at groundwater and river levels is a major issue for Victoria. The National Land and Water Resources Audit estimated that dry land salinity in Victoria affects about 670 000 hectares, which may grow to three million hectares by 2050 (NLWRA 2001). The Victorian Government has committed to achieving a reduction in the environmental and economic impacts of salinity by 2015, by focusing on the need for land use change in the future, the role of the Government and the community, the skills of landholders and efficient water use.

Victoria revised its approach to salinity management in 2000, releasing the strategy document *Salinity management framework: restoring our catchments*. The strategy provides for catchment management authorities to develop salinity management plans as sub-strategies of their regional catchment strategies. The current review and renewal of regional catchment strategies aim to ensure salinity management plans satisfy accreditation criteria under the national action plan.

## Submissions

Environment Victoria raised concerns that the development of regional river health strategies is well behind schedule. It stated:

*While draft guidelines and a draft decision support framework have been made available for regional groups preparing regional river health strategies, neither of these has been released for public scrutiny. Some regions have started using the draft guidelines and decision support framework to prepare their regional river health strategies. Most regions are however well behind schedule and will not complete their strategies until well after the target date of June 2003 and hence after the conclusion of the 2003 NCP assessment. (Environment Victoria 2003)*

## Discussion and assessment

The Council found in 2001 that Victoria was meeting its NCP commitment on integrated catchment management. Since 2001, Victoria has focused on further reform of the administrative framework and the review of regional catchment strategies. These initiatives are interrelated, and aim to ensure that integrated catchment management is administered in accord with the requirements of the national action plan and Natural Heritage Trust extension.

Although the Victorian Catchment Management Council raised some concerns about policy coherence, the Government appears to have in place, via the Victorian River Health Strategy, a means of coordinating the management of river health issues, including water quality and quantity

issues. The strategy is designed to align with the catchment management authority/regional catchment strategy framework, and reflects the administrative approaches and management processes required under the national action plan.

The review and renewal of regional catchment strategies have been delayed against the original milestones proposed by Victoria. To some extent, the delays are understandable. Catchment management authorities face the concurrent and interrelated tasks of revising their regional catchment strategies and developing river health strategies. Moreover, they are developing these strategies against evolving national and State policy contexts, including the national action plan and Natural Heritage Trust extension. The Glenelg Hopkins regional strategy, gazetted on 8 May 2003, was the first regional strategy to be accredited in Australia under the national frameworks.

The Council considers that Victoria made satisfactory progress for the 2003 NCP assessment against its integrated catchment management obligations. In particular, Victoria:

- developed administrative arrangements and decision-making processes to ensure an integrated approach to natural resource management; and
- adopted an integrated catchment approach to water resource management and set in place arrangements to consult with local government and the wider community in individual catchments.

The Council considers that Victoria's natural resource management framework facilitates consideration of, and support for, land care practices to protect rivers with high environmental values. In particular, Victoria's action plan for second generation land care (released in 2002) sets directions for the next 15 years. As part of its full assessment of water reform in 2005, the Council will consider Victoria's progress in the implementation of regional catchment strategies and regional river health strategies.



## 3.5 National Water Quality Management Strategy

**Assessment issue:** Victoria is to demonstrate a high level of commitment to the ongoing implementation of the objectives of the National Water Quality Management Strategy (NWQMS), including action (through market-based and regulatory measures, water quality monitoring, catchment management policies, town wastewater and sewage disposal, and community consultation and awareness) to achieve the agreed objectives.

In the 2001 NCP assessment, the Council was satisfied that Victoria was meeting its 2001 obligations on the NWQMS. The Council stated that it would continue to monitor Victoria's development of NWQMS programs in future assessments.

**Next full assessment:** The Council will conduct a full assessment across the entire package of water reforms in 2005.

**Reference:** CoAG water reform agreement, clauses 8(b) and (d)

Victoria continues to implement the strategic directions of the National Water Quality Management Strategy (NWQMS) through a range of mechanisms, primarily:

- regional catchment strategies, river health strategies and action plans covering water quality, water quality monitoring and wastewater and effluent management at the regional level; and
- regional schedules of State environment protection policies.

These arrangements are being extended and refined through:

- the Victorian River Health Strategy, released in August 2002; and
- the revised State environment protection policy (SEPP)–Waters of Victoria.

Victoria regards water quality as a key aspect of river health that must be managed in an integrated way with other aspects (such as flow, riparian and floodplain condition and instream habitat). This approach is a focus of both the Victorian River Health Strategy and the revised SEPP–Waters of Victoria.

Under Victoria's integrated catchment management framework, catchment management authorities identify environmental assets (values) of waterways and set water quality and river health targets at the regional level by developing regional catchment strategies, regional river health strategies and water quality and nutrient management action plans. In areas where water quality is considered a priority, regional schedules to the SEPP–Waters of Victoria may also be developed. Each of these regional processes uses the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (NWQMS paper no. 4) as input to the development of water quality targets. In addition, processes adopted by catchment management

authorities, and those set out in the Victorian River Health Strategy and SEPP–Waters of Victoria apply key themes outlined in the NWQMS implementation guidelines (NWQMS paper no. 3): strategic planning; active partnership; an integrated approach; a balance of social, economic and environmental impacts; and adaptive management.

The Victorian River Health Strategy requires each catchment management authority to identify a set of environmental, social and economic water-based assets to be considered in river-related action plans. To facilitate this identification, Victoria has undertaken to develop an assets register, drawing on the environmental values in the NWQMS and the beneficial water uses set out in the SEPP–Waters of Victoria.

The SEPP–Waters of Victoria establishes beneficial water uses,<sup>11</sup> provides policy direction on activities that pose a risk to beneficial uses and sets Statewide objectives for aspects of river health, particularly water quality. The revised policy includes risk-based environmental quality objectives that define the level of environmental quality required to protect the beneficial uses. Victoria is adopting objectives derived from NWQMS paper no. 4 except where regionally specific objectives have been identified.<sup>12</sup> Victoria has prepared a policy background paper, *Risk assessment approach – ecosystem protection*, on how it will implement the NWQMS risk-based approach. Victoria is trialling its risk-based approach in the North Central, North East and Corangamite catchments.

In recent years, Victoria's approach to water quality management has emphasised salinity management and nutrient strategies to address the issue of algal blooms. The Nutrient Management Strategy for Victorian Inland Waters (1995) was developed in parallel with the NWQMS, while the Salinity Management Framework was developed for consistency with the NWQMS implementation guidelines. These programs are implemented through the regional catchment strategy framework under the auspices of catchment management authorities. Victoria has 14 catchment-based nutrient/water quality plans covering the whole State to deal with high nutrient levels in waterways. In July 2003, the Government had endorsed eight plans, with the remaining six at various stages of development.

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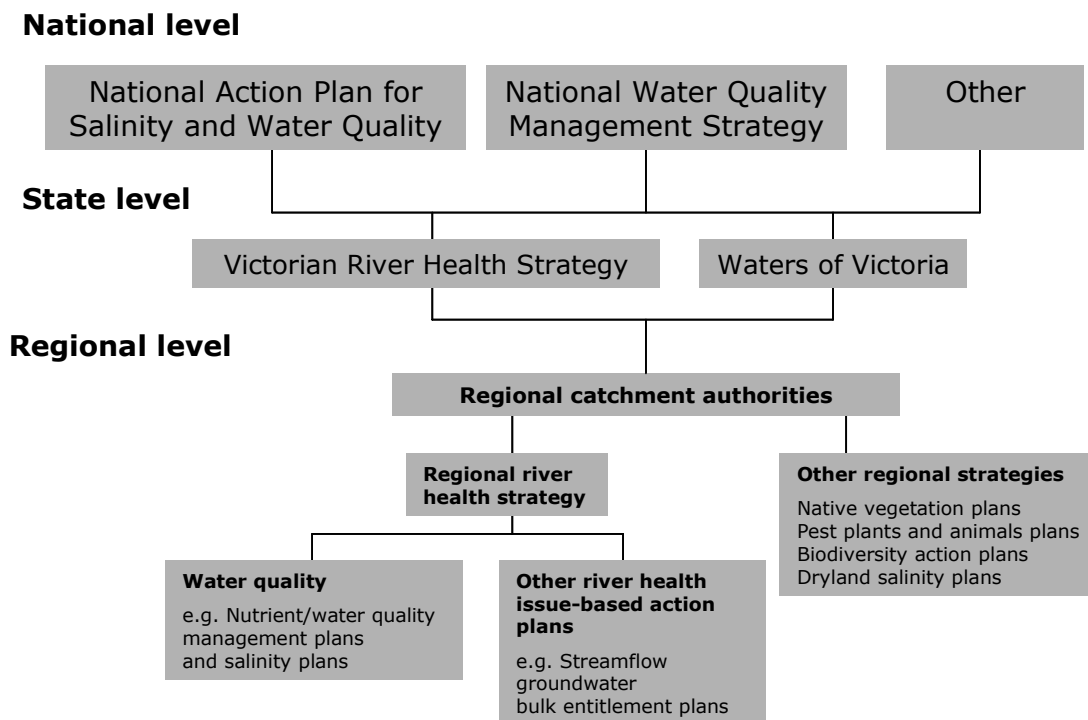
<sup>11</sup> Uses and values that the community and the Government want to protect.

<sup>12</sup> The environmental quality objectives describe the level of environmental quality needed to avoid risks to beneficial uses and to protect them. If an objective is not attained, the beneficial uses are likely to be at risk. The nonattainment of an objective will trigger further investigation using a risk-based approach, to assess risks to beneficial uses. From this assessment, actions will be implemented or regionally appropriate objectives will be developed.

A draft State environmental protection policy, *The waters of Western Port Bay and catchments*, was finalised in November 2001. The policy sets water quality targets for the bay and its waterway inputs. Victoria implements NWQMS guidelines (NWQMS paper no. 8) on groundwater through the SEPP (Groundwaters of Victoria), originally gazetted in 1997 and varied in 2002.

Victoria's water quality management framework is outlined in figure 3.1

**Figure 3.1: Victorian water policy framework**



Source: Government of Victoria 2003, attachment 6.

## Water quality monitoring

The SEPP-Waters of Victoria uses the Australian Guidelines for Water Quality Monitoring and Reporting (NWQMS paper no. 7) to set default trigger levels where no further information is available. In accord with NWQMS paper no. 7, the Environment Protection Authority has developed regional target levels for a number of parameters.

Victoria has in place a number of frameworks for water quality monitoring, including:

- the Victorian Water Quality and Quantity Monitoring Networks;
- the State Water Quality Monitoring and Assessment Committee;
- the Index of Stream Condition; and
- the Catchment Condition Indicators project, reported by the Victorian Catchment Management Council.

The Victorian Water Quality and Quantity Monitoring Networks monitor streamflows and water quality at 180 sites across regional Victoria, mostly in the upper middle reaches of rivers and streams. Incorporation of the Environment Protection Authority's monitoring sites has increased the number of sites in the disturbed lower and middle reaches of the main rivers, but many major rivers and streams do not have monitoring sites in the lower or undisturbed parts of the catchment. Melbourne Water maintains 50 monitoring sites on urban streams through the StreamWatch program.

The State Water Quality Monitoring and Assessment Committee has been established under the auspices of the Victorian Catchment Management Council to:

- further develop, implement and coordinate Statewide monitoring and assessment of the condition of rivers and streams, wetlands and estuaries; and
- investigate more innovative ways of monitoring to more effectively support regional catchment management.

The committee combines information and skills across a range of organisations and community groups including the Melbourne Water Corporation, the Environment Protection Authority, water authorities, the Department of Sustainability and Environment, and Waterwatch community monitoring.

The Index of Stream Condition benchmarked the environmental condition of 950 Victorian rivers and streams in 1999. The index combines information on the biota, flow regime, water quality and physical condition of a channel and has become a fundamental input to catchment and river health management. In particular, the index facilitates the benchmarking of river conditions, the setting of management objectives and targets, and the assessment of the long-term effectiveness of river management.

Victoria intends to repeat this benchmarking exercise every five years, with the next exercise scheduled for 2004. Victoria noted that some aspects will require updating as knowledge of river science continues to evolve. In particular, the hydrology component will need to account for advances in the area of environmental flows (DNRE 2002e, p. 134). The Department of Sustainability and the Environment will review the Index of Stream Condition before each five-year assessment.

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The Catchment Condition Indicator project, completed in 2001 by the Victorian Catchment Management Council (VCMC), collated a range of indicators to facilitate consistent reporting on catchment condition. Information on the indicators is available for public access at [www.nre.vic.gov.au/vcio](http://www.nre.vic.gov.au/vcio).

Victoria is progressively refining its monitoring programs in consultation with catchment management authorities and other stakeholders to meet the requirements of the new National Framework for Monitoring and Evaluation and the National Standards and Targets Framework which are being used under the national action plan and Natural Heritage Trust extension. In addition, all State water quality and quantity monitoring data, including the Index of Stream Condition benchmarking, are available on the Victorian Water Resources Data Warehouse at [www.vicwaterdata.net](http://www.vicwaterdata.net).

The Victorian Catchment Management Council's five-year report acknowledged Victorian initiatives in water quality monitoring, including the development of the Victoria Water Resources Data Warehouse and the establishment of the State Water Quality Monitoring and Assessment Committee. The council also raised some concerns on the overall coherence of Statewide monitoring. It stated that it:

*... had trouble pulling best available information together on water quality. This problem was inherent in synthesising information for all the indicators. There is no Statewide process for collecting, interpreting and updating natural resource management data ...*

*... (T)here is no responsible body or process for facilitating reporting arrangements, avoiding duplication, cross sharing information, providing consistency and quality control, and communicating natural resource management information to the community. (VCMC 2002, pp. 8–9)*

The council also raised concerns over reduced funding of the Victorian Water Quality and Quantity Monitoring Networks:

*With reduced funds to support the Victorian Water Quality and Quantity Monitoring Networks, the number of sites monitored for water quality and water quantity has halved over the last two decades. This is of concern as we need consistent, long-term datasets to detect change. (VCMC 2002, p. 33)*

Victoria acknowledged that the number of sites monitored for water quality fell from 301 in 1975 to 148 in 2000, but advised that the networks are currently being incorporated into regional water resources monitoring partnerships, to improve the cost-effectiveness of monitoring. Victoria stated that:

*The process is aimed at providing the most cost-effective means of meeting all water resource monitoring requirements within a region. The process involves all parties conducting water resource monitoring in each region agreeing on a monitoring configuration that meets their collective needs and agreeing on cost sharing. Statewide requirements are fed into these regional agreements and funded by the State Government. The current investment in water quality and quantity monitoring for Statewide requirements will be maintained at a minimum and will be increased where there is a clear requirement identified within the regional monitoring partnerships. (DNRE 2002e, p. 135)*

## **Water quality evidence**

The National Land and Water Resources Audit reported in 2000 on surface water quality against the standards set out in the 1992 Australian Water Quality Guidelines for Fresh and Marine Waters. The audit found that water quality was generally 'fair' across the State although a majority of basins had high levels of turbidity and total nitrogen and phosphorous concentrations. The audit found a significant proportion of Victorian basins exceeded guidelines for salinity, including most western basins in the Murray–Darling and south-east coastal drainage divisions.

Victoria's Index of Stream Condition found that only 27 per cent of Victoria's major rivers and tributaries in 1999 were in good or excellent condition. Thirty-four per cent were in poor or very poor condition, and 44 per cent were moderately impacted (DNRE 2002e, p.26). In large areas of the State the majority of rivers were in poor or very poor condition, and only 56 of the 950 reaches fully met the criteria for ecologically healthy rivers (DNRE 2002e, p.28). The Victorian River Health Strategy concluded that 'Victoria's rivers and streams are showing significant signs of degradation and many are still on a downward trajectory' (DNRE 2002e, p. 31).

## **Drinking water**

Victoria has launched a new regulatory framework for drinking water quality. Following community and water industry consultation, Victoria introduced the Safe Drinking Water Bill in April 2003. This will establish an Office of the Drinking Water Quality Regulator, within the Department of Human Services, to oversee proposed risk management process to ensure safe drinking water.

The legislation will also provide for the setting of drinking water quality standards by regulation. After a public regulatory impact assessment process, Victoria will set standards, as well as requirements for monitoring and reporting against those standards. All standards will be based on the NWQMS 1996 Australian Drinking Water Guidelines. Victoria expects to

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develop the standards during 2003-04 with a view to commencing the new regulatory framework on 1 July 2004. The new framework will be designed to gradually improve drinking water quality in a manner that recognises local community resource capabilities.

The Water Services Association of Australia reported that the following water providers complied in 2001-02 with the microbiological and physical/chemical requirements of the water quality standards set out in their licence: the Barwon Region Water Authority, Central Highlands Region Water, Goulburn Valley Water, the Melbourne Water Corporation and Yarra Valley Water. Significant noncompliance was reported for Central Gippsland Region Water and the Coliban Region Water Authority. Compliance by the Coliban Region Water Authority was expected to improve in 2002-03 with the completion of new water treatment plants (WSAA 2003). Victoria reported that Central Gippsland Region Water is undertaking action to address areas of noncompliance, which arise mainly in two small towns.

The water quality standard differs among Victoria's authorities.

- The World Health Organisation's 1984 water quality standards are applied to the Barwon Region Water Authority, Central Highlands Region Water, Central Gippsland Region Water and Goulburn Valley Water.
- The 1987 Australian Drinking Water Guidelines are applied to the Melbourne Water Corporation and Yarra Valley Water.
- The 1996 Australian Drinking Water Guidelines are applied to the Coliban Region Water Authority.

Victoria reported that the adoption of 1987 guidelines by the Melbourne urban water businesses reflects the lower public health risk to drinking water supplies from human pathogens because the catchments that provide Melbourne's water supply are essentially closed. Victoria regards the 1984 World Health Organisation standards as an appropriate measure for drinking water supplies outside the Melbourne metropolitan area — which are generally sourced from open catchments. To some extent, the use of various standards also reflects historical arrangements. Victoria advised that it will apply uniform arrangements across the State under its new regulatory framework, expected to commence in 2004 (see above).

## **Wastewater and effluent management**

Victoria considers that the control of nonpoint source (diffuse) sources of pollution is best achieved through integrated catchment management, such that all land managers are aware of their impacts on water quality and river health, and are committed to reducing these impacts. The SEPP—Waters of Victoria is being revised to recognise the regional planning processes that generate regional targets for water quality and to provide benchmarks for assessing the impacts on water environments.

Victoria is progressively developing and implementing frameworks to control diffuse sources of pollution through the regional catchment strategies and regional river health strategies, nutrient and water quality action plans and SEPP-Waters of Victoria schedules. Where high value environmental, economic or social assets are at risk, the Victorian River Health Strategy provides for the development of a catchment water quality action plan. Through these initiatives, catchment management authorities develop work programs that utilise the NWQMS guidelines, including guidelines for activities and industries that generate effluent.

Victoria developed urban stormwater management guidelines and launched a Victorian Stormwater Action Program in June 2000 to accelerate the implementation of stormwater best practice through stormwater action plans. In addition, the SEPP-Waters of Victoria uses a system of licensing agreements to protect beneficial water uses from the impacts of pollution. Victoria adopts the NWQMS guidelines to manage point source discharges of specific industries (including sewerage waste, effluent from dairy sheds, intensive piggeries, wool scouring and carbonising, tanning, wineries and distilleries) through environmental performance benchmarks in the development of licence conditions. Victoria is considering the NWQMS guidelines as a basis for revising related State guidelines and, where relevant, licence conditions for point source discharges.

The Water Services Association of Australia reported that the following water providers complied in 2001-02 with the Environment Protection Authority license for wastewater: the Central Highlands Region Water Authority, Goulburn Valley Water, the Melbourne Water Corporation and Yarra Valley Water. Noncompliance was reported for the Barwon Region Water Authority, Central Gippsland Region Water and the Coliban Region Water Authority. The current upgrade at Barwon Water is expected to address its noncompliance (WSAA 2003). Victoria reported that action is under way to address areas of noncompliance by each authority.

## **Discussion and assessment**

Victoria continues to make progress in implementing the NWQMS framework. This progress is being achieved via regional catchment strategies, river health strategies and action plans covering water quality, water quality monitoring and wastewater and effluent management at the regional level. Significant developments since the 2001 NCP assessment, some of which are still under way, include:

- policy development in frameworks for setting regional water quality and river health targets through the Victorian River Health Strategy, with the NWQMS guidelines used as input in the development of targets;
- the proposed incorporation of risk-based environmental quality objectives, derived from objectives set out in the NWQMS, under the revised SEPP-Waters of Victoria;



- the development of an assets register, drawing in part on environmental values in the NWQMS;
- the completion of the Catchment Condition Indicators project, and its publication on a web site;
- the introduction of the Safe Drinking Water Bill in April 2003 and the proposed introduction of new regulatory measures and drinking water quality standards based on the NWQMS guidelines.

While the Victorian Catchment Management Council identified some deficiencies in water quality monitoring arrangements, the Victorian River Health Strategy appears to recognise these issues and propose corrective measures. In addition, the National Land and Water Resources Audit found in 2000 that water quality monitoring in Victoria was more intensive and had a greater coverage than in any other State (NLWRA 2001).

The Council considers that Victoria made satisfactory progress for the 2003 NCP assessment in implementing policies that reflect the NWQMS guidelines. As part of its full assessment of water reform in 2005, the Council will consider Victoria's progress in:

- developing risk-based environmental objectives for catchments;
- refining water quality monitoring arrangements; and
- implementing frameworks to control point and diffuse sources of pollution.

## 3.6 Water legislation review and reform

**Assessment issue:** Victoria is to have reviewed and, where appropriate, reformed all water industry legislation that restricts competition. Legislative restrictions that are retained must be shown to provide a net benefit to the whole community. Completion of review and reform obligations is a key element of the 2003 assessment. Where a review and/or reform implementation are not complete (or an appropriate transitional path to reform is not in place), the Council considers that the Government has not complied with National Competition Policy obligations. In the 2002 NCP assessment, Victoria was yet to implement several of the reforms recommended by its review of water industry legislation.

**Next full assessment:** This is the final assessment for legislation review and reform matters.

**Reference:** Competition Principles Agreement, clause 5

Victoria's review of the *Water Act 1989*, the *Water Industry Act 1994*, the *Melbourne and Metropolitan Board of Works Act 1958* and the *Melbourne Water Corporation Act 1992*, undertaken by Marsden Jacob Associates, was completed in June 2001. The Victorian Government announced its response to

the review at the end of June 2002. The Government accepted the majority of the review recommendations, and action to implement the Government's response is underway. The review made nine recommendations. These, together with the Government's response and the reform outcomes are discussed below.

## **Recommendation: Retain exclusive licences**

The review recommended that exclusive licences within defined areas be retained as the preferred model of the provision of water and sewerage services, subject to the implementation of independent price regulation, contracting out to achieve efficiency benefits, and vetted competition for cross-border developments.

The Government indicated that it is satisfied with the current single service provider model for delivery of core water and wastewater services. The Government announced measures that will increase the efficiency of the industry, including independent economic regulation of the water industry by the ESC from 1 January 2004, and measures that are intended to encourage competition for provision of future infrastructure. The first price determination by the ESC is to take effect on 1 July 2005.

## **Recommendation: Introduce vetted competition**

The review recommended that competition, on the basis of cost efficiency, for the right to supply major new developments should be encouraged: that is, vetted competition against a cost benchmark. The review suggested the development of a formal protocol to specify the objectives, criteria and the process to follow.

The Government agreed that vetted competition, on the basis of cost efficiency, for new developments on the border of existing businesses should be encouraged. The Government considered that to be effective, vetted competition would need to be underpinned by consistent financial and regulatory frameworks. It proposed:

- the development of a financial framework for all water businesses by December 2002, with the framework fully implemented by 30 June 2003;
- the introduction of vetted competition, commencing with a scoping paper during the first half of 2003; and
- the development of a formal protocol to guide vetted competition by December 2003.

Victoria indicated that the introduction of vetted competition will depend on the outcomes of the water industry green paper review.

## **Recommendation: Review the case for a State access regime for water infrastructure**

The review recommended that the Government implement a review of the costs and benefits of introducing a formal access regime for third party access rights to essential water infrastructure in Victoria.

The Government undertook to a review of the role of a formal Statewide third party access regime for essential water infrastructure, with the review to commence within 12 months of the establishment of the ESC as the economic regulator of the water industry.

## **Recommendation: Implement alternative approaches to service delivery**

The review recommended that:

- customers and grouping of customers should be allowed to supply water to themselves, subject to compliance with health and environmental standards.
- entities supplying water services (beyond an agreed base level) should be licensed and all licensees must comply with health, environmental and pricing guidelines.

The Government agreed to retain alternative approaches to service delivery, subject to compliance with existing health, environment protection and consumer protection obligations. It also proposed changes to drinking water quality management, which would enable entities other than water businesses to be brought under the Statewide regulatory regime after consideration of the benefits and costs on a case-by-case basis.

The Government agreed that entities supplying larger groupings of customers should be subject to regulation. The Government was not persuaded, however, that the cost of introducing additional regulation for larger self supply arrangements outweighed the benefits.

## **Recommendation: Water entitlements and water trading**

The review recommended that Victoria review its approach to pricing bulk water. Currently, there is a difference in the bulk water price to urban and rural users, which arises because there is a different return on assets for water supplied by rural water authorities to regional urban customers and to rural customers. The review suggested alternative arrangements to minimise adverse effects on water markets. The Government agreed that the differential in the price of bulk supplies to regional urban and rural users should be reviewed, and undertook to do this before the ESC sets prices for bulk water (see section 3.3).

## **Recommendation: Reform the power to require connection to water infrastructure**

The review recommended that the power in s. 147 of the Water Act to require connection to water infrastructure be amended to:

- ensure the power to require connection is separated from infrastructure provision and service delivery; and
- provide a power to hear appeals.

The Government agreed that, subject to appropriate appeal rights, compulsory connection powers should be retained. The Government also agreed that s. 147 of the Water Act should be amended to separate the roles of infrastructure provision and service delivery. The Government undertook to develop and consult on a proposal to place statutory obligations on property owners to connect to a reticulated sewerage scheme. The Government intended that legislative proposals be developed during the second half of 2002 with a view to introducing legislation in the 2003 Autumn sittings of Parliament.

The Government subsequently extended the period for consultation with stakeholders to April 2003, and indicated that additional consultation is needed to work through issues raised by stakeholders. The key issues requiring additional consultation, which were raised by the local government sector, concern the additional role envisaged for local governments in the determination of new compulsory sewerage schemes and related costs. The timing of this second stage of consultation means that the legislative proposals will now be developed with the objective of introducing legislation in the 2004 Autumn sitting of Parliament.

## **Recommendation: Amend provisions for making by-laws**

The review recommended that provisions in the Water Act allowing for the making of by-laws should be amended to reflect current practice, with responsibility for drafting by-laws to be held by the Minister, subject to an authority proposing minor amendments to reflect local circumstances.

The Government undertook to change the by-law making powers in the Water Act and the *Melbourne and Metropolitan Board of Works Act 1958* to minimise the risks associated with authorities both setting and enforcing regulatory requirements. The Government undertook to develop and further consult on the details of proposed changes with a view to introducing legislation in the 2003 autumn sittings of Parliament. Victoria subsequently advised that it anticipates that legislative proposals will be introduced in the 2003 Spring sitting.

## **Recommendation: Retain licensing provisions for drilling**

The review recommended retention of the current legislative provisions and associated arrangements for the licensing of individuals for drilling. The Government agreed with the recommendation.

## **Recommendation: Implement a consistent regulatory framework**

The review recommended establishment of a single regulatory and legislative framework to ensure a consistent approach to the different water supply entities. The Government supported this recommendation, undertaking to commence work in 2003 to develop a comprehensive legislative framework for Victoria's water businesses. Victoria advised that work on a scoping paper for establishing a legislative framework for Victoria's water businesses will commence in the second half of 2003.

## **Discussion and assessment**

Victoria undertook a comprehensive review of its water industry legislation. The Government accepted many of the review recommendations and is currently taking implementation action, including legislative action and the development of financial and policy frameworks. Key outcomes to date include: the introduction of legislation to give effect to the economic regulation of the water industry by the Essential Services Commission; the

release for public comment of legislative proposals to allow leasing of water entitlements; the canvassing of options for managing structural change in the water industry; a commitment to review the requirement to own land as a condition of owning a licence and a commitment to review the differential rate of return on bulk water supplies before the Essential Services Commission sets prices for bulk water.

While Victoria has made progress in several important areas, it has not fully implemented the recommendations of its water industry legislation review. The Government advised that the nature and timing of work to implement some of the recommendations of the review of water industry legislation, including the proposal for a State-wide legislative framework for Victoria's water businesses, will depend of the outcomes of the State's water industry green paper review. The Government also noted that there had been some delays with implementing the review recommendations as a result of the November 2002 State election, and the need for additional consultation on some matters.

The Council will look in the 2004 NCP assessment for Victoria to have implemented the key recommendations from the NCP review of its water industry legislation. The Council also draws Victoria's attention to its comments on remaining constraints on water trading, some of which derive from Regulations under the Water Act.