5 Western Australia

5.1 Best practice pricing

Water and wastewater businesses should earn sufficient revenue to ensure their ongoing commercial viability while avoiding monopoly returns. To this end, governments agreed the following principles should apply:

- The jurisdictional independent pricing body should set or review prices or pricing processes for water storage and delivery and report publicly.
- To be viable, a water business should recover at least the operational, maintenance and administrative costs, externalities (defined as the natural resource management costs attributable and incurred by the water business), taxes or tax equivalents (not including income tax), the interest cost on debt, dividends (if any) and provision for future asset refurbishment/replacement. If a dividend is paid, it should be set at a level that reflects commercial realities and simulates a competitive market outcome. This is defined to be the lower bound of cost recovery.
- To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities (all external costs and benefits), taxes or tax equivalent regimes, and provision for the cost of asset consumption and the cost of capital, the latter being calculated using a weighted average cost of capital. This is defined to be the upper bound of cost recovery.
- In determining prices, the independent pricing body 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 customer classes 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 (CSO).
- Asset values should be based on a deprival value method 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 CSOs, contributed assets, the opening value of assets, externalities (including resource management costs), tax equivalent regimes and any remaining cross-subsidies.

Compliance with the pricing commitments in the 1994 Council of Australian Governments (CoAG) water reform agreement requires governments to ensure user charges for water and wastewater services are set to fully recover (within the cost recovery band) the cost of supplying the services (see chapter 1). Water service prices should be set on a consumption basis, comprising a fixed component and a variable use component, where this is cost effective.

References: 1994 Council of Australian Governments (CoAG) water reform agreement, clauses 3(a)–(d); guidelines for the application of section 3 of the CoAG strategic framework and related recommendations in section 12 of the expert group report (1998 CoAG pricing principles)

Cost recovery by urban water businesses, and institutional reform — outstanding issue, 2003 National Competition Policy assessment

Outstanding issues: Western Australia is to demonstrate transparently that the prices of urban water and wastewater services are set to achieve full cost recovery in accord with the CoAG pricing principles. Also, Western Australia is to separate institutionally, as far as possible, the roles of water resource management, standards setting and regulatory enforcement, and service provision. Arising from the National Competition Council's 2003 National Competition Policy (NCP) assessment, the Australian Government suspended 10 per cent of Western Australia's 2003-04 competition payments, with the suspension to be lifted if Western Australia creates the Economic Regulation Authority (proposed at the time of the 2003 NCP assessment) with responsibility for the water industry and issues terms of reference for the authority to investigate urban water and wastewater pricing.

Future reform: Metropolitan water businesses should continue movement toward upper bound pricing by 2008. Independent bodies should set or review prices, or price setting processes, for water storage and delivery by government water service providers. Western Australia was not a signatory to the National Water Initiative at the time of the 2004 NCP assessment.

References: 1994 CoAG water reform agreement, clauses 3(a) and (b) and 6(c) and (d); 1998 CoAG pricing principles; Intergovernmental Agreement on a National Water Initiative

There are three major providers of urban water and wastewater services in Western Australia: the Water Corporation, the Bunbury Water Board and the Busselton Water Board.[1] The Water Corporation is by far the largest business, providing water supply, sewerage, drainage and irrigation services to 1.7 million people in 300 towns and communities.

In the 2003 NCP assessment, the Council found that Western Australia had not transparently demonstrated that the prices of urban water and wastewater services are set to achieve full cost recovery in accord with the CoAG pricing principles. While the government stated that the Water Corporation sets prices to achieve full cost recovery, it provided no information to show that the corporation's price setting accords with the CoAG pricing principles (including the principle of transparency).

The Council considered that Western Australia also needed to address water institutional arrangements. At the time of the 2003 NCP assessment, the Office of Water Regulation advised on both pricing and standards setting, and the Minister for Environment and Heritage had responsibility for water resource management, water service standards and price regulation. This institutional arrangement creates potential conflicts. The lack of transparency of Western Australia's pricing outcomes exacerbated the Council's concerns about potential conflicts.

The Council originally raised these issues in the 2001 NCP assessment. At that time, Western Australia committed to establishing an independent economic regulator with responsibility for the water sector, including

[1] There are also some 20 local government authorities operating wastewater schemes.

responsibility for recommending on water and wastewater prices. At the time of the 2003 NCP assessment, the Economic Regulation Authority Bill 2002 was before the Parliament, and the government indicated that it would ask the Economic Regulation Authority (ERA), when created, to inquire into urban water and wastewater pricing. The ERA's report would be available to the government when it set urban water and wastewater charges.

Because governments needed to have substantially achieved CoAG objectives on urban water and wastewater pricing and institutional structure by 2003, the Council's 2003 NCP assessment recommended that the Australian Treasurer suspend 10 per cent of Western Australia's 2003-04 competition payments. The Council recommended that the suspension be lifted if Western Australia established the ERA and announced appropriate terms of reference for the ERA to investigate urban water and wastewater pricing (NCC 2003a, pp. xl). The Treasurer suspended 10 per cent of Western Australia's 2003-04 competition payments for water reform matters in accord with the Council's recommendation (Costello 2003).

Activity since the 2003 National Competition Policy assessment

On 27 November 2003 Western Australia passed the *Economic Regulation Authority Act 2003,* establishing the ERA to oversee the water, electricity, gas and rail industries. On 1 January 2004 the ERA formally commenced and the Office of Water Regulation ceased to exist.

The ERA investigates water issues — a role that includes recommending on pricing, on reference from the Western Australian Treasurer — and has taken over the licensing and performance monitoring functions previously performed by the Office of Water Regulation. The Act obliges the Treasurer to consult with the ERA on the terms and conditions of a reference before a formal reference is made. It also requires the ERA to make public the terms and conditions of its inquiries (including the time period and arrangements for public consultation), and sets the ERA's procedures for conducting an inquiry and reporting its findings. Water policy is now the responsibility of the newly created Office of Water Policy, within the Environment portfolio.

On 16 June 2004 the government released terms of reference for the ERA to investigate and recommend on the future pricing of the urban water and wastewater services provided by the Water Corporation, the Bunbury Water Board and the Busselton Water Board (Ripper 2004). The terms of reference state that the ERA, in undertaking its inquiry and in developing its recommendations, is to have regard to the 1994 CoAG water reform agreement and the CoAG pricing principles.

The terms of reference require the ERA to produce a draft report and a final report, with the latter to be available by 12 August 2005. The government has advised that it will consider the report and ensure 2006-07 urban water and wastewater prices account for the ERA recommendations. The government

considers that the nominated timeframe is necessary to enable the ERA to appropriately consider the operations of the service providers (including the regulatory asset base), the non-capital cost estimates and the rate of return on capital, depreciation and forecast capital expenditure programs.

The Western Australian Treasurer stated that the government envisages a further reference to the ERA in mid-2005 for the investigation of broader pricing issues. The second inquiry would examine the prices charged by service providers other than the Water Corporation and the water boards, and would cover rural water prices (Ripper 2004).

Discussion and assessment

The 1994 CoAG water reform agreement obliges governments to ensure water and wastewater prices are set transparently to achieve at least the lower bound of cost recovery. As far as possible, the roles of water resource management, standards setting and regulatory enforcement, and service provision are to be separated institutionally. While Western Australia is not a signatory, the National Water Initiative confirmed these obligations and committed governments to use independent bodies to set or review prices, or price setting processes, for water storage and delivery by government water service providers, and to publicly review and report on pricing. The Western Australian Parliament's assent to the Economic Regulation Authority Act and the establishment of the ERA formally separates institutional responsibility for policy making and water regulation (including price regulation) from service delivery: the ERA has responsibility for water regulation and advising on pricing, while the new Office of Water Policy has responsibility for advising on water policy.

Under the Economic Regulation Authority Act, the government can refer water and wastewater pricing for investigation by the ERA, which has no constraints on its inquiries. The government has released terms of reference for the ERA to investigate and recommend on water and wastewater pricing by the three large urban service providers. The terms of reference ask the ERA to consider and recommend on prices that account for the requirements of the 1994 CoAG water reform agreement and the CoAG pricing principles. The outcome of the ERA investigation will be available to the government in setting urban water and wastewater prices in 2006-07, and as a public report. Acknowledging that the ERA is newly created and is conducting public investigations in a number of areas (including water pricing), the Council accepts that this timeframe is appropriate.

The Council considers that Western Australia has made satisfactory progress against both its urban water and wastewater pricing obligations and its institutional reform obligations. This does not mean, however, that the state's water and wastewater prices are now set in accord with the CoAG pricing principles. Western Australia will not meet this obligation until the ERA completes its investigation and the government implements the authority's recommendations. Western Australia is also to prepare terms of reference for

a broader ERA investigation of water and wastewater pricing that covers, among other matters, local government water pricing issues.

Under the National Water Initiative (Western Australia was not a signatory at the time of the 2004 NCP assessment) governments committed to ensure that metropolitan water businesses continue to move towards the upper bound of cost recovery pricing by 2008 (CoAG 2004).

Cost recovery and consumption based pricing by rural water service providers

Assessment issue: Western Australia is to demonstrate that government-owned irrigation schemes and government-owned suppliers of bulk water are setting prices based on the principles of full cost recovery and consumption based pricing. Government-owned water businesses must also show that they are managing any subsidies consistent with efficient and effective service provision and use. In the 2001 NCP assessment, the Council found that some government-owned schemes and suppliers were not meeting these obligations. It also noted that the government was subsidising the cost of rural water services provided by the Water Corporation as part of a broader CSO, rather than a separately identified subsidy. For the 2004 NCP assessment, the Council has looked for Western Australia to have substantially met full cost recovery and consumption based pricing objectives. For any rural water business that did not achieve at least lower bound cost recovery by 30 June 2004, Western Australia has needed to show that the business had substantially met cost recovery objectives at 30 June 2004 or is applying a price path that should achieve cost recovery within a short period after 30 June 2004, with any transitional CSOs separately identified and made transparent. As part of this obligation, Western Australia should have identified any rural water businesses that are unlikely to achieve full cost recovery, and demonstrated that the CSOs supporting these schemes are transparent.

Future reform: Governments should apply consumption based pricing, achieve lower bound pricing for all rural systems and continue towards upper bound pricing. Any subsidies must be transparent, and alternative management arrangements aimed at removing the need for a continuing subsidy should be introduced where practicable. Western Australia was not a signatory to the National Water Initiative at the time of the 2004 NCP assessment.

References: 1994 CoAG water reform agreement, clauses 3(a) and (d); 1998 CoAG pricing principles; Intergovernmental Agreement on a National Water Initiative

Western Australia has transferred each of its four irrigation schemes to local cooperatives: the South West Irrigation Management Cooperative (now Harvey Water), Preston Valley Irrigation Cooperative, Ord Irrigation Cooperative and Gascoyne Water Cooperative. The Water Corporation supplies bulk water to each of these cooperatives. In 2002-03 it supplied 587 061 megalitres of water to the irrigation industry (approximately 64 per cent of total water supplied by the Water Corporation to customers in that year). Rural bulk water supply agreements between the Water Corporation and cooperatives were set up as part of the handover of irrigation schemes.

Western Australia has advised that the bulk water supply agreements require the cooperatives to pay a bulk water charge comprising fixed and volumetric components. The charge recovers asset consumption (based on a

renewals annuity) and ongoing operation and maintenance costs. However, the charge does not recover the full cost of bulk water supply, which Western Australia defines as depreciation, a return on assets, and operations and maintenance costs.

The Western Australian Government makes a CSO payment to the Water Corporation for the difference between the depreciation, return on assets, operation and maintenance costs and the revenue raised from bulk water charges for each irrigation scheme. The purpose of the CSO is to ensure that irrigators face the same bulk water charge, consistent with the government's uniform pricing policy. The government has advised that in 2003-04 it paid a total CSO of around $9.6 million to the Water Corporation. This provided a subsidy of around $3.5 million for South West Irrigation Cooperative, $0.5 million for Preston Valley Irrigation Cooperative, $3.9 million for the Ord Irrigation Cooperative and $1.6 million for the Gascoyne Water Cooperative.

Western Australia anticipates that the CSO payment for 2004-05 and out years will be similar to the payment in 2003-04. It considers there may be some change in relation to the South West Irrigation Cooperative, however, where the current bulk water supply agreement will expire in 2006. Western Australia has indicated that the trading of water from the South West Irrigation Cooperative to the Water Corporation would most likely be considered in the negotiation of a more cost-reflective (upper bound pricing) bulk water charge in the next bulk water supply agreement. The bulk water supply agreements for the other three cooperatives are not due for renewal for 10–15 years. Western Australia has advised that it will review pricing arrangements when the agreements are due for renewal.

One of the conditions of transfer of the schemes to the irrigation cooperatives is that the cooperative must increase water charges over an agreed period of time. In return the government agreed to provide an operating subsidy to the irrigation cooperatives to cover revenue shortfalls during the cooperatives' first years of operation. The government provides such subsidies to the Ord Irrigation Cooperative and the Gascoyne Water Cooperative. In 2002-03 the Ord Irrigation Cooperative received its first subsidy payment of $2.5 million, which the government is phasing out over 10 years. In 2003-04 the Gascoyne Water Cooperative received its first subsidy payment of $1.2 million. This will be phased out over 15 years. (The cooperatives report on the operating subsidies received each year in their annual reports.) The government has ceased providing operating subsidies to the South West Irrigation Management Cooperative and the Preston Irrigation Cooperative, which are now achieving lower bound cost recovery.

As discussed, on 16 June 2004 the Treasurer released a media statement that the government will issue the ERA with terms of reference for an inquiry and report into all water issues, including rural water charges (Ripper 2004). The Treasurer's statement indicated that the ERA inquiry will thoroughly investigate the cost recovery and pricing principles of the Water Corporation's bulk water charges to rural users. The Treasurer advised that he will request this investigation in mid-2005.

Discussion

Full cost recovery

Under the 1994 CoAG water reform agreement and the National Water Initiative, Western Australia needs to show its rural water services are achieving at least the lower bound of cost recovery and applying the CoAG pricing principles. The lower bound of cost recovery should recover at least the operational, maintenance and administrative costs, externalities (defined as the natural resource management costs attributable and incurred by the water business), taxes or tax equivalents (not including income tax), the interest cost on debt, provision for future asset refurbishment/replacement, and dividends (if any).

Western Australia has advised that its bulk water charges raise revenue sufficient to recover a renewals annuity charge and ongoing operation and maintenance costs, but has not provided information to show the extent of cost recovery (against the CoAG pricing principles) by each publicly owned bulk water service. Western Australia's bulk water charge does not recover any externality costs incurred in relation to the irrigation schemes, the interest cost on debt, taxes and tax equivalents, or any dividends. It appears, therefore, not to incorporate all the cost components of the CoAG lower bound of cost recovery. Moreover, the bulk water price setting process is not transparent. As a result, it is unclear whether pricing meets the requirements of the 1994 CoAG water reform agreement and the CoAG water pricing principles.

Consumption based pricing

Under the 1994 CoAG water reform agreement, governments need to adopt pricing regimes based on the principle of consumption based pricing. Western Australia has advised that all bulk water charges comprise a fixed component and a volumetric component, but has provided no information to explain which components are fixed and which can vary depending on volume. On the information provided, the Council is unclear whether the bulk water charges fully satisfy CoAG requirements.

Transparent reporting of subsidies

The government makes a specific CSO payment to the Water Corporation, equivalent to the difference between the cost to the corporation of providing bulk irrigation services and the revenue that the corporation raises from the bulk water charge to irrigation schemes. Western Australia's definition of cost recovery includes depreciation, a return on assets, and operations and maintenance costs. As with Western Australia's lower bound cost definition (discussed above), this definition does not cover all cost components recognised in the CoAG pricing principles.

Western Australia does not appear to publicly report the CSO payments made for supply to each irrigation scheme, although it disaggregated these subsidies in material provided to the 2004 NCP assessment, following a request by the Council. Western Australia has explained that the intent of the CSOs is to ensure irrigators face the same bulk water charge consistent with the government's uniform pricing policy.

Western Australia is reducing the operational and bulk water supply subsidies over time. It will also renegotiate the bulk water supply agreement with the South West Irrigation Cooperative so bulk water charges more closely reflect the upper bound of the CoAG pricing principles.

Assessment

Both the 1994 CoAG water reform agreement and the National Water Initiative commit governments to establishing rural water prices that achieve at least the lower bound of cost recovery and move towards the upper bound where practicable. The agreements recognise that cost recovery might not be achieved in some systems and that governments might deem it necessary to provide a (transparent) CSO. The National Water Initiative also commits governments to use independent bodies to set or review prices, or price setting processes, for water storage and delivery by government water service providers, and to publicly report on pricing by government (and private) water service providers to ensure they apply best practice water pricing.

Western Australia has transferred the management of its four irrigation schemes to local cooperatives, and the Water Corporation supplies bulk water to each of these cooperatives through bulk water supply agreements. The agreements require bulk water charges that comprise fixed and volumetric components and recover some cost recovery components of the CoAG pricing principles. Western Australia subsidises the bulk water charges and the operations of two local grower cooperatives.

Western Australia still has several rural pricing matters to address. Most importantly, it needs to ensure rural businesses achieve at least lower bound cost recovery. It needs to show that its consumption based charges are set on the basis of efficient resource pricing. It could also improve the transparency of CSO payments to the Water Corporation by publicly reporting the (separate) CSOs attached to each irrigation scheme (as it did for this assessment following the Council's request). The foreshadowed ERA investigation into the cost recovery and pricing principles underpinning the Water Corporation's bulk water charges to rural users will be an important step towards best practice rural pricing. The government is due to provide the ERA with terms of reference in mid-2005. It is not clear, however, how the government will implement the ERA recommendations, given that Western Australia will not be reviewing bulk water pricing arrangements for up to 15 years.

The Council considers that Western Australia has made satisfactory progress against its rural water pricing reform obligations for the 2004 NCP assessment.

Cost recovery in issuing licences for water extraction

Assessment issues: Western Australia is to demonstrate that fees charged for water licences achieve full cost recovery, in accord with the CoAG pricing principles. In previous NCP assessments, the Council found that the state's licence fees were not consistently applied, and reflected historical charges rather than resource management and other licensing costs. For the 2004 NCP assessment, the Council has looked for Western Australia to demonstrate that licence fees for unregulated and groundwater users reflect the cost of resource management and licensing.

Future reform: Signatories to the National Water Initiative are to bring into effect by 2006 consistent approaches to pricing and attributing the costs of water planning and management. This should involve identifying all costs associated with water planning and management, including the proportion of these costs that can be attributed to water access entitlement holders, consistent with the principle of linking charges as closely as possible to the costs of activities or products. Western Australia was not a signatory to the National Water Initiative at the time of the 2004 NCP assessment.

References: 1994 CoAG water reform agreement, clauses 3(a) and (b); 1996 Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) paper; 1998 CoAG pricing guidelines; 1999 tripartite meeting; Intergovernmental Agreement on a National Water Initiative

The Water and Rivers Commission grants licences (water entitlements) to individuals and companies to use water resources. With some minor exceptions, these licences are granted without a charge. Western Australia argues that it is socially equitable and appropriate, given the complexities of charging, to fund the commission from consolidated revenue.[2] Recurrent expenditure on activities (broadly classified as water resource information, water allocation and state development, protection and conservation, and waterways and catchments) was approximately $46.5 million in 2002-03.

Western Australia considers that the CoAG water reforms do not require cost recovery for water resource management, only that these costs be transparent. It has argued that transparent reporting of budgeted costs is achieved by the commission publishing budgets in its annual reports (Government of Western Australia 2004).

Western Australia explained that the commission had investigated the possibility of introducing licence fees in two stages: fees would be introduced to cover administrative costs, and then increased to cover all other relevant costs. However, after consulting stakeholders and developing a possible administration fee arrangement during 2003, the government decided not to

[2] There are some state and Australian Government purpose-funded programs (for example, the Natural Heritage Trust).

introduce licence fees. It decided instead to review the level of commission activity and the strategies for funding the commission's water licensing and compliance functions.

The government considers that it is appropriate to fully fund water resource management from consolidated revenue because major water users already perform significant resource management activity. It has noted that one of the largest and most geographically spread licence holders — the Water Corporation — is required to perform considerable water management activities. These activities include catchment management and the management of commission-vested land on which the Water Corporation has assets, monitoring and metering in catchments and groundwater areas, and the funding of work to investigate new water sources. The government has also advised that the Water Corporation funds a considerable amount of activity and is active in implementing the state Water Strategy — for example, the Water Corporation contributed $8 million to the development of the Blackwood Groundwater Area Management Plan. Other water service providers and private abstractors who are investigating or developing a resource carry out similar activities.

Discussion and assessment

The 1994 CoAG water reform agreement envisages that governments ensure charges for rural water supply fully cover the cost of supplying water to users. It commits governments to impose charges based on the principle of full cost recovery (including natural resource management costs), with any remaining subsidies being transparent. Work by ARMCANZ in 1996 under the auspices of CoAG, the National Water Initiative and other jurisdictions' approaches to charging confirm this direction.

The 1996 ARMCANZ paper on the allocation and use of groundwater states that the states and territories should identify the full cost of groundwater management (recommendation 9). ARMCANZ classified groundwater management activities as:

- direct management activities — the operation of water allocation regulatory systems (for example, licensing, day-to-day management and administration), as well as metering and water level monitoring that are carried out to directly support management

- indirect management activities — policy making, investigation, assessment, monitoring, maintenance of technical databases, and related activities.

The ARMCANZ paper states that governments should recover the cost of direct management activities from users, and that they should consider (appropriate) apportionment of indirect costs. Any remaining subsidies should be transparent where full cost recovery cannot be achieved. Governments should also consider the consequences of differential pricing for surface water

and groundwater. In line with the ARMCANZ work, CoAG extended elements of the 1994 water reform agreement to apply to the pricing of groundwater (the 1996 water strategic reform framework), although it did not establish this reform as an obligation relevant to recommendations on competition payments.

The 1998 CoAG pricing principles provide further evidence of CoAG's intent that water users face all appropriate costs of using water, including the costs of licensing related activities. They require water businesses to recover the cost of externalities (defined for lower bound cost recovery to be the environmental and natural resource management costs that are attributable to, and incurred by, water businesses). Similarly, the National Water Initiative commits governments to adopt consistent approaches to pricing and attributing the costs of water planning and management. This work should involve the identification of all costs associated with water planning and management, and the identification of the proportion of costs that can be attributed to water access entitlement holders, consistent with the principle of linking charges as closely as possible to the costs of activities or products. (The Council acknowledges, however, that Western Australia had not signed the National Water Initiative at the time of this 2004 NCP assessment.)

Western Australia and the Northern Territory are the only jurisdictions that do not charge for water licences. All other jurisdictions either impose a fee regime linked to the cost of licensing and associated water management activities or are considering the introduction of a cost-reflective charging regime. Although not charging for licences, Western Australia does impose licence conditions that transfer responsibility for some water resource management (and thus some of the associated costs) to licensees. It has reported, for example, that the costs of the Water Corporation's water management activities can be significant (such as the corporation's $8 million contribution to the Blackwood Groundwater Area Management Plan).

Nevertheless, water users probably face only a small proportion of the costs of water management. Moreover, the ad hoc nature of the current arrangements means it is impossible to determine whether users face appropriate direct and indirect costs as intended by CoAG. (From its investigation of cost-reflective licence fees, Western Australia is likely to have gained some understanding of the nature of its licensing and water management costs, but it did not provide this information to the Council.) A related matter is the Auditor General of Western Australia's criticism of the state's management of its water resources. The Auditor General attributed poor performance to, in part, a decline in (real) funding for core water management operations (see section 5.3).

The Council considers that Western Australia's argument that it has met CoAG requirements by transparently reporting commission costs risks undermining the CoAG objective of achieving an efficient and sustainable water industry. Accordingly, the Council considers that Western Australia has provided inadequate justification in arguing that the complexities of levying an appropriate water resource management charge warrant taxpayer funding of licensing related activities. As noted, most other states are well

advanced in working through these complexities and applying water licence charges that reflect costs consistent with CoAG's intention that water use charges should include appropriate natural resource management costs.

The Council considers that it is appropriate for Western Australia to have additional time to resolve matters relating to charging for licences and associated water management. The signatories to the National Water Initiative have committed to address water management cost recovery by 2006. The 2005 NCP assessment, which CoAG senior officials established as an assessment of compliance against the full 1994 water reform program, should consider Western Australia's progress with attributing licensing related costs to water users.

5.2 Water access entitlements

Assessment issue: Western Australia is to institute a statutory water access entitlement system and support systems for the consumptive use of water, separate from land. The arrangements are to be substantially completed by 2005 for all river systems and groundwater resources covered by Western Australia's 1999 implementation program.

At the time of the 2003 NCP assessment, Western Australia had established a system of water access entitlements separated from land title and specified in volumetric terms. Water licences are issued for between five and 10 years or for an indefinite period, with a presumption that fixed term licences will be renewed. Only a person who owns, occupies or has access to the land on which the water occurs may hold a licence, and then only if they intend to use the water. Licences include a time limit for water entitlements to be used before the entitlement may be forfeited. The then Water and Rivers Commission had the power to issue a direction overriding all other rights recognised by the *Rights in Water and Irrigation Act 1914*. Western Australia had a register of water entitlements, which records third party interests. It had also developed an Internet version of the register, but that was not operational.

For the 2004 NCP assessment, the Council has looked for Western Australia to:

- remove the restriction on who can hold a water licence or demonstrate that it is in the public interest and consistent with 1994 CoAG water reform obligations
- report on the policy for managing unused licensed entitlements and its consistency with 1994 CoAG obligations
- report on any directions issued that override other rights in the Act, and their impact on the security and value of water entitlements
- progress the implementation of the online version of the register of water entitlements.

Western Australia has not signed the National Water Initiative. As a result, the Council considers that Western Australia is not obliged to amend its water licences to specify them as a perpetual share of the available water resource.

References: CoAG water reform agreement, clause 4; 1999 tripartite meeting

Under the Rights in Water and Irrigation Act, water users in proclaimed areas generally require a licence.[3] Water licences are separate from land titles, specified in volumetric terms and transferable. The reliability of entitlements is determined in water management plans (see section 5.3). Licences may be issued for between five and 10 years, or for an indefinite period, and there is a presumption that fixed term licences will be renewed if licence conditions are met.

The Act restricts who can hold a water licence. Only a person who owns, occupies or has access to the land on which the water occurs may hold a licence, and then only if they intend to use the water. Licences include a time limit for water entitlements to be used before the entitlement may be forfeited. The Department of Environment (which subsumed the Water and Rivers Commission in July 2004) administers the water licence system. The department may change the conditions of a licence but, under the Act, must ensure changes are made in a fair way that properly considers the needs of all licence holders. Compensation is generally payable only where the impact of a licensing decision is inconsistent with the impact on other water users in the area.

To manage areas of overallocation or water shortages, or areas in which extraction is causing environmental harm, the Act provides for the Department of Environment to issue a direction overriding all other rights recognised by the Act. The department is required to give reasons for a direction, and water users can appeal to a tribunal to ensure their rights are protected. At the time of the 2003 NCP assessment, the former Water and Rivers Commission had issued only one such direction. Issued in 2002, the direction required the Water Corporation to reduce temporarily its extraction from some wells in the south west of the state, where unacceptable environmental impacts would otherwise occur. The commission compensated for the reductions by issuing fixed term nonrenewable licences allowing an increase in extractions from other sources.

The former Water and Rivers Commission released draft policy guidelines in March 2003 on the management of unused licensed water entitlements for public consultation. It also released a discussion paper in March 2003 on the use of its unused allocations (WRC 2003c).

The Rights in Water and Irrigation Act provides for a register of licences and entitlements, which the Department of Environment maintains. Entitlement holders can register third party interests, including the interests of financial institutions. The register is accessible to the public at the department's

[3] The Act provides for any watercourse, wetland or groundwater area to be proclaimed for the purpose of sustainable management. Licences are not required for riparian water rights and rights to take surface water and water from non-artesian wells for stock or domestic purposes. Areas of minor resource allocation and use (where allocations are less than 30 per cent of sustainable yield) are generally not proclaimed or subject to licensing requirements. Nearly all groundwater and some surface water areas have been proclaimed.

offices. At the time of the 2003 NCP assessment, Western Australia had developed an Internet version of the register, but that was not operational.

Reform progress

In 2003-04 the Department of Environment did not issue any directions overriding other rights under the Rights in Water and Irrigation Act.

In September 2003 in a performance report that included the management of the state's water resources, the Auditor General for Western Australia found that the Water and Rivers Commission was falling behind in its processing of water licences (AGWA 2003). The average waiting time for a licence was three months, with some taking more than nine months. At June 2003 over 1000 new applications were waiting to be processed. The Auditor General also found that only 11 per cent of the state's 25 650 water licences had been checked for compliance and that thousands of licences were renewed after only minimal assessment. Western Australia is reviewing options to reduce delays in the processing of licence applications and to increase compliance inspections. (The Auditor General's broader findings on water resource management, along with the government's response, are considered in section 5.3.)

In November 2003 the former Water and Rivers Commission finalised policy guidelines on the management of unused entitlements (WRC 2003b). The intent of the policy is to ensure water resources are allocated and used effectively by minimising unused licensed entitlements, ensuring licensed entitlements are fully used for the benefit of the licence holder and the state, reducing speculation in the granting of water entitlements, and ensuring decisions on managing and recouping unused entitlements are fair and equitable among existing and potential water users. The policy applies to all licences granted under the Rights in Water and Irrigation Act to take water; it does not apply to water entitlements that have been purchased (via trading) or to unused entitlements resulting from improvements in water use efficiency, meaning the department does not reclaim such unused entitlements.

Under the policy, before granting a licence, the department considers several criteria, including the applicant's ability to use the water entitlement within a reasonable and agreed timeframe. For new developments (or extensions to existing developments) licences granted by the department include a condition requiring the licensee to implement the development and use all of the water within a prescribed timeframe. The department audits compliance with the licence conditions over time, including differences between the licensed entitlement and the volume of water used. Where the department establishes that the water entitlements are consistently not being fully used, it negotiates with the licensee on its short and long term water requirements. The department may recoup (and re-issue or retire) the unused water entitlements if it is not satisfied that a licensee continues to require all of its entitlements. In making a decision, the department accounts for extenuating

circumstances (such as sudden market changes and where a licence holder paid a premium for the water entitlements when purchasing a property in a fully allocated area). The department's level of management of unused entitlements reflects the extent to which available water is allocated, with fully allocated areas subject to more active management.

In December 2003 the former Water and Rivers Commission published a 'situation statement' outlining proposed reservations of water resources for future public drinking water supplies for the state, based on projected population growth and groundwater demand. The commission placed a high priority on the availability and protection of groundwater resources suitable for public drinking water supplies. Its statement is intended to provide the background for water supply planning for at least the next three decades. The department is still to finalise its policy position on the reservation and protection of water resources for future use in Western Australia, following the release of a discussion paper in March 2003. The discussion paper indicated that Western Australia is considering the feasibility of issuing licences for a finite period to permit short to medium term access to water resources that are reserved for future town supply.

Before commencing the Internet version of its register of water licences and entitlements, the department is undertaking a data cleansing project. It expects to complete the project and make its register available online during 2004.

The Rights in Water and Irrigation Act is scheduled for review in 2005. Western Australia has commenced preliminary discussions with selected stakeholder groups, to identify areas for reform. Western Australia has advised that particular issues identified include strengthening the register and establishing the conditions under which entitlements may become permanent.

Discussion and assessment

In previous NCP assessments, the Council found that Western Australia's Rights in Water and Irrigation Act establishes a comprehensive system of water entitlements that are separated from land title, specified in volumetric terms and tradable, consistent with the obligation in the 1994 CoAG water reform agreement.[4] Under the Act, Western Australia maintains a publicly accessible register of water licences and entitlements, which includes provision for registering third party interests. It expects soon to provide online access to the register.

[4] Western Australia's arrangements, which do not provide for perpetual access entitlements (specified as shares of water available for consumption), will be inconsistent, however, with those of governments that have signed the National Water Initiative.

Western Australia retains a restriction on who can hold a water licence — specifically, the holder must own, occupy or have access to the land on which the water occurs, and intend to use the water. The Rights in Water and Irrigation Act requires the part of the Act that includes this restriction to be reviewed in 2005. Because the water entitlement is separate from land title, removal of this remaining link between water entitlements and land is arguably not required under the water entitlement provisions of the 1994 CoAG water reform agreement. The restriction may, however, constrain water trading (see section 5.4).

The power of the Department of Environment to issue a direction overriding all other rights recognised by the Rights in Water and Irrigation Act reduces the security of water entitlements and may have an impact on their value. Western Australia previously advised that the power is intended to enable the department to manage water resources where immediate action is necessary and that it is likely to be applied only temporarily and in extreme circumstances. In practice, the department does not appear to have used the power in a manner that would significantly influence the value of water entitlements. The department's predecessor issued only one such direction, to prevent unacceptable environmental impacts. Moreover, in that case, it compensated for the direction by allowing an increase in extractions from other water sources. The requirement that the department disclose its reasons for a direction, along with the ability of water users to appeal to a tribunal, helps minimise the risk for water entitlement holders.

The state's policy guidelines on the management of unused entitlements also potentially undermine the security of water entitlements by enabling the Department of Environment to reclaim unused entitlements. The impact of the policy on water entitlement security is lessened, however, by several factors, including that:

- the policy does not apply to entitlements that have been purchased (via trading) or to unused entitlements resulting from improvements in water use efficiency

- for new developments, the department includes a condition in the licences that makes clear that some or all of the water entitlements may be recouped if not used within a prescribed timeframe — given that Western Australia grants the entitlements rather than charges for them, this condition appears to be a necessary part of the system for new developments

- the department accounts for extenuating circumstances, including cases where a licence holder paid a premium for the water entitlements when purchasing a property in a fully allocated area

- a decision by the department to recoup unused entitlements is subject to appeal.

The effect of the policy guidelines on water trading is discussed in section 5.4.

While some aspects of Western Australia's water entitlement arrangements could be improved, to increase the security of entitlements, the Council considers that Western Australia has made satisfactory progress against its 1994 CoAG obligations for the 2004 NCP assessment. The Council notes Western Australia's scheduled review of the Rights in Water and Irrigation Act.

5.3 Water planning — providing a better balance in water use

Assessment issue: Governments are to establish water allocation systems that provide a sustainable balance between the environment and other uses of water, including by formally providing water in rivers and groundwater systems for use by the environment.

Under the 1994 CoAG water reform agreement, governments committed to determine environmental water requirements using the best available scientific information, wherever possible, and to have regard to the intertemporal and interspatial environmental water requirements needed to maintain the health and viability of river systems and groundwater basins. For river systems that are overallocated or deemed to be stressed, governments committed to provide a better balance in water use to enhance or restore the health of the river systems. Governments also committed to consider establishing environmental contingency allocations and to review allocations five years after they have been determined. In allocating water to the environment, governments agreed to have regard for the ARMCANZ/Australian and New Zealand Environment and Conservation Council (ANZECC) National Principles for the Provision of Water for Ecosystems (see appendix B).

Arising from the 1994 CoAG water reform agreement, each state and territory established a program in 1999 for implementing water allocations for priority river systems and groundwater resources. Governments committed to substantially complete their 1999 programs by 2005 (including allocations for stressed and overallocated rivers by 2001). Western Australia elected not to sign the National Water Initiative, which complements and extends the 1994 CoAG water reform agreement.

At the time of the 2003 NCP assessment, Western Australia's water planning process was on track against the revised implementation program agreed in the 2002 NCP assessment. For the 2004 NCP assessment, the Council has asked Western Australia to update its progress and provide a representative sample of water management plans (including plans for fully allocated systems) to demonstrate that Western Australia is satisfactorily addressing CoAG obligations on allocating water among consumptive and environmental uses.

References: 1994 CoAG water reform agreement, clauses 4(b)–(f); 1999 tripartite meeting; Intergovernmental Agreement on a National Water Initiative

Western Australia derives most of its water supply from groundwater. Its approach to allocating water to the environment (formalised in the Rights in Water and Irrigation Act) is delivered via a tiered system of statutory water management plans (regional, subregional and local).[5] Plans are developed

[5] If the use of overland flow causes a reduction in the flow of a watercourse or has a significant effect on the quality of the water that an ecosystem receives, these flows can be managed under local by-laws.

through a consultative process and set out the basis for allocating water, setting environmental flows and adjusting allocations. Each plan includes arrangements for ongoing monitoring and review. Water management plans continue indefinitely, with review every seven years (or later if water use has not increased).

The subregional (or local) plans define environmental water requirements (the water regime required to maintain ecological values at a low level of risk) and environmental water provisions (the water reserved for the environment). Environmental water provisions may be set as notional or interim allocation limits, or as formal assignments if the water resource is highly or fully committed. Where stakeholders accept some ecological impact, the environmental water provisions may be less than environmental water requirements.

The Environmental Protection Authority has an ongoing role in assessing the adequacy of environmental water requirements and environmental water provisions set in the plans. The state groundwater environmental protection policy and other similar policies provide for the statutory identification and priority management of 'critical areas' through regulations and other subordinate legislation. These areas may include those in which the environmental provisions are not being attained or those that the Environmental Protection Authority considers to be 'stressed'.

The Rights in Water and Irrigation Act provides for the establishment of water resource management committees, including community and stakeholder representatives. The Department of Environment also consults the public as a normal part of its planning processes for establishing and reviewing water management plans. Its processes for significant plans include a formal public review.

Western Australia nominated 77 water sources (40 river basins and 37 groundwater management areas) under its 1999 implementation program. None of the 40 river systems was identified as stressed or overallocated. Under its revised implementation program, agreed in the 2002 NCP assessment, Western Australia scheduled 37 water management plans covering most of the groundwater resources and main irrigation rivers covered by its original 1999 implementation program plus some new systems that had been identified as fully allocated or overallocated.

At the time of the 2003 NCP assessment, Western Australia advised that its planning processes (including reviews of existing plans) were on track for completion by 2005. It had completed ten plans and identified a further nine low priority systems for which it proposed no further action.

Reform progress

Western Australia completed only one plan in 2003-04 covering the lower Gascoyne River — the Carnarvon local plan — bringing the number of completed plans to 11. The Council has considered this plan in the 2004 NCP assessment (see pp. 5.22–26).

During 2003-04 Western Australia again revised its water planning priorities (table 5.1). Under the revised timetable, there are seven water allocation plans and reviews scheduled for completion in 2005. The bulk of the remaining 15 plans are scheduled for completion during the following two years (including the four added to the program since 2002-03). Among the plans Western Australia expects to complete in 2005 are its s46 reviews of the Gnangara and Jandakot mounds (the latter was reassessed from low priority status during 2003-04). Western Australia's progress with these reviews is discussed below (see pp. 5.26–27).

Table 5.1: Status of water planning in Western Australia, as at May 2004

Plan	*Current status*
Albany local[a]	Strategy completed in 2001-02. Second review scheduled for 2009-10.
Arrowsmith subregional	Completed in 2001-02. Second review scheduled for 2009-10.
Blackwood subregional groundwater[b]	Interim ecological water requirements developed. Interim allocation management strategy scheduled for June 2005 and final plan scheduled for October 2007.
Bolgart groundwater management review	Low priority, no further action proposed.
Bremer Bay groundwater protection	Low priority, no further action proposed.
Bremer Bay local[a]	Low priority, no further action proposed.
Broome subregional	Scheduled for review in 2004-05.
Bunbury subregional	Incorporated into Busselton–Capel subregional review.
Busselton–Capel subregional groundwater	Review commenced. Scheduled for completion in 2006-07.
Canning River interim local[c]	Monitoring indicates system is exhibiting stress. Interim management strategy being developed.
Cape–to-Cape (Vasse) surface water subregional	Incorporated Busselton-Capel subregional review.
Carnarvon local[a]	Completed in 2003-04.
Cockburn subregional[a]	Completed in 2001-02. Second review scheduled for 2009-10. Sub-area allocation limit and boundary review in process, due for completion in June 2004.

(*continued*)

Table 5.1 continued

Plan	*Current status*
Collie Water Resource Management Strategy[a]	Draft surface water plan completed in 2003. Final plan scheduled for completion in 2004-05. Groundwater environmental water provision to be determined in 2006-07 and plan to be made in 2007-08.
Derby local	Review scheduled for 2004-05.
Esperance local[a]	Completed in 2001-02. Second review scheduled to occur by 2009-10.
Exmouth local	Review scheduled for 2006-07.
Gascoyne Junction interim local	Low priority, no further action proposed.
Gingin subregional	Completed in 2001-02. Second review scheduled to occur by 2009-10
Gnangara groundwater review[a]	Review (under s46 of the Environmental Protection Act) scheduled for completion by June 2005. Review will be incorporated in the Perth–Gingin subregional plan.
Goldfields regional	Low priority, no further action proposed.
Harvey basin regional	Completed in 1999. Plan operating well. Second review deferred until 2009-10.
Jandakot groundwater review[a]	Reassessed from low priority. Review (under s46 of the Environmental Protection Act) scheduled for completion by June 2005.
Jurien subregional	Completed in 2001-02. Second review scheduled to occur by 2009-10.
Kemerton local	Completed in 2001-02. Second review scheduled to occur by 2009-10.
Kimberley regional	Low priority, no further action proposed.
La Grange subregional	To be incorporated in Kimberley plan for which no further action is proposed.
Marbellup interim local	Completed in 2001-02. Second review scheduled to occur by 2009-10
Murray subregional	Low priority, no further action proposed.
Murray surface water	Review scheduled for 2005-06.
Ord River	Draft plan completed in 2001-02. Final plan rescheduled for completion in June 2005.
Perth Northwest Corridor groundwater management	To be incorporated in the Perth–Gingin subregional plan. Draft plan scheduled for 2006-07.
Perth–Bunbury regional[a]	Review scheduled for 2004-05. The need to progress this plan is being reviewed in light of the other priorities.
Perth–Gingin subregional[a,c]	Draft plan scheduled for 2006-07.
Pilbara regional	Issue scoping, initial cultural values assessment completed. Plan intended to deal with increased stress from mining activity. Strategy to be completed in 2004-05.

(*continued*)

Table 5.1 continued

Plan	*Current status*
Rockingham–Stake Hill subregional	Completed in 2001-02. Second review scheduled to occur by 2008-09.
Rottnest groundwater management review	Low priority, no further action proposed.
South West Coastal groundwater management review	To be incorporated in the Kemerton plan.
Swan subregional[a]	To be incorporated in the Perth–Gingin subregional plan.
Wanneroo local[a]	To be incorporated in the Perth–Gingin subregional plan. Draft plan scheduled for completion in 2006-07.
Whicher regional (Busselton Coast–lower Blackwood groundwater and surface water)[b]	Due to other priorities, preparation of plan deferred until 2005-06.

[a] The Auditor General has identified that licensed water use in parts of these groundwater management areas exceeded the estimated sustainable limits. [b] Added to the program in 2002-03. [c] Added to the program in 2003-04.

Sources: Government of Western Australia 2002, 2003, 2004

In 2003 the Office of the Auditor General for Western Australia reviewed the state's water planning processes. It found deficiencies in the former Water and Rivers Commission's processes, record keeping, compliance monitoring and resourcing (AGWA 2003). The audit revealed, for example, that the commission did not have the information needed to accurately determine the sustainable level of groundwater and surface water use in many areas. The audit identified that licensed water use in parts of 13 of the state's 44 groundwater management areas exceeded the estimated sustainable limit. (Most of these groundwater areas are included under Western Australia's implementation program.) Moreover, the commission had prepared a detailed environmental assessment for only three of these areas.[6] The audit also found that the commission had progressively wound back its monitoring program and that only about 11 per cent of all water licences have ever been checked for compliance. It noted that the commission had lost all of the last 25 appeals against its decisions to refuse further water allocations with the Appeals Tribunal often finding that the commission's decisions lacked scientific rigour.

The Auditor General considered that a number of factors seriously affected the former Water and Rivers Commission's capacity to manage the state's water resources, including:

- a doubling in demand for water over the previous 15 years
- a 33 per cent decline in funding (in real terms) since 1998 for the core water resource management operations of investigation, assessment, planning, licensing and regulation

6 Since publication of the Auditor General's report the former Water and Rivers Commission has completed another water management plan.

- amendments in 2001 to the Rights in Water and Irrigation Act, which considerably increased the commission's workload by requiring more rigorous environmental assessment and greater community consultation.

The commission has acknowledged that management of the state's water resources deteriorated in the five to six years to 2003. It noted that it is investigating specific solutions and is adopting the Auditor General's recommendation to take a strategic approach to addressing the identified problems. As discussed the former Water and Rivers Commission has reviewed the state's water planning priorities. It has also been progressively reviewing allocation limits using the most up to date information to ensure the limits set take account of appropriate environmental water provisions (Government of Western Australia 2004).

In addition, the State Government has amalgamated its water resource management and environmental protection functions through the creation of the Department of Environment (which subsumed the Water and Rivers Commission). It has also introduced the Water Resources Management (Administration) Bill 2003 into Parliament, in which the government proposes to establish a water resources council (with expertise in water resources management, conservation, economic development, community development and natural resources law) to advise the department and the Minister for the Environment on water resources management, including its funding and effectiveness. The water resources council will be assisted by regional- and/or local-level advisory committees.

The Carnarvon local plan

The lower Gascoyne River drains the Gascoyne River basin and enters the Indian Ocean at Carnarvon, 980 kilometres north of Perth. The Gascoyne River is an intermittent stream that has been dry for twice the time it has been flowing since records commenced in 1957. Its mean annual flow duration is 110 days and usually flows occur within a two year period, although periods in excess of two years between flows have been recorded.

The alluvial plain of the lower Gascoyne River contains two aquifer systems. The riverbed sand aquifer is the closest to the surface. It is located between the banks of the river and varies in width between 100 and 1200 metres. The water contained in this aquifer is predominantly fresh (less than 500 milligrams of total dissolved solids per litre) and of recent age. The older alluvium aquifer occurs under the riverbed sand aquifer and extends for a further distance from the river. Salinity values vary substantially across the aquifer, from 500 to 6000 milligrams of total dissolved solids per litre, with water quality declining and becoming brackish with increasing distance from the river. The two aquifers are hydraulically connected and receive recharge from the lower Gascoyne River when it flows.

Given the unpredictability of surface water supplies, the Carnarvon district relies on groundwater for irrigation, stock and domestic and town water services. Thus water management involves managing groundwater reserves.

The former Water and Rivers Commission subdivided the groundwater reserves of the lower Gascoyne River into 12 basins. Licensed private users may extract water from basin A only. The licences provide for unrestricted access to the groundwater, and to surface water during times of river flow. When there is no river flow, private users are restricted to a set groundwater entitlement. The commission reserved basins B–L for the exclusive use of the Water Corporation for supplying irrigation and town water. It did not restrict the source from which groundwater may be extracted, although most of the town water is supplied from the older alluvium aquifer.

The sustainable yield of the two aquifers is 18 000 megalitres a year (WRC 2004). Current annual licences provide for 19 100 megalitres a year to be extracted from basins A–L — 15 500 for irrigation and 1800 megalitres for town supply plus a reserve of 1800 megalitres for future use. While this allocation exceeds the estimated sustainable yield, only about 8000 megalitres a year is used on average. Moreover, the results of hydrological modelling indicate that an excess drawdown of the groundwater probably would not cause permanent problems because the aquifers are quick to recharge during flood events. Prolonged extraction during periods of no surface flow, however, could result in lateral movement of salt within the system and elevate salinity levels in the groundwater reserves.

Specialist consultant SMEC determined the ecological water requirements for the groundwater reserves of the lower Gascoyne River. SMEC identified Chinaman's Pool, Rocky Pool and the temporary pools along the river bed as groundwater dependent ecosystems of high ecological value (given their unique ecology) and high social value (given their recreational and aesthetic importance to the Carnarvon community) (WRC 2004). It also found that the riverbank vegetation — in particular, the river red gum trees (*Eucalyptus camaldulensis*) — depend on groundwater.

SMEC did not assign an environmental water requirement for the pools because it lacked sufficient data on their ecology and the water requirements of aquatic communities within them. It did, however, state that these pools are highly groundwater dependent and that groundwater extraction could affect the health of aquatic flora and fauna. SMEC recommended that the Water and Rivers Commission conduct flora and fauna surveys to determine the environmental water requirements for these ecosystems as a part of the planning process.

SMEC estimated that the riparian vegetation (river red gums) needs about 4250 megalitres a year to maintain optimum health, although about 1600 megalitres a year would be sufficient to sustain life during drought. It noted that the river red gums typically draw water from 5 metres below the surface, but can adapt to declining groundwater levels by increasing root growth (which occurs at a maximum rate of 0.5 millimetres a day). During

times of prolonged drought, therefore, the trees could draw water from as far as 20 metres below the surface.

On 1 January 2004 Western Australia implemented the groundwater management strategy for the lower Gascoyne River (WRC 2004). The strategy applies to the groundwater reserves in the Carnarvon area. It aims to allocate the groundwater resources in an equitable and sustainable manner for the long term benefit of the Carnarvon community taking into consideration the inherent social, economic and environmental impacts of using groundwater. The commission developed the strategy in consultation with the community, with assistance from the Carnarvon Water Allocation Advisory Committee. The committee comprised representatives from the former Water and Rivers Commission (chair), growers, the Department of Indigenous Affairs, the Shire of Carnarvon, the Carnarvon Land Conservation District Committee and the Water Corporation. The commission also released a draft report and sought public submissions in finalising the strategy. The Department of Environment, in consultation, will review the strategy in its seventh year of operation.

The strategy provides for a reduction in the water allocated to consumptive uses to meet sustainable yields. Total allocation under the strategy will be 18 000 megalitres a year, with 14 400 megalitres (10 400 megalitres from basins B–L) a year for irrigation, 1800 megalitres a year for town water supply and 1800 megalitres a year reserved for future town water supply. Under specified drought conditions, provisions in the strategy permit a temporary increase in the allocation of irrigation water from basins B–L to cater to growers' demands. It also sets out some additional water quality and ecology provisions that require water users to:

- cease to extract when salinity in a bore exceeds 1000 milligrams total dissolved solids per litre
- restrict abstraction of basin A groundwater to 10 megalitres a month for any one property
- place all new wells in the older alluvium aquifer only
- institute a 500-metre buffer zone for the placement of bores from the river bank for a distance of 2 kilometres downstream of Rocky Pool
- draw down aquifer water levels in basins B–L to no more than the levels experienced during the 18-month no-flow period in 1994
- in any extended drawdown in basins B–L not exceed the rate of 5 millimetres a day (to protect river red gums).

The strategy states that groundwater extraction is likely to have little impact on groundwater dependent ecosystems because the condition of the pools is more affected by extended periods of no flow and associated increases in salinity than by groundwater extraction. While it has provided no specific supporting evidence, Western Australia advised that historical pumping

regimes in the Carnarvon local area have not affected the identified groundwater dependent ecosystems (in particular Rocky Pool and the riparian vegetation). It further advised that Chinaman's Pool is in the tidal influence and is not impacted by groundwater pumping in the area due to marginal water quality. The strategy contains provisions for monitoring salinity, water levels and river red gum health. It does not, however, indicate whether the government has adopted SMEC's recommendation to conduct flora and fauna surveys to determine the environmental water requirements for Chinaman's Pool and Rocky Pool.

The strategy makes the Water and Rivers Commission (now the Department of Environment) responsible for coordinating the monitoring programs and reporting on outcomes. The strategy includes an adaptive management approach, and the foreshadowed review of the strategy must take account of the monitoring results.

Best available science

The former Water and Rivers Commission conducted hydrological investigations and developed the Gascoyne River floodplain aquifer model, basing its approach on the internationally accepted MODFLOW groundwater model. The commission adapted this model to determine sustainable yields and recharge values for the Carnarvon aquifers. The commission did not, however, provide information on data quality or the confidence limits attached to the estimates of recharge.

The specialist consultant, SMEC, based its environmental water requirement assessments on a single site visit. It relied predominantly on existing literature for descriptions of the ecology and for an assessment of the extent to which the ecology is groundwater dependent. SMEC did not use a recognised environmental water requirement method or a holistic or multidisciplinary approach. It did, however, adopt a precautionary approach and include recommendations for further monitoring and investigation to determine more accurate environmental water requirements. Although no formal independent peer review was undertaken, Western Australia has advised that ecological experts within the Department of Environment reviewed the SMEC work.

Balancing economic, environmental and other interests

The strategy contains provisions aimed at ensuring the health of the water resource and identified dependent ecosystems. The provisions aim to prevent the lateral movement of salt through the system, protecting the ecosystems that depend on groundwater resources and the associated recreational values. The strategy does not, however, adopt all of the recommendations of the ecological investigation. It addresses the requirements of the river red gum communities and provides a buffer zone to afford protection to Rocky Pool. While the strategy makes clear that the provisions can be changed over time

in response to improved information, it includes no explicit proposal to investigate the water requirements of the pools' flora and fauna.

The strategy re-allocates currently unused licensed water allocations from irrigators to the environment. This re-allocation was determined through a consultative process in a manner that ensures water use does not exceed the estimated sustainable yield of 18 000 megalitres a year, but can cater to future demand for irrigation and drinking water. While the strategy includes provisions to meet the identified needs of groundwater dependent ecosystems, the available information does not make clear whether the strategy adequately caters for the pool ecosystems. Western Australia has advised that the management regime is based on observed historical trends and that identified groundwater dependent ecosystems have not been affected by the historical pumping regimes in the area.

Monitoring and adaptive management

The strategy contains a monitoring program to assess the effects of groundwater extraction on salinity and river red gum health, which is tied to an adaptive management system. In reviewing the strategy the Department of Environment must take account of the monitoring results.

Western Australia has advised that it compares trends in water use against historic water use data. It explained that it takes a precautionary approach aimed at ensuring that use in excess of historic levels is not at a level that will have an adverse impact on ecosystems. The strategy, however, does not provide a means for addressing the data gaps identified by SMEC's investigation of Chinaman's Pool and Rocky Pool. While SMEC's data were limited, it identified these two habitats as being groundwater dependent and potentially at risk from extraction practices.

Stakeholder consultation and transparent processes

The development of the strategy involved extensive stakeholder consultation. The Carnarvon Water Allocation Advisory Committee was broadly representative of relevant economic, social and environmental interests. However, some aspects of the Carnarvon plan lack transparency. The plan does not, for example, demonstrate an intention to monitor the health of the pools or conduct research to determine appropriate environmental water requirements.

Jandakot and Gnangara mounds

As indicated in table 5.1 the Department of Environment is conducting a review (under s46 of the *Environmental Protection Act 1986*) of the environmental conditions applying to the Jandakot and Gnangara mounds. In 2001 the former Water and Rivers Commission initiated the review because it

had consistently been unable to fully comply with environmental conditions relating to groundwater abstraction at the mounds.[7] Through the review process the department is investigating the effects of groundwater level changes to the mounds. Based on its findings it will develop strategies to better manage the mounds (including recommendations for changes to the environmental conditions where this is appropriate).

The department is conducting the s46 review in two stages. In the first stage it is focusing on short term strategies for managing water over the summer for the critical areas where noncompliance with the environmental conditions has occurred. It had scheduled the first stage of the review to be completed in 2003, but subsequently extended this timeline to late 2004. At the second stage of the review the department will develop long term management strategies for sustainable water use at the mounds.

The former Water and Rivers Commission has used existing and new environmental studies, supplemented with hydrological investigations and groundwater modelling to ascertain the condition of wetlands (connected to the mounds). At the request of the Environmental Protection Authority, the commission appointed a Peer Review Group (consisting of experts in the fields of land management, wetland ecology and groundwater modelling) to independently review these scientific investigations.

The Peer Review Group reiterated the findings of Balla (1994) that the wetlands on the Swan Coastal Plain are significant ecological and social assets, especially given that over 80 per cent of the wetlands in the Perth region have been lost. The group reported that there is considerable evidence of severe stress and loss of wetlands, especially on the Gnangara Mound (WRC 2003a). It considered that groundwater extraction should be reduced in many areas of both mounds to help redress the environmental damage. Further, the group considered that the current environmental conditions applying to the aquifers are reasonable and should not be reduced.

The Environmental Protection Authority is concerned about the poor condition of the mounds and the delays in addressing this matter. In its most recent advice to the Minister for the Environment, the Environmental Protection Authority stated that the sustainable limits for groundwater abstraction from the mounds need to be urgently reviewed and revised (EPA 2004a, 2000b). It considered that deferring action is no longer legally or environmentally acceptable. Further, it recommended that the department submit a detailed timetable for completion of the s46 review, to be agreed with the Minister as soon as possible.

[7] The conditions (which have been in place since 1992 and 1999 respectively) require the department to maintain water levels above a specified minimum. This aims to provide sufficient water to sustain the important groundwater dependent ecosystems in the areas, such as wetlands and terrestrial vegetation.

Discussion and assessment

Western Australia's current program covers 41 water planning areas. It has water management plans in place for around a quarter of these areas and expects to complete plans for another 22 areas in 2005 or soon after. Its program identifies eight low priority areas where the water systems are not in danger of becoming overallocated or stressed. For these areas Western Australia does not propose to prepare water management plans. If Western Australia meets its current water planning timetable it will complete around two-thirds of its scheduled water plans by 2005.

Western Australia's performance to date, however, raises doubt as to whether it can meet its CoAG water planning obligations within a reasonable time. Western Australia has had to realign its planning priorities twice to consolidate its planning program and extend the completion timelines. Despite this effort, problems with delays continue to occur. In relation to the s46 review, for example, even though there is evidence that the Gnangara and Jandakot mounds are under stress the Department of Environment has delayed completing its review to the point where the Environmental Protection Authority has had to make recommendations to the Minister for the Environment seeking urgent action. The 2003 Auditor General's report also questioned whether Western Australia devotes sufficient resources to enable it to properly meet its water planning responsibilities.

In addition, the environmental assessment underpinning the Carnarvon local plan did not use a recognised environmental water assessment method, a holistic method or a multidisciplinary approach. This raises questions about whether Western Australia has relied upon the best available science in determining the environmental water requirements for the lower Gascoyne River. Moreover, its environmental water assessment identified data gaps and made recommendations for research into the environmental requirements of the ecosystems identified as highly groundwater dependent and of significant value. The government did not adopt these recommendations or explain why it failed to adopt them.

Western Australia is, however, addressing some of the deficiencies in its water planning processes. Apart from reviewing its planning priorities Western Australia is progressively reviewing allocation limits to ensure they account for environmental water requirements. It has amalgamated its water resource management and environmental protection functions in the Department of Environment, which may help to address some of the identified funding problems. It also intends to establish a water resources council to provide advice on water resources management, including its funding and effectiveness.

The recent changes aimed at improving the state's water planning processes suggest that Western Australia is committed to completing allocations for the systems on its 1999 implementation program by 2005 or soon after. The Council therefore considers that Western Australia has made satisfactory progress for the 2004 NCP assessment. The evidence of deficiencies in the

state's water planning processes indicates, however, that Western Australia has some work to do during 2004-05 to improve its processes. For the 2005 NCP assessment, Western Australia should show that it is determining environmental water requirements (including any assessments undertaken for the review of the arrangements for the Jandakot and Gnangara mounds) on the basis of the best available science. It should look to develop water management plans that are transparent and provide supporting evidence for the decisions on allocations, including robust socioeconomic evidence to explain any trade-offs accepted between environmental and human uses. Western Australia should also demonstrate that it has progressed its water planning consistent with the timeframe that it provided for this 2004 NCP assessment. Under this timetable Western Australia committed to substantially complete its water planning program by the end of 2005.

5.4 Water 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. CoAG senior officials asked the Council to assess governments' progress with developing intrastate trading arrangements in 2003 and interstate arrangements in 2004. Trading arrangements are to be substantially implemented by 2005.

In the 2003 NCP assessment, which considered intrastate trade, the Council found that Western Australia had established a framework for the transfer of water entitlements, but that trading was still in its early stages. The Council identified constraints on trade, including:

- provision for local by-laws to prohibit trades
- restrictions on who can hold a water licence (that is, only a person who owns, occupies or has access to the land on which the water occurs, and then only if they intend to use the water)
- the Department of Environment's power to reclaim, and not approve trade in, water entitlements that have not been used.

Western Australia is also developing water management plans, which may contain trading rules.

Interstate trade involving Western Australia will be possible only if stage 2 of the Ord Irrigation Project proceeds. In the 2001 NCP assessment, the Council noted that the Northern Territory had agreed in principle for Western Australia's water trading arrangements to apply throughout the territory sector of stage 2 of the project.

Western Australia needs to remove constraints on water trading or demonstrate that they are in the public interest. It also needs to ensure the trading rules in water management plans facilitate trading where this is socially, physically and environmentally sustainable.

References: CoAG water reform agreement, clause 5; 1999 tripartite meeting

Western Australia established provisions for water trading through amendments to the Rights in Water and Irrigation Act in 2001. Interstate trade involving Western Australia (with the Northern Territory) will be

possible only if the state proceeds with stage 2 of the Ord Irrigation Project. In the 2001 NCP assessment, the Council noted that the Northern Territory had agreed in principle for Western Australia's water trading arrangements to apply throughout the territory sector of stage 2 of the project.

The regulation of intrastate trading

The Rights in Water and Irrigation Act permits a licence holder to transfer all or part of their water entitlements to another party entitled to own a licence.[8] Trades may be permanent or temporary, and require the approval of the Department of Environment. The department may not approve a trade without the written permission of a party with a registered interest in the entitlement.

Under the Act and the statewide policy on transferable water entitlements issued in 2001 (WRC 2001):

- trades must be consistent with an approved water management plan or, if there is no plan, with the department's policy or guidelines
- the department may refuse trades to:
  - protect the environment and other users from damage
  - ensure outcomes continue to be beneficial to the state
  - prevent non-efficient uses and monopolies in water
  - meet policy objectives
  - encourage or preserve complementarity and diversity (in the market)
  - preserve the trading market from distortion
- the department actively discourages speculation in the market
- a decision by the department not to approve a trade is subject to appeal to a tribunal.

To supplement the Act and the statewide policy, in February 2003 the then Water and Rivers Commission released an interim subpolicy to guide the operational management of trading (WRC 2003d). The subpolicy sets out the resource management process to be undertaken as the level of water use in an area approaches the sustainable limit, in preparation for the commencement of trading in that area. The initial stages of the process (for example, the determination of environmental water provisions and the review of

[8] Riparian right allocations, stock and domestic rights and environmental water provisions are not tradable.

sustainable limits) are typically completed through subregional or local area water management planning. The Department of Environment subsequently identifies, recoups and re-allocates unused entitlements. Where the resource management process has not been completed, or the water resources are highly or fully allocated, trading applications must be supported by the relevant regional manager and the managers of various branches of the department (hydrology and water resources, catchments and waterways, and resource allocation). The managers are required to consider a range of matters, including whether the trade is likely to have adverse environmental, social and economic impacts.

To limit the scope for speculation in the water market, the Act contains constraints on water trading, including provisions for:

- local by-laws to prohibit trades
- restrictions on who can hold a water licence (that is, only a person who owns, occupies or has access to the land on which the water occurs, and then only if they intend to use the water)[9]
- the Department of Environment to vary a water licence if the licence holder has not consistently used their entitlements (this provision underpins Western Australia's policy that the department can reclaim, and not approve trade in, water entitlements that have not been used).

The Act also contains, however, a provision for making local by-laws to enable a person other than whoever owns, occupies or has access to the land to hold a licence.

As noted in section 5.2, the department is investigating more efficient use of its unused allocations, including the feasibility of issuing short to medium term licences to permit access to water reserved for future town supply. A discussion paper released in March 2003 (WRC 2003c) acknowledged that the impact of such a change on trading would need to be considered (including whether and how to charge for temporary access to unused allocations).

While regional management plans are high level and usually make little reference to trading issues, subregional and local area water management plans may include trading provisions. The plans are required to be compatible with the statewide trading policy or to address potential conflicts or limitations. Some entitlements may not be tradable, as a result of water resource management constraints identified in the plans. (Western Australia's progress in developing water management plans is discussed in section 5.3.) The groundwater management strategy for the Carnarvon region (finalised in January 2004), for example, reiterates the trading requirements of the Act and the statewide policy. It also includes local trading rules aimed

[9] Special provisions apply when a person who is not eligible to hold a licence is buying property and wants to make prior arrangements to purchase an entitlement. In these circumstances, the department may give an undertaking that it will approve the trade once the property purchase is finalised.

at avoiding adverse impacts on the environment, water quality and other water users. The local trading rules include measures to manage salinity impacts, for example, by not permitting transfers to areas sensitive to increases in salinity.

Recent trading activity

In many parts of Western Australia, water resources are not fully allocated and the demand for trading is low. The only significant area for trading in surface water is the South West Irrigation Management Scheme. Most trades are temporary transfers. In 2002-03 temporary transfers within the scheme amounted to around 10.9 gigalitres (7 per cent of licensed entitlements), permanent transfers were less than 0.2 gigalitres (significantly less than 1 per cent), and around 3 gigalitres (2 per cent) were transferred with property sales. There is also some trading in groundwater. In the 10 months to May 2003, groundwater trading consisted of 1.7 gigalitres in temporary transfers, 0.06 gigalitres in permanent transfers and 15.5 gigalitres transferred with property sales.

It is not compulsory for applicants to provide details of the price of water trades, so such information is limited. In the 2003 NCP assessment, Western Australia provided a few examples of groundwater trades, for which prices ranged from around $500 a megalitre in the Wanneroo area to $1300 a megalitre in the Busselton–Capel area, for permanent trades of around 30 megalitres.

For groundwater trading applications, Western Australia provided information indicating that the approval process ranged from a few days to 10 months. Trades were generally approved within two months.

Reform progress

The Council noted the following developments of relevance to water trading in section 5.2:

- In November 2003 the former Water and Rivers Commission finalised policy guidelines on the management of unused entitlements (WRC 2003b). Under the policy, the Department of Environment may recoup (and re-issue or retire) unused water entitlements if it is not satisfied that a licensee continues to require all of its entitlements. It may not approve trade in unused entitlements. The policy does not apply, however, to water entitlements that have been purchased (via trading) or unused entitlements resulting from improvements in water use efficiency. In making a decision, the department accounts for extenuating circumstances (such as sudden market changes and where a licence holder paid a premium for the water entitlements when purchasing a property in a fully allocated area).

- The department is still to finalise its policy position on the reservation and protection of water resources for future use in Western Australia, following the release of the discussion paper in March 2003.

Western Australia has indicated that it will review the effectiveness of its statewide policy on transferable water entitlements via a semi-formal consultation process. It intends to seek submissions from parties who have encountered difficulties in trading.

In addition, Western Australia has advised that:

- it has not introduced any local by-laws to prohibit water trade
- it is investigating ways in which to collect information on the prices of water trades, such as through the stamp duty system, and make it publicly available
- it has commenced discussions with a broking company in South Australia with a view to allowing buyers and sellers to use the broker's website to register their interest in trading.

Discussion and assessment

In the 2003 NCP assessment, the Council found that Western Australia had implemented arrangements for water trading, although it identified questions about the consistency of the arrangements with CoAG obligations. Interstate trade involving Western Australia will be possible only if stage 2 of the Ord Irrigation Project proceeds.

The Rights in Water and Irrigation Act permits a licence holder to transfer all or part of its water entitlements (temporarily or permanently) to another party entitled to own a licence, subject to the approval of the Department of Environment. In previous NCP assessments, the Council found that water entitlements are sufficiently specified in Western Australia to enable water users to form a reasonable expectation of the potential benefits and risks of trading. Licences may be issued for between five and 10 years, or for an indefinite period. There is a presumption that fixed term licences will be renewed if licence conditions are met. While the state's register of water licences and entitlements does not provide indefeasibility of title, it does allow the entitlement holder to register interests. The department may not approve a trade without the written agreement of any person with a registered interest in the entitlement.

Western Australia's trading arrangements contain measures to protect the environment and the interests of other water users. Trades must be consistent with an approved water management plan or, if there is no plan, with the Department of Environment's policy or guidelines. Under the Act, the department is required to assess any potential environmental, hydrological and hydro-geological impacts associated with each trade. It can

refuse a trade if there would be significant impacts on river or groundwater health or other water users. While the department has taken up to 10 months to assess complex trading applications, the process is usually much shorter, with recent trades generally approved within a few days to two months.

Until the state's water trading market further develops, the Department of Environment has the additional role of collecting and providing market information. Western Australia is also pursuing other means of facilitating trading, including through a broking company in South Australia.

As the Council reported in section 5.2 and in previous NCP assessments, the power of the Department of Environment to issue a direction, overriding all other rights recognised by the Rights in Water and Irrigation Act, increases the risk to entitlement holders and may have an impact on the value of water entitlements and their tradability. The Council notes, however, that Western Australia intends to use the provision only in extreme circumstances. In practice, the government has not used the power in a manner that would significantly influence the value of water entitlements or hinder trade. The requirement for the department to disclose its reasons for a direction, along with the ability of water users to appeal to a tribunal, helps minimise the risk for water entitlement holders.

In previous NCP assessments, the Council identified several measures in the Rights in Water and Irrigation Act and the statewide trading policy that may constrain trade in water entitlements, including:

- provision for local by-laws to prohibit trades
- restrictions on who can hold a water licence (that is, only a person who owns, occupies or has access to the land on which the water occurs, and then only if they intend to use the water)
- the Department of Environment's power to reclaim, and not approve trade in, water entitlements that have not been used.

The three provisions appear to be largely a response to community concern about potential speculation in the water market. Nonetheless, the provisions have the potential to reduce the security of entitlements and constrain the movement of water to its most profitable use. (The effect of the second and third provisions on the security and value of water entitlements was discussed in section 5.2.) The restrictions on who can hold water licences, for example, may affect the entry and activities of agents, brokers and other potential participants in the water trading market, and the ability of financial institutions to obtain ownership of a water entitlement in the case of default. The policy for managing unused entitlements may encourage overuse to protect ownership. Even where trading is established in an area, the policy enables the department to recoup unused entitlements if they were not acquired through trading or if speculative behaviour occurs. All of the provisions have the potential to reduce the returns available to holders of water entitlements.

Western Australia provided the following information on the three provisions:

- No local by-laws have been introduced to prohibit water trade.
- The government considers the restriction on who can hold a water licence to be a reasonable interim step to allow the community to become familiar with water markets and trading. The Rights in Water and Irrigation Act requires the part of the Act that includes the restriction to be reviewed in 2005. Given that water trading markets are relatively undeveloped, the government considers that the requirement is not distorting the market; in any case, most constraints can be readily overcome.
  - To enable sale of a water licence via a leaseback arrangement, the licence holder would need only to be granted occupancy rights for the land as part of the contract.
  - Financial institutions seeking to hold security over the licence could take an interest in the land to enable them to take control of the licence in their own name if the licence holder defaults.
  - There is provision for local by-laws to be made to enable a person other than whoever owns, occupies or has access to the land to hold a licence, such as those holding a security interest (although the provision has not been used to date).
- The impact of the Department of Environment's power to reclaim, and not approve trade in, water entitlements that have not been used is lessened by several factors:
  - The policy does not apply to entitlements that have been purchased (via trading) or unused entitlements resulting from improvements in water use efficiency.
  - For new developments, the department includes a condition in the licences that makes clear that some or all of the water entitlements may be recouped if not used within a prescribed timeframe.
  - The department accounts for extenuating circumstances, including cases where a licence holder paid a premium for the water entitlements when purchasing a property in a fully allocated area.
  - A decision by the department to recoup unused entitlements is subject to appeal.

The Council considers that the above factors mitigate the extent to which the three provisions hinder water trade and conflict with CoAG obligations.

Apart from the three provisions, the statewide trading policy indicates that the Department of Environment can refuse trades to prevent monopolies in water. Western Australia advised that the inclusion of this provision was a result of the consultative process undertaken during the policy's development.

There is, however, no statutory power for the department to refuse a trading application for this reason. As a result, Western Australia intends to amend the policy to remove the provision by December 2004.

Western Australia's subregional and local area water management plans may contain trading rules. The plans are required to be compatible with the statewide trading policy, or address potential conflicts or limitations, so the completed plans reflect the above inconsistencies with CoAG obligations. The groundwater management strategy for the Carnarvon region, for example, includes the statewide restrictions on who may hold a licence, trading in unused entitlements, and trade that may lead to monopolies in water. The local trading rules in the Carnarvon groundwater strategy, however, are aimed at avoiding adverse impacts on the environment, water quality and other water users, so are consistent with CoAG obligations. Western Australia will need to ensure the local trading rules in future water management plans are also consistent with CoAG obligations.

While elements of Western Australia's water trading arrangements are not consistent with 1994 CoAG obligations, given the low demand for trading in most areas of the state, the Council accepts that these elements currently do not constrain trade to a significant extent. The Council considers, therefore, that Western Australia has made sufficient progress against its CoAG obligations on water trading for the 2004 NCP assessment.

The required 2005 review of the relevant part of the Rights in Water and Irrigation Act and the proposed review of the effectiveness of the statewide trading policy provide Western Australia with an opportunity to reform its arrangements so water can be used to maximise its contribution to national income and welfare, subject to the ecological and physical constraints of catchments. For the state's trading arrangements to comply with 1994 CoAG obligations as the demand for water trading increases, the Council considers that Western Australia would need to amend its legislation and related arrangements to:

- remove the provision for making local by-laws to prohibit trades, or clarify that such by-laws would be used only in response to the environmental or physical constraints of the water source

- remove the restriction on who can hold a water licence, so there is no longer any link to land or the capacity to use the water

- remove the power of the Department of Environment to reclaim unused water entitlements in areas where entitlement and trading arrangements have been fully established.

5.5 Other matters from the 2003 National Competition Policy assessment

National Water Quality Management Strategy

The National Water Quality Management Strategy (NWQMS) comprises 21 guidelines promoting the sustainable use of water resources. The strategy incorporates a mix of regulatory and market based approaches, education and guidance. It is based on principles of ecologically sustainable development, an integrated approach to water quality management and community involvement in setting water quality objectives.[10] The guidelines allow governments to respond to circumstances at regional and local levels.

The Australian Government, after consulting with the states and territories, proposed a two-yearly review to assess the implementation of the NWQMS. Because the two-year timeframe expired in 2003, the Council expected state and territory governments to have largely implemented the NWQMS by the time of the 2003 NCP assessment. Although most governments had some elements remaining in 2003, the Council considered that all except Western Australia were progressing satisfactorily.

At the time of the 2003 NCP assessment, Western Australia had just released the state Water Quality Management Strategy implementation plan. The Council noted this to be a significant step, but considered that Western Australia's overall implementation of NWQMS arrangements was slow. The government appeared to be still developing its institutional framework, and advised that it was still to achieve consistency in the approaches of the Environmental Protection Authority and the Natural Resource Management Council. The Council undertook to assess Western Australia's progress again in 2004, particularly in the areas that the government had undertaken to address in 2003-04. The key outstanding areas included the implementation of guidelines for fresh and marine water quality and guidelines for water quality monitoring and reporting (NWQMS papers 4 and 7).

Since the 2003 NCP assessment, Western Australia has released State Water Quality series document 6 (SWQ6). The guideline encompasses Western Australia's implementation of NWQMS papers 4 and 7. The government developed the framework in co-operation with the Environmental Protection Authority, and followed consultation with natural resource management

[10] The process for water quality management is described in the NWQMS Implementation Guidelines (ARMCANZ and ANZECC 1998), the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000a) and the Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC 2000b).

agencies, industry, peak bodies, the Conservation Council and the broader community. Western Australia considered that the framework addresses all issues raised by stakeholders.

SWQ6 requires that environmental values for water quality be developed through community consultation. An environmental value is a statement of visionary purpose for the use of a water resource. It may be related to ecosystem or community benefits. A set of environmental quality objectives is then developed for each value, which reflects the desired state of water quality.[11] In turn, two-tiered environmental quality criteria (or benchmarks) are set for each objective. The lower bound (the 'environmental quality guideline') sets a trigger level that should, if breached, initiate an investigation. The upper bound (the 'environmental quality standard') sets a trigger that should, if breached, initiate a response to fix the problem. Typically, the resource management agency with day-to-day responsibility for the resource (for example, a natural resource management group) would rectify problems.

While SWQ6 does not have legal or coercive powers, Western Australia intends it to assist the Environmental Protection Authority in developing policy under the *Environmental Protection Act 1986*, and in setting Ministerial and licensing conditions for activities subject to the Act. The authority can use the environmental quality criteria in SWQ6 to guide the setting of discharge limits in discharge licences, for example, and can take enforcement action under the Act for breaches of those licences. The authority must also:

- give final approval to the environmental values, environmental quality objectives and environmental quality criteria determined for each water resource

- conduct periodic reviews of the effectiveness of management agencies in achieving environmental quality objectives, and report publicly on these matters to the government.

SWQ6 incorporates a number of variations from the NWQMS guidelines.[12] Western Australia considers this variation to be consistent with the NWQMS

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11 SWQ6 provides that the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (NWQMS paper 4) and the Australian Guidelines for Water Quality Monitoring and Reporting (NWQMS paper 7) be used as default environmental quality objectives unless more appropriate information for local water resources is available.

12 The two-tiered benchmarking parameters, ('environmental quality guideline and 'environmental quality standard'), for example, do not correspond directly with the NWQMS framework. In addition, Western Australia adopts different approaches for ambient waters of good quality and those that are degraded. For good quality water sources, SWQ6 adopts the trigger guidelines from NWQMS paper 4 as default environmental quality guidelines; for degraded waters, SWQ6 uses aspirational targets as the basis for remediation. However, the guideline values are used in all cases as the benchmark for assessing waste discharges.

framework, which allows for flexibility and adaptation to local situations. Western Australia has explained that the variations give resource managers flexibility to address the state-specific issues. In particular, it is concerned that NWQMS papers 4 and 7 offer only limited guidance on several water quality issues affecting the state, including salinity, euthrophication and sedimentation.

Western Australia has advised that it will conduct workshops on SWQ6 within the Department of Environment and with consultants and industry during 2004. It envisages that these workshops will flow on to the setting of environmental values, environmental quality objectives and environmental quality criteria for significant water bodies on a priority basis. Western Australia noted that successful implementation will require an initiative from a lead agency such as the Department of Environment to apply the framework to a few demonstration areas (such as the Swan–Canning and Collie catchments). It has also noted that the state's natural resource management groups are identifying environmental values, environmental quality objectives and environmental quality criteria for their respective areas.

While the focus of SWQ6 is on matters related to NWQMS paper 4 (water quality guidelines), it also addresses water quality monitoring issues (NWQMS paper 7). SWQ6 recognises that water quality monitoring is critical to effective achievement of water quality objectives and provides general guidance on monitoring techniques. It also calls on NWQMS paper 7 as a 'useful set of standards to assist stakeholders to design consistent programs and collect comparable data that can be integrated across broad regions' (Government of Western Australia 2004, p. 25). SWQ6 provides that government agencies — in conjunction with natural resource management groups, parties that use the water source (for waste discharge, for example) and other stakeholders — have prime responsibility for water quality monitoring.

Western Australia has also made some progress in implementing other NWQMS guidelines since the 2003 NCP assessment. In relation to the 1996 Australian Drinking Water Guidelines (NWQMS paper 6), the Advisory Committee for the Purity of Water commissioned an assessment of the state's drinking water management and protection practices against the national guidelines. The Department of Environment is also preparing a policy document describing the custom and practice of protecting public drinking water sources.

Western Australia advised that it is considering how best to incorporate the next (2002) iteration of the Australian Drinking Water Guidelines once those guidelines are formally approved. The Department of Environment is developing a policy document for public comment as part of this work. The government reported that work is also under way to implement NWQMS papers 8 (groundwater protection), 10 (urban stormwater), 11 (effluent management), 14 (reclaimed water), and 16 (dairy sheds and processing plant effluent).

Discussion and assessment

With the release of SWQ6, Western Australia has satisfactorily implemented the undertakings regarding the NWQMS that it made at the time of the 2003 NCP assessment. While considerable work is required to develop environmental values, objectives and criteria, and to implement appropriate monitoring systems, SWQ6 provides a foundation for these steps to occur. The Council thus considers that Western Australia has satisfactorily addressed its CoAG obligations for the 2004 NCP assessment.

Notwithstanding this recent progress, Western Australia's implementation of the NWQMS remains incomplete in several other areas. For 2004-05, Western Australia has prioritised implementation of the guidelines for drinking water (NWQMS paper 6), groundwater protection (paper 8), urban stormwater (paper 10), effluent management (paper 11), reclaimed water (paper 14) and dairy sheds and processing plant effluent (papers 16a and 16b). The Council would expect Western Australia to have completed these elements of the NWQMS by the 2005 NCP assessment.

Water legislation review and reform

Governments agreed to review and, where appropriate, reform by 30 June 2002 all existing legislation that restricts competition. Reform is appropriate where competition restrictions do not provide a net benefit to the whole community and are not necessary to achieve the objective of the legislation. Any new legislation that restricts competition must also meet these tests.

The Western Australian Government reviewed 32 pieces of water industry legislation, endorsing the findings of those reviews, mostly in 1999 or 2000. It is reviewing the Health (Treatment of Sewerage and Disposal of Effluent and Liquid Waste) Regulations 1993 as part of a wider review of health industry legislation and subsidiary legislation. At the time of the 2003 NCP assessment, Western Australia was still to implement the recommended reforms to 19 water industry regulatory instruments.

In 2004, Western Australia has again reported that it has completed none of the 19 reforms. The government had proposed to reform seven of the 19 instruments via the Acts Amendment and Repeal (Competition Policy) Bill in 2002, later delayed to 2003. Parliamentary Counsel then decided that the scope of the water amendments required an industry-specific Bill. Accordingly, Cabinet approved the redrafting of the amendments as the Water Industry Legislation Amendment Bill in February 2004. Western Australia proposed to introduce the Bill in the autumn sitting of Parliament in 2004, but did not meet this timeframe. It has stated that the amendments were delayed by a range of factors, including the priority listing for drafting and the restructure of the Office of Water Regulation. In July 2004, Western Australia provided the Council with a draft explanatory memorandum and

summary of the Bill, which it expected to introduce to Parliament in late 2004.

Discussion and assessment

Western Australia substantially completed its review of water industry legislation and regulation several years ago. Its review of the Health (Treatment of Sewerage and Disposal of Effluent and Liquid Waste) Regulations 1993 is being undertaken as part of a wider review of health industry legislation.

Western Australia has made little progress since the 2003 NCP assessment in implementing the recommended reforms. The reform of seven regulatory instruments via the Water Industry Legislation Amendment Bill remains incomplete, five years after the reviews were completed. Further, the Office of Water Policy has not completed regulatory amendments to the remaining 12 regulations and by-laws. The Competition Principles Agreement requires governments to have completed, by 2002, the review and appropriate reform of legislation that restricts competition, so the Council finds that Western Australia has not met its NCP review and reform obligations relating to water industry legislation.

Institutional reform

At the time of the 2003 NCP assessment, Western Australia was still to complete CoAG water reform agreement institutional reforms to:

- separate the roles of water standards setting and regulation from service delivery (see section 5.1)
- devolve a greater degree of responsibility for irrigation scheme management to local bodies
- implement integrated catchment management.

Devolution of greater responsibility for irrigation scheme management

The CoAG water reform agreement requires that governments devolve a greater degree of responsibility for the management of irrigation schemes to local bodies. Devolution can take different forms, ranging from the scheme manager's consultation with local constituents on management issues to full devolution of operational responsibility to the local level. Any devolution of operational responsibility should occur within a regulatory framework that ensures all of CoAG's water reform objectives can be met.

At the time of the 2003 NCP assessment, Western Australia had implemented measures to devolve the management of three of its four irrigation systems: the South West Irrigation Management Cooperative, the Gascoyne Water Cooperative and the Preston Valley Irrigation Cooperative. Progress was under way to devolve the management of the fourth system — the Ord Irrigation Scheme. The Council undertook to consider in the 2004 NCP assessment the state's progress with devolution for the Ord scheme.

The management of the Ord scheme was transferred from the Water Corporation to the Ord Irrigation Cooperative in 2002. Western Australia reported in 2003 that a transfer of the scheme's assets would follow in December 2003. Once the proposed transfer is complete, the cooperative will own and operate the scheme's distribution system and retail the delivery of water services to growers. The Water Corporation will continue to own, operate and maintain the main irrigation channel and hillside levies. Western Australia has reported in 2004 that the transfer of scheme assets has been delayed. It had expected the transfer to take place by mid-2004.

Discussion and assessment

The transfer of management of the Ord scheme to a local cooperative was a significant step in Western Australia's devolution process. While the state has delayed the transfer of scheme assets to the cooperative, the Council accepts that Western Australia has demonstrated a commitment to this final stage of reform. The Council expects Western Australia to have completed the devolution process by the time of the 2005 NCP assessment.

Integrated catchment management

The CoAG water reform agreement requires that governments establish institutional arrangements for an integrated approach to the management of water and land resources, including management at the catchment level. Catchment management should address issues such as salinity, river degradation and pollution, biodiversity loss and soil degradation. It should be implemented via partnerships among the different levels of government and nongovernment organisations. Approaches include the regional strategies being developed under bilateral agreements by the Australian, state and territory governments under the National Action Plan for Salinity and Water Quality.

Regional strategies

The Council raised concerns in the 2003 NCP assessment about the pace at which Western Australia was addressing integrated catchment management issues. Western Australia proposed to implement reform via natural resource management strategies developed by community based groups. The six

regional groups had developed their strategies by 2001, but the government had not endorsed any strategies under state processes by the time of the 2003 NCP assessment. Western Australia reported in 2003 that the strategies required further work to meet accreditation criteria under the national action plan, and that progress was slow due to the state not having reached a bilateral agreement on the plan with the Australian Government. It also attributed the lack of reform activity to delays in funding from the Natural Heritage Trust extension. This funding was provided in June 2003.

Western Australia reached a bilateral agreement on the national action plan with the Australian Government in October 2003. The six regional groups were then able to refine their strategies through state and national processes in preparation for public consultation. Western Australia had expected most strategies to be ready for consultation by April 2004, with possible accreditation to follow in August–December 2004. The state has been working with the regional groups to try to meet these milestones. It is providing technical advice and helping to identify priorities, targets and management actions as required under the national action plan.

Western Australia advised in July 2004 that consultation on two strategies had commenced in April, but that consultation on another two was delayed to mid-year (table 5.2). The Joint State Commonwealth Steering Committee has completed its preliminary reviews of the four strategies.

Table 5.2: Progress with natural resource management strategies

Regional group	*Progress*
Avon Catchment Council	Public consultation commenced in April 2004.
Swan Catchment Council	Public consultation commenced in April 2004.
South West Catchments Council	Release for public consultation delayed from April to June 2004.
South Coast Regional Initiative Planning Team	Release for public consultation delayed from April to June or July 2004.
Northern Agricultural Catchment Council	Public consultation scheduled for July 2004.
Rangelands Coordinating Group	Public consultation scheduled for June 2005.[a]

[a] The Rangelands group commenced only in December 2002. In contrast, other regions have had several years experience and earlier work on which to draw. The Rangelands group also covers 90 per cent of the state, in contrast to other groups that are smaller in area and have more concentrated support bases. The agreement between Western Australia and the Australian Government to implement the Natural Heritage Trust extension recognises these differences.

Source: Government of Western Australia 2004

Waterways Western Australia

In 2000 the former Water and Rivers Commission published a draft management framework (Waterways WA) to facilitate and support land care practices to protect rivers with high environmental values. Western Australia reported in 2003 that the framework would be in place by the end of that year. The Council undertook to monitor implementation.

Western Australia reported in 2004 that the draft strategy is being implemented via the integration of its directions into the regional strategies (see above). This approach reflects the government's objective to coordinate the management of waterways within an integrated catchment management framework.

Discussion and assessment

Western Australia's implementation of integrated catchment reforms has quickened considerably since the government agreed with the Australian Government on implementing the Natural Heritage Trust extension (in December 2002) and the National Action Plan for Salinity and Water Quality (in October 2003). The agreements provide funding to refine the six regional strategies for community consultation and eventual accreditation under the national processes. Western Australia released its most advanced strategies for consultation in April 2004, in accord with its published milestones. While there was a further delay with two strategies, Western Australia now appears to be addressing these matters satisfactorily. For the 2005 NCP assessment, the Council expects the state will have developed all but the Rangelands strategy to an accreditable stage under the national action plan.