

7 Tasmania

7.1 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) 1994 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 and consumption based pricing by rural water service providers

Assessment issues: Tasmania is to demonstrate that government-owned irrigation schemes and local governments that supply bulk water to rural users 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 2003 National Competition Policy (NCP) assessment, the National Competition Council found that some government-owned irrigation schemes were not achieving lower bound cost recovery and were receiving government subsidies. The Council previously found that Tasmania imposes charges for rural water services that are set on a consumption basis. For the 2004 NCP assessment, the Council has looked for Tasmania to show that its schemes are setting prices that achieve lower bound cost recovery and continuing to move to upper bound pricing where practicable. The government also needs to ensure subsidies are transparently reported and, where practicable, consider alternative management arrangements that remove the need for ongoing subsidisation.

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. (Tasmania has not signed the Intergovernmental Agreement on a National Water Initiative.)

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

Irrigators source most of their water from unregulated streams and farm storages using privately funded infrastructure. About 10 per cent of all water used is provided by the three government-owned irrigation schemes: Cressy–Longford, South East and Winnaleah. In previous NCP assessments, the Council established that Cressy–Longford and Winnaleah price the water they supply at the lower bound of cost recovery, and transparently account for transitional subsidies from the government that cover the finance costs (interest and repayment of the loan) of establishing the schemes. The government considers the subsidies are warranted to provide economic development within remote/rural areas.

South East is on a price path aimed at achieving lower bound cost recovery by 2010-11. It transparently accounts for transitional subsidies from the government that cover the finance costs of establishing the scheme. Tasmania indicated a possibility that the scheme may achieve lower bound cost recovery earlier than 2010-11. It expects the cost of operating the scheme will fall significantly over the next 10 years and the scheme will raise more revenue via the sale of additional entitlements.

Two-part tariff arrangements apply in the Cressy–Longford and the Winnaleah irrigation schemes. In each case, the two-part tariff comprises a fixed charge per megalitre of irrigation entitlement and a volumetric charge per megalitre of water used (to cover variable costs). In Winnaleah, the volumetric charge varies over the irrigation season. Water charges in the South East Irrigation Scheme are based solely on the volume of entitlements held by the user, not on the volume of water used. Tasmania explained that

the proportion of fixed to variable costs in this scheme is very high and, therefore, that the price structure is an appropriate reflection of costs.

Submission

WWF Australia raised a water pricing matter — in relation to the appraisal of the economic viability of the proposed Meander Dam — that it considered to be relevant to assessing Tasmania's compliance with the CoAG obligations for appraising new water infrastructure. It asked the Council to consider whether the Meander Dam (and similar projects) will achieve full cost recovery and whether community service obligations will be made transparent.

Discussion and assessment

Cost recovery and transparent reporting of subsidies

The Cressy–Longford and Winnaleah irrigation schemes continue to price at the lower bound of cost recovery and to account for transitional CSOs for debt repayment in accord with the minimum requirements of the CoAG pricing guidelines. Although the South East Irrigation Scheme is not expected to reach the lower bound of cost recovery until 2010-11, subsidies are transparent and falling. This arrangement is sufficient to meet the minimum requirements of the CoAG pricing guidelines.

The 1994 CoAG water reform agreement obliges governments, before investing in new rural schemes or extensions to existing schemes, to demonstrate that the scheme is economically viable and ecologically sustainable. The economic viability test involves a consideration of whether an infrastructure project will deliver an overall public benefit to Australia — that is, to be economically viable, a scheme must deliver a net benefit, taking into account the private (scheme related) and social (broader than the scheme) benefits and costs. While a project's commercial viability is an important element of the economic viability test, a project that is not commercially viable may still satisfy the economic viability test if there is robust evidence that the project would deliver a net social benefit that outweighs the costs that arise because it is not commercially viable. To demonstrate economic viability, the Council looks for governments to have analysed all relevant economic and social costs and benefits, including any costs of mitigating adverse environmental effects resulting from the scheme. For large developments, a robust cost–benefit analysis is an effective way of meeting the CoAG obligation. Appraisals should be based on the best information available, with any assumptions and limitations clearly stated.

Consumption based pricing

In previous NCP assessments, the Council found that Tasmania's irrigation services meet the CoAG obligation to price on a volumetric basis. The Council noted in particular the Winnaleah scheme, which sets prices according to the season and the volume consumed. The Council commented, however, that it may not be appropriate for the volumetric component of the price to be zero in the off-peak season unless the marginal cost of water use is very low. In this 2004 NCP assessment, Tasmania responded to the Council's comment by noting that the Winnaleah scheme is now privately owned and that the government has no role in determining the scheme's prices.

Cost recovery in issuing licences for water extraction

Assessment issues: Tasmania 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 pricing structure for unregulated water extractions meets reform obligations. For the 2004 NCP assessment, the Council has looked for Tasmania to demonstrate that licence fees for unregulated and groundwater users appropriately reflect the cost of resource management and licensing.

Future reform: Signatories to the National Water Initiative are to bring into effect consistent approaches to pricing and attributing the costs of water planning and management by 2006. This should involve identifying all costs associated with water planning and management, including 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. Tasmania 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 Resources Management Council of Australia and New Zealand (ARMCANZ) paper; 1998 CoAG pricing guidelines; 1999 tripartite meeting; Intergovernmental Agreement on a National Water Initiative

Under the *Water Management Act 1999*, water users must hold a licence to take water except (in general) for taking water for stock and domestic purposes or for taking groundwater or dispersed surface water. The licence fee comprises a direct charge reflecting standard administrative costs and a variable management fee to cover, among other matters, compliance auditing and water quality monitoring. Licence fees may vary according to how and how much water is taken, its source, the purpose for which it is taken, and the security of supply.

The government reviewed licence fees during 2004. The review proposed a fee increase so licensing charges recoup around \$400 000, or 13 per cent of the annual cost of the Department of Primary Industries, Water and Environment's water management activities. The proposed increase would almost double licence fee revenue received in 2002-03. The review considered the proposed fee structure to closely reflect the private benefit to irrigators (DPIWE 2004).

Submission

The Tasmanian Conservation Trust submitted that licence fees involve a subsidy to water users by the Tasmanian Government. The trust considers that the subsidy arises because the cost of employing regional water management officers is not passed on to private users. The Tasmanian Conservation Trust questioned how this arrangement complies with NCP requirements.

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 progressively review charges so they comply with the principle of full cost recovery (including the recovery of natural resource management costs), making any remaining subsidies transparent. Work by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) in 1996 conducted under the auspices of CoAG, the National Water Initiative, and other jurisdictions' approaches to charging confirm this direction.

The 1996 ARMCANZ paper *Allocation and use of groundwater* (recommendation 9) states that the states and territories should identify the full cost of groundwater management. 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 is carried out to directly support management
- indirect management activities — policy, investigation, assessment, monitoring, the maintenance of technical databases and related activities.

The 1996 ARMCANZ paper states that governments should recover the cost of direct management activities from users and should consider (appropriate) apportionment of indirect costs. Any remaining subsidies should be transparent if full cost recovery cannot be achieved. Governments should also consider the consequences of differential pricing between surface water and groundwater. CoAG extended elements of the 1994 water reform agreement in line with the ARMCANZ work to apply to the pricing of groundwater (the 1996 water strategic reform framework) although it did not establish this as an obligation relevant to recommendations on competition payments.

Following the *Review of fees payable under the Water Management Act 1999* (DPIWE 2004), the Tasmanian Government has increased licence fees so they now recover about 13 per cent of water management costs. Taxpayers meet the remaining costs. According to the review, this level of cost recovery reflects the distribution of public and private benefits from the Department of

Primary Industries, Water and Environment's natural resource management function. The recommended fees also reflect increased costs of service.

The issue raised by the Tasmanian Conservation Trust — that the government's payment of the salaries of regional water management officers involved in considering applications for dam permits and water licences may not comply with NCP requirements — was also raised in its submission to Tasmania's *Review of fees payable under the Water Management Act 1999* (DPIWE 2004). In line with CoAG requirements, Tasmania has undertaken a rigorous and transparent review of licence fees, identified costs (including salary costs), apportioned these costs according to private/public beneficiaries, and transparently reported any remaining subsidies. The Council considers, therefore, that the matter raised by the Tasmanian Conservation Trust should have no implications for Tasmania's compliance with the CoAG water pricing obligations.

Cost recovery and consumption based pricing by urban water service providers

Assessment issue: Four submissions questioned whether Tasmania is meeting the cost recovery and consumption based pricing components of urban water reform.

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

Future reform: Metropolitan water businesses should continue to move towards 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. (Tasmania has not signed the Intergovernmental Agreement on a National Water Initiative.)

Four parties — the Tasmanian Conservation Trust, Mr Robert Rockefeller (Nekon Pty Ltd), Mr Anthony Hocking (Enterprise Marketing and Research Services Pty Ltd), and the Property Council of Australia — made submissions to the 2004 NCP assessment that cover issues relating to urban bulk and retail water supply and institutional reform. The Council considered matters relating to urban pricing (including the matters raised in the four submissions) in the 2001, 2002 and 2003 NCP assessments. In the 2003 NCP assessment, the Council found that Tasmania had complied, or was moving satisfactorily towards compliance, with its urban retail full cost recovery and institutional reform obligations (NCC 2003a). It considered, in the light of this progress, that further consideration of Tasmania's actions on retail pricing should be left until the 2005 NCP assessment.

For this reason, the Council has not considered the matters raised by the four submissions in this 2004 NCP assessment. The Council notes, however, Tasmania's advice that all urban water and wastewater services will achieve cost recovery by 2004-05, in accord with strategies agreed following the Government Prices Oversight Commission's 2002 audit of urban water and wastewater services.

The Council also notes the Government Prices Oversight Commission finding in its 2004 investigation into the bulk water authorities' pricing policies that:

progress to reform pricing policies has varied between the authorities and some aspects have fallen short of best practice in setting prices that convey the true cost of current and future supply. In consequence, true costs are being hidden through subsidies by owners of the authorities and by cross-subsidies between users. (GPOC 2004, Foreword)

The 2004 investigation recommended on maximum allowable revenues, pricing policies and demand management strategies. The Council considers that Tasmania's progress with reforming its bulk water pricing arrangements should be considered in the 2005 NCP assessment, when Tasmania's bulk water authorities should be expected to have implemented the Government Prices Oversight Commission's recommendations on best practice pricing.

7.2 Water access entitlements

Assessment issue: Tasmania 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 Tasmania's 1999 implementation program.

At the time of the 2003 NCP assessment, Tasmania had established a system of water access entitlements (termed 'allocations') separated from land title and specified in volumetric terms. Water licences are issued for 10 years, with a presumption of renewal. Within irrigation districts, only an owner or occupier of land in the district, or a person who may hold land in the district, could hold irrigation rights. A holder of an irrigation right who no longer owned or occupied land in the district was required to transfer the right within six months or forfeit it. Tasmania had a register of water entitlements, which records third party interests. It was in the process of converting existing water rights to the new system of licences and allocations.

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

- remove the restriction on who can hold irrigation rights, or demonstrate that it is in the public interest and consistent with 1994 CoAG water reform obligations
- progress the conversion to its new licence and allocations system, consistent with its 1994 water reform agreement obligation to substantially complete allocation and trading arrangements by 2005.

Tasmania has not signed the Intergovernmental Agreement on a National Water Initiative. As a result, the Council considers that Tasmania is not obliged to amend its 10-year licences to specify them as a perpetual share of the available water resource to comply with its CoAG obligations.

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

Under the Water Management Act, water entitlements (termed 'water allocations' in Tasmania) and licences are legally separate from land titles and transferable. Licences are specified in volumetric terms and also indicate the reliability of the water allocations. To obtain a water allocation, a person

must hold a water licence.¹ Licences are issued for 10 years, with a presumption of renewal, and are subject to a review of conditions after five years.² In the transition from the previous system, the Minister for Primary Industries and Water may vary licence conditions, reduce the water allocations on a licence, or impose restrictions on the taking of water, to meet environmental requirements. Tasmania identified 16 water sources for which it intends to develop water management plans to address the competing demands of consumptive users and the environment (see section 7.3).

Within irrigation districts, the *Irrigation Clauses Act 1973* (as amended in 1997 and 2001) establishes a system of irrigation rights. The rights are separate from land titles and transferable within the district. At the time of the 2003 NCP assessment, however, only an owner or occupier of land in the district, or a person who may hold land in the district, could hold irrigation rights. A holder of an irrigation right who no longer owned or occupied land in the district was required to transfer the right within six months or forfeit it. The Minister could give a single extension of six months.

Under the Water Management Act, a water licence holder is entitled to compensation when it is necessary to reduce water allocations because total allocations exceed the quantity of water available or because they are inconsistent with the objectives of the Act. No compensation is payable, however, if the reduction in allocations is required to meet an environmental water provision in an approved water management plan.

The Water Management Act provides for a register of licences, which includes provision for registering financial interests. The Department of Primary Industries, Water and Environment maintains the register, which is known as the Water Information Management System.

Reform progress

Tasmania has completed the process of converting to its new system of licences and allocations, with the following exceptions:

¹ Riparian and casual land users may take water without a licence for stock and domestic purposes. Occupiers of land may take surface water (not flowing in a watercourse) and groundwater (subject to the recent changes reported in the reform progress section) for any purpose. These entitlements are subject to the water extraction not leading to environmental harm and not being contrary to a water management plan. Water may not be taken in excess of reasonable requirements. Maximum takes may be set by Regulation (and are in place for riparian rights under the Water Management Regulations 1999).

² Special 99-year licences are issued to corporate bodies using water to generate at least 400 gigawatt hours of electricity annually or to other bodies approved by an advisory committee comprised of relevant Ministers. Special licences have been issued for Hydro Tasmania and the Wesley Vale pulp and paper mill.

- For two bulk water authorities (Hobart Water and Cradle Coast Water) the conversion process is complicated by the quantity and priority of their historical water entitlements being unclear.
 - For Hobart Water, Tasmania reported that it had had to correct a legislative error before it could progress the conversion.³ The correction was included in Water Management Act amendments that took effect in June 2004. Tasmania anticipates that the conversion process will be completed in the first quarter of 2005, following negotiations with Hobart Water on the licence conditions.
 - For Cradle Coast Water, Tasmania expects the conversion process to be completed by December 2004.
- For one town supply (Burnie Council), the conversion process is more complicated than for other local governments. Tasmania expects the new licences to be in place by December 2004.
- For a small number of conversions of previous prescriptive rights to licences and allocations under the Act, the registered owner of the right cannot be located.

Under the amendments to the Water Management Act in June 2004, Tasmania established a process for proclaiming ‘groundwater areas’. Previously, landholders could take groundwater without a licence, provided it was not in excess of reasonable requirements, would not lead to environmental harm and was not contrary to a water management plan. This arrangement will continue to apply to the majority of the state where groundwater use is within sustainable limits. If groundwater use is not sustainable, the government decided, given the lengthy and complex process required to establish water management plans, to adopt a simpler and more expedient process for establishing groundwater rules. In proclaimed groundwater areas, the taking of groundwater may require a licence. The Department of Primary Industries, Water and Environment will work with stakeholders to implement management rules to ensure the equitable and sustainable use of groundwater in proclaimed areas. The government considers that these changes will enable management rules to be applied on an as-needed basis, accounting for each area’s circumstances.

Under concurrent amendments to the Irrigation Clauses Act, Tasmania removed the restrictions on who may hold irrigation rights. It is no longer necessary for holders of irrigation rights to be an owner or occupier of land, or

³ Tasmania advised that a similar, but unrelated, error had prevented the conversion of the water entitlements of the Rivers and Water Supply Commission. The error meant that the commission’s water entitlements were not preserved when the Water Management Act and the *Rivers and Water Supply Commission Act 1999* commenced in January 2000. As an interim measure, the Minister exempted the commission from the need to hold water licences for its water supply schemes. The exemption included conditions that the licences would otherwise have included. The error was also corrected in the amendments to the Water Management Act in June 2004.

a person who may hold land, in the irrigation district. The government also removed the requirement for the holder of an irrigation right who no longer owns or occupies land in the district to transfer the right within six months or forfeit it.

Submissions

The Tasmanian Conservation Trust expressed concern that the Tasmanian Government does not intend to separate land and water rights. It was also concerned that the government would not consult interested parties in preparing a public benefit study on this issue.

Discussion and assessment

In previous NCP assessments, the Council found that Tasmania's Water Management Act and Irrigation Clauses Act establish a comprehensive system of water entitlements separated from land title and specified in volumetric terms, consistent with the obligation in the 1994 CoAG water reform agreement. Under the legislation, Tasmania maintains a register of water licences, which includes provision for registering financial interests. The recent legislative amendments extend Tasmania's water licensing arrangements to areas in which groundwater use is not sustainable, without the need to first complete a water management plan.

Tasmania has almost completed the process of converting water allocated under its previous system to licences and allocations under the new system. Given that it expects to complete the remaining conversions by the first quarter of 2005, Tasmania is on track to meet its CoAG obligation for substantial completion by 2005.

In response to the submission from the Tasmanian Conservation Trust, the Tasmanian Government reiterated that land and water rights have been separated in Tasmania since the commencement of the Water Management Act in January 2000. The Council notes that the recent amendment to the Irrigation Clauses Act removes the final link between land and irrigation rights (see section 7.4).

The Council considers that Tasmania has made satisfactory progress against its 1994 CoAG obligations relating to water entitlements for the 2004 NCP assessment.

7.3 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). Tasmania 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, Tasmania was close to completing its first water management plan, for the Great Forester River. Following completion of this plan, Tasmania proposed to develop generic principles to guide the preparation of future water management plans, with the aim of accelerating the process. Tasmania released draft guidelines for assessing applications for new water allocations from watercourses (including for proposed dams) and commenced a project on the conservation of freshwater ecosystem values. For the 2004 NCP assessment the Council has looked for Tasmania to have progressed its water management arrangements, including the provision of appropriate allocations to the environment, consistent with its 1994 water reform obligation to complete allocation and trading arrangements by 2005.

References: 1994 CoAG water reform agreement, clauses 4(b)–(f); 1999 tripartite meeting

Under the Water Management Act, the Department of Primary Industries, Water and Environment has responsibility for determining environmental water requirements — that is, the water regime that sustains the values of an ecosystem at a low level of risk. Tasmania listed 45 of its 96 major rivers and streams on its 1999 implementation program (appendix A). The work is undertaken on a priority basis.

- For more developed water sources, the department prepares a water management plan that incorporates an environmental water provision to preserve water for the environment. The provision is determined by community agreement, taking account of environmental, economic and social considerations. It represents that part of the environmental water requirement that the community agrees should be met. Overland flows can be included in a water management plan and regulated under the Act. Tasmania's 1999 implementation program includes 16 river systems to be managed via water management plans.

- For other lower priority water sources, the department uses a rapid (desktop) assessment method to determine environmental water requirements and the total available yield of the water source. Typically, Tasmania uses a benchmarking approach to extrapolate environmental water requirements. The total available yield is determined as the water remaining at 80 per cent reliability after taking account of the environmental water requirement. It provides a benchmark against which decisions about the need to develop a water management plan can be made. In the absence of a water management plan for these systems, Tasmania approves additional licensed water allocations that exceed the total available yield only if it can be demonstrated (using a rigorous environmental flow assessment) that it will not cause harm to river health.

Despite having an abundance of water relative to other parts of Australia the timing and distributional pattern of rainfall in Tasmania means that demand for surface water can exceed natural stream flow during the summer irrigation period. Since 1995 therefore Tasmania has protected summer low flows through a moratorium on new water licences and by setting thresholds for imposing restrictions on water use during summer. Tasmania advised that it determined the trigger points for imposing water restrictions to reflect key river health parameters. It has not updated the trigger points to reflect the scientifically derived environmental water requirements. The effectiveness of the current system is, however, monitored through the river health assessment program.

More recently, Tasmania adopted *Guidelines to assess applications for new water allocations from watercourses during winter* (Water Resources Policy Number 2003/1) for determining environmental water requirements for the rest of the year. The guidelines also cover water allocations for dams and transfers of water allocations within a catchment. Where a catchment is covered by a water management plan the specific provisions of the plan replace the general summer and winter environmental flow protection measures.

The Water Management Act requires anyone wishing to construct a new dam to obtain a permit. A statutory committee, the Assessment Committee for Dam Construction, assesses the permit applications, including against environmental objectives.

Reform progress

Tasmania has determined environmental water requirements for 43 of its 45 listed rivers. Of the two outstanding, Tasmania has advised that the assessment for Montagu River is close to completion and the assessment for the Forth River is scheduled to be finalised in June 2006 (see table A.13). In addition Tasmania has completed environmental flow assessments for Brumbies Creek and Dee, King, and Blackman rivers (these waterways are not covered by Tasmania's 1999 implementation program).

Despite having expected to have completed eight of its 16 water management plans by this time, Tasmania has completed only the Great Forester Catchment Water Management Plan 2003 (table 7.1). This plan came into effect on 13 August 2003. Tasmania noted that the 1999 criteria it used for nominating priority catchments did not include an assessment of the environmental condition of the rivers. Its more recent data indicates that all 16 rivers are in good condition and that current water use does not have an adverse impact on river health in these catchments.⁴

Tasmania has, however, identified five other catchments — Brid River, Clayton's Rivulet, Inglis and Flowerdale rivers, Mountain River and Rubicon River — that are at risk of overuse because water users have historically extracted greater volumes of water than strictly permitted by their licences. Tasmania initiated a new process — water use sustainability projects — to provide greater certainty for water dependent businesses while reducing the risk of moving to a situation of unsustainable water use. Under the projects, Tasmania determined each irrigator's water extraction during the 2002-03 irrigation season. It uses these figures to cap summer water use in the identified catchments until water management plans are developed. In the future, water extraction in these catchments will be metered to ensure compliance with the cap.

Table 7.1 outlines Tasmania's progress in preparing water management plans for the systems covered by its 1999 implementation program and the additional rivers for which is preparing water use sustainability projects.

Table 7.1: Timetable for water management plans in Tasmania, as at August 2004

<i>Water management plan</i>	<i>Completion timeline</i>	<i>Current status</i>
Brid River ^a	na	Water use sustainability project under way. It is scheduled to be completed in January 2005.
Clayton's Rivulet ^a	na	Water use sustainability project under way. It is scheduled to be completed in June 2005.
Clyde River	April 2005	Draft plan prepared for statutory approval.
Coal River	December 2005	Environmental flows study complete.
Derwent River ^b	Low priority (after 2006)	Hydro Tasmania has commenced a water management review. Consultation is in progress. Data collection is progressing.
Elizabeth River ^c	November 2005	Environmental flows study complete and water use sustainability project in progress.
Great Forester River	Completed	Plan adopted in August 2003. River managed according to plan.

(continued)

⁴ Tasmania has assessed the health of the 16 catchments at 213 sites (749 samples were collected) using the nationally recognised AUSRIVAS method. The data show that the rivers are in good condition (mean AUSRIVAS score 0.90 (n=213)).

Table 7.1 continued

<i>Water management plan</i>	<i>Completion timeline</i>	<i>Current status</i>
Inglis and Flowerdale rivers ^a	nd	Water use sustainability project under way. It is scheduled to be completed in November 2004.
Lake River and Macquarie River below Lake River ^c	November 2005	Environmental flows study complete and water use sustainability project in progress.
Lakes Crescent and Sorell	April 2005	Draft plan prepared for statutory approval.
Liffey River	December 2005	Environmental flows study complete. Water management plan to be completed as part of the Meander River catchment.
Little Swanport River	December 2004	Draft plan released for public consultation.
Macquarie River downstream of Ross ^c	November 2005	Environmental flows study complete and water use sustainability project in progress.
Meander River	December 2005	Process to recommence after the Meander Dam issue is resolved. The completion date for the Meander River plan may be effected this matter
Mountain River ^a	nd	Water use sustainability project under way. It is scheduled to be completed in January 2005.
North Esk River ^d	Low priority	Environmental flows study complete.
Rubicon River ^a	nd	Water use sustainability project under way. It is scheduled to be completed in November 2004.
South Esk River (upstream of Macquarie including St Pauls and Nile rivers)	August 2005	Environmental flows study complete. Hydrological modelling and water use sustainability project in progress.
St Patricks River ^d	Low priority	Environmental flows study complete.
Tooms River ^c	November 2005	Environmental flows study complete.
Upper and lower Mersey River	December 2004	Draft plan released for public consultation.
Upper and lower Ringarooma River including the Ledgerwood River	April 2005	Environmental flows study complete. Hydrological modelling and water use sustainability project in progress.

^a Catchments added to Tasmania's implementation program since 1999 because they are at risk of over use or because increased water extraction could have adverse impacts on industries in the area.

^b The Derwent River was not included on the 1999 implementation program for priority development of a water management plan. Hydro Tasmania's review of the Derwent River Basin contains many elements of a water management plan. ^c A single water management plans will be developed to cover the rivers in the Macquarie Basin. ^d Water allocation issues have been resolved through provision of water licences for use of the Launceston urban supply. **nd** Not determined.

Source: Government of Tasmania 2004

Tasmania is implementing measures to accelerate water management planning. The Department of Primary Industries, Water and Environment has reviewed the planning process in light of its experience with the Great Forester plan. As an outcome of the review, it is developing, in consultation with key stakeholders (including the Tasmanian Conservation Trust and the Tasmanian Farmers and Graziers Association), generic principles to guide the

preparation of future plans. The government intends that the principles cover, among other things, the following issues:

- All irrigation extractions should be metered. Tasmania is progressively installing meters in priority catchments. The catchments targeted in 2003-04 were Mountain, Flowerdale, Inglis, Rubicon, Brid, Legerwood, upper and lower Mersey and Buttons.
- Where appropriate, historical use (outside of the licensing system) should be formally recognised as a low surety water allocation capped at 2002-03 season use.
- Priorities should be determined for the protection of freshwater ecosystem values. In 2002 Tasmania commenced the Conservation of Freshwater Ecosystem Values Project to identify natural ecosystem conservation values and priorities at the state, bio-region, catchment and subcatchment levels. It expects to complete the project report in 2004. Outputs from the project will be incorporated into future water management plans.
- Comprehensive water resource information is required to develop a plan. The Department of Primary Industries, Water and Environment has commenced a project, due for completion in December 2004, to develop a holistic method for determining environmental flows.
- There should be a requirement for ongoing monitoring.

On 26 June 2004 the government implemented amendments to the Water Management Act to align it with other similar resource planning processes. In the future, water management plans will need to specify the environmental and socioeconomic objectives for the relevant water source. The government has also introduced a requirement for the Resource Planning and Development Commission to independently review the Department of Primary Industries, Water and Environment's responses to representations on draft water management plans, and to recommend to the Minister on the adequacy of these responses. In accord with the *Resource Planning and Development Commission Act 1997*, the commission may conduct hearings to assist it with its review. Other amendments to the Act remove the requirement for the Minister to advertise rights of appeal following the adoption of a plan, and remove the requirement for a plan to be reviewed at least once every five years. Instead, any review requirements will be specified in individual plans or undertaken at the direction of the Minister.

Key amendments to the Water Management Act also create a single system for access to both surface water and groundwater. The amendments provide for the proclamation of 'groundwater areas'. Within these areas, the department must work in partnership with stakeholders to implement management rules to ensure the fair, equitable and sustainable use of groundwater. In addition, groundwater drillers will need to be accredited and will be subject to a code of practice. The government has advised that these changes recognise the increasing demand for groundwater, and that some

parts of the state 'are already experiencing demonstrable impacts of overuse of groundwater:

[T]his includes the impact of new groundwater bores on water availability for existing groundwater users and the reduction in the contribution of ground water to surface water systems. Overextraction is also causing ground subsidence in some areas. The high-intensity groundwater use areas where some of these impacts are evident include Mella, Broadmarsh, Togari and Forest in the north west; Wesley Vale, Moriarty, Sassafras, Sheffield, Spreyton and Longford in the north; and Sorell in the south. (Aird 2004, pp. 46)

With the amendments to the Water Management Act having been implemented and development of generic principles for water planning well advanced, Tasmania has advised that it expects to have developed water management plans for all 15 remaining catchments by the end of 2005 (although it conceded that some target dates may slip).

The Great Forester Catchment Water Management Plan

The Great Forester River and catchment is situated in north east Tasmania. It is mostly riverine, although the Great Forester River enters the McKerrows March wetland towards the bottom of the catchment. There is also an aquifer system within the underlying Scottsdale sedimentary basin, but little is known about its ecosystem requirements.

In the 1920s the Great Forester River was significantly altered by construction of a 4 kilometre diversion, known as the Adam's Cut, which shortened the last section of the river by 7 kilometres. This enabled 325 hectares of floodplain and swampy land to be reclaimed. The DIPWE is uncertain whether the 7 kilometres of natural river channel receives mainstream flows from the Great Forester River.⁵

The Great Forester is an unregulated river. Estimated extraction represents about 6 per cent of the median annual flow, with most of this water taken directly from the river during the irrigation season. In its *State of rivers report for rivers in the Great Forester Catchment*, Tasmania reported that its river health monitoring surveys indicate that the catchment is in good health, particularly in the middle to upper reaches (DPIWE 1999). Some sites are in poorer ecological condition, but this condition is largely related to adjacent land use rather than stream flow. The survey data also show that the river has recovered from a pyrethrum spill that occurred in April 1994 (DPIWE 1999).

⁵ This part of the river, the wetlands and the aquifer are covered by the water management plan, but were not included in the environmental flows analysis, which formed the scientific basis for the environmental water allocation to the river.

McKenny and Read (1999) undertook an environmental flows analysis for the Great Forester Catchment using the RHYHAB computer model (River HYdraulics and HABitat simulation). This model is based on the instream flow incremental method (IFIM). It is a habitat based model that uses information on the preferences of key species to determine appropriate environmental flows. For their analysis, McKenny and Read targeted four detailed and specific assessment species with relatively strong habitat preferences: the blackfish (*Gadopsis marmoratus*), the jollytail (*Galaxias maculatus*), the shortfinned eel (*Anguilla australis*), and both juvenile and adult brown trout (*Salmo trutta*). The study also included a range of insects, worms, mites and molluscs.

Although irrigators extract water from the Great Forester catchment throughout the year, McKenny and Read focused their assessment on the low flow period between December and April, when the river is most likely to be under stress. They used sampling data collected during February and March 1998 at two reference sites (one in the upper catchment and one in the lower catchment) to derive minimum summer flow recommendations for specific months. McKenny and Read determined flow requirements for a low (no), moderate and high risk to the ecology (table 7.2). Low risk involves setting flows to maintain at least 85 per cent of the usable habitat, moderate risk involves setting flows to maintain 60–85 per cent of usable habitat, and high risk involves setting flows that maintain less than 60 per cent of the usable habitat.

Table 7.2: Environmental water requirements for the Great Forester River^a

Month	Risk to catchment habitat			Risk to native fish habitat		
	Low (no) ^{b,c}	Moderate ^d	High ^e	Low (no) ^c	Moderate ^d	High ^e
	ML a day	ML a day	ML a day	ML a day	ML a day	ML a day
December	≥105	105–65	≤65	≥65	65–15	≤15
January	≥75	75–45	≤45	≥75	75–15	≤15
February	≥65	65–45	≤45	≥65	65–15	≤15
March	≥50	50–35	≤35	≥50	50–15	≤15
April	≥85	85–50	≤50	≥85	85–15	≤15

^a All figures presented were converted to megalitres and rounded to the nearest 5 megalitres based on 1 cumec being equivalent to 86.4 megalitres. ^b The environmental water requirement set in the Great Forester plan. ^c The environmental water requirement or minimum flow required to maintain at least 85 per cent of usable habitat. ^d The environmental water requirement or minimum flow required to maintain 60–85 per cent of usable habitat. ^e The environmental water requirement or minimum flow required to maintain up to 60 per cent or less of usable habitat.

Sources: DPIWE 2003a; McKenny and Read 1999

McKenny and Read recommended implementing the ‘no risk’ environmental water requirement. While they noted that their analysis was strongly influenced by the requirements for brown trout, they considered the no risk provision was also necessary to protect the endangered giant freshwater crayfish (*Astacopsis gouldi*). McKenny and Read conceded, however, that little is known about the water requirements of the crayfish.

The Department of Primary Industries, Water and Environment developed the final Greater Forester plan with advice and assistance from the Great Forester Catchment Water Management Planning Consultative Group (DPIWE 2003b). The consultative group had 11 members, comprising representatives of vegetable growers and lower catchment irrigators (two), dairy farmers (two), hop growers (one), poppy growers (one), the Brid-Forester Integrated Catchment Management Group (two), Forestry Tasmania (one), the Dorset Council (one) and the environmental group Dorset Waterwatch (one).

The Great Forester plan requires persons who extract surface water and groundwater to hold a licence, sets water allocations for each irrigation season (1 November to 30 April), enables the transfer of water licences and allocations, provides for metering, and provides for the measurement of water flow through dams. It includes a water restriction management plan.

The plan adopts as the environmental water requirements the recommended low risk minimum flows (shown in the second column of table 7.2). It's stated long term environmental vision, however, is to implement a 'moderate risk' environmental water provision, subject to maintaining the economic and social wellbeing of the community. While the plan does not define moderate risk, the draft plan (DPIWE 2003a) had proposed increasing the environmental water provision over time until it is consistent with McKenny and Read's moderate risk scenario (shown in the third column of table 7.2).

As a first step, the plan sets the environmental water provision as a managed minimum flow of 30 megalitres per day during the irrigation season (December to April). It achieves this by imposing water restrictions once flows fall to 40 megalitres a day, with a ban imposed at 30 megalitres. This provision represents a slight tightening of existing water restrictions. The plan states that the aim of setting the environmental water provision at 30 megalitres a day is to reduce the environmental risk to aquatic ecosystems in the catchment to an 'acceptable level'. As shown in table 7.2, the analysis of McKenny and Read indicates that reducing flows to this level involves a moderate risk that the ecological value of native fish could degrade and a higher risk that the value of the other species could degrade.

Under the plan, the Department of Primary Industries, Water and Environment will collect and record information relating to the state of the aquatic environment in catchment watercourses, water quality, water management activities and compliance, and changes in areas of land used for plantation forestry and other relevant activities. The overall aim of the department's monitoring is to gather sufficient information to assess the environmental and economic effects of the plan. The department is required to publish an annual monitoring and assessment report, and hold an annual public meeting with water users to discuss the report. The plan also proposes further study to:

- determine environmental water requirements outside the irrigation season

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- better understand the wetland environment
 - determine the relationships between flow and water quality in the lower catchment
 - determine the habitat requirements of relevant species.

The plan requires the department to review the plan three years after its endorsement by the Minister. This review is scheduled for 2006-07.

In August 2003 the Tasmanian Conservation Trust lodged an appeal with the Resource Management and Planning Tribunal because it considered that the plan does not comply with ARMCANZ/ANZECC national principle 2 as required under Tasmania's policy principle 1 of the Water for Ecosystems Policy (Policy no. 2001/1 of the Water Management Act). The trust argued that the specified managed minimum flow in the irrigation season (30 megalitres a day) is significantly lower than the recommended environmental water requirement. In September 2003 Dorset Waterwatch also advised the department that it wished to rescind its agreement to the plan and record a dissenting report.

In November 2003 the tribunal found that the plan failed to strictly comply with the requirements of s14 of the Water Management Act because there is a lack of adequate scientific evidence. Based on scientific expert evidence, however, the tribunal accepted that 'for at least the three year period until the first review, the minimum flow provided by the plan would adequately protect the health of the river' (Tasmanian Conservation Trust v Minister for Primary Industries, Water and Environment (2003) TASRMPAT 266 at 16–17). The tribunal concluded that 'it is appropriate to use the plan as a framework for maintaining the status quo while information is gathered' (re Tasmanian Conservation Trust at 16–17).

The tribunal ordered several amendments to the plan. Some amendments make clear that the managed minimum flow of 30 megalitres a day is a short term target pending further review of environmental water needs. Another amendment indicates that the formal review of the plan is anticipated to take about six months (rather than a year), but will be completed as soon as practicable. The tribunal also specified matters that the review must consider. It ordered that the review:

- use a hydrological model of the catchment sufficient to allow the impact of the natural flow to be compared with other uses in the catchment, including passive uses
- identify and describe the ecosystems, including any threatened or endangered species that need water and the quantity of water they need
- determine an environmental water provision that relates to the whole year and not just the irrigation season
- use a method to determine the environmental water provision that is scientifically justifiable and consistent with any water quality guidelines and State policies

- describe clearly the method used to determine the environmental water provision.

Comments from stakeholders

In October 2003 Dorset Waterwatch wrote to the Council to express two concerns about the development of the final Great Forester plan, and it subsequently provided a number of other documents. Two aspects of its two particular concerns can be summarised as follows:

1. Irrigators are overrepresented on the community consultative committee following the decision of the Department of Primary Industries, Water and Environment that irrigators should comprise at least 60 per cent of committee representatives. Dorset Waterwatch considered that the majority representation of irrigators on the consultative committee may make it difficult for the committee to reach consensus to increase the environmental water provision (now 30 megalitres a day) if the current provision proves inadequate.
2. There is a lack of scientific research and documentation supporting the environmental water provision in the final plan. Dorset Waterwatch noted the following examples:
 - Environmental water provisions were re-set for the second and all subsequent drafts and the final plan to a 'high risk' 30 megalitres a day without any clear basis in science and despite the advice of McKenny and Read for a 'low risk' outcome to protect the giant freshwater crayfish.
 - The economic assessment (Armstrong 2001), which concluded there would be widespread economic hardship under the 'moderate risk' environmental water provision, was based on interviews with only three irrigators (all very large enterprises and relatively high water users) and did not appear to be supported by a risk assessment framework or a detailed social impact study.
 - The Department of Primary Industries, Water and Environment had not addressed criticisms of the economic study in the 2002 NCP assessment.

Dorset Waterwatch suggested the water management planning process should incorporate:

- independent, peer reviewed science and risk assessment as the basis for establishing environmental water provisions
- a comprehensive framework and protocol for corrective action, if it proves to be necessary, in association with ongoing monitoring and research
- consultative arrangements that better reflect the composition of water users and other interests in a catchment.

The Tasmanian Government stated that it does not agree with the Dorset Waterwatch. It considers that its approach is supported by the decision of the Resource Management and Planning Tribunal, which required only minor amendments to the Great Forester plan (not related to the concerns of Dorset Waterwatch).

The government made the following comments on Dorset Waterwatch's concerns about the composition of the community consultative committee:

- There is no statutory requirement for the establishment of consultative committees.
- The decision to form the consultative group reflected public concerns about potential economic and social impacts of the environmental water provision in the draft plan.
- The purpose of establishing the consultative group was to advise the Department of Primary Industries, Water and Environment and the Minister on possible amendments to the draft plan. The consultative group comprised representatives of all local interests in the catchment. Water users are a diverse group and often have different timing and reliability requirements for water access. Because interests sometimes conflict, it is important to represent this diversity of water users. In any case, the balance of interests on a consultative group should not be of concern because consultative groups have no statutory power or decision-making function.
 - At all times, every attempt is made to ensure advice from consultative group is agreed by consensus. Changes made during the life of a plan should also be consensual, to provide certainty.
 - In deciding to implement a plan, the department (and the Minister for Primary Industries, Water and Environment) must ensure the plan gives effect to the objectives of the Act, including that the plan 'maintain ecological processes and genetic diversity for aquatic systems' (Water Management Act, s6(1)(c)).
 - All stakeholders have an opportunity to make dissenting representations to the department and to the Minister, regardless of whether they are members of a consultative group.

The government made the following comments on Dorset Waterwatch's concerns about the availability of scientific research and documentation to support the environmental flows adopted in the plan.

- The department used nationally recognised scientific methods to determine the environmental water requirements for the Great Forester catchment. The methods were subject to independent peer review.
- A number of scientific studies were used to develop the plan. Independent expert assessment of the scientific reports presented at the Resource Management and Planning Tribunal hearing supports the view that the environmental water provision is sufficient to protect the environment until the review of the plan in 2006-07.

- The plan adopts an adaptive management approach and includes an extensive ecological and water use monitoring program.
- Environmental water provisions are determined through a consultative process and are set to balance environmental, economic and social considerations and to comply with the Water Management Act.

Discussion

Best available science

The method used to determine environmental water requirements for the Great Forester catchment was limited to minimum summer flows using a species-specific IFIM method rather than a holistic approach. The ecological assessment does not consider the end of system flows, the water requirements for the terminal wetland or interactions between the surface water and groundwater systems. This general approach, however, reflected current scientific thinking when the environmental water requirements for the Great Forester Catchment were determined some six years ago.

Nevertheless, questions remain about Tasmania's approach to determining environmental water requirements. Tasmania determines its environmental water requirements on the basis of community values. These include broad water value categories — the ecosystem, consumptive and nonconsumptive use, recreational use, the physical landscape and aesthetic requirements. Thus the environmental water requirement is a decision that reflects a balance of environmental and nonenvironmental values, rather than a true evaluation of the water requirements needed to sustain the long term ecological values of the catchment. (There is subsequent account taken of economic and other interests in setting the environmental water provision.)

For the Great Forester catchment, the recommended environmental water requirements are strongly influenced by the flow needs of the brown trout. Brown trout are an introduced species with very different water requirements from those native fish. They prefer stable flow conditions and relatively high summer flows, whereas most native species have adapted to the variable flow conditions characteristic of Australian streams. Brown trout prey on native fish and can be aggressive competitors for food and habitat (Clunie *et al.* 2002). They have also been found to contribute to the decline and fragmentation of native fish and macroinvertebrate communities in Australia (Arthington and Blühdorn 1995).

The plan's environmental water provision (30 megalitres a day) involves a further reduction in the environmental water requirements, to accommodate economic and other interests. Although the stated long term objective for the plan is to implement moderate risk environmental water requirements, the current environmental water provision involves a high risk to the health of the catchment. The regard shown in the Great Forester plan for ARMCANZ/ANZECC national principle 2, which calls for the provision of

water sufficient to sustain the ecological values of aquatic ecosystems, is therefore questionable. There is some doubt that a contemporary environmental study using a best practice approach would determine environmental water requirements for the Great Forester River similar to those recommended by McKenny and Read (1999).

The Resource Management and Planning Tribunal has directed the Tasmanian Government to improve substantially the scientific basis for determining future environmental water provisions in the Great Forester Catchment in a manner consistent with the requirements of the ARMCANZ/ANZECC national principles. To do this, Tasmania is developing a holistic approach, which it expects to complete by September 2004. Tasmania has also committed to undertake extensive monitoring and further research over the three years before the review to improve understanding of the environmental water requirements of the catchment.

Expert evidence at the tribunal hearing considered that the proposed minimum managed flow in the plan is unlikely to compromise the ecological condition of the river before the plan is reviewed in 2006-07. The Council considers that to demonstrate that the Great Forester arrangements are based on the best available science, Tasmania should use the forthcoming review to determine the river's environmental water requirements separately from other community values, so any trade-offs among competing objectives in determining the river's environmental water provision are transparent. Consistent with CoAG's objectives in the 1994 water reform agreement, the review should aim to achieve an appropriate balance of long term sustainability in environmental allocations and human demands, including water for irrigation, recreational trout fishing and other consumptive uses.

Balancing economic, environmental and other interests

The Great Forester plan does not explain how the environmental water provision for the river was determined or provide independent, rigorous and transparent evidence to support the managed minimum flow of 30 megalitres a day. While the expert opinion provided to the Resource Management and Planning Tribunal is that the health of the river will not be compromised under the plan in the short term, it also indicates that Tasmania will need to act soon if the ecological health of the river is to be maintained or improved.

Unlike the draft plan, the final plan does not set out a pathway towards achieving a more sustainable balance in water use. It states, however, that its long term environmental vision is to implement 'moderate risk' environmental water provisions, subject to maintaining the economic and social wellbeing of the community. It also establishes a review (to be conducted in 2006-07) to re-assess the environmental water requirements of the catchment following further research and monitoring of its ecological health. Following the tribunal ruling the review must use scientifically justifiable methods consistent with Tasmania's legislation and policies for determining the environmental water provision.

The tribunal decision and the expert evidence on ecological health indicate that the Great Forester plan satisfactorily addresses the obligations on the allocation of water to the environment set by CoAG (pending the review in 2006-07). Moreover, the development of the plan, which has involved considerable debate over a long period, and the availability of avenues to challenge decisions, indicates that Tasmania's processes are robust.

Monitoring and adaptive management

Tasmania committed to undertake extensive monitoring and further research to improve understanding of the environmental water requirements for the catchment. It will report annually on the outcomes of its monitoring program, and the 2006-07 review of the Great Forester plan will account for the monitoring and other information collected. In addition, Tasmania has used the experience and information gleaned from developing the Great Forester plan to adapt its water management planning processes and the scientific methods that will be used to determine environmental water provisions in other systems.

Tasmania has removed the statutory requirement to review plans at least once every five years. Instead any review requirements will be specified in individual plans or undertaken at the direction of the Minister. While flexibility is desirable, careful review of water management plans is often essential to ensuring processes can be adapted to account for changes in a system's ecological health and condition. Given that Tasmania is in the process of developing its first plans and a new scientific assessment method, maintaining the statutory requirement to review plans within five years would seem prudent. In this regard, all governments including Tasmania committed under the 1994 CoAG water reform agreement to consider establishing environmental contingency allocations that provide for review of the allocations after five years (CoAG 1994, clause 4(e)).⁶ In addition, the guidelines for water planning and planning processes in the National Water Initiative state that the duration of a plan should be consistent with the level of knowledge about, and the development of, the particular water source, and that there should be a review process that allows for changes in light of improved knowledge.⁷

⁶ The draft plans for the Mersey and Little Swanport rivers, which were completed after the amendments to the Water Management Act both contain review provisions. The draft plan for the Mersey River proposes that the plan be reviewed ten years after its adoption. The draft plan for Little Swanport River proposes a review in the 5th year of operation of the plan.

⁷ The Council notes that Tasmania has not signed the Intergovernmental Agreement on a National Water Initiative.

Stakeholder consultation and transparent processes

The Great Forester water management plan was developed via a consultative process open to all relevant stakeholders. There were, however, some criticisms of the process. As discussed, Dorset Waterwatch, a representative on the consultative committee, considered that water users (particularly irrigators) were overrepresented. In 2002 the Tasmanian Conservation Trust criticised the Tasmanian Government's public consultation and education on water management issues, stating that it has been 'erratic and irregular' and that the government 'appears to only pay heed to water users' (Tasmanian Conservation Trust 2002, p. 5). The government, on the other hand, stated that water users often have different and sometimes conflicting timing and reliability requirements for water access, so it is important to represent this diversity.

Irrigators are the group most likely to be affected by the plan, so they must be appropriately represented and their views must be fully considered. It is also important that the consultative process provides adequately for other interests. The limited explanation (including scientific evidence) to support the recommended environmental water provisions suggests the consultative process might have given less weight to the interests of stakeholders other than irrigators. It also points to some transparency and accountability problems with the Great Forester process.

Notwithstanding these issues, the capacity for aggrieved parties to appeal to the Resource Management and Planning Tribunal provides a safeguard that enhances transparency and accountability, and an additional avenue for stakeholder involvement. The appeals mechanism is expensive and time consuming, however, and overreliance on it can undermine people's confidence in stakeholder based water management planning. Tasmania appears to have drawn some lessons from the Great Forester experience and is taking steps to improve its processes. Among other things, Tasmania has amended the Water Management Act to require the Resource Planning and Development Commission to independently review the Department of Primary Industries, Water and Environment's responses to representations on draft water management plans.

Assessment

Tasmania has determined environmental water requirements for 43 of the 45 rivers and streams covered by its 1999 implementation program. It has also implemented a water management plan for the Great Forester catchment. Tasmania expects to complete its assessment of environmental water requirements and implement water management plans for the remaining 15 high priority river systems by the end of 2005 or soon after. In addition, amendments to the Water Management Act are likely to improve the way in which Tasmania manages its rivers and groundwater systems. Tasmania is thus determining environmental allocations broadly in line with

its 1999 implementation program determined under the 1994 CoAG water reform agreement.

There are some questions about Tasmania's approach to determining environmental flow requirements, as illustrated by the discussion of the Great Forester plan. Tasmania uses 'community values', which include both environmental and non-environmental objectives, to set environmental flow requirements. This method cannot provide a true evaluation of the water required to sustain water dependent ecologies.

The approach envisaged in the 1994 CoAG water reform agreement and the National Water Initiative does not rule out governments altering recommended environmental flows for socioeconomic or other public benefit reasons. But if such alterations are made, there should be robust evidence to support the trade-offs from the recommended flows. The Great Forester plan did not include a rigorous and transparent assessment of the trade-offs between environmental and human uses, which in turn reduced the effectiveness of consultation and affected the confidence of some stakeholders.

Tasmania appears to be improving its water planning processes following the experience of the Great Forester plan. It is developing a holistic approach to determining environmental water requirements that it will apply in all future water planning. Its approach would be improved, however, if the method of determining environmental water requirements is aimed more directly at estimating the volume of water needed to ensure the long run health and viability of water systems, rather than seeking to build non-environmental trade-offs into the estimate of environmental needs. Alterations to recommended flows could still be made (where there is robust socioeconomic information), but only after the true environmental requirements are known.

Other aspects of Tasmania's water planning framework are likely to assist the rigour of the state's water allocation outcomes. Tasmania has robust appeal processes that provide a safeguard and enhance transparency and accountability. Following the Great Forester process, Tasmania implemented measures to take better account of all interested parties' views.

Tasmania also recently implemented amendments to its Water Management Act to improve and accelerate its water planning processes. One amendment, however, removes the statutory requirement for the review of water management plans. While flexibility is desirable, and Tasmania's water management plans can still contain review provisions, this change has the potential to adversely affect the quality of water management outcomes. As recognised by the ARMCANZ/ANZECC national principles and the National Water Initiative, effective review processes are essential to an adaptive management approach.

The Council has identified some questions about Tasmania's approach to determining environmental water requirements. It would be desirable, therefore, for Tasmania to re-assess the environmental water requirements for all the water systems covered by its 1999 implementation program. Because Tasmania has not identified any stressed or overallocated water

systems, this work could be done over time without affecting current water planning processes.

The Council considers that Tasmania has satisfactorily addressed CoAG water management obligations for the 2004 NCP assessment. The 2005 NCP assessment should conclude on Tasmania's implementation of its obligation to provide appropriate environmental water allocations.

7.4 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, the Council found that Tasmania had removed the two trading restrictions previously identified by the Council as likely to be inconsistent with CoAG water trading commitments. After further considering Tasmania's trading arrangements and those in other states, however, the Council identified two additional such restrictions:

1. Within irrigation districts, only an owner or occupier of land, or a person who may hold land, in the district could hold irrigation rights.
2. In unregulated systems, the Minister could refuse or modify a proposed transfer if the quantity of water available would exceed the amount that could be used sustainably for the intended purpose.

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

Tasmania needs to have reviewed the remaining restrictions on trade and either removed them or demonstrated that they provide a net public benefit. 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

In Tasmania, water trading is permitted in both irrigation schemes and unregulated systems.

The regulation of intrastate trading

Under the Irrigation Clauses Act, irrigation rights within irrigation schemes are separated from land titles and transferable within the irrigation district. They can be leased or sold. Transfers are subject to any conditions imposed by the scheme's managing authority under its transfer rules. The rules cover the physical limits of scheme infrastructure, environmental constraints and the rights of third parties (other users and parties with a financial interest in an irrigation right). If rights are to be traded out of an irrigation district, then

the scheme's managing authority would need to transfer a portion of its licence on behalf of the irrigator.

Under the Water Management Act, water licences and allocations for water resources outside irrigation schemes are separated from land titles and transferable. Transfers may be by permanent sale (termed 'absolute transfers') or temporary lease (termed 'limited period transfers'). Transfers are subject to the approval of the Minister for Primary Industries and Water. The transfer must accord with any relevant water management plan or, where there is no plan, with the objectives of the Act. The Minister may refuse to approve a proposed transfer if it would have a significant adverse impact on other water users or the environment, and may require a transfer applicant to pay for an assessment of the transfer's effects. Transfers also require the consent of any person with a registered interest in the licence. If the receiving party does not hold a water licence, they must apply for a licence when applying for the transfer.

In the 2003 NCP assessment, the Council found that Tasmania had removed the two trading restrictions previously identified by the Council as likely to be inconsistent with CoAG water trading commitments:

1. In government-owned irrigation districts, the Rivers and Water Supply Commission's power to refuse a transfer of water if it was likely to result in the movement of water from irrigated agriculture to another purpose.
2. In unregulated systems, the transitional provision that a permanent transfer would not be permitted unless certain conditions were met (primarily that the transferring party had obtained financial advice on the effects of the transfer).

After further considering Tasmania's trading arrangements and those in other states, in the 2003 NCP assessment the Council identified two additional restrictions likely to be inconsistent with CoAG obligations:

1. In irrigation districts, only an owner or occupier of land, or a person who may hold land, in the district could hold irrigation rights. A holder of an irrigation right who no longer owned or occupied land in the district was required to transfer the right within six months (with a possible extension of a further six months) or forfeit the right.
2. In unregulated systems, the Water Management Act enabled the Minister to refuse or modify a proposed transfer if, after the transfer, the quantity of water available to the receiving party would exceed the amount that could be used sustainably for the intended purpose.

At that time, Tasmania advised that these requirements were intended to ensure water is used for the purpose for which it was provided and to militate against speculation in the water market. The Council indicated, however, that the restrictions were also likely to affect the entry and activities of agents, brokers and other potential participants in the water trading market. As a result, the restrictions may reduce returns available to holders of irrigation rights and water licences, and constrain the extent to which water

is put to its most profitable use. Tasmanian Government officials indicated a preparedness to consider the continuing need for the restrictions before the 2004 NCP assessment.

The water management plans being developed by Tasmania may contain trading rules. The rules in the penultimate draft plan for the Great Forester catchment — the only almost-completed plan available at the time of the 2003 NCP assessment — reiterated the requirements of the Water Management Act and did not appear to impose additional conditions on trade.

Recent trading activity

Water trading in Tasmania is at an early stage of development. Most water trading, other than that directly related to rural property sales, has occurred within the major irrigation schemes and through privately arranged transfers between landholders. Almost all permanent water transfers accompany land sales.

In the three government-owned irrigation schemes, water transfers (both permanent and temporary) accounted for at least 10 per cent of water use in each of the previous three years (table 7.3). In the South East Irrigation Scheme, almost one-quarter of water supplied was traded in 2002-03. Based on the two schemes for which data are available for 2003-04, the number of temporary transfers exceeded permanent transfers. The volume of permanent transfers (all of which resulted from land sales), however, slightly exceeded temporary transfers. The government-owned irrigation schemes account for only around 10 per cent of the state's water use.

Table 7.3: Irrigation rights transferred in Tasmanian Government-owned irrigation schemes, 2000-01 to 2003-04^a

	<i>Water supplied</i>		<i>Water trades</i>	
	<i>ML</i>	<i>no.</i>	<i>ML</i>	<i>%</i>
Cressy–Longford Irrigation Scheme				
2000-01	7 162	8	373	5
2001-02 ^b	5 489	7	550	10
2002-03	9 980	22	948	10
2003-04 ^c	na	na	na	na
South East Irrigation Scheme				
2000-01	4 293	48	394	11
2001-02	1831	15	241	13
2002-03	3 822	59	833	22
2003-04 ^c	2 402	14	265 ^d	11

(continued)

Table 7.3 continued

	<i>Water supplied</i>		<i>Water trades</i>	
	<i>ML</i>	<i>no.</i>	<i>ML</i>	<i>%</i>
Winnaleah Irrigation Scheme				
2000-01	3 507	4	74	2
2001-02	3 523	15	525	15
2002-03	4 777	23	868	18
2003-04 ^c	2 715	6	297 ^e	11

^a Temporary trade accounts for the majority of this trade. ^b Data to 20 March 2002. ^c Data to 31 January 2004. ^d Comprises five permanent trades (103 megalitres) and nine temporary trades (162 megalitres). ^e Comprises one permanent trade (197 megalitres) and five temporary trades (100 megalitres). **na** Not applicable.

Source: Government of Tasmania 2004

In unregulated systems, almost all transfers have been permanent transfers accompanying land sales (table 7.4). Tasmania has advised that transfers separate from land sales account for less than 1 per cent of water use. It previously indicated that there has been little, if any, demand for trade between irrigation schemes and unregulated systems.

Water trade in unregulated systems is expected to increase significantly over the next three to four years. Hydro Tasmania will transfer over 50 000 megalitres of water to irrigators over this period. This follows the signing of a memorandum of understanding between the Department of Primary Industries, Water and Environment, Hydro Tasmania and the Tasmanian Farmers and Graziers Association. The transfer arrangements are intended to provide security of water entitlements for irrigators without significantly affecting Hydro Tasmania's commercial operations. Tasmania has advised that separate transfers would be negotiated with Hydro Tasmania for future dam developments, including the Meander Dam project.

Table 7.4: Water transfers in unregulated systems, January 2000 to February 2004

<i>Trading period</i>	<i>Permanent transfers</i>		<i>Temporary transfers</i>	
	<i>ML</i>	<i>no.</i>	<i>ML</i>	<i>no.</i>
January 2001 to June 2001	3 400	38	–	–
July 2001 to February 2002	48 579	151	3 670	32
March 2002 to February 2003	7 677	63	215	3
March 2003 to February 2004	1 914	34	–	–

– Nil.

Source: Government of Tasmania 2004

Reform progress

Tasmania removed the two restrictions on water trading that the Council identified in the 2003 NCP assessment by legislative amendments that commenced in June 2004:

-
- In irrigation districts, to hold irrigation rights it is no longer necessary to be an owner or occupier of land, or a person who may hold land, in the district. The provisions relating to the divesting of rights have also been removed.
 - In unregulated systems, the Minister is no longer able to refuse or modify a proposed transfer if the quantity of water available would exceed the amount that could be used sustainably for the intended purpose.

In December 2003, as part of the Tasmanian Government's commitments under its bilateral agreement to implement the National Action Plan for Salinity and Water Quality, the Department of Primary Industries, Water and Environment released a policy paper, *Guiding principles for water trading in Tasmania* (DPIWE 2003c). The paper specifies the guiding principles for assessing applications for water transfers under the Water Management Act. By documenting the principles, the government aims to assist water users to understand the arrangements for transfers, and to provide greater certainty in the approval process. In the paper, the department foreshadows that it will develop and publish exchange rates for trading between zones in water sources.

Tasmania's first water management plan (the plan for the Great Forester catchment) commenced in August 2003 (see section 7.3). The trading rules in the plan mirror the requirements of the Water Management Act at that time. Under the plan, the Department of Primary Industries, Water and Environment will make information on the number, volume and average price of transfers publicly available on an annual basis, subject to voluntary disclosure by applicants and the protection of personal details. Tasmania expects this type of information to become more widely available as water management plans are developed throughout the state.

Tasmania advised that the department had been informed of a recent feasibility study of the establishment of a water brokerage in the state. The study indicated that a dedicated water brokerage would not be commercially viable. It considered that the potential for water trading in Tasmania is generally limited, partly because the small size of water catchments restricts the number of potential purchasers.

Discussion and assessment

Tasmania made significant progress in addressing its water trading commitments in 2003-04. It removed the two trading restrictions that the Council identified in the 2003 NCP assessment as being likely to be inconsistent with CoAG water trading commitments. In addition, it has almost completed the conversion of all former water rights (attached to land titles) to tradable licences and allocations under the new system.

In previous NCP assessments, the Council found that water market and trading administration does not appear to represent an impediment to trade.

While Tasmania's register of water licences and allocations does not provide indefeasibility of title, water allocations are sufficiently well defined so as not to impede to trade. In addition, transfers require the consent of all parties with a registered financial interest. For the 2003 NCP assessment, data provided by Tasmania on the time taken to approve trades indicated that approval processes are unlikely to impede efficient trade.

The publication of Tasmania's guidelines for water trading should assist water users to understand the trading and approval process. The guidelines do not impose any additional conditions on trade. They foreshadow the recent legislative amendments and will be amended to reflect the changes.

While there is a limited choice of water trading mechanisms and little market information available in Tasmania this is understandable given the level of trade. The Tasmanian Government does not impede the establishment of new trading mechanisms and it will supply more information as water management plans are completed.

Trading arrangements also adequately address risks for the environment by requiring, for example, that transfers are consistent with the objectives of the water legislation and any relevant water management plan. The trading rules in the Great Forester plan reiterate the requirements of the Water Management Act as it applied when the plan commenced in 2003. While the plan states that an applicant must demonstrate that the water available to the transferee does not exceed the volume that could be used sustainably on their land for the intended purpose, the recent changes to the Act mean these provisions no longer have effect. Following its scheduled review in 2006-07, the plan will be able to be amended to reflect the recent changes to the Act.

Tasmania will need to ensure the trading rules in the water management plans that are still to be completed are also consistent with CoAG obligations. This should be the case if the rules reflect the requirements of the Water Management Act (as amended).

The Council considers that Tasmania has made satisfactory progress against its 1994 CoAG obligations relating to water trading for the 2004 NCP assessment.

7.5 Investments in new rural water schemes

Assessment issue: Investments in new rural water schemes or extensions to existing schemes are to be undertaken only after appraisal indicates the scheme or extension is economically viable and ecologically sustainable.

At the time of the 2003 NCP assessment, the Australian Government's approval process for the Meander Dam project under the *Environment Protection and Biodiversity Conservation Act 1999* was still to be completed. The Council's preliminary view was that Tasmania had provided a robust case to show that the project would be economically viable. It had insufficient information to reach a preliminary view on whether the project would be ecologically sustainable.

If the Meander Dam project proceeds, Tasmania will need to demonstrate compliance with the CoAG obligations on economic viability and ecological sustainability.

Reference: CoAG water reform agreement, clause 3(d)(iii)

The Meander Dam project is a proposal to construct a 43 gegalitre dam on the Meander River in Tasmania's central north. This dam would be used to supply licensed water users (including irrigation, town domestic water supplies and a proposed mini hydroelectric power plant) and environmental flows for the Meander River. At the time of the 2003 NCP assessment, the Australian Government's approval process for the project under the *Environment Protection and Biodiversity Conservation Act* was still to be completed.

In the 2003 NCP assessment, the Council's preliminary view was that Tasmania had provided a robust case to show that the project would be economically viable. It had insufficient information to reach a preliminary view on whether the project would be ecologically sustainable (NCC 2003a).

Developments since 2003

The Australian Government Minister for the Environment and Heritage approved the project on 18 September 2003 subject to conditions, including the submission of management plans for the two nationally threatened species (*Epacris aff. exserta* and the spotted tailed quoll). The Tasmanian Conservation Trust appealed the Minister's decision but withdrew its appeal in June 2004 following further scientific work that showed the plant species (now known as *Epacris Franklinii*) has a widespread distribution, including several populations in south east Tasmania. Given that the plant is no longer listed as being threatened, the Minister has amended his approval accordingly.

Following the Tasmanian Conservation Trust's withdrawal of its appeal, the Tasmanian Government proceeded with a tender process for the construction of the dam. Tenders closed on 15 October 2004, and the government is currently assessing proposals.

Submissions

WWF Australia considered that the Council should assess, before construction commences, the ability of the Meander Dam (and other such projects) to achieve CoAG obligations relating to full cost recovery and the transparency of CSOs. These issues relate to the CoAG obligations for water pricing, so the submission is considered in section 7.1.

Discussion

The Council aims to assess new rural schemes against the CoAG obligations relating to economic viability and ecological sustainability in the year in which the relevant government decides the scheme can proceed. The Meander Dam project cannot proceed until Tasmania finalises its management plan for the spotted tailed quoll and receives approval for the plan from the Australian Government Minister for the Environment and Heritage. The Tasmanian Government indicated that the project would proceed on approval of the plan.

The Council has not considered actions relating to the Meander Dam as part of the 2004 NCP assessment. If there is a decision taken during 2004-05 to proceed with the dam, Tasmania's compliance with the CoAG obligations on new rural infrastructure will need to be considered in the 2005 NCP assessment. The assessment will need to consider the economic and environmental studies undertaken by the Australian and Tasmanian governments. It will also need to account for the information previously provided by other parties, including the Tasmanian Conservation Trust and WWF Australia.

7.6 Other matters from the 2003 National Competition Policy assessment

Institutional reform

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

- separate the roles of water standards setting and regulation from service delivery
- devolve a greater degree of responsibility for irrigation scheme management to local bodies.

Institutional role separation

Governments should separate responsibilities for providing water and wastewater services from responsibilities for regulation, water resource and environmental management and standards setting in areas such as health and plumbing. This separation is intended to prevent conflicts of interest that might arise if a monopoly water business (or its Minister) has responsibilities for both providing water and setting its price and quality. Economic regulation should be independent, given that water and wastewater businesses are public monopolies.⁸

At the time of the 2003 NCP assessment, Tasmania was reviewing its arrangements for handling complaints about the service standards of local government water businesses. This review was occurring as part of a wider review of the *Local Government Act 1993*. For the 2004 NCP assessment, the Council has considered the adequacy of Tasmania's complaints-handling processes in the light of the review.

Tasmania reported in 2004 that it has completed consultation on an exposure Bill and draft regulations. The Bill specifies that local governments must adopt formal complaints handling policies and procedures (to be prescribed in regulations). The procedures will include a complaints register to help identify systemic problems. It will remain open to a customer to seek an independent review of a local government's decision through the Local Government Ombudsman. Tasmania intends to introduce the Bill during the spring session of Parliament 2004.

Discussion and assessment

For the 2004 NCP assessment, Tasmania has made satisfactory progress in its review of complaints procedures for local government water businesses. It should be expected to have enacted the reform legislation and published the regulations on complaints procedures by the 2005 NCP assessment.

Devolution of greater responsibility for irrigation scheme management

The CoAG water reform agreement requires that governments devolve more 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

⁸ Independent economic regulation also addresses CoAG obligations in water pricing, provided (1) the regulator takes account of CoAG pricing principles and (2) its recommendations are made available in a public report.

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, Tasmania had implemented measures to devolve the management of two of its three state-owned irrigation schemes. An association of local irrigators has managed the Cressy–Longford scheme since April 2002, while a draft agreement on devolution for the Winnaleah scheme was discussed with irrigators in March 2003. The Council noted a lack of progress for the third scheme — the South East Irrigation Scheme.

Tasmania reported in 2004 that it had formally handed over management of the Winnaleah Scheme to irrigators in December 2003. The Winnaleah irrigators are now responsible for day-to-day scheme operations, administration and management (including price setting), and own the operational assets. The Rivers and Water Supply Commission retains ownership of water delivery and water storage assets. Little progress has been made towards devolution for the South East Irrigation Scheme. Tasmania has reported that the scheme's operational arrangements are more complex than those of other schemes, and that several pricing issues need to be resolved. Tasmania has advised that negotiations on devolution for the scheme are a priority for the Rivers and Water Supply Commission in 2004.

Discussion and assessment

With the transfer of management responsibility for the Winnaleah scheme in December 2003, Tasmania has completed the devolution process for two of its three state-owned irrigation schemes. Progress remains slow in the South East scheme.