WATER INDUSTRY REFORMS

The Tasmanian Government is fully committed to implementing efficient and sustainable water industry reforms that were agreed at the February 1994 COAG meeting and subsequently included in the package of NCP and related reforms agreed at the April 1995 meeting of COAG. The Tasmanian Government is currently working in partnership with the Commonwealth and State/Territories to develop the Intergovernmental Agreement on a National Water Initiative that was identified at the August 2003 meeting of COAG.

The COAG water reforms are embodied within the *Strategic Framework for the Efficient and Sustainable Reform of the Australian Water Industry* (Strategic Framework) and principally require the implementation of pricing reforms, with greater emphasis on user pays and cost recovery principles, clearer definition of water entitlements (including the allocation of water for the environment) and the development of trading in these entitlements. The Tasmanian Government recognises that the benefits of these reforms will extend beyond those derived from competition policy, with significant positive impacts on community welfare and the environment expected in the longer-term.

An Inter-departmental Water Policy Committee has been established to oversee Tasmania's water reform obligations. It comprises representatives from the Departments of Premier and Cabinet (Policy and Local Government Divisions), Primary Industries, Water and Environment (DPIWE) and Treasury and Finance.

The following information details Tasmania's progress to 31 December 2003 (including proposed future work where relevant) in its implementation of the COAG water reforms.

Water management legislation

The *Water Management Act 1999* (WMA) commenced on 1 January 2000. The WMA replaces the *Water Act 1957* and the *Groundwater Act 1985* and amends or replaces 12 other Acts covering the allocation of water resources in the State.

Provisions in the WMA reformed the manner in which access to, and use of, the State's water resources are regulated to provide for long-term sustainability, while implementing a number of the State's COAG water requirements.

In particular, the Water Management Act:

- establishes new institutional arrangements for water management in Tasmania;
- provides for consistent water licensing arrangements for all types of users, including the establishment of special licences for large generators of electricity, such as Hydro Tasmania, and other major water users;
- provides for the development of water management plans;
- facilitates trading in water entitlements;
- provides for formal allocations of water for the environment;
- establishes a new system for dealing with applications for dam construction; and
- creates water districts.

Further details of the Water Management Act are provided below.

Cost and pricing reforms

Urban water services

In Tasmania, all urban retail water services are provided by local government.

The COAG Strategic Framework requires the implementation of two-part pricing for urban water schemes where cost-effective. In December 1998, the State Government commissioned GPOC to develop a set of guidelines to establish measurable criteria to assist each local council to assess whether the implementation of a two-part pricing structure for water schemes in its jurisdiction would be cost-effective.

In June 1999, the Government released GPOC's report, titled, *Investigation into the Cost-Effectiveness of Local Councils Implementing Two-Part Pricing for Urban Water Services*. The guidelines provided a methodology for determining the net present value of a change to two-part pricing, comparing the extra costs involved (eg. capital cost of new meters and meter replacements, cost of extra meter readings and invoicing) with the resulting expenditure savings (eg. deferred or reduced cost of planned capital works, reduced pumping and treatment costs). These savings are based on the expected reduction in water consumption as a result of two-part pricing.

The main factors used to determine whether the savings from the introduction of two-part pricing were greater than the associated costs were the:

- expected decrease in water consumption;
- projected future demand for water due to demographic factors and the commercial environment;
- extent of excess capacity of urban water schemes;
- extent to which metering is currently in place;
- need for improvements in the quality of water; and
- charging arrangements applicable at the bulk water end (including the extent to which volumetric charging is imposed).

The GPOC guidelines provided a screening test, based primarily on the size and extent of metering of each water scheme, to enable a rapid assessment of whether a detailed analysis of the cost-effectiveness of the introduction of a two-part tariff was appropriate. Where the screening test indicated that such an analysis was appropriate, a model was provided to facilitate this assessment.

In July 1999, the Premier (in his capacity as Minister for Local Government) requested councils to apply the GPOC guidelines to those water supply schemes where two-part pricing was not currently in place (85 schemes) and report on the outcomes by mid-September 1999. Five schemes were already applying two-part tariffs.

A review panel assessed council responses to ensure that the guidelines had been applied appropriately. Represented on the panel were the Departments of Primary Industries, Water and Environment (convenor), Treasury and Finance and Premier and Cabinet (Policy Division and the Local Government Division), and the LGAT.

The panel provided its final report to the Minister for Primary Industries, Water and Environment on 13 December 1999. The report analysed submissions covering 85 of Tasmania's water supply schemes. The submissions were analysed on a scheme-by-scheme basis (rather than a council-by-council basis), as water

supply schemes within a council may have no common infrastructure and may draw water from different sources.

A full analysis of the cost-effectiveness of the change to two-part pricing was undertaken for 34 of the 85 water supply schemes. Of the remaining 51 schemes:

- 40 schemes were eliminated according to the screening test developed by GPOC; and
- 11 schemes were excluded as a firm commitment had been given by the relevant council to introduce two-part pricing prior to any assessment.

Of the 34 schemes assessed, 26 schemes returned negative values, demonstrating that two-part pricing would not be cost-effective. The remaining eight schemes, however, returned positive values. Subsequently, it was found that the analysis for the Ross scheme was incomplete and that two part tariff pricing was not cost-effective for this scheme.

This process confirmed that 18 water schemes should change from their existing pricing system to two-part tariffs. These schemes and implementation dates for two-part pricing have been previously reported. Seventeen of these schemes have now implemented two-part pricing.

The remaining scheme, operated by Derwent Valley Council, was due to commence two-part tariffs in July 2002. However, a revision of the costs of metering the scheme, as a result of practical experience with a trial installation of meters, identified that a further cost-effectiveness study was warranted. This was completed in July 2002 and established that it would no longer be cost-effective for consumption-based pricing to be implemented for the Derwent Valley Council water scheme. The results of the revised cost-effectiveness study were assessed by the Government Prices Oversight Commission as being NCP compliant.

The West Tamar Council introduced two-part tariffs for urban water pricing in July 2001 without undertaking a cost-effectiveness study. Following a petition by electors, an elector poll was held in conjunction with the October 2002 council elections asking electors whether the council should revert to the previous charging regime.

In the lead up to the poll, a cost effectiveness study was completed which found that two-part tariffs were cost-effective. By a very small margin, electors in the municipality voted to retain two-part tariffs. While the poll is not binding on the council, two-part tariffs have been maintained.

Table 5.1: Implementation dates for two-part pricing

Scheme	Committed Implementation date	Actual Implementation date
Cressy	2000-01	July 2000
Deloraine	2000-01	July 2000
Evandale	2000-01	July 2000
Longford/Perth	2000-01	July 2000
Kempton	2000-01	July 2001
Sorell	2000-01	July 2001
Bracknell	2001-02	July 2001
Exton	2001-02	July 2001

George Town	2001-02	July 2001
Hadspen	2001-02	July 2001
Hillwood	2001-02	July 2001
Launceston	2001-02	July 2001
Prospect Vale	2001-02	July 2001
Scottsdale	2001-02	July 2001
Westbury-Carrick	2001-02	July 2001
West Tamar	2001-02	July 2001
Wynard-Somerset	2001-02	July 2001

The current water prices set by many councils, including the larger urban councils, do not include separate access and volumetric components. The absence of full water metering in many municipalities precludes the immediate introduction of volumetric pricing in the form of two-part tariffs.

Current pricing systems for the schemes are generally one of several basic types:

- two-part tariffs, with no free allowance[1];
- standard fixed tariff (all consumers pay the same amount);
- fixed tariff proportional to the assessed annual value of the property supplied; or
- fixed charge (standard charge or based on the assessed annual value) for a standard maximum water usage ("free allowance") with an "excess" charge for volumes used above this amount.

In its June 1999 report, GPOC also provided a set of principles to ensure that local councils successfully meet the asset renewal and asset maintenance requirements of the Water Pricing Guidelines agreed to by the Agricultural Resource Management Council of Australia and New Zealand.

Local councils are required to rigorously apply these principles to ensure that they are meeting the asset renewal and asset maintenance requirements, as specified in the Strategic Framework.

Additional papers provided by the Government to assist councils in complying with their urban water pricing obligations, including full cost recovery, are the *Community Service Obligation Policy and Guidelines*, November 2000 and a revision of the GPOC guidelines, titled *Urban Water Pricing Guidelines for Local Government in Tasmania*, January 2003.

The Urban Water Pricing Guidelines were revised to more closely align reporting requirements with the existing reporting requirements for significant business activities under section 84(2)(da) of the *Local Government Act 1993*. The inclusion of checklists and other interpretive material will further simplify the reporting process for Councils. The Guidelines also require councils to report environmental costs incurred, to explicitly report Community Service Obligations and to transition to determining asset valuation on a fair value basis in accordance with AASB 1041.

[1] A free allowance is a specified maximum quantity of water consumed before a charge above the fixed charge is incurred.

To assist councils with the new Guidelines, workshops for council officers were held in February 2003 in both the north and south of the State to address approaches to asset valuation, appropriate identification of CSOs and identification of externalities.

An annual audit is undertaken by the Government Prices Oversight Commission to determine the extent of compliance of councils in meeting their obligations for full cost recovery under the National Competition Policy agreements for water industry reform.

The 2002 audit of performance for the year ended 30 June 2001 found a generally high level of compliance by Tasmanian councils in both water and wastewater pricing. However, in the case of water pricing, four councils (Central Highlands, Clarence, Glenorchy and Hobart) were assessed as recovering insufficient revenue to meet the minimum requirement for full cost recovery, while the revenue of one council (Latrobe) was found to exceed the Guideline for the maximum allowable return.

Of the under-recovering councils, three have bulk water supplied by HRWA. Part of their under-recovery is the result of an exceptionally dry 2000-01 summer, which resulted in the quantities and costs of water being higher than anticipated, and therefore not recovered through those councils' rates-based charges. It is likely that 2001-02 would be a more normal year for assessing the extent of departure from the Guidelines. The remaining council, Central Highlands, is one of the smallest councils and has several very small schemes totalling less than 700 connections. In addition, the council has been subject to an extended period of drought.

In the case of wastewater pricing, three councils (Central Highlands, Hobart and West Coast) were assessed as recovering insufficient revenue under the Guidelines, and two (Derwent Valley and Glenorchy) were found to have exceeded the maximum allowable return.

Each of the seven councils found to be non-compliant has committed to a program of changes to reach full compliance within two to three years.

Central Highlands

The council has increased rates for 2002-03 by 2.9 per cent in order to commence the process towards a cost recovery regime with a view to a similar increase in water and wastewater rates as for 2002-03. The council has advised that it aims to achieve a positive real rate of return for both its water and wastewater businesses by 2004-05.

Clarence

In relation to the proposed future rating effort for water, council has a policy of fully funding its infrastructure renewal requirements ("depreciation funding"), with the required amount being phased in over time. The estimated target amount is $6 million per annum for all council assets and, in 2002-03, the council expects to raise $3.3 million.

The return on the council's water assets will continue to improve as its policy of funding infrastructure renewal progresses, both through an increased rating effort and through interest being earned on (and attributed to) funds as they accumulate. The council is conscious of the impact on ratepayers and is therefore managing the cost recovery issue carefully so that increases in the water rate are transitioned over time.

Derwent Valley

The administration and overhead costs allocated to water and wastewater services are to be reviewed during the completion of the 2002-03 Financial Statements. In addition, the council's water and wastewater infrastructure

assets are to be revalued for 2003-04. The council has advised that it will comply with the cost recovery guidelines for water and wastewater by 2004-05.

Glenorchy

At the time the GPOC audit was conducted, the Glenorchy City Council was in the process of implementing a new asset management policy. It was previously reported that the Council had a real rate of return of 11.3 per cent and following the revaluation, the real rate of return is now 5.2 per cent. GPOC has advised that, for 2000-01, Glenorchy City Council now complies with the cost recovery guidelines for wastewater, based on the new asset valuations.

Hobart

The Hobart City Council's water and wastewater undertakings will operate on a full cost recovery basis from the 2002-03 financial year. This is being achieved by increasing the level of rate revenue raised for these undertakings, together with a review of the level of overheads being attributed to these activities.

Latrobe

The Latrobe Council has budgeted for a reduction in the real rate of return on water assets for the 2002-03 financial year to 17.1 per cent. This budgeted reduction was achieved by decreasing water rates and re-evaluating overhead allocations.

Revaluation of water assets will be completed within the next 6 months. It is expected that an increase of at least 10 per cent will result. The rate of return is forecast to fall to approximately 11 per cent in the 2003-04 financial year. The council confidently expects to achieve the desired rate of 7 per cent by the 2004-05 financial year.

West Coast

The West Coast Council has made two significant rating policy decisions to increase the revenue received for the water and wastewater schemes whilst continuing to control the level of expenditure.

For 2001-02, the council increased rates for water and wastewater services by 15 per cent, while the 2002-03 operating plan delivers a further increase of 6 per cent for water and 9 per cent for wastewater. Additionally, in 2001-02, a separate construction rate for the Strahan wastewater scheme was introduced and is being maintained in 2002-03.

2003 Water Audit

In May 2003, GPOC delivered its report on councils' compliance with NCP water reform obligations as they apply to urban water and wastewater services for the 2001-02 financial year.

The 2003 audit of performance for the year ended 30 June 2002 again found a generally high level of compliance by Tasmanian councils in both water and wastewater pricing. In the case of water pricing 21 councils were found to be in practical compliance with the Guidelines. Of these Central Highlands, Clarence, and Latrobe are in the process of a two year transition to compliance with full cost recovery under agreed strategies following the results of the 2002 audit. The remaining four councils achieved results below the lower limit.

Waratah-Wynyard

The council experienced both an increase in costs and a decrease in revenues for its water business, resulting in a real rate of return of -1.6 per cent. The audit estimated that a revenue increase of 6.8 per cent is needed to reach the lower limit.

Southern Midlands

Southern Midlands achieved a return of -1.0 per cent, as a result of a 12 per cent decrease in revenue from 2000-01. GPOC estimated a need for a revenue increase of 8.9 per cent in order to achieve compliance with the Guidelines.

Launceston

Launceston was deemed to be in practical compliance last year, but is now under-recovering revenue with returns of -2.8 per cent due, in part, to the treatment of bulk water dividends. The council considers these as revenue to the water business whereas the Guidelines state that dividends must be removed from revenues in determining full cost recovery. Launceston has also undertaken an asset revaluation in 2002 which may have impacted upon its return. The audit results suggest an increase in revenue in the order of 18 per cent will be required to reach the lower limit.

Break O'Day

Break O'Day has experienced a shift in its cost recovery, moving from a positive rate of return of 1.4 per cent to a return of -1.0 per cent in one year. An estimated 19.8 per cent increase in revenue would be required in order to achieve compliance with the Guidelines.

In the case of wastewater pricing, only three councils (Sorell, King Island and West Coast) were assessed as recovering outside the limits under the Guidelines.

Sorell

Sorell was within the Guidelines last year but has gone significantly above the upper limit for 2001-02. This would appear to be due to the grant of the Lewisham Sewerage Construction Fees of $125 000. If the effect of the grant were removed, Sorell would achieve a rate of recovery within the Guidelines.

King Island

King Island is also significantly over recovering for wastewater at the rate of 16 per cent. This is due to the council raising funds in advance of construction of a new sewage treatment plant.

West Coast

West Coast has also over recovered with a return of 9.7 per cent representing a significant change for the under recovery recorded for the previous year. This is largely due to receipt of a major grant of $900 000 for Strahan Sewerage. If the grant were removed, West Coast would record a rate of return of 0.3 per cent which would be within the acceptable range. It is expected, that revenues will return to normal levels in 2002-03.

The terms of reference for the 2003 audit also required GPOC to investigate the use of property-based charges for the fixed component of two-part tariff structures and for single-part tariffs. In particular, GPOC was required to examine whether the use of property-based charges constitutes a cross-subsidy that is likely to create inefficiencies in the use and provision of water and wastewater services.

GPOC found that, in the case of single-part tariffs, there will inevitably be inefficiencies and cross-subsidies, irrespective of whether property values, connections size or any other measure is used to allocate costs. However, these inefficiencies may be less than those when the cost of administering a metering scheme outweighs the benefits.

In the case of two-part tariffs, GPOC found that, where the volumetric price is set correctly, the fixed charge represents the cost to the consumer of the provision of water services.

In determining whether property-based fixed charges are likely to create inefficiencies, GPOC used two tests of efficiency:

- the fixed charge must be independent of the volume consumed, otherwise it would influence the consumer's choice of volume; and
- allocative efficiency requires that no consumer pay an 'excessive fixed charge', that is, one which is greater than the consumer's value of connection to the water network. Allocative efficiency is therefore guaranteed if the fixed charge is less than the value of the water connection.

Property-based charges were found to satisfy the requirement of independence of water use. However, as AAV is not perfectly correlated to a consumer's value from the water network, it could potentially require a prospective customer to pay a fixed charge that is greater than his or her value of being connected to the water network. Nevertheless, GPOC found no evidence that the AAV-based fixed charge has caused any customers to change their decisions about connecting to the water network.

On this basis, GPOC found that a property-based fixed charge, of a magnitude just sufficient to cover the fixed cost of the urban water authority, is unlikely to be inefficient.

Urban wastewater services

In relation to trade waste charges, the Government has noted the NCC view that wastewater charges should recover the incremental costs of treatment of trade waste. In particular it is noted that metropolitan wastewater charges should reflect the level of services received, measured where practicable through the volume and pollutant load.

The Government is working with councils where the largest trade waste dischargers are located (Devonport, Hobart, Launceston, Circular Head, Central-Coast, Glenorchy and Burnie Councils) to verify the structure and use of trade waste charges in these local government areas and to ensure that they meet the pricing objectives.

There are a number of legislative mechanisms available to councils to enable specific trade waste issues to be addressed where they arise.

The Local Government Act provides Tasmanian councils with broad competency powers to carry out their functions in providing services to local communities. These enable councils to enter into trade waste agreements, through contractual agreements with waste dischargers, to recoup the additional costs of treatment of trade waste.

The *Plumbing Regulations 1994* [Section 22 (1)] include provisions prohibiting direct or indirect discharge of trade waste into a sewerage system unless the discharge is authorised in accordance with a special connection permit. Penalties are available to enforce this prohibition.

Councils can also make use of by-law making powers available under the Local Government Act to establish by-laws addressing trade waste issues. The Glenorchy City, Hobart City, Launceston City and Devonport City Councils have specific trade waste by-laws that have been used to back up extensive trade waste policies and guidelines established by those councils. Other councils with sewer and/or drain by-laws that provide similar powers are Brighton, Central Highlands, Clarence City, Huon Valley, Kingborough, Sorell and Tasman Councils.

The Department of Primary Industries, Water and Environment (DPIWE) has issued environmental guidelines for the acceptance of liquid wastes to sewer under its Sewerage Management Program and these identify technical limits of acceptance for liquid wastes. Through this program, DPIWE has been working with councils to identify sources of trade waste. DPIWE has also developed a model trade waste agreement to assist councils in establishment of trade waste agreements.

For the purposes of the 2003 assessment of the State's progress in implementation of COAG Water Reform obligations, the NCC has sought information on the structure and use of trade waste charges in local government areas where the largest trade waste dischargers are located. The NCC identified these as Devonport, Hobart, Launceston, Circular Head, Central Coast, Glenorchy and Burnie.

In relation to urban water pricing principles, the NCC has stated that wastewater charges should reflect the level of services received (volume and pollutant load) where practicable (for example, through effective trade waste charges).

The Government has surveyed the identified councils and has been provided with the following information regarding the trade waste charging policies employed by them.

Burnie

The Burnie City Council has a trade waste agreement in place for one identified discharger. One other significant discharger in the region has acceptable self-treatment arrangements in place accompanied by appropriate land disposal licences.

Under the terms of the one trade waste agreement, charges apply in regard to the metered volume of output and rate of biochemical oxygen demand (BOD).

The council will be undertaking further assessments of potential trade waste dischargers in the 2003-04 financial year with a view to developing a policy for smaller commercial dischargers.

Central Coast

One major trade waste discharger is located in the Central Coast Council area. The council has had a trade waste agreement in place with this business since 1980. The agreement stipulates a review every five years with the next review scheduled to occur during 2003.

The agreement requires the discharger to pay the council trade waste charges based on the proportional load and cost of operating the council's wastewater treatment plant. A minimum service charge is determined based on the costs of operation of the Ulverstone wastewater treatment plant. These include inlet works, oxidation ditch and pump station, sludge treatment facilities, pipeworks, siteworks and buildings and electrical services. The minimum service charge also includes elements of the pipeline and pump station ancillary works. An annual operating charge is also applied covering pump station and treatment plant operating costs.

Aside from this one major discharger, the number of industries contributing high volume and pollutant load in the Central Coast Council are limited. The council has monitored these activities by applying the Department of Primary Industries, Water and Environment's *Guidelines for Acceptance of Liquid Wastes to Sewer*. However, because of the relatively small number of trade waste dischargers the council has, hitherto, placed a higher priority on the survey and reduction of stormwater infiltration and illegal drainage connections to the sewer system. The council has indicated that it will review implementation of trade waste charging for minor dischargers in 2004.

Circular Head

The Circular Head Council has trade waste agreements in place with the two largest trade waste dischargers to the Council's sewer system. The agreements are based on volume and pollutant load and reflect the actual cost of service provided by the council.

The total cost distribution is made up of 25 per cent for flow, 65 per cent for biochemical oxygen demand and 10 per cent for suspended solids. These apportionments represent the treatment costs for each division and therefore each contributor pays their proportional costs.

Devonport

The Devonport City Council advises that it employs the pricing principles identified in the paper *A Simplified Approach for Charging Trade Waste Acceptable for Discharge to Sewers*, (M Boake, NSW LGEA Conference 1987). This method apportions the council's costs relating to both transport and treatment of sewage, relative to the quality and quantity of waste discharged by individual industries.

The rate for volume discharge is determined by division of the overall transport costs by the total discharge volume. The trade waste component is apportioned to each industry in the ratio of their measured or deemed discharge volume to the overall volume.

The rate for quality discharge is determined by division of the overall treatment costs by the total discharge quantities for both biochemical oxygen demand and oil and grease. The trade waste component is apportioned to each industry in the ratio of their measured or deemed discharge quantities of BOD and oil and grease to the overall quantity.

Glenorchy

Glenorchy City Council introduced a Trade Waste Policy and charging regime in 1997. All trade waste dischargers have been assessed and categorised according to the volume and toxicity of discharge.

Smaller trade waste dischargers pay an annual fee of $180 calculated based on an average discharge of 400 kilolitres per year and a rate of $0.45 per kilolitre. This rate was developed by consultants and incorporates the cost of receiving and disposing of liquid trade waste and includes all costs associated with management and renewal of the trade waste component of the sewerage system. Larger trade waste dischargers pay a fee based on the cost of treating waste plus an incentive to reduce the volume and pollutant load from their business.

Hobart

The Hobart City Council implemented a liquid trade waste policy in November 1998. Under the policy properties are categorised as:

Category 0	Domestic – normal domestic wastewater
Category 1	Light – low strength and volume
Category 2	Medium – low strength and high volume
Category 3	Heavy – high strength discharge

Implementation of the policy was prioritised, with trade waste agreements being finalised with Category 3 dischargers first and then Category 2 dischargers.

The council has approximately 600 premises that discharge liquid trade waste to the council's sewer system and the majority are managed through trade waste permits that specify acceptance limits.

The council has finalised trade waste agreements with the three premises identified within Category 3 and remote-monitored trade waste telemetry stations are installed at all premises recording flow, temperature and pH. The Agreements contain provisions for the recovery of operating costs and depreciation, relating both to the Council's sewerage treatment facilities, sewer reticulation costs, sludge disposal costs and trade waste administration costs, along with relevant on-costs and overheads.

In 1998, the council initiated a review of the trade waste charges recommended in the original policy. Earth Tech Engineering Pty Ltd (formerly Fisher Stewart), in association with Marsden Jacob, was commissioned to undertake the review, which included as objectives the identification of proposed tariffs that achieve full cost recovery on a current cost basis. The consultants were also asked to evaluate the efficiency of the tariff having regard to the relative costs of collecting, treating and disposing of the trade waste effluent received by the council. The resulting recommendations have been implemented.

Launceston

The Launceston City Council has reported that, at the current time, its trade waste licensing system is used primarily to identify potentially hazardous dischargers and to protect the council's staff and infrastructure from them. Apart from a nominal licence fee, wastewater treatment charges are met from the AAV-based sewerage rate.

The council has developed a trade waste charging policy comprising multiple level tariffs based on volume and pollutant loads. The council has been trialing the policy on its council business units over the last two years and in December 2002 appointed consultants to review the results, develop proposed charge levels and to advise on application to the broader community.

The council has identified significant cost implications, both to it and the broader community, from implementation of trade waste charges. The council considers that a roll out of a new charging system should be phased in over a three-year period to allow business to adjust to significant cost increases. This will also allow businesses time to choose to minimise waste discharges if they wish to do so, with potential flow on benefit to the council of reduced loads on its treatment plants.

Bulk water authorities

As a result of GPOC's 2001 investigation into the pricing policies of the three bulk water authorities, the Government has determined in relation to water pricing that the maximum allowable revenues (MAR) and maximum volumetric price (MVP) to be charged by the three bulk water pricing authorities for the period beginning 29 September 2001 and ending 29 September 2004 (in real dollars 2000-01) areas listed in Table 5.2.

Table 5.2: MAR and MVP, 29 September 2001 to 29 September 2004

	2001-02	2002-03	2003-04
	$'000	$'000	$'000
Hobart Regional Water Authority:			
MAR	25 957	26 063	26 049
Further work concerning the Marginal Capacity Cost (MCC)	To review the threshold levels for application of MCC.	To review the threshold levels for application of MCC.	To review the threshold levels for application of MCC.
Esk Water Authority:			
MAR	12 770	12 815	12 773
MVP	40 cents per kilolitre.	40 cents per kilolitre.	40 cents per kilolitre to Jun 04 and 30 cents per kilolitre thereafter.
Cradle Coast Water Authority:			
MAR	9 436	9 454	9 512
MVP	20 cents per kilolitre for treated water.	20 cents per kilolitre for treated water.	20 cents per kilolitre for treated water.

The Government has also advised the bulk water authorities that GPOC's Final Report should be regarded as a prudent guideline for target revenues. The target revenues for each bulk water authority (as in the recommendations contained in the Final Report and in real dollars 2000-01) are listed in Table 5.3.

Table 5.3: Target Revenue

Water Authority	2001-02	2002-03	2003-04
	$'000	$'000	$'000
Hobart Regional Water Authority	22 053	22 265	22 368
Esk Water Authority	10 386	10 483	10 497
Cradle Coast Water Authority	8 052	8 102	8 194

The Government further advised the bulk water authorities that GPOC's Final Report should be regarded as a prudent guideline concerning pricing policies.

Rural water supply

Water pricing for Government irrigation schemes

Less than 10 per cent of irrigation water used in Tasmania is sourced from publicly-owned infrastructure. The vast majority of irrigation water is sourced from unregulated streams or on-farm storages utilising privately funded infrastructure.

There are three Government-owned irrigation schemes in the state: Cressy-Longford, South-East and Winnaleah, with ownership vested in the Rivers and Water Supply Commission. On 1 April 2002, the management of the Cressy-Longford Irrigation Scheme was devolved from the RWSC to the Cressy-Longford

Irrigators Association (CLIA). On 1 December 2003, the RWSC devolved the management of the Winnaleah Irrigation Scheme to the Winnaleah Irrigators Association (WIA). CLIA and WIS are required to operate the schemes on a commercial basis with water prices set to recover at least the lower limit of the COAG pricing benchmark.

The South-East Irrigation Scheme is currently managed by the RWSC. As a GBE, the RWSC is required to include the payment of tax equivalents and a loan guarantee fee in the determination of its costs for operating its trading enterprise. Water pricing is set through the business plan for the scheme which forms part of the RWSC's Corporate Plan.

Water prices cover operational, management, maintenance, finance and asset consumption (as depreciation or renewal annuities) costs. All schemes receive an equity injection from the Government to cover the costs of repayments and interest on loans which were established to provide the capital funding for construction of the schemes. These government equity injections appear as separate, fully transparent items in the RWSC's annual financial statements for each scheme. These statements are tabled in Parliament and are public documents.

Cressy/Longford Irrigation Scheme (CLIS)

Water pricing for CLIS is based on a two-part pricing system with a fixed charge per ML of irrigation right and a volumetric charge per ML of water actually used to cover variable costs.

Over the previous seven years, water prices have risen to achieve full recovery of operational, maintenance, administration and asset consumption costs. This has been achieved by establishing a revenue target and then setting water prices to meet this target, based on the rolling five year average of water sales. The financial costs (interest and repayment of the loans taken out to establish the scheme) are not included in the revenue target as they are treated as a government subsidy to the scheme.

It was considered that full cost recovery (as defined above) had been achieved in 1997-98. However, a 1999 review of the price fixing model being used by the RWSC indicated that the model was not appropriately accounting for depreciation. The model was corrected and used to set the 1999-00 prices which included an asset renewal levy. Prices were set for the 2003-04 financial year based on the same methodology (refer to Table 5.4).

In consultation with scheme users, the following initiatives have been implemented since 1995 to reduce the revenue target:

- a reduction in CLIS employees from three to two;
- an extension of the scheme district and allocation of additional irrigation rights to spread the fixed costs;
- restrictions on the amount of water allowed to be used per ML of irrigation right before a price penalty is incurred (changed from no restriction to twice the relevant irrigation right);
- the staged removal of a cross subsidy for a specific group of users relying on a pumping system (previously power charges for the pump were paid by all scheme users); and
- the replacement of the depreciation charge with an asset renewal levy.

Table 5.4: Cressy/Longford Irrigation Scheme water prices

CLIS: Price charged	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Irrigation Rate	$18.70	$18.70	$21.82	$21.82	$21.82	$21.82	$22.40

(per ML Irrigation Right)							
Irrigation Charge (per ML for all water used)	$15.70	$15.30	$15.90	$15.90	$15.90	$15.90	$15.90

Prior to 2003-4 water prices for the Cressy Longford Irrigation Scheme were set by the RWSC in consultation with scheme users. For 2003-04 the prices were set by the CLIA.

Winnaleah Irrigation Scheme (WIS)

Water pricing for WIS is based on a modified two-part pricing system, consisting of a fixed charge per ML of irrigation right and a volumetric charge per ML of water actually used, with the volumetric charge varying over the irrigation season.

The current pricing system was suggested by scheme users and adopted by the RWSC in 1999-00. It aims to encourage greater water use in the off-peak seasons and to discourage use (or at least fully account for marginal costs) at the peak of the season (refer to Table 5.5).

Over the previous seven years, water prices have risen to achieve full recovery of operational, maintenance, administration and asset consumption costs. This has been achieved by establishing a revenue target and then setting water prices to meet this target, based on the rolling five year average of water sales. As with CLIS, the financial costs (interest and repayment of the loans taken out to establish the scheme) are not included in the revenue target as they are treated as a government subsidy to the scheme.

Full cost recovery was achieved in 1998-99. At this time, the costing for asset consumption was changed from straight-line depreciation to an asset renewal levy.

In consultation with scheme users, the following initiatives have been implemented since 1995 to reduce the revenue target:

- the sale of additional irrigation rights to spread the fixed costs;
- the introduction of a quota system by which irrigators incur a price penalty for any water used over a percentage of their irrigation rights at peak usage times;
- the replacement of the depreciation charge by an asset renewal levy; and.
- the replacement of the previous scheme operator with a contracted employee.

Table 5.5: Winnaleah Irrigation Scheme water prices

WIS: Price charged	**1996-97**	**1997-98**	**1998-99**	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**
Irrigation Rate (per ML Irrigation Right)	$47.50	$53.50	$55.50	$44.00	$47.00	$47.00	$47.00	$47.00
Irrigation Charge (per ML for all water used)	$0.00	$0.00	$0.00	$9.00[1]	$8.50[1]	$8.50	$8.50	$8.50

[1]Irrigation charge varies from zero in off peak seasons, through 50 per cent of the prices above in shoulder seasons, to full price in the peak season.

As of 1 December 2003 the management of the Winnaleah Irrigation Scheme was devolved to the Winnaleah Irrigators Association who will set the prices in the coming years.

South East Irrigation Scheme (SEIS)

Water pricing for SEIS is a fixed charge based on the amount of irrigation right held, reflecting the high proportion of fixed costs for the scheme. Over the previous seven years, water prices have risen with the intention of achieving full recovery of operational, maintenance, administration and asset consumption costs by 2006 (refer to Table 5.6).

Severe drought, major mechanical problems with the pumping system for the scheme in 1999-00, and ongoing water quality issues led to modifications to the scheme infrastructure in 2000-01 to increase overall water supply surety and water quality in Stage 2. These modifications were undertaken after extensive consultation with scheme users (including scheme users' agreement to the proposed price path involved).

These modifications involved the change of the source of supply for Stage 2 users from Craigbourne Dam to HRWA. Under this arrangement, Stage 2 is supplied with fully treated water originating from water resources in the Derwent Valley via HRWA's urban supply line. The full capacity of Craigbourne Dam is now available for supply of Stage 1.

These modifications led to a major increase in water prices in 2000-01 as the RWSC is required to meet the full price of water supplied by Hobart Water ($155/ML).

This has required a modification of the original price path to full cost recovery (defined as full recovery of operational, maintenance, administration and asset consumption costs while financial costs [interest and repayment of the loans taken out to establish the scheme] are treated as a government subsidy to the scheme).

Calculations indicate that full cost recovery under present operating arrangements is $90/ML for Stage 1 and $245/ML for Stage 2. The price path chosen by the RWSC involved a large increase in price for the 2000-01 season (to enable the RWSC to meet the full cost of water supply from HRWA) followed by a straight-line increase to the target price (increased appropriately for CPI increases) over the following 10 years.

Hence, the price path is an annual increase of $1/ML + CPI and $6/ML + CPI for Stage 1 and Stage 2 respectively from 2001-02 to 2010-11. The endpoint price for Stage 2 is $215 (+ accumulated CPI increases) as the capital charge currently being included by HRWA in the water price ($30/ML) will be eliminated in 10 years' time as the result of the repayment of a 10 year loan for capital works.

However, it is expected that the cost of scheme operation will reduce significantly in the next few years due to:

- reduced staffing costs as a result of new arrangements (including a change from two part-time operators to one part-time operator and use of casual operators as necessary);
- a significant reduction in maintenance costs as a result of the switch from on-demand pumping to gravity feed; and
- a significant reduction in asset consumption costs as the most expensive expendable short-term asset (the on-demand pumping system) is not expected to be renewed as its function has largely been replaced by the new water supply system for Stage 2.

In addition, the RWSC has put additional irrigation rights on the market in both stages of the scheme. Sale of additional rights will spread the scheme costs and hence reduce the cost per ML of irrigation right.

Thus it is expected that full cost recovery will be achieved much sooner than 2010-11 on the above price path.

Table 5.6: South East Irrigation Scheme water prices

SEIS Price charged	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Stage 1 - Irrigation Right (per ML)	$47.00	$52.50	$59.00	$66.00	$80.00	$83.00	$86.00	$90.00
Stage 2 - Irrigation Right (per ML)	$47.00	$52.50	$59.00	$66.00	$155.00	$166.00	$176.00	$186.00
Stage 2 – Pumping charge (per ML used)	$75.57	$62.23	$60.16	$59.60	$0.00	$0.00	$0.00	$0.00

Raw water pricing

Prior to the enactment of the *Water Management Act 1999* (WMA), pricing for "raw water" (water taken directly from rivers, lakes and aquifers by commercial water users) varied widely, from a nil cost to $26 per ML.

Previously, the majority of commercial water users (holders of Commissional water rights under the now repealed *Water Act 1957*) were charged a biennial fee. However, the fees were not reflective of the direct costs, including licensing, monitoring and compliance auditing incurred by the RWSC in managing the water resources. Other water users generally did not contribute to the regulatory and monitoring costs, although they derived benefits from these services.

With the introduction of the WMA, the Government confirmed its commitment to introduce a new user-pays pricing policy.

To this end, the WMA provides that water licence fees can vary according to the quantity of water taken, the source of water, the use to which the water will be put, when the water is taken, the degree of certainty of the water supply being available and the method by which the water is taken. This provides for a flexible pricing system for dealing with the wide variety of types of water takes throughout the State, from Hydro Tasmania's licensed take of around 25 million ML to a take of one ML by a landholder into a farm dam.

The *Water Management Regulations 1999* (proclaimed on 1 January 2000) established the new water licence fees. The fee-setting system for water taken from unregulated streams, lakes and groundwater provides for:

- clear separation of public and private good costs incurred in water management;
- the setting of licence fees to reflect the direct costs attributable to licensees (a standard administrative fee to cover licence issue and a variable management fee to cover compliance auditing, streamflow monitoring etc);
- the creation of eight different pricing regions to reflect the variations in the cost of servicing users in different catchments of the State;
- a broader base for revenue collection to ensure that all direct beneficiaries contribute equitably to the costs of the services provided;
- a different pricing structure for different types of licences, for example, water taken into storage during winter compared to water taken directly from rivers during summer; and
- opportunities for licensees to reduce their costs by changing the level of service received from the Government.

During 2003-04 DPIWE conducted a review of water licence fees to take account of changes in water allocations and in water management costs since the current fees were established. A discussion paper on the review and the proposed new fees was advertised and released for public comment for a period of 4 weeks in November 2003. Comments were received from the Tasmanian Farmers and Graziers Association of Tasmania, the Tasmanian Conservation Trust, Inland Fisheries Service and the Tasmanian Chamber of Commerce and Industry. The comments were generally supportive of the fee setting methodology and the resulting proposed changes to the current fees. The lack of any responses from individual water users was taken as widespread acceptance of the methodology and the fees, indicating that the fees are deemed to be reasonable and equitable. DPIWE is currently drafting Regulations in relation to the new fees which will come into force on 1 July 2004.

Groundwater

Groundwater resource assessment work by Mineral Resources Tasmania within the Department of Infrastructure, Energy and Resources indicates that current consumption of groundwater is around 20 000 ML per annum, compared to a sustainable yield of 500 000 ML per annum. Long-term monitoring indicates that in most areas of the State, current usage is generally having no adverse impact on groundwater quantity or quality.

Currently, the only significant government activity in relation to groundwater management is the monitoring of the impact of use. This is undertaken by DPIWE as a public good activity with no charge being directly levied on groundwater users. However, as part of the 2003 Great Forester Water Management Plan, a groundwater licensing system will be implemented within the first five years of the Plan. Groundwater allocations will be established for all users of groundwater within the plan area except where groundwater is used for stock and domestic purposes.

Groundwater management is an integral part of freshwater management and is also undertaken by DPIWE under the WMA. The Act provides that the costs of groundwater management services may be recouped from users where the services are provided as a direct result of the users' activities.

Proposed amendments to the WMA in 2004 will facilitate the introduction of groundwater licensing and regulation of bore construction in areas where groundwater usage needs to be regulated to ensure sustainable and equitable usage. Appropriate licence fees will be introduced where licensing of groundwater taking is implemented.

Institutional reform

Responsibility for water management

Prior to the commencement of the WMA, there were several public and private bodies managing water resources in the State, for example, the RWSC, Hydro Tasmania, Mineral Resources Tasmania, councils and private companies. Almost all of these bodies also had responsibilities for the provision of water services.

Under the WMA, the responsibility for management of all of the State's freshwater resources is vested in the Minister for Primary Industries and Water, with DPIWE being responsible for the implementation of the provisions of the Act. All service providers, including the RWSC, councils and Hydro Tasmania, require licences to take water.

A separate Act, the *Rivers and Water Supply Commission Act 1999*, which was also proclaimed on 1 January 2000, makes provision for the continuation of the RWSC as a GBE with responsibility for the commercial management of government water schemes. The RWSC now has no natural resource management

role (other than to meet the conditions of its water licences or to implement a Water Management Plan as discussed below).

Under the WMA, service providers are able to manage water resources as part of their licence conditions or in situations where an approved Water Management Plan is in place. In these situations, DPIWE is accountable for compliance auditing of the provider to ensure that the agreed licence conditions or water management requirements of the Plan are met.

Service provision

Under the WMA, DPIWE no longer has a role in the delivery of water services. The transfer of responsibility for major urban water services to local government leaves the Prosser Water Supply Scheme as the only State Government-owned urban water supply scheme. This Scheme is currently operated by Glamorgan/Spring Bay Council under contract to the RWSC and serves several small towns on the East Coast. The full transfer of this Scheme is being negotiated with the Glamorgan/Spring Bay Council.

Efficient delivery of water services

In accordance with the GBE Act, the Department of Treasury and Finance, on behalf of the Government, continues to monitor the quarterly financial performance of GBEs (including the RWSC) against planned performance targets.

To enhance public accountability, the published annual reports of GBEs include a Statement of Corporate Intent which details:

- the business definition, which outlines the core business, any major undertakings, key limitations and any CSOs required to be delivered;
- strategic directions, including the business directions for the GBE, the major goals, expected outcomes and key factors affecting the operating environment;
- business performance targets, which provide a public commitment to performance in key areas of the business; and
- any other major issues, including significant changes in any areas, for example, pricing issues, employee relations and subsidiaries.

Performance comparison criteria have been developed for the three bulk water authorities.

The RWSC is participating in the national performance monitoring program for irrigation schemes developed by the Standing Committee on Agriculture and Resource Management and now being managed by the Australian National Committee on Irrigation and Drainage (ANCID). The three RWSC schemes were reported on in the first benchmarking report released by the Standing Committee in January 1999 and prepared for the 1997-98 financial year and have participated in all subsequent benchmarking reviews.

However, recent changes to the benchmarking system by ANCID mean that it is no longer cost-effective for small schemes such as those in Tasmania to participate in the national system. Hence, the RWSC and DPIWE will determine appropriate benchmarks for ongoing monitoring of the performance of the Tasmanian irrigation schemes.

Commercial focus for water services

The establishment of the HRWA, the EWA and the NWWA as joint authorities was based on the following principles:

- all of the major customer councils within the region must be involved;
- the bulk supply joint authority must function at arms length from the councils involved, in a proper commercial manner; and
- appointments to the joint authority Board must be on the basis of skills and experience to manage a bulk water supply, as distinct from representative experience.

These transfers of the bulk water authorities from the State Government to local government were also conditional upon assurances from local government that the bulk water operations will be conducted in a manner that enables the State to meet its obligations under the NCP Agreements. This means that joint authorities are subject to tax equivalent, dividend and guarantee fee regimes.

The establishment of the HRWA, the EWA and the NWWA as joint authorities of local government is fully consistent with the recommendation of London Economics in its final report, entitled *Water Sewerage and Drainage Review - Tasmanian Roles and Functions Committee* in September 1995.

In this report, London Economics clearly recommended a corporatisation model, with State or local government-owned organisations operating according to sound commercial practice. In this manner, London Economics considered that the best practices of the commercial sector are brought into the industry and that there is appropriate accountability for performance and for meeting standards.

The establishment of the RWSC as a GBE in 1995 has led to a greater commercial focus for the operation of Government-owned irrigation, water supply, riverworks and drainage schemes. In particular, in accordance with section 7 of the GBE Act, the RWSC is to:

> "perform its functions and exercise its powers so as to be a successful business by -
>
> (i) operating in accordance with sound commercial practice and as efficiently as possible; and
>
> (ii) maximising the sustainable return to the State in accordance with its corporate plan and having regard to the economic and social objectives of the State."

Under the GBE Act, governance of the RWSC is undertaken jointly by the Stakeholder Minister (the Treasurer) and the Portfolio Minister (the Minister for Primary Industries and Water).

The Commission must undertake its responsibilities in accordance with a Ministerial Charter under Division 1 of Part 6, and an annual Corporate Plan under Division 2 of Part 6, of the GBE Act.

The Commission sets water prices under section 48 of the *Irrigation Clauses Act 1973*, in accordance with the requirements of the GBE Act.

Under section 24 of the GPO Act the Treasurer may direct GPOC to undertake an investigation into the pricing policies of a monopoly provider. The RWSC may therefore potentially be declared to be a monopoly provider under the Act.

Management of irrigation schemes

For many years, the RWSC has fostered the establishment of separate management committees for each of the three irrigation schemes for which it is responsible. The committees have a majority membership of elected

irrigator representatives. While the committees are only advisory, the RWSC has sought their advice on all significant matters affecting scheme operations.

In 1998, the RWSC appointed Stanton Associates/GHD Joint Venture to undertake an investigation of alternative management options for the schemes, including commercialisation, individual corporatisation or privatisation. The consultants finalised their reports on the Cressy-Longford and Winnaleah Schemes in 1999 and for the South East Scheme in early 2000. Scheme users were actively involved in establishing the guidelines for the investigation and in directing the consultancy work as it progressed.

The reports indicated that commercialisation or privatisation of the irrigation schemes is economically feasible, with some cost savings in scheme operation possible if the required services could be obtained on the open market (rather than through the RWSC).

The RWSC subsequently entered into negotiations with elected representatives of the Cressy-Longford Irrigators Association (CLIA), including funding independent financial, business and legal advice for the CLIA, with a view to reaching agreement for the devolution of day to day management of the CLIS.

In 2000, the RWSC reached agreement in principle for the CLIA to take over the management of the scheme from 1 July 2001. The proposal was agreed in principle at the CLIA annual general meeting in October 2000 and details were agreed at a general meeting of the CLIA on 6 March 2001.

The proposal was for the RWSC to retain ownership of the fixed assets while the CLIA (as an incorporated company) takes over the role of the responsible water entity under the *Water Management Act 1999*. Under this arrangement, CLIA would have responsibility for day to day scheme operations, administration and management, including price setting and staff management, and own the operational assets. Fixed water delivery and/or water storage assets would be retained by the RWSC, at least for the time being.

Just prior to the proposed handover date, the Australian Taxation Office retracted previous advice to the CLIA that its operations would qualify as a tax-free entity. Having subsequently finalised that the new irrigator association would be a taxable entity, a review of the CLIA's business plan was necessary and hence the handover was postponed. Negotiations between the RWSC and CLIA then re-commenced in January 2002. Agreement was reached for handover, under the new tax ruling, on 1 April 2002. CLIA has been operating the scheme since that date.

Negotiations commenced with Winnaleah Scheme Irrigators at a meeting in August 2001 for the handover of the Winnaleah Scheme on similar grounds to that agreed to with the CLIA. Further discussions were put on hold pending consideration and settlement of a revised agreement with CLIA to provide for the change in tax status of the new entity. A draft agreement was discussed with irrigators on 21 March 2003 and the handover occurred on 1 December 2003.

In expectation that agreement for the transfer to self-management would be settled with both the Cressy-Longford and Winnaleah Irrigators, it was agreed with both groups that they make the selection and arrange employment of new irrigation scheme staff. With assistance from private consultants, irrigators appointed new scheme managers for the Cressy Scheme in January 2001 and Winnaleah Scheme in September 2001.

The devolution of the South-East Irrigation Scheme is complicated by the more complex nature of scheme operations and the current pricing regime. However, negotiations on devolution of the scheme are a priority for the RWSC during 2004.

Allocation and trading reforms

Rights to take water

Prior to the enactment of the *Water Management Act 1999* (WMA), water users had access rights to water through a wide range of statutory provisions, for example:

- owners of riparian tenements were able to take water for stock and domestic purposes under common law;
- the vast majority of commercial water users (around 2 400) were licensed under the earlier *Water Act 1957*;
- other specific groups (eg. Hydro Tasmania and holders of prescriptive rights and rights in fee) had entitlements under separate provisions of the *Water Act 1957*;
- other surface water users had rights under several specific pieces of legislation; and
- groundwater users could be licensed under the Groundwater Act.

The WMA has the following provisions:

(a) all rights to surface and groundwater are vested in the State;

(b) specified people may take water without needing a licence. Riparian or 'quasi-riparian' land owners, as well as casual users of land, may take water from watercourses and lakes for human consumption, domestic purposes, stock watering and fire fighting ("riparian rights"). In addition, electricity generation for private use is permitted where this does not adversely affect other users or the environment. Occupiers of land may also take surface water (water not flowing in a watercourse) and groundwater from that land for any purpose. Common law rights to naturally occurring water are abolished and all water users other than those outlined above are required to be licensed;

(c) the above entitlements to take water without a licence are subject to the taking of water not leading to material or serious environmental harm or being contrary to the provisions of an applicable water management plan. In addition, no-one may take water in excess of his or her reasonable requirements for the above purposes and maximum takes may be prescribed by regulation (and are in place for "riparian rights" under the *Water Management Regulations 1999*);

(d) the Minister may deem it necessary to licence water users who would otherwise have a right to take water under (b) above in order to ensure the equitable sharing of water or to avoid environmental harm;

(e) the Minister may grant a water licence to a person to take water from a water resource. Licences are required to take water for a purpose, or in a manner, other than that listed above under paragraph (b);

(f) the details that must be specified in a water licence include the name of the water resource, the surety with which the water allocation can be expected to be available, the quantity of water that can be taken, the date on which the water licence expires and any special conditions;

(g) a water licence is separate to a land title and is the property of the licensee; and

(h) a licence or all or part of the water allocation on a licence may be transferred to another water user.

The changeover arrangements from the previous licensing system to the new system under the WMA provided that pre-existing legal entitlements to water were preserved where they were sustainable. The Act allows the Minister to vary the conditions or reduce the allocation of a licence, or impose restrictions on the taking of water as necessary to meet environmental requirements.

With the enactment of the WMA, in January 2000, the State commenced a process of converting the water access entitlements that existed prior to that date to new water licences that are quantified and tradeable.

The water licence conversion process started with the conversion of Commissional water rights to water licences under the new Act. This action is now complete and all 2,300 or so Commissional water rights except those of two of the three large urban water authorities have been converted to licences under the new Act and can now participate in water trading arrangements. The Commissional water right of one large urban water authority (Esk Water) has been converted and work is progressing on conversion of the other two (Hobart Water and Cradle Coast Water). This process has been complicated by the lack of clarity on the quantity of the historical water access entitlements of the authorities and the priority of those entitlements. While interim arrangements are in place enabling the authorities to meet their obligations under the WMA, full conversion of the entitlements may need to wait until Water Management Plans for the relevant catchments are completed.

The conversion of previous prescriptive rights to licences and allocations under the new Act has also been largely completed. A small number of conversions are outstanding where the registered owner of the right cannot be located.

All town water supply rights previously held under the *Local Government Act 1993* have also been converted to licences and allocations under the new Act apart from one, for Burnie Council, which is far more complicated than for all other councils. As with the entitlements for Hobart Water and Cradle Coast Water, final resolution of this issue may only be possible through development of a water management plan.

On proclamation of the WMA, the previous powers of the RWSC to grant water entitlements and to manage water resources was removed. Parliament's intention was that the RWSC's previous water entitlements were preserved by virtue of the cognate *Rivers and Water Supply Commission Act 1999*, as licences issued under the WMA. The WMA provides that the RWSC is subject to the same statutory framework as other water licensees, including being bound by the provisions of a relevant Water Management Plan and the ability to transfer its licences or part or all of its water allocations.

Legal advice received in 2003 from the Office of the Solicitor General indicated that, notwithstanding Parliament's intention in passing the WMA and the *Rivers and Water Supply Commission Act 1999* to preserve the water entitlements of the Commission applying at that time, a drafting error meant that those entitlements had not been preserved. To rectify this situation, the Minister has exempted the RWSC, under s.11 of the Act, from the need to hold a water licence and allocation for these schemes. The exemption includes conditions that would have otherwise been conditions of the licences. This matter be more appropriately addressed through amendments to the WMA in 2004.

Assessment of water allocations and dam permits

Water allocations

In 1995, the RWSC imposed a moratorium on the issue of new water entitlements for direct taking of water during summer and the moratorium has been continued by DPIWE. The moratorium will only be lifted on particular water resources when appropriate environmental flow regimes have been established which clearly show that further allocations are ecologically sustainable.

The Department of Primary Industries, Water and Environment has provided temporary allocations to applicants for water rights on some streams where it expects the environmental flow requirements to be readily met within the current regime of licensed water entitlements. These temporary allocations apply for one season only and may be withdrawn if the stream flow reaches environmental risk levels at any time.

Under the Water Management Act, in areas where a Water Management Plan does not exist, the Minister may approve applications for new water allocations (including water taken into dams) only where that can be done in accordance with the objectives of the Act. The objectives of the Act in this regard are those set out in Tasmania's Resource Management and Planning System (RMPS), which establish principles for sustainable development in the State, as well as the specific objectives of section (6) of the WMA. All proposals for new water allocations are assessed on the basis of the objectives and provisions of the Act.

In 2002, DPIWE developed a model, using all reliable stream gauging available for Tasmania, to better estimate water yields available in any subcatchment or catchment for allocation after allowing for a conservatively set environmental flow requirement. The model is used to assist in the assessment of water licence applications for winter flows to fill proposed dams and forms the basis of guidelines for assessing new allocations of surface waters for winter storage. Following public comment and stakeholder consultation during early 2003 the guidelines were endorsed by the Minister in July 2003 as Water Resources Policy #2003 /1 "Guidelines to Assess Applications for New Water Allocations from Watercourses during Winter". The guidelines are available on the DPIWE web site.

These guidelines are used to assess whether an application for a water allocation can be considered without the need for further information (where water is available at 80% reliability after allowing for a basal environmental flow requirement) or whether further information on water yields and environmental requirements is required before the application can be considered.

In general, where the model indicates that an application for a water allocation may reach the total available yield from the catchment and/or subcatchment, the applicant will be asked to provide information to demonstrate that the granting of the allocation can be made without adversely impacting on the needs of the ecosystems that depend on that water resource for water and the commercial operations of major users of water from that water resource.

In some catchments, such as the Jordan River in Southern Tasmania, where all the winter water available at 80% reliability has been allocated, no further allocations are being approved until studies detailed below are completed:

1. A comprehensive assessment of the environmental flow requirements of the Jordan River including the need for certain flood flows to maintain the geomorphology of the channel and the in-stream and riparian ecosystems and the estuary at Herdsmans Cove; and
2. An in-depth hydrological study to establish surface water hydrological models for the Jordan catchment.

It is anticipated that these studies for the Jordan catchment will be completed by May 2004.

During 2003-04 the Department initiated a new project, the Water Use Sustainability Project, in response to observations that suggested that water use in some catchments may be greater than the total licensed allocations. The aim of the Water Use Sustainability Project is to increase the security for water dependent businesses and reduce the risk of unsustainable water use by arresting the ongoing creep in surface water irrigation extractions in advance of Water Management Plans.

The project will formalise existing summer irrigation extractions from rivers and streams to the levels of water extraction used by individual irrigators in the 2002-03 irrigation season. Irrigators will need to provide documented evidence of their water use in the 2002-03 irrigation season (or the average of the past three seasons if that was greater) and will be granted access to this water via a low surety allocation on their licence. In return

for acknowledging this level of past water use, the Department will require all direct extractions from rivers and streams to be metered at the licence holder's expense. Such meters are to be installed within an agreed time frame and will provide essential information on water use necessary for water management planning. Three staff have been appointed to implement this project which has begun by targeting catchments in the northeast, northwest and the south of the State where water use creep is most evident.

Similar arrangements are being implemented in the South Esk Basin through a Memorandum of Understanding between DPIWE, Hydro Tasmania and the Tasmanian Farmers and Graziers Association. Under the MOU, historical irrigation water use has been recognised through low surety allocations on licences via transfers of water allocations from Hydro Tasmania. As with the Water Use Sustainability Project, licensees are required to install meters on all direct water takes.

Dams

The Tasmanian RMPS provides a mechanism for ensuring that appropriate environmental impact assessments are completed prior to approving the construction of dams.

Under the WMA, a statutory committee, the Assessment Committee for Dam Construction (ACDC), is the body responsible for assessing applications for the construction of dams. The Act provides a planning procedure to be followed by the ACDC.

Environmental and other technical matters in regard to proposed dams are considered by a subcommittee of the ACDC, the Technical Advisory Committee, that makes recommendations to the ACDC on requirements for environmental impact assessments. The Technical Advisory Committee provides expert advice on water resource, environmental and cultural impact assessment requirements for applicants. Proposals to construct dams which may have a significant impact at a regional level are assessed by the Board of Environmental Management and Pollution Control, established under the *Environmental Management and Pollution Control Act 1994*, in accordance with the environmental impact assessment principles set down in that Act.

During 2002-03 the ACDC issued 160 permits for dam works as indicated in the table below:

Table 5.6: Classification of dam permits issued

Dam Classification	No. permits issued
On-stream (for all purposes)	92
Catchment (Off stream)	19
Other Off-stream	18
Treated Effluent	11
Modifications to existing dams	20
TOTAL PERMITS ISSUED	160

The proportion of approvals for off stream dam works and modifications to existing dams is increasing as the number of economic on-stream dam sites in catchments decreases.

In 2003, the ACDC adopted a new co-ordinated process for the assessment of applications for medium to large sized dams; with a capacity greater than 500ML. Medium to large proposals that trigger one or more of the following characteristics generally require assessment under this process:

- Significant environmental issues including threatened species, reserves, significant native vegetation, fish passage;
- High potential for receiving representations based on other water user concerns in the catchment, location of irrigation areas or environmental issues;
- Consideration of water availability, allocation and licence issues required to be conducted simultaneously;
- Significant land tenure issues including assessment of Crown Land and other public land values; or
- Assessment of new irrigation areas.

Proponents for dam applications falling in this category are issued with individually tailored "Guidelines for the Preparation of the Dam Development Effect and Management Statement" that detail those studies that are required to be conducted prior to submission of the application. The completed Dam Development Effect and Management Statement (DDEMS) then forms part of the application that is advertised prior to consideration of the application by the ACDC and the Director of Environmental Management. The Chimney Hill dam proposal on the Elizabeth River is the first one to use this new process and an application from this proponent, including the comprehensive DDEMS, is expected early in 2004.

Mechanisms to provide the ACDC with information on the strategic protection of riverine and estuarine ecosystems and water quality are being considered as part of the project on Conservation of Freshwater Ecosystem Values currently being conducted by DPIWE.

During 2003, dam sfatey amendments to the WMA were proclaimed and the *Water Management (Safety of Dams) Regulations 2003* were implemented. The aim of the new statutory framework is to ensure consistency in the application of required levels of competency for safe dam construction, operation and maintenance. The framework was developed in full consultation with stakeholders and dam safety experts and adopts accepted design, construction and operational standards.

The State Government publicly launched the *Water Development Plan for Tasmania* in 2001. The Plan, among other things, identifies key water development opportunities that could benefit from public-private partnership funding arrangements.

Since the Plan was released in August 2001 a number of investigations have been undertaken to assess water development proposals around the State. These include the Meander Dam and water resource development options in the South Esk Basin, North East, Central Highlands, Greater South East, East Coast and Circular Head region. More detailed investigations into the Christian Marsh dam (Shannon River), Edith Creek dam (Circular Head region), Maloneys Hill dam (Macquarie River) and Benham dam (St Pauls River) identified significant feasibility issues and as a result these proposals are no longer being progressed under the Water Development Plan. Investigations are continuing into solutions for domestic water supply shortages for the East Coast communities of Swansea and Bicheno and irrigation water developments including the Chimney Hill dam, the Headquarters Road dam (tributary to Great Forester River) and the Wesley Vale pipeline proposal. Regional water development options for the South East, Southern Midlands, Parramatta Creek, South Esk and North East are also being investigated.

A dam permit and environment protection notice for the Meander Dam project were issued on 10 October 2002 giving statutory approval under the WMA and *Environmental Management and Pollution Control Act 1994* (EMPCA). The Tasmanian Conservation Trust and a private individual appealed to the Resource Management and Planning Appeal Tribunal (RMPAT) against the approvals under the WMA and EMPCA. On 23 January 2003, RMPAT released its determination that the appeal was upheld and the previous approvals were overturned.

Subsequently, the Government introduced enabling legislation into Parliament to reinstate the dam permit and environment protection notice that were set aside by the RMPAT decision. The *Meander Dam Project Act 2003*, providing for the implementation of the project, subject to existing permits and notices, passed through both Houses of Parliament in April 2003.

On 18 September 2003 the Federal Minister for Environment and Heritage approved the construction and operation of the Meander Dam under the *Environment Protection and Biodiversity Conservation Act 1999.* An application for an Order of Review of this decision was filed in the Federal Court on 26 November 2003 on behalf of the Tasmanian Conservation Trust.

Trading arrangements for water allocations or entitlements

Unregulated water resources

Prior to 1 January 2000, the majority of water entitlements, known as Commissional water rights, were legally attached to land titles and hence were not transferable separately from the land.

The WMA established a new water entitlements system whereby water licences are not legally attached to land titles and are transferable. The key elements are set out below:

- a licensee may transfer all or part of the water allocation on his or her water licence to another person. The transfer may be absolute (i.e. permanent sale of the water) or for a limited period (i.e. temporary lease of the water);
- the transfer must be in accordance with any relevant Water Management Plan or, where there is no relevant Water Management Plan, in accordance with the objectives of the Act;

- the Minister may modify or refuse to approve a proposed transfer if the transfer would have a significant adverse impact on other water users or the environment, or if, after the transfer, the quantity of water available to the transferee would be in excess of the quantity that could be sustainably used;
- the Minister may require an applicant for a transfer to pay for an assessment of the effect of granting that transfer; and
- a transfer of an allocation on a licence can only be approved with the consent of any person noted on the register of water licences as having an interest in the licence (eg. a mortgagee).

Details of water transfers since January 2000 are set out below:

Table 5.7: Water transfers since January 2000

Period	Number of Permanent Transfers	Total Volume Permanently transferred (ML)	Number of Temporary Transfers	Total Volume Temporarily transferred (ML)
Jan 2000 – March 2001	38	3,400		
Jul 2001 – Feb 2002	151	48,579	32	3,670
Feb 2002 – Feb 2003	63	7,677	3	215
Feb 2003 – Feb 2004	34	1,914		

In addition to the above, a Memorandum of Understanding between DPIWE, Hydro Tasmania and the Tasmanian Farmers and Graziers Association will result in over 50,000 ML of water being transferred from Hydro Tasmania to irrigators over the next 3-4 years. Under the MOU, the transfer arrangements provide security of water entitlements for irrigators while not significantly impacting on Hydro Tasmania's commercial operations. In addition, separate water transfers are being negotiated with Hydro Tasmania for large dam developments in the South Esk Basin and Derwent catchment, including the Meander Dam and Chimney Hill Dam proposals.

During 2003, to assist with the implementation of water trading in Tasmania and as part of the Tasmanian Government's commitment to the Bilateral Agreement for the implementation of the National Action Plan for Salinity and Water Quality, a policy paper titled "Guiding Principles for Water Trading in Tasmania" was developed by DPIWE. The paper provides guiding principles for the assessment of all applications for the transfer of water allocations under Part 6 of the *Water Management Act 1999*. The principles are aimed at providing greater certainty in the Government decision making process and assisting water users who are considering entering into water transfer arrangements. In situations where additional certainty at a local level is needed, further trading rules can be established through Water Management Plans.

Irrigation schemes

A system of irrigation rights trading has been operating in the Government-owned irrigation schemes since the 1994-95 season. Under these arrangements, owners of irrigation rights not wishing to use those rights in a particular season were able, with the approval of the RWSC, to transfer them to other users.

Amendments to the *Irrigation Clauses Act 1973* in 1997 and 2001 provided a more robust and "free-market" mechanism for transfers.

The *Irrigation Clauses Act 1973* provides that irrigation rights (entitlements to take water from the irrigation scheme) are separated from land titles and are transferable within the irrigation district, subject to conditions imposed by the managing authority under its transfer rules. Rights can be leased or sold.

The transfer of irrigation rights under the Act commenced in December 1998, after the RWSC established transfer rules in consultation with scheme users. The transfer rules cover the physical restrictions imposed by scheme infrastructure, rights of third parties with an interest in the rights and environmental sustainability factors. In May 2003, the RWSC revised their conditions of transfer to enable irrigation rights to be transferred to other users.

Table 5.8 shows the amount of irrigation right (ML) transferred temporarily and permanently for each of the government irrigation schemes over the past four financial years.

Table 5.8: Irrigation right transferred for government irrigation schemes

	1999-2000	**2000-01**	**2001-02**	**2002-03**	**2003-04** (to 31 January 2004)
Cressy/Longford Irrigation Scheme[a]					
Water supplied (ML)	7 505.1	7162.0	5489.1	9980	Not available
Number of trades	13	8	7	22	Not available
Water traded (ML)	850	373	550	948	Not available
Percentage water traded	11%	4.8%	10%	9.5%	Not available
Figures for 2001-02 are till 30 March 2002, on 1 April 2002 the CLIS went to self management					
South East Irrigation Scheme					
Water supplied (ML)	3 536.64	4292.5	1831	3822	2402
Number of trades	63	48	15	59	14
Water traded (ML)	677	394	241	833	265
Percentage water traded	19%	11%	13%	22%	11%
Winnaleah Irrigation Scheme					
Water supplied (ML)	3 546.2	3 507.3	3523	4777	2715
Number of trades	10	4	15	23	6
Water traded (ML)	245	74	525	868	297
Percentage water traded	7%	2.1%	15%	18%	11%

Source: RWSC

Environment and water quality reforms

Integration of environmental values into water management

The *State Policy on Water Quality Management 1997* (State Policy) established a Tasmanian framework that reflects the intent of the National Water Quality Management Strategy's policy objective in achieving sustainable management of the waterways while allowing for sustainable development.

The State Policy refers to the National Strategy's guidelines to assist in the management of water resources, decisions on quality aspects of water, sewerage and drainage services, and the coordination of various strategies of government.

The State Policy provides a process for determining Protected Environmental Values (PEVs) and Water Quality Objectives for Tasmania's fresh and estuarine surface waters under the policy. PEVs have now been set for the State's fresh waters. The State Policy is currently being amended to allow a process to be developed to set PEVs for coastal and ground waters.

DPIWE is developing statutory Water Management Plans that integrate the PEVs with other consumptive and non-consumptive use values for catchment water resources. This process is established through extensive community consultation.

Progress in the identification of water values by the community

Good progress has been made on setting PEVs in Tasmania's fresh and estuarine surface waters. Table 5.9 and Diagram 1 show the progress achieved to date. Community consultation associated with the setting of PEVs has been completed for all fresh surface waters and the Board of Environmental Management and Pollution Control has endorsed the PEVs for all freshwater. Final endorsement of PEVs by some planning authorities is yet to occur.

Table 5.9. Progress with the setting of PEVs in the State

Water bodies that have been completed

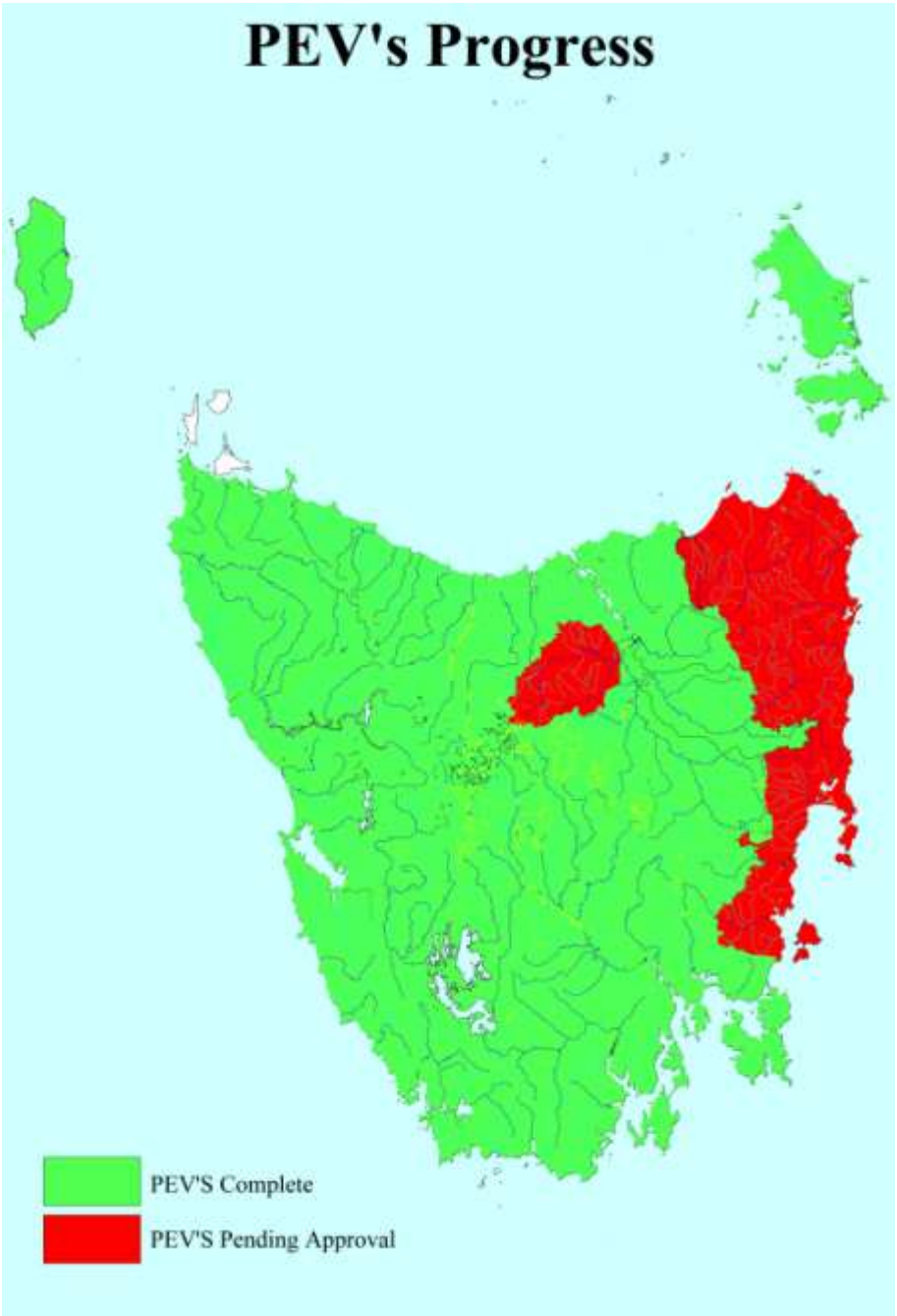
Water body	Council municipal area
Blythe River Estuary, Minna Creek and Tip Creek	Burnie
All water bodies in the Circular Head Municipality	Circular Head
All water bodies in the Waratah/Wynyard Municipality	Waratah/Wynyard
All water bodies in the West Coast Municipality including the Gordon and Pieman River Catchments	West Coast
Little Swanport River	Southern Midlands
Gordon River Catchment	Derwent Valley
Great Lake and Brumby Creek Catchments and Lower Macquarie and South Esk Rivers	Central Highlands, Northern Midlands, Meander Valley, West Tamar, Launceston
Macquarie and South Esk River Catchments	Northern Midlands, Break O'Day, Central Highlands, Dorset
Mersey Catchment	Devonport, Latrobe, Kentish, Central Highlands, Meander Valley
Penguin Sewage Treatment Plant, Preservation Bay – Westcombe Beach	Central Coast
Tas Alkaloids, Quamby Brook between Railway Bridge and confluence with Meander River	Meander Valley
All water bodies in the Southern Midlands Municipality (excluding Little Swanport River Catchment – see above)	Southern Midlands
Huon Valley Catchments	Huon Valley, Kingborough, Derwent Valley, Glenorchy
Kingborough Catchments and D'Entrecasteaux Channel	Kingborough, Huon Valley, Hobart
Flinders Municipal area Catchments	Flinders Island
River Derwent Estuary	Derwent Valley, Brighton, Clarence, Glenorchy, Hobart, Kingborough
Upper River Derwent Catchment	Central Highlands, Derwent Valley, Meander
North Central Coast Catchments and the Greater	Burnie, Central Coast, Kentish, Latrobe, Devonport, Meander

Rubicon Catchment	Valley, West Tamar
King Island	King Island
South East Coast Catchments	Clarence, Sorell, Tasman
Greater Pipers River Catchment	George Town, Launceston

Water bodies pending approval by local government

Water body	Council municipal area
Meander	Meander Valley, West Tamar, Northern Midlands, Central Highlands
North East	Break O'Day, Dorset
Tamar Estuary and North Esk	Launceston, West Tamar, Georgetown, Northern Midlands, Break O'Day, Meander, Dorset, Latrobe
Glamorgan Spring Bay Catchment	Glamorgan Spring Bay, Northern Midlands

Diagram 1: Progress in setting Protected Environmental Values



Environmental flow assessment

Relevant Policies

The *Water for Ecosystems Policy*, an administrative policy under section 8(1)(b) of the Water Management Act, provides guidance on the setting and implementing of environmental allocations for the State's rivers.

The Policy provides guidelines for determining environmental flows in catchments with different levels of hydrological stress. The policy also formally adopts the principles as set out in the *National Principles for the Provision of Water for Ecosystems* (1996).

For some time Tasmania has implemented a policy that no further summer water allocations be allocated from a catchment until the relevant environmental flow has been identified and implemented. This would normally occur through the development of a Water Management Plan. The recently adopted "Guidelines to Assess Applications for New Water Allocations from Watercourses During Winter" Water Resources Policy #2003/1, provides guidance on how the environments water requirements are to be determined for all further allocations for the remainder of the year.

Priority Setting

Commencing in 1999, a project was undertaken to prioritise the assessment of environmental flows for Tasmania's 96 major rivers and streams. The priorities for setting environmental flows were based on the ecological status of the receiving estuary, water quality and riverine health, threatened species issues, existing water allocations and predicted water development pressure. These factors were combined to form an "impact matrix" (see Appendix D). The matrix was developed in consultation with relevant experts from State Government and the University of Tasmania. .

Stressed rivers were identified from the "impact matrix" by giving particular weight to Water Use Priority which compares the relative allocation of water with the available resource. The State priority setting process and timelines for completion of environmental flows assessments were based upon consideration of the level of stress, recognising the logistics necessary to undertake work in a given area of the State.

Progress Against NCC Environmental Flows Timetable

Tasmania has completed environmental flow assessments for 43 of the 45 priority rivers that required environmental flow assessments. Of the two outstanding assessments, the Ouse River is not scheduled for completion until 2006 and the Montagu River is close to completion. The reason for the delay in finalising the Montagu River assessment is the need for one further flood gauging in order to run the habitat simulation models required for the assessment. There are Occupational Health and Safety issues concerning this gauging that require very specific flows to occur before the assessment can be undertaken. DPIWE is waiting for these flows to occur to complete the assessment.

In addition to the priority rivers identified in the impact matrix, several other rivers have been identified through the National Action Plan for Salinity and Water Quality and NHT II as priority rivers for environmental flow assessments. Progress on environmental flow assessments for all Tasmanian rivers is detailed in Appendix D.

Improved methods for determining environmental flows

The environmental flows work undertaken to date has been concentrated on the high-stress period of the year, the summer. The work has specifically focussed on providing data to establish the low, medium and high risk flow levels for the general aquatic environment.

In December 2003, Tasmania commenced a one-year major project funded through the National Action Plan for Salinity and Water Quality to develop a holistic method for determining environmental flows for the State's rivers. This method will build on the internationally recognised Instream Flow Incremental Methodology (IFIM) currently used for most Tasmanian assessments. As part of the new method, protocols for formally assessing the water requirements of ephemeral streams, riparian and other flood dependent vegetation and estuaries are being developed. The method will explicitly address the flow regime required to maintain geomorphic as well as biotic processes. Once the methodology has been trialed, existing assessments will be

updated using this method as required. A two-day workshop involving expert environmental flows scientists from throughout Australia was convened in December 2003 to progress this work.

Special Licences

The water licence agreement between DPIWE and Hydro Tasmania as a special licence holder provides that the provisions of environmental flows are a necessary requirement of Hydro Tasmania's operations and are not subject to compensation claims by the licence holder. Under the agreement, environmental water provisions will be investigated and implemented as part of statutory Water Management Plans.

As part of the investigations related to the consequential impacts of the introduction of Basslink, substantial environmental flows work has been completed on the King River, the Gordon River and the Macquarie River downstream of the Poatina power station. This scientific work has provided the basis for negotiation of environmental flow regimes on these systems. Even prior to the final deliberations of the Basslink Joint Assessment Panel, Hydro Tasmania has made a number of significant commitments towards the implementation of environmental flow regimes and regulation of hydro-peaking in these rivers.

Water Management Planning

Tasmania has adopted one Water Management Plan under section 28 of the WMA and is close to public release of Draft Plans for a further three catchments: the Clyde, Little Swanport and the Upper and Lower Mersey.

In addition, Hydro Tasmania has completed the South Esk - Great Lake Water Management Review. While not a Water Management Plan under the Act, the reviews coordinated by Hydro Tasmania contain several main elements of water management planning including broad stakeholder consultation, identification of environmental values and implementation of management systems to protect them. Hydro Tasmania has commenced the Derwent Water Management Review. Further information on Hydro Tasmania's review process is available at http://www.hydro.com.au/environment/waterreviews/environment.html. Progress on water management planning activities is presented in Table 5.10.

Table 5.10: Status of water management planning timelines for priority river systems

Catchment	Original timeline	Current work status
Great Forester River	December 2004	Plan adopted and river managed accordingly.
Little Swanport River	N/A	Consultative Group established Draft Plan under negotiation
Upper and Lower Mersey River	2001	Consultative Group established Draft Plan under negotiation
Clyde River	June 2005	Consultative Group established Draft Plan under negotiation
Meander River	December 2001	Process is on hold pending the outcome of the Meander dam issue.
South Esk – Great Lake Water Management Review	N/A	Completed

Catchment	Original timeline	Current work status
(Hydro Tasmania)		
Derwent Water Management Review (Hydro Tasmania)	N/A	Consultation in progress Data collection progressing
Lower and Upper Ringarooma River	December 2003	Environmental flows studies and economic impact assessment completed Hydrological modelling in progress
Liffey River	December 2002	Hydrological modelling in progress
Elizabeth River	December 2002	Environmental flows studies completed
Tooms River	December 2002	
Macquarie d/s of Ross	December 2003	
Coal River	June 2004	
South Esk River	December 2004	
Lake River and Macquarie below Lake River	December 2004	
North Esk River	December 2005	
St Patricks River	December 2005	

The time taken to progress the Great Forester Catchment Water Management Plan and the other three Plans currently in progress has been far longer than anticipated and has delayed a start on the other Plans as scheduled above.

As noted below, various measures are being developed to accelerate the planning process so that the overall original program to the end of 2005 can be achieved as originally planned. In the interim, the moratorium on the granting of new water allocations for summer extraction and the guidelines for ensuring sustainable allocation of water for winter taking are being used to prevent any erosion of sustainable water extraction limits. In addition, the Memorandum of Understanding between DPIWE, Hydro Tasmania and TFGA has enabled significant progress in formalising and metering water takes on the South Esk, Meander, Macquarie and Elizabeth Rivers in preparation for the development of Water Management Plans.

Great Forester Catchment Water Management Plan

The Great Forester Catchment Water Management Plan was adopted in accordance with section 28 of the WMA on 30 July 2003. An appeal was subsequently lodged against the environmental provision within the Plan in accordance with section 275 of the WMA by the Tasmanian Conservation Trust. Ten parties then joined to the appeal, nine supporting the Plan and one objecting. The appeal was heard by Tasmania's Resource Management and Planning Appeal Tribunal (RMPAT) in October 2003.

The RMPAT decision was that the Great Forester Catchment Water Management Plan be affirmed with several minor amendments. The amendments to the Plan clarify matters associated with the scheduled review of the Plan, the definition of the environmental water provision and the issuing of further Surety 6 water allocations. These changes do not alter the intent of the Plan nor influence its day-to-day operation.

The Plan has been in effect since 30 July 2003 and has worked efficiently and effectively during one of the driest summers on record. The local Consultative Group formed to advise in the development of the Plan has been retained to provide advice on any ongoing water management issues associated with the implementation of the Plan.

Generic Principles to Guide Water Management Planning

The development of the Great Forester Catchment Water Management Plan has provided an opportunity for DPIWE to better understand issues and processes associated with Tasmania's Water Management Planning legislative framework. In light of these experiences, DPIWE has reviewed the water management planning process and is implementing strategies to significantly increase the progress of Water Management Planning in Tasmania.

An outcome of this review is the proposed development, in partnership with peak stakeholder bodies, including the Tasmanian Farmers and Graziers Association, the Tasmanian Conservation Trust and NRM Council, generic principles to guide the development of future Plans. These generic principles will be negotiated during the first quarter of 2004 and will consider several matters including:

- metering of irrigation abstractions;
- protocols for dealing with historical use that is outside of the current licensing system;
- adoption of statewide priorities for the protection freshwater ecosystem values;
- the extent and quality of water resource information on which to develop a plan; and
- ongoing monitoring requirements.

Work to support several of these matters has commenced and is outlined in the following sections.

Water Use Sustainability Project

In some areas of Tasmania water users have historically extracted greater quantities of water than strictly permitted by their licences. Continuation of this problem will lead to an unsustainable situation in Tasmania's rivers and streams as legal water users may not be able to obtain reliable water supplies and implementation of environmental flows will be difficult. The problem is compounded by the lack of water metering to regulate water extractions and monitor actual water usage.

The Water Use Sustainability Project has been implemented as part of the Water Development Plan to prevent further creep in the taking of over-allocation of water in advance of Water Management Plans and to provide greater certainty of access entitlements for water users. The Project provides a mechanism to quantify current irrigation water usage and to monitor this usage for future sustainability of river systems. In consultation with catchment water users, the project is determining, and where appropriate formally recognising, historical water use (as low surety water allocations capped at 2002-3 season usage), and coordinating the installation of meters on all irrigation abstractions. The Project is also identifying water management protocols, such as restriction management, to sustain the environmental values of these catchments.

The catchments targeted in 2003-2004 are Mountain River, Flowerdale River, Inglis River, Rubicon River, Brid River, Legerwood River, Upper and Lower Mersey River, and Buttons River.

Resource information to support Water Management Planning

The review highlighted the requirement for more comprehensive information about the catchments water resource prior to entering negotiations on proposed Water Management Plans with local Consultative Groups.

To this end Tasmania has commenced a major initiative to develop comprehensive catchment water balance models for the State's agricultural catchments. The first 13 of these, which include Tasmania's entire NAPSWQ region, will be completed by December 2004.

The review also highlighted the limitations of Tasmania's current methods for determining a river's Environmental Water Requirement. While the current methodologies used in the State provide highly conservative assessments of the instream water requirements of the ecosystem, the methods do not explicitly consider intra- and inter-annual variability in streamflows. This makes it exceedingly difficult to put into operation the predicated Environmental Water Requirement in Tasmania's unregulated streams and rivers and to provide catchment communities with confidence that the environmental flow provisions are appropriate. To address this issue DPIWE has commenced a major project to develop an holistic methodology for determining environmental flows. The methodology is due for completion in December 2004.

Conservation of Freshwater Ecosystem Values Project

In 2002, Tasmania commenced a project to identify and strategically manage the key natural values of the State's freshwater dependent ecosystems. This project will facilitate Water Management Planning by explicitly identifying natural ecosystem values at the State, bioregional, catchment and subcatchment scales. Agreement on these priorities by peak stakeholder groups, will result in a more efficient planning process and environmental outcomes at the catchment scale that contribute to statewide environmental objectives. The Project will report on conservation values and priorities by September 2004 and the outputs will be incorporated into all future Water Management Plans.

Amendments to Legislation

The Government has approved the development of a "Water Management Amendment Bill 2004" to, *inter alia*, amend the legislative framework for the development of Water Management Plans to make it consistent with other similar statutory planning processes under the Resource Management and Planning System. Stakeholder and public consultation on the proposed amendments is scheduled for February-March 2004.

Key changes proposed are requirements for Water Management Plans to formally specify environmental and socioeconomic objectives for the relevant water resource and for an independent review of DPIWE's responses to representations on a draft Plan by the Resource Planning and Development Commission.

Integrated approach to natural resource management

Tasmania's Resource Management and Planning System (RMPS), established in 1993, provides an integrated policy and a statutory and administrative framework for the pursuit of sustainable development in the State. Supported by a suite of complementary legislation (including the *Water Management Act*), the system establishes a whole of government, industry and community approach to resource management and planning. The system is concerned with the use, development, conservation and protection of land, water and air.

Under the RMPS, strategic planning occurs in an integrated way at State, regional and local levels. The system is designed to simplify and streamline the approvals process, create surety for land managers, users and owners, and improve the quality of resource management and planning decisions. Public involvement in resource management and planning is encouraged and the system includes opportunities for public consultation and participation.

The objectives of the RMPS are to:

(a) promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity;

(b) provide for the fair, orderly and sustainable use and development of air, land and water;

(c) encourage public involvement in resource management and planning;

(d) facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c); and

(e) promote the sharing of responsibility for resource management and planning between the different spheres of government, the community and industry in the State.

Under the RMPS, **"**sustainable development**"** means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well being and for their health and safety while:

- sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations;
- safeguarding the life-supporting capacity of air, water, soil and ecosystems; and
- avoiding, remedying or mitigating any adverse effects of activities on the environment.

Within the RMPS Framework, the *State Policies and Projects Act 1993* provides for the making of State Policies. A State Policy is binding on any person and on State Government agencies, public authorities and planning authorities. It had previously been proposed to develop a State Policy on Integrated Catchment Management under this Act. However, the development of a State Policy on Integrated Catchment Management was put on hold in 2000 pending a review of the future direction for State Polices under the State Policies and Projects Act and the State's involvement in consultation with the Commonwealth, and all state and territory governments on the proposed COAG Natural Resource Management policy and the National Action Plan for Salinity and Water Quality.

The Government subsequently initiated the development of a Tasmanian Natural Resource Management (NRM) Framework. Following extensive consultation with stakeholders. The Framework was completed in February 2002. The Framework covers issues such as administrative arrangements at State and regional level, proposed legislation, natural resource management principles and priorities, and integration with existing relevant statutory and non-statutory instruments.

The *Natural Resource Management Act 2002* was passed by Parliament in early November 2002. In accordance with the Act, the Natural Resource Management Council was appointed in February 2003 and three regional NRM committees (North, South and North-West) have all been appointed. Two (North and South) are incorporated associations while the North-West is a joint committee of the Cradle Coast Authority.

The principal initial duty of the three Regional Committees is the development of Regional NRM Strategies. The development and accreditation of the regional strategies by the State and the Commonwealth, in accordance with the bilateral agreements for NAP and NHT II, will require the setting and monitoring of targets on a range of nationally-agreed matters. These are being developed to provide integrated natural resource management outcomes, a process that subsumes and implements "integrated catchment management". Regional strategies are to build where possible on existing work. In Tasmania, a significant number of plans and strategies have been developed specifically on Integrated Catchment Management lines (eg. for the Huon, Mersey and Tamar catchments). Such work will be an important building block in the regional strategies.

The Regional NRM Committees have developed discussion papers on each of the key NRM assets and issues and initial consultation with key stakeholders and the public is to occur over the period December 2003 to March 2004. Feedback from this consultation will be used by the Committees in developing the draft Regional NRM Strategies for further consultation in the first half of 2004. The Committees are aiming to finalise the draft Strategies for consideration by the State and Commonwealth Governments around mid 2004.

Environmental regulation

In undertaking its water management responsibilities under the Water Management Act, DPIWE is required to maintain agreed environmental flows, to not compromise PEVs established under the State Policy, to abide by environmental protection measures and to monitor the environmental impacts of its activities.

To facilitate the implementation and operation of this regulatory regime, an appropriate system of environmental regulation has been established, utilising the current arrangements under the *Environmental Management and Pollution Control Act 1994*.

The Board of Environmental Management and Pollution Control established under the Act determines (i) a set of broad PEVs in consultation with stakeholders; and (ii) water quality objectives, in accordance with the State Policy.

Water quality management

State Policy on Water Quality Management

The State Policy on Water Quality Management is a statutory policy which applies to both surface and groundwaters in Tasmania.

The policy was specifically designed to implement the National Water Quality Management Strategy in Tasmania. It will achieve this in the following ways:

- the purpose of the policy was drawn from, and is comparable to, the objective of the National Strategy in Tasmania;
- the structure and functioning of the policy closely follows the model set out in *Policies and Principles*, which is the key document in the National Strategy. The policy specifically refers to developing water quality objectives through a consultative approach;
- the policy for dealing with point source pollution is based firmly on the model in the *Policies and Principles* document;
- the policy sets out strategies to deal with major sources of diffuse pollution in accordance with the approach recommended in the National Strategy;
- the policy adopts the waste minimisation hierarchy promulgated in the National Strategy;
- the policy deals with groundwaters in accordance with the guidance set out in the National Strategy document entitled *Guidelines for Groundwater Protection in Australia*; and
- where appropriate and available at the time that the policy was finalised, it adopts or refers to guidelines produced as part of the National Strategy, eg. the *Australian Water Quality Guidelines* and *Guidelines for Urban Stormwater Management*. Other National Strategy guidelines are expected to be applied in implementing other components of the policy.

The policy is currently being amended to align the PEVs with those in the Australian and New Zealand Guidelines for Fresh and Marine Waters 2000.

DPIWE has received funding through the NAPSWQ to trial the development of Water Quality Objectives to meet the PEVs. This work will be of benefit for the setting of water quality targets in the development of the Regional NRM Strategies.

Water quantity and quality monitoring

As part of a major infrastructure funding program, the State Government committed $500,000 to the establishment of continuous water quality and quantity monitoring sites around Tasmania in the 2001-02 financial year. This program has been extended with additional funding from the National Action Plan for Salinity and Water Quality. Currently 51 stream flow sites are functioning, many of which are telemetered to allow real-time access to stream flow data. Water quality instrumentation has been installed at 24 sites with a further 10 sites to be installed by December 2004. The 34 continuous water quality monitoring sites will allow real-time management of salinity, turbidity and other water quality parameters.

In addition, monthly samples are taken from 50 of the 51 gauges. These samples are analysed for a range of nutrients and other water quality parameters. This information, coupled to the real-time monitoring, will allow nutrient export loads to be calculated for Tasmania's catchments critically informing the efficient targeting and assessment of catchment management activities.

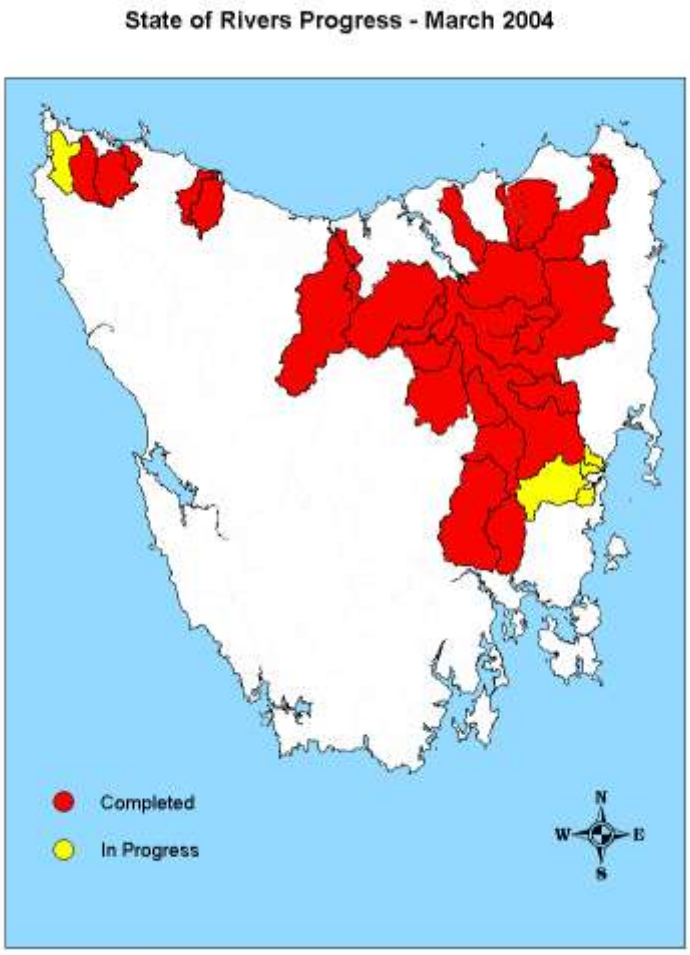
The establishment of such a network was a recommendation of the Tasmanian Surface Water Quality Monitoring Strategy (previously drafted as the State Water Quality Monitoring Strategy). The new network will be fundamental to the delivery of National Action Program (Salinity and Water Quality) outcomes, as well as meeting the Tasmania *Together* benchmarks.

State of River reporting

State of River reports provide a catchment overview of water quality, river health, hydrology, water use and water allocations. State of River reporting is a cost-effective way of providing fundamental information sets for supporting catchment and natural resource management in Tasmania, including the development of Water Management Plans. State of River reports are also a major vehicle for providing water quality information for use in the implementation of the National Water Quality Management Strategy and the State of Environment reporting process.

Tasmania has completed 11 State of River reports and 3 Water Quality Technical reports since the program's inception, with 6 of the State of River reports completed in 2002-2003 (see Diagram 2). Tasmania is currently mid-way through a State of Rivers study in the Little Swanport catchment. Future priorities for State of Rivers reports will be determined by the requirements of the Water Management Planning Program and the priorities of the Regional NRM Strategies.

Diagram 2: State of Rivers Progress – March 2004



River health program

As part of the Tasmanian Government's commitment to the Tasmania *Together* initiative, river health is assessed twice yearly at 60 permanent sites across the settled parts of the State using the AUSRIVAS protocol. In addition, during 2003 the river health program assessed a further 17 sites to support natural resource management in the NAPSWQ region and 61 sites to support water management planning in the Great Forester catchment, Mersey catchment and the Little Swanport catchment. This commitment is continuing in 2004.

The river health program is currently implementing an accredited training program for local government, NRM facilitators and others in AUSRIVAS river health assessment techniques and interpretation. The purpose of these courses is to build capacity amongst the natural resource management community to undertake quality river health assessments. The program is supported by the National Action Plan for Salinity and Water Quality.

Catchment management

Tasmania has a number of current programs to support and facilitate catchment management within the State. These include publication of a guide for community groups, titled *Integrated Catchment Management - What it is and How to do it* and an NRM Facilitator network to assist groups with facilitation and technical issues associated with their catchment management projects. A total of 28 catchment management and sub-regional natural resource management groups are now operating in the State, with catchment and natural resource

management plans and strategies at various stages of development and implementation. In addition, the State Government is now moving to establish improved co-ordination of this program, and sees this being more effectively achieved through its Partnership Agreements with local government, rather than through the State Policy process as previously proposed. Through the *Natural Resource Management Framework*, there is a shift to natural resource management planning on a regional basis rather than on a catchment basis.

A significant development in recent years has been the implementation of a number of large devolved grant projects in which funding for property based landcare practices, specified in the catchment plan, has been made available to groups and individuals to undertake works.

Landcare practices

The State Water Quality Management Policy contains provisions for dealing with the control of erosion and stormwater runoff from land disturbance, agricultural runoff and forestry operations amongst a number of other provisions to control diffuse runoff. These provisions are aimed at promoting landcare practices which will protect rivers and streams.

The policy refers to the use of the planning system and the development of a code of practice to reduce the effect of development activities on waterways. Action is underway to ensure that the appropriate provisions are contained in planning schemes.

Best practice guidelines for control of erosion and stormwater runoff from land disturbance have been developed by the Hobart metropolitan councils, and Launceston City Council. Both packages describe appropriate best practice environmental management for the minimisation of contaminated runoff from individual construction sites, subdivisions, civil infrastructure and road works. They also include adequate measures for the protection of streamside vegetation, as required by the State Policy on Water Quality Management.

Both packages are promoted to all councils around the State as appropriate tools for meeting the requirements of clause 31, 33 and 35 of the policy by the Board of Environmental Management and Pollution Control. In relation to agricultural runoff, the policy requires the development of a code of practice or guidelines to reduce the impact of stormwater from agricultural land on water quality.

DPIWE, jointly with the Tasmanian Farmers and Graziers Association (TFGA), undertook a Natural Heritage Trust funded project, titled Guidelines for Good Agricultural Land Practice in Tasmania. The aim of the project was to develop a set of guidelines for good agricultural land practice to assist in improving soil, water and vegetation management and in reducing the impact of agriculture on Tasmania's land and water resources. The guidelines have been produced in modular form with the first module being "Guidelines for Good Soil Management" which has been distributed to TFGA members and other interested farmers.

Whilst the project has a broader focus than simply meeting the requirements of the State Policy, the guidelines address the issue of the impact on water quality of stormwater runoff from agricultural land.

In the case of forestry operations, Tasmania already has in place a legally enforceable Forest Practices Code which facilitates the achievement of the requirements on private and public forestry land. During 2001 the code was amended to tighten restrictions on clearing of forest trees.

Wastewater discharge

There are several measures in place in Tasmania, including the State Policy on Water Quality Management, to manage wastewater discharges, remove existing discharges from waterways, particularly inland waters, and actively promote the re-use of wastewater.

Sewage treatment lagoons are the most common method for sewage treatment in Tasmania. Discharges from lagoons are among the principal sources of point source pollution for inland rivers.

A major research project was conducted between 1993 and 1995 to investigate design parameters for increasing the efficiency of lagoons under Tasmanian conditions. The main project output was a manual, entitled *Design and Management of Tasmanian Sewage Lagoon Systems,* for engineers and lagoon operators that is being used to upgrade sewerage lagoon systems in the State.

For the period 1999-2003, funding through the Natural Heritage Fund was obtained to provide for design and capital works for the upgrading of sewage treatment lagoons and some public water supply schemes throughout the State. The project called the Clean Quality Water Program was managed by DPIWE and aimed at enhancing treatment to a standard where lagoon effluent is suitable for direct re-use for irrigation or, where this is not feasible, disposal to rivers with insignificant environmental impact. Providing acceptable potable water supplies for small communities was another aim of the project.

From 1999, NHT funding of $10,671,754 was made available to councils for up-grades to 37 wastewater and water supply schemes, with further funding of $20,779,704 provided by the councils themselves. By May 2003 all funds under the Program were fully committed and all projects will be completed by June 2004. These projects will result in a significant decrease in the amount of harmful discharge into Tasmania's inland waters and a significant improvement in the number of small communities supplied with acceptable quality potable water.

Progress has continued in relation to stormwater management. A draft State stormwater management strategy has been finalised and includes components on water sensitive urban design. The State Policy on Water Quality Management 1997 is currently being amended to make reference to the Strategy. The Strategy is being utilised to develop storm water management plans for the Derwent Estuary catchments and provides a framework for councils to set priority management actions for catchments in their municipal areas. The Strategy will also be of use to regional NRM committees in the planning and implementation of NRM regional strategies.

Public consultation and education

Public consultation on water issues

Public consultation on a range of water issues has occurred throughout the State. It has been fundamental to the success of implementing the WMA. During 2003 DPIWE undertook public consultation on a range of water related issues:

- A regulatory impact statement was prepared and released for public comment in relation to dam safety regulations.
- A discussion paper was prepared and released for for public comment on proposed amendments to fees payable under the WMA.

- Public comment was also sought in relation to a policy developed under s8(1)(b) of the WMA "Guidelines to assess applications for new water allocations from watercourses during winter".
- A paper setting out "Guiding Principles for Water Trading" in Tasmania was made available publicly to clarify DPIWE's interpretation of the water licence transfer provisions of the WMA.
- In September 2003, the Water Use Sustainability (WUS) project commenced. The aim of the project is to increase the security for water dependant businesses by arresting the on-going creep in irrigation extractions. To date 6 public meetings have been held with irrigators in relation to this project.
- Public consultation has been a crucial component of the PEV and water values setting process and the development of water management plans. Up to March 2003, more than 40 public and stakeholder meetings have been held around the State in these processes. Since March 2003, an estimated further 40 public and stakeholder meetings have been held as part of the water management planning work undertaken by DPIWE.
- Approximately 30 community and broader stakeholder meetings have been held in the development and implementation phases of the Water Development Plan for Tasmania. Newsletters have also been circulated that provide regular updates on progress of a number of projects.
- A Project Reference Group of stakeholder representatives has been established to participate in the Conservation of Freshwater Ecosystem Values Project.

Community Partnerships

The Tasmanian Surface Water Quality Monitoring Strategy promotes the sharing of water resource information. The Community Access to Water Information project has developed a user friendly water information management system with a single access point on the internet. Called the Water Information Resources and Electronic Data system (WIRED), the site can be accessed at http://www.wired.tas.gov.au. The outcomes of this project have been to achieve better promotion of water management activities, provide access to relevant on-ground management information, and to facilitate improved water communications across all sectors.

The WIRED internet site continues to be supported with regular updates on river flows from the State's stream gauging network. Updates are provided daily during critical periods for water management. During 2004 the site will be expanded to provide real-time access to continuous water quality and river health information.

The Water Quality Linkages and Baseline Data Project, supported by the National Action Plan for Salinity and Water Quality, is providing technical and software support to community organisations to improve their capacity to collect, manage and interpret water resource information. Software is currently being developed and will be delivered during 2004 to enable community organisations and local government to directly access and query the State's water resource information database to undertake sophisticated analyses relevant to their interests. For example, a local catchment committee could determine sediment load from their catchment during a single storm event.

As part of the Local Government Partnership Program, water quality data sharing agreements have been developed with the La Trobe Council, Break O'Day Council, Meander Valley Council and Central Highlands Council. Further partnerships will be developed with relevant councils in line with the State's program of developing Partnership Agreements. These partnerships allow for the coordination and data sharing of water sampling activities between local and State government, with the State Government providing software and technical and logistical support to actively manage water quality information.

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Public education DPIWE

The Water Resources Division of DPIWE undertook various public education activities during 2003. Being the International Year of Freshwater, there was an increased interest from school teachers and community groups in water education, initiating many requests for education resources. DPIWE responded to this interest via continuing development of its website, providing education materials to teachers and producing a poster "River Life", which depicts a Tasmanian river scene.

In conjunction with local council and community groups, Water Resources took part in a World Environment Day "Year of Freshwater" display. During 2003 approximately 250 copies of the Healthy River Flows video were distributed to schools and community groups. Water Resources continued its presence at Agfest, concentrating on the Year of Freshwater theme. The "River Journey" interactive display proved very popular and will be used again at Agfest 2004.

From October 2003 to January 2004, the Division embarked on a review of its website, which has resulted in the introduction of an on-going content review system. The "Water Facts" note sheets are being reviewed as part of this process.

Water Development Branch is committed to educating industry groups and stakeholders about sustainable water development in Tasmania, with branch staff regularly addressing such groups as TAPG and TFGA and conducting project related meetings around the State. It also puts out a regular newsletter about branch activities, which is distributed to 350 stakeholders. Water Development reports and project updates are made available on the DPIWE website.

Water Assessment Branch provides the public with results of its water assessment programs. State of River reports provide local communities with a snapshot of the condition of their water resources. Six State of River Reports were made publicly available in 2002-2003, and a study of the Little Swanport catchment will be progressed during 2004. Environmental Water Requirement reports for a number of rivers around the state are now available on the water resources website, with more to follow during 2004.

Other public education and training programs to be progressed during the year include a river health project which will provide AusRivAS training for local government and NRM groups, and the Baseline project which will develop software to enable community groups to access State water resources information databases. The WIRED on-line database currently provides regular updates on river flows and will be expanded to provide real time water quality and river health information.

Environment Division's Derwent Estuary Program continues to inform the public about the health of the Derwent River with regular newsletter and website updates. Its State of the Derwent Estuary Report was released in November 2003.

Waterwatch

Waterwatch, Tasmania's community water monitoring and education network was seriously cut back in 2003 following withdrawal of NHT funding. Several Waterwatch groups are still operating as at February 2004, however the network as a whole is in a state of transition. There are currently three regionally based waterwatch facilitators who provide assistance to community waterwatch groups. During 2004, the NAP Water Quality Linkages program will help to resurrect the Statewide network by providing assistance in the creation of new groups and a new support system under the NRM framework. In addition, Tasmania's three NRM regions received funding to continue Waterwatch for another 6 months in 2004, and are exploring means to best support the network through their Regional NRM Strategies and Investment Plans in the long-term.

Waterwatch Tasmania continues to provide reference manuals, monitoring guides and education resources on its website. The Derwent Waterwatch group released the "Diving into the Derwent" teacher support package and interactive CD-rom in 2003.

Local Council

The Local Government Act provides a mechanism for public education and consultation through the annual reporting requirements. Under the Local Government Regulations a council's annual report is to include a statement reporting on its plans in relation to domestic water supply.

The Local Government Division of the Department of Premier and Cabinet has also facilitated workshops to assist Councils with completion of cost recovery reporting for water and wastewater services. Workshops were held in Hobart and Devonport in February 2003.

During 2002 – 2003 a number of councils in the State prepared and released educational material on water conservation and two part pricing. Public debate over two part pricing and metering is continuing, with Councils now investigating rating structures.

A regional education project proposed by Southern Regional Councils and Hobart Water was unsuccessful in obtaining funding, however Hobart City Council is working to implement its Water Reform Package, which has a number of public education components. These include a school based "Waterwise" program and the development of related curriculum projects, a water sensitive urban design pilot (which will be publicly accessible at the Royal Tasmanian Botanical Gardens), and a water conservation rebate scheme which was implemented in December 2003.

Hobart Water continues to provide its school education program.

Rivers and Water Supply Commission

The Rivers and Water Supply Commission meets with users of the government irrigation schemes regularly to discuss aspects of scheme operation, including service delivery standards and water pricing.

APPENDIX D

Table A4: Environmental flows/water for ecosystems impact matrix and progress against NCC timelines

Catchment	Water Development Priority	Water Quality Priority	Water Use Priority	Instream Ecology Priority	Estuary Conservation Status	Industry Priorities	NCC Priority	NCC TIMELINE	Mar 20034 Work Status
Apsley River	L	6	M	2	High	IRRIGATION	n/a	n/a	
Arthur River	L	7	L	5	High		n/a	n/a	
Curries River	M		L	5	Degraded	WSUPPLY	n/a	n/a	
Davey River	L	8	L	5	Critical	n/a WHA	n/a	n/a	
Denison River	L	8	L	5	Moderate	n/a WHA	n/a	n/a	
Flinders Island	L	3	L	5	High		n/a	n/a	
Florentine River	M	6	L	5	Moderate	HydroelectricityHEC	n/a	n/a	
Forth River	H	5	L	5	Degraded	HydroelectricityHEC	4	Jun-06	
Franklin River	L	8	L	5	Moderate	n/a WHA	n/a	n/a	
Hellyer River	H	7	L	5	High	INDUSTRY	n/a	n/a	
Henty River	L	7	L	5	High	HydroelectricityHEC	n/a	n/a	
Huon River	M	4	L	2	Moderate	INDUSTRY	n/a	n/a	
Huskisson River	L	7	L	5	Moderate		n/a	n/a	
Kermandie River	L	4	L	5	Moderate	INDUSTRY	n/a	n/a	
King Island	L	2	M	5	Moderate, Yarra Degraded	n/a	n/a		
Lt Henty River	L	7	L	5	Moderate		n/a	n/a	
Lune River	L		L	5	Moderate		n/a	n/a	
Lyons River	L		L	5	High		n/a	n/a	
MacClaines Creek	L		L	3	Degraded	WSUPPLY	n/a	n/a	

Catchment	Water Development Priority	Water Quality Priority	Water Use Priority	Instream Ecology Priority	Estuary Conservation Status	Industry Priorities	NCC Priority	NCC TIMELINE	Mar 20034 Work Status
MacIntosh River	L		L	5	Moderate	HydroelectricityHEC	n/a	n/a	
Meredith River	M	6	M	3	Degraded	IRRIGATION	n/a	n/a	
Murchison River	L		L	5	Moderate	HydroelectricityHEC	n/a	n/a	
New River	L		L	5	Critical		n/a	n/a	
Nile River	H		M	2	Critical	HydroelectricityHEC	NAP	June 2005	
Nive River	L		L	5	Moderate	HydroelectricityHEC	n/a	n/a	
Orielton Rivulet	M		M	3	Degraded	IRRIGATION	NAP	June 2006	
Picton River	L	4	L	4	Moderate	n/a WHA	n/a	n/a	
Pieman River	L	7	L	5	Moderate	HydroelectricityHEC	n/a	n/a	
Pipers Brook	H		M	5	Moderate	IRRIGATION	NAP	June 2005	
Plenty River	H		M	2	Moderate	IRRIGATION	n/a	n/a	
Quamby Brook	H		M	5	Critical	HydroelectricityHEC	n/a	n/a	
Rapid River	L		L	5	High		n/a	n/a	
Russell River	M		M	5	Moderate	INDUSTRY	n/a	n/a	
Samphire Creek	L	3	L	5	Moderate	IRRIGATION	n/a	n/a	
Sandspit River	L		L	3	n/a		n/a	n/a	
Savage River	H	7	L	5	Moderate	INDUSTRY	n/a	n/a	
Scamander River	L	3	L	2	Degraded		n/a	n/a	
Shannon River	H		M	5	Moderate	HydroelectricityHEC	n/a	n/a	
Snug	L	4	L	5	Moderate		n/a	n/a	
South East	L		M	5	Moderate		n/a	n/a	
Southern Rivers	L		L	5	Louisa River Critical, Cockle Creek Moderate,		n/a	n/a	

Catchment	Water Development Priority	Water Quality Priority	Water Use Priority	Instream Ecology Priority	Estuary Conservation Status	Industry Priorities	NCC Priority	NCC TIMELINE	Mar 20034 Work Status
					Remainder High				
Stanley River	L		L	5	Moderate	n/a WHA	n/a	n/a	
SW Rivers	L		L	5	Mulcahy High, Giblin High, Lewis High, Mainwaring High, Spero High, Hibbs Lagoon High	n/a WHA	n/a	n/a	
Cam River	H	2	M	1	Badly Degraded	WSUPPLY	3 NHTII	Dec-01	Completed
Dee River	L		L	5	Moderate	HydroelectricityHEC	n/a	n/a	Completed
Jordan River	H		H	1	Moderate	IRRIGATION	4NAP	Dec-02	Completed
Rubicon River	H	5	H	5	Degraded	IRRIGATION	3 NHTII	Dec-01	Completed
Ansons River	L		L	5	Moderate	IRRIGATION	2	Mar-00	Completed.
Blythe River	H	2	M	2	Degraded	INDUSTRY	3	Dec-01	Completed.
Boobyalla River	H		L	5	High	IRRIGATION	2NAP	Mar-00	Completed.
Brid River	H	3	H	5	Degraded	IRRIGATION	1NAP	Aug-99	Completed.
Browns River	L	4	M	5	Moderate		3	Dec-01	Completed.
Claytons Rivulet	H		H	5	Degraded	IRRIGATION	NHTII	Jun 2005	Completed.
Clyde River	H	6	H	1	Moderate	INDUSTRY	2NAP	Jun-00	Completed.
Coal River	H	6	H	1	Degraded	INDUSTRY	3NAP	Jun-01	Completed.
Derwent River below Meadowbank	M	6	H	5	Moderate	Hydroelectricity WSUPPLY IRRIGATIONHEC	4NAP	Jun-06	Completed.
Duck River	H	2	M	1	Degraded	IRRIGATION	2 NHTII	Dec-00	Completed.
Elizabeth River	H	1	H	5	Critical	HydroelectricityHEC	1NAP	Jul-99	Completed.

Catchment	Water Development Priority	Water Quality Priority	Water Use Priority	Instream Ecology Priority	Estuary Conservation Status	Industry Priorities	NCC Priority	NCC TIMELINE	Mar 20034 Work Status
Emu River	H	2	M	1	Badly Degraded	INDUSTRY	3	Dec-01	Completed.
Esperance River	L	4	H	3	Moderate	INDUSTRY	1		Completed.
George River	L	3	L	5	Degraded / Moderate		2	Mar-00	Completed.
Gordon River	L	8	H	5	Moderate	BASSLINK	4	Jun-03	Completed.
Gt Forester River	H	3	H	5	Degraded	IRRIGATION	1NAP	Nov-99	Completed.
Gt Musselroe River	H		L	5	Moderate	IRRIGATION	2	Mar-00	Completed.
King River	L		L	5	Degraded	BASSLINK	n/a	n/a	Completed.
Lake River	H		H	1	Critical	HydroelectricityHEC	4NAP	Jun-04	Completed.
Leven River	H	5	L	1	Badly Degraded	IRRIGATION	3	Dec-01	Completed.
Liffey River	H	1	H	5	Critical	HydroelectricityHEC	1NAP	Aug-99	Completed.
Lower Mersey River	H	5	H	5	Badly Degraded	HydroelectricityHEC	2NHTll	Mar-00	Completed.
Lower Ringarooma River	H	3	M	5	High	IRRIGATION	2NAP	Jun-00	Completed.
Lt Forester River	M		M	5	Moderate		2NAP	Jun-00	Completed.
Lt Musselroe River	H		L	5	High		2	Aug-00	Completed.
Lt Swanport River	H	6	M	2	Moderate	IRRIGATION	3NAP	Jun-01	Completed.
Macquarie River	H	1	H	5	Critical	HydroelectricityHEC	1NAP	Dec-99	Completed.
Meander River	H		H	5	Critical	HydroelectricityHEC	1NAP		Completed.
Mountain River	H	4	H	1	Moderate	IRRIGATION	2 NHT II	Mar-00	Completed.
Nichols Rivulet	H	4	H	5	Degraded	WSUPPLY	2 NHTII	Sep-00	Completed.
North Esk River	H	1	H	5	Critical	WSUPPLY	1NAP	Aug-99	Completed.
NW Bay Rivulet	H		H	2	Badly Degraded	IRRIGATION	3 NHTII	Mar-01	Completed.
Pipers River	H	3	H	5	Moderate	IRRIGATION	1NAP	Aug-99	Completed.
South Esk River	H	1	H	5	Critical	HydroelectricityHEC	1NAP		Completed.
St Patricks River	H	1	H	5	Critical		1NAP	Aug-99	Completed.

Catchment	Water Development Priority	Water Quality Priority	Water Use Priority	Instream Ecology Priority	Estuary Conservation Status	Industry Priorities	NCC Priority	NCC TIMELINE	Mar 20034 Work Status
Swan River	H		H	5	High		3 NHTII	Jun-01	Completed.
Tomahawk River	H		L	5	Moderate		2NAP	Jun-00	Completed.
Tooms River	H	1	H	5	Critical	HydroelectricityHEC	1NAP	Jul-99	Completed.
Upper Mersey River	H	5	H	5	Badly Degraded	HydroelectricityHEC	1NHTll		Completed.
Upper Ringarooma River	H	4	M	6	High	IRRIGATION	1NAP	Aug-99	Completed.
Welcome River	H	2	M	1	Moderate		3	Dec-01	Completed.
Inglis River	M	2	L	1	Badly Degraded	IRRIGATION	NHTII	June 2005	Field work completed
Black River	M		L	2	Critical	IRRIGATION	n/a	n/a	Field work completed
Detention River	M		L	2	Moderate	INDUSTRY	n/a	n/a	Field work completed
Prosser River	L	6	L	2	Degraded	WSUPPLY	NAP	June 2004	Fieldwork commenced
Flowerdale River	M	2	L	2	Badly Degraded	IRRIGATION	NHTII	June 2004	In progress
Ouse River	H	6	H	5	Moderate	HydroelectricityHEC	4	Jun-06	In progress
Montagu River	H	2	M	1	Moderate	IRRIGATION	3	Dec-01	In progress
St Pauls River	H	1	M	3	Critical	HydroelectricityHEC	NAP	June 2005	In progress

Source: DPIWE