SINCLAIR KNIGHT MERZ

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INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

System Performance Standards and Indicators for State Water Corporation

- Final
- 9 December 2004

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Executive Summary

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) commissioned this study to provide advice on system performance standards and indicators for State Water Corporation (State Water). State Water was recently established as a State Owned Corporation by the *State Water Corporation Act 2004* and an Interim Operating Licence was issued to State Water on 1 July 2004.

The scope of this project was to advise the Tribunal on appropriate system performance standards and indicators for inclusion in State Water's Initial Operating Licence. These performance indicators and standards will help to ensure public accountability of State Water for its operations. IPART's terms of reference for reviewing the Interim Operating Licence include recommending terms relating to performance standards and indicators for delivery of water, flood management and any other matters.

This study involved an examination of the regulatory framework in which State Water operates, stakeholder expectations for the operating licence, and standards and indicators available in comparable water businesses. Criteria to select performance indicators and assign standards were then developed before making recommendations on performance standards and indicators to include in the Initial Operating Licence.

Regulatory environment:

- State Water has well defined core functions and powers under the *State Water Corporation Act 2004*, as well as functions and powers conferred on State Water in the operating licence, which performance standards and indicators should primarily be targeted towards.
- State Water's responsibilities in unregulated and groundwater supply systems will be regulated by contracts with the Department of Infrastructure, Planning and Natural Resources (DIPNR).
- The principal alternative regulatory mechanism on State Water's operations will be DIPNR's Water Supply Works Approvals (works approvals) and accompanying Implementation Manuals. Specifying conditions on State Water's licence in the area of environmental management and flood management will most likely result in regulatory overlap, but may be warranted for the Initial Operating Licence in areas of regulatory uncertainty. The works approvals and implementation manuals are still being developed, but are scheduled to be ready for adoption prior to the commencement of the Initial Operating Licence.
- State Water has obligations to the Department of Primary Industries (DPI) under the *Fisheries Management Act 1994*, which is supported by a memorandum of understanding with DPI. Specifying conditions on State Water's operating licence in this area will most likely result in overlap with standards and indicators in the memorandum of understanding.

- State Water has obligations under the *Protection of the Environment Operations Act 1997* to not pollute, where polluting can include changing water quality. The Department of Environment and Conservation (DEC) regulates this Act.
- The regulatory mechanism for dam safety is via the Dams Safety Committee. Specifying conditions on State Water's operating licence in this area of operation will most likely result in regulatory overlap.

Stakeholder expectations:

- State Water has high expectations of its own performance. It believes that performance standards and indicators should be relevant to operations for which State Water has sole responsibility, will drive efficiency improvement, are meaningful and will not be costly to measure. They should encourage continuous improvement of performance by allowing benefits to accrue to State Water.
- Environment groups would like to see the operating licence contain performance indicators and standards on areas of State Water's operation that affect the environment, including general reporting requirements where environmental performance is not uniquely attributable to State Water.
- Irrigator groups are keen to see indicators that ensure adequate notification by State Water for changes to delivery conditions. Monitoring and reporting against performance standards and indicators should not result in increases to water delivery charges.
- The Department of Infrastructure, Planning and Natural Resources regards the setting of performance standards and indicators on the environment as its regulatory responsibility under the *Water Management Act 2000*.
- The Department of Primary Industries considers the current memorandum of understanding with State Water to be working effectively to deliver outcomes on fisheries management.
- The Department of Environment and Conservation (DEC) does not intend to separately regulate State Water, but will maintain a watching brief and consider appropriate actions if undesirable environmental impacts occur from State Water's operations.

Existing performance standards and indicators

- State Water does not currently report on all of its performance indicators in its Annual Report.
- State Water agrees that some of its existing performance indicators do not address a specific need and are difficult to interpret, but in the area of water delivery the majority of its indicators are considered sound.

- State Water is in the process of consulting with its Customer Service Committees about the performance indicators and standards in its Customer Service Charter. The draft charter is significantly different to the current charter.
- Existing environmental indicators published in Water Sharing Plans are suited to measuring environmental outcomes but do not specifically isolate State Water's contributions to those outcomes and hence are not considered appropriate to adopt.
- Seven comparable businesses were identified that report on performance standards and indicators on an annual basis. Not all indicators from these businesses are relevant because of the different regulatory framework in which they exist and the different functions of these other water businesses.
- Four industry benchmarking reports were identified. Of these, the benchmarking of rural water industries in Victoria is of most relevance to State Water's core functions, whilst the performance monitoring report of Australian non-major urban water utilities is highly relevant to the Fish River Water Supply Scheme.
- Each of the indicators readily available from the above sources will help to inform the selection of performance indicators and standards for State Water's business.

Criteria for selecting performance standards and indicators:

The key considerations were whether:

- the area of operation includes a core function or power of State Water, as defined in legislation or by regulation in the operating licence;
- an alternative regulatory mechanism is already available or will be available upon implementation of the Initial Operating Licence;
- there is a stakeholder need to regulate a particular area of operation or a reasonable expectation that it should be regulated;
- poor performance in that area of operation is best prevented by a course of action decided by State Water or whether IPART should specify the action directly; and
- the outcomes in that area of operation are controllable by State Water.

If outcomes are not controllable by State Water, but State Water's actions contribute to those outcomes, then a general reporting requirement is specified which may lead to policy development and subsequent regulation of performance.

The decision about assigning a standard to an indicator was based on whether:

- there is a mandatory requirement to meet a certain performance standard (eg under relevant federal or state legislation or regulation);
- there is a commonly accepted industry performance standard;
- there is a standard that has already been agreed between State Water and its customers; and/or
- there is an unacceptable consequence of not meeting the given standard and data is available to support the adoption of that standard.

Recommendations

The application of the above criteria led to the development of the performance indicators and standards recommended for inclusion in State Water's Initial Operating Licence, listed in Table 1. General reporting requirements are also specified to report on areas of operation affected but not solely controllable by State Water's activities, or to support the interpretation of performance indicators and standards with other water businesses and over time. General reporting requirements are not measures of State Water's performance and hence form a separate category to performance indicators and standards.

In addition to the performance standards and indicators listed in Table 1, a number of other recommendations are made:

- Performance indicators for fish passage, cold water pollution and other riparian and aquatic habitat activities are expected to be included in State Water's new memorandum of understanding with DPI, to apply from 1 January 2005, and should not be duplicated in the operating licence. IPART should direct State Water to publicly report on these performance indicators.
- State Water should be required to establish protocols for notifying other departments of incidents of environmental harm as part of its memoranda of understanding with DIPNR, DPI and DEC.
- State Water should be required, as part of its memorandum of understanding with DIPNR, to specify targets for when resource assessments should be completed.
- The following standards or indicators for bank slumping and cold water pollution should only be adopted by IPART if it perceives that there is a particular stakeholder need for regulatory duplication with DIPNR:
  - Changes in the rate of reservoir release to not exceed natural rates of hydrograph fall.
  - Deviation from reference temperature conditions downstream of regulated storages.

- Indicators in the following areas should only be adopted by IPART if it perceives that there is a long-term benefit in reporting on these indicators to prevent future poor performance:
  - Lost time injury frequency rate;
  - Average lost time rate;
  - Training costs per employee;
  - Training costs as a proportion of total labour costs;
  - Research and development expenditure; and
  - Degree of participation in Statewide and national forums (no. and type).

Performance standards and indicators for the **Fish River Water Supply Scheme** are listed in Table 2. It is recommended that the standards and indicators recommended for State Water's business as a whole should be reported on separately for the Fish River Water Supply Scheme where relevant to State Water's role as a water management/supply authority for the scheme.

Optional indicators relating to bank slumping and cold water pollution should be adopted for the Fish River Scheme if IPART adopts them for State Water's business as a whole.

No general reporting requirements are considered necessary for the Fish River Water Supply Scheme, provided that State Water continues the current contribution of the Fish River scheme to the Australian Water Association's annual benchmarking report of non major urban water businesses, and that it continues to provide quarterly and annual reports to its Customer Advisory Committee.

In relation to business development, as a water supply authority, State Water has an obligation to "conduct research, collect information and develop technology in relation to water management," which can be reflected in the adoption of the recommended business development indicators for the Fish River scheme.

Implications of adopting recommended standards and indicators:

The majority of the information required to support the recommended list of indicators is already being collected by State Water and will not involve additional resourcing or funding. Indicative up front costs for potential work required totals in the order of $90,000 to $160,000, with no significant additional ongoing costs. If only the recommended indicators are adopted, this cost could be as low as $30,000 to $100,000. Additional funding for weekend work and having on-call staff may be required to meet the desired target for unplanned service interruptions for the Fish River Water Supply Scheme. It would also cost $40,000 to $80,000 for DIPNR to determine and specify rules for maximum changes in reservoir release rates.

Table 1 – Summary of recommended performance standards and indicators for State Water

Area of Operation	Reporting requirement	Description of standard or indicator
Water delivery	Performance standards	▪ 100% of licence holders to be contacted within one working day of the non-complying order being placed ▪ 95% of complying orders to be delivered with ± 1 day of the scheduled day of delivery ▪ Supplementary water announcements to made with four hours of an indicator streamflow gauge detecting a supplementary water event on a working day
	Performance indicators	▪ Percentage of time that daily minimum flow targets are met (on a rolling average weekly basis) ▪ Operational surplus as a percentage of water delivered to consumers (%)
	General reporting requirements	▪ Available water determination (initial, conditional and end of season allocation) ▪ Number of water orders ▪ Number of dams and weirs ▪ Water balance for each river valley ▪ Volume of water ordered (GL)
Flood Management	N/a	None recommended
Water accounting and billing	Performance standards	▪ 90% of water management works for the extraction of surface waters to be metered accordance with metering standards ▪ Temporary intra-valley transfers to be processed within four working days of receipt of payment

Area of Operation	Reporting requirement	Description of standard or indicator
Policing	Performance indicators	▪ Volume of water taken in excess of access licence conditions (ML) ▪ Value of penalties imposed by State Water for taking of water in excess of access licence conditions ($) ▪ Volume of penalties imposed by State Water for taking of water in excess of access licence conditions (ML) ▪ Number of access licences suspended ▪ Number of approvals suspended
Customer service	Performance standards	▪ At least 75% of respondents to customer satisfaction surveys should be satisfied with State Water's services.
	Performance indicators	▪ Number of customer complaints to State Water ▪ Number of customer complaints for arbitration
	General reporting requirements	▪ Number of customer enquiries to State Water
Asset management	N/a	None recommended
State Water personnel	N/a	None recommended
Business development	N/a	None recommended
Environment and Recreation	General reporting requirements	▪ Number of algal blooms by alert level in State Water weirs and storages

Table 2 – Summary of recommended performance standards and indicators for the Fish River Water Supply Scheme

Area of Operation	Reporting requirement	Description of standard or indicator
Water delivery	Performance standards	▪ Percentage of time that end of system minimum flow targets are met (ie downstream of Oberon Dam and Duckmaloi Weir) ▪ A water supply efficiency of 90% should be maintained, where water supply efficiency is the volume of water supplied to consumers divided by the volume of water diverted from rivers ▪ Restrictions should not occur more often than 5% of the time and not more frequently than 1 year in 10. The maximum restriction level should be 20% of unrestricted demand supplied during a repeat of the worst drought on record.
Water quality	Performance standards	▪ 100% compliance with Australian Drinking Water Guidelines where potable water is being supplied
Flood Management	N/a	None recommended
Water accounting and billing	Performance standards	▪ At least 90% of water management works for the extraction of surface waters to be metered in accordance with metering standards
Policing	Performance indicators	▪ Volume of water taken in excess of access licence conditions (ML or GL)
Customer service	Performance standards	▪ At least 75% of respondents to customer satisfaction surveys to be satisfied with State Water's services
	Performance indicators	▪ Number of customer complaints to State Water ▪ Number of complaints for arbitration
	General reporting requirements	▪ Number of customer enquiries to State Water

Area of Operation	Reporting requirement	Description of standard or indicator
Asset management	Performance standards	▪ The response time for unplanned supply interruptions to be within 24 hours
	Performance indicators	▪ The number of planned water supply interruptions ▪ The number of unplanned water supply interruptions ▪ The average duration of planned water supply interruptions ▪ The average duration of unplanned water supply interruptions
State Water personnel	N/a	None recommended
Business development	Performance indicators	▪ Training costs per employee ▪ Training costs as a proportion of total labour costs ▪ Research and development expenditure ▪ Degree of participation in Statewide and national forums (no. and type)
Environment and Recreation		▪ Number of algal blooms by alert level.

Contents

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1. Introduction

The Independent Pricing and Regulatory Tribunal of New South Wales (IPART) commissioned this study to provide advice on system performance standards and indicators for inclusion in State Water Corporation's (State Water) Initial Operating Licence, which is scheduled to commence on 1 July 2005. State Water was recently established as a State Owned Corporation by the *State Water Corporation Act 2004* and an Interim Operating Licence was issued to State Water on 1 July 2004. . Performance indicators and standards in the operating licence will help to ensure public accountability of State Water for its operations.

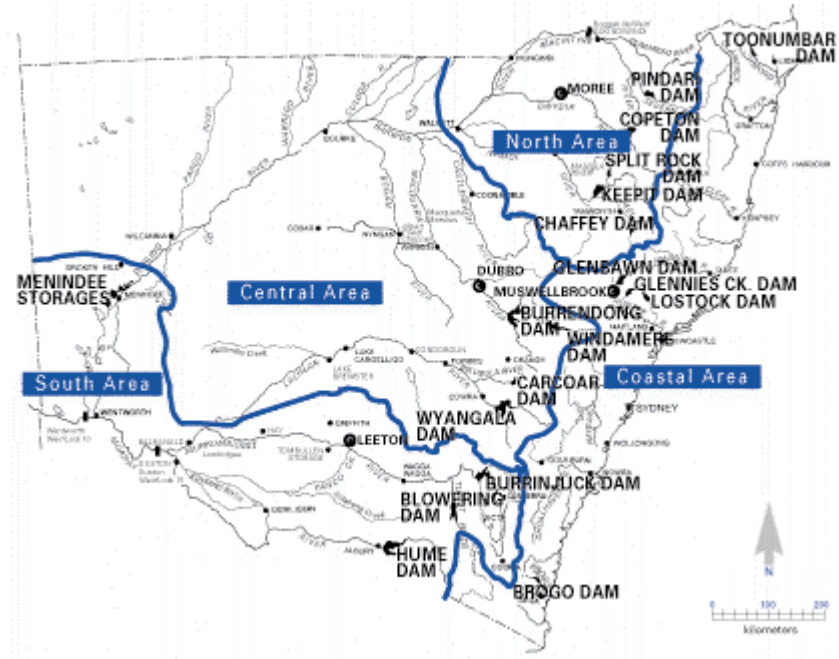
State Water operates the majority of New South Wales' major water storages and weirs for the provision of bulk water supply for irrigation, urban, stock and domestic, hydroelectric, industrial and environmental water use. It operates in four customer service areas, as shown in Figure 1-1. It operates 18 major dams and 264 weirs to supply around 6,200 bulk water users, with a further 15,000 groundwater and unregulated river customers (DEUS, 2004). From 1 January 2005, State Water will also operate the Fish River Water Supply Scheme, supplying treated water to predominantly bulk urban and industrial customers.

IPART's terms of reference for reviewing State Water's operating licence include recommending terms relating to performance standards and indicators for delivery of water, flood management and any other matters. This excludes any recommendations on performance standards and indicators in relation to pricing. The outcomes from this study form an input into IPART's public consultation process on State Water's operating licence.

The outline of this report is shown in Figure 1-2 and is described as follows:

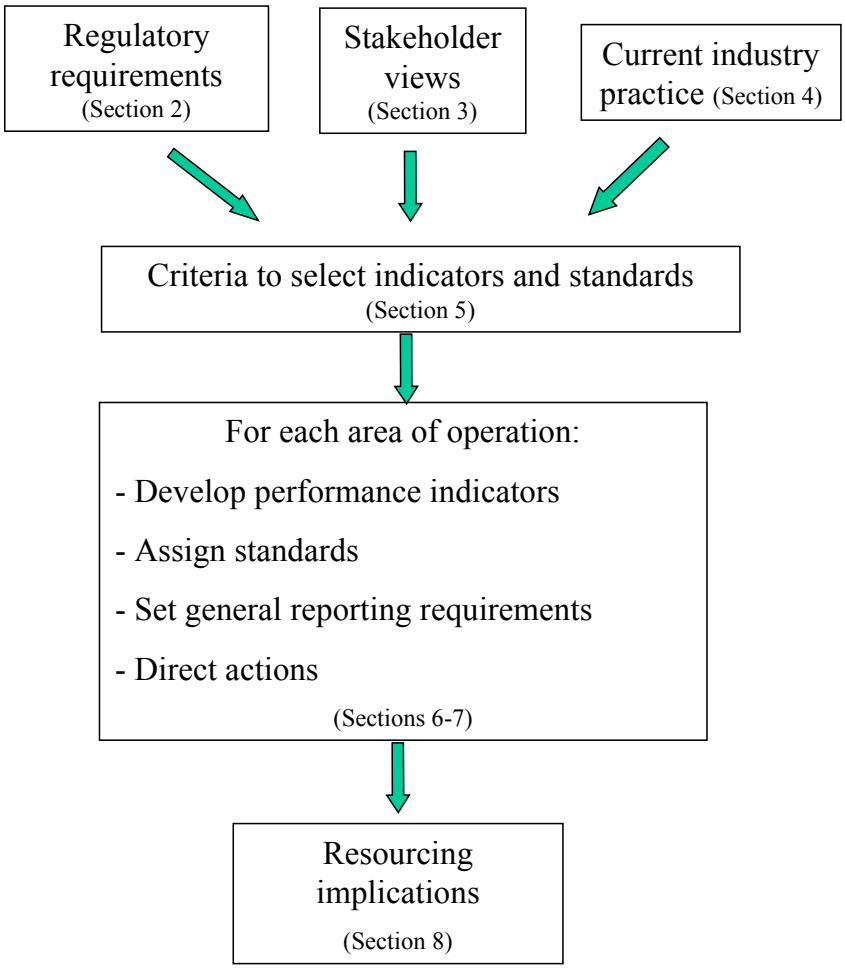
- Examination of the **regulatory framework** in which State Water operates to establish its obligations (Section 2);
- A summary of **stakeholder views** on the role of performance indicators and standards on State Water's operating licence (Section 3);
- An assessment of **currently available performance standards and indicators** in comparable businesses across Australia (Section 4).
- **Criteria used** to select performance indicators and standards (Section 5).
- **Selection of indicators and standards** for inclusion in State Water's licence (Section 6).
- Indicators and standards for the **Fish River** Water Supply Scheme operation (Section 7).
- The cost or other **implications** of adopting the proposed indicators and standards (Section 8).
- **Conclusions and recommendations** arising from the above (Sections 9&10).

- **Figure 1-1 – State Water Customer Service Areas**



Source: DEUS (2004)

- **Figure 1-2 – Process for developing performance standard and indicators**



2. Regulatory Framework

2.1 Introduction

This section of the report examines the regulatory framework in which State Water operates. This includes its core responsibilities under the *State Water Corporation Act 2004* and functions under the Water *Management Act 2000* or the *Water Act 1912* conferred on State Water under the operating licence and by Ministerial concurrence. This section of the report highlights the key objectives and requirements that need to be addressed by State Water and those that are potentially covered by other regulatory mechanisms. It is important to note in reading this chapter that there is still some uncertainty about the exact content of each regulatory mechanism and these details are likely to continue to change in the lead up to adoption of the Initial Operating Licence in July 2005. This is because many of the regulatory instruments governing State Water's operation are only available in a preliminary and, in some instances substantially incomplete, draft form. The regulatory environment for the Fish River Water Supply Scheme is slightly different to State Water's core functions elsewhere across the State and is considered separately in Chapter 7.

2.2 Recent history of State Water

Prior to 2003, State Water operated as a commercial business unit within the predecessor of DIPNR. As part of National Competition Policy reforms, it was recommended that the role of water resource manager should be separated from the role of bulk water supplier to eliminate potential conflict of interest in managing the resource. In April 2003, State Water became a commercial business unit within a new department, the Department of Energy, Utilities and Sustainability (DEUS) to help achieve this separation of power. On 1 July 2004 State Water was established as a State Owned Corporation by the *State Water Corporation Act 2004* to further facilitate this reform.

2.3 State Water responsibilities under the State Water Corporation Act 2004

2.3.1 Objectives

The objectives of State Water are expressed in section 5 of the *State Water Corporation Act 2004*:

(1) "The principal objectives of the Corporation are to capture, store and release water in an efficient, effective, safe and financially responsible manner.

(2) The other objectives of the Corporation are as follows:

(a) To be a successful business and, to that end:

(i) to operate at least as effectively as any comparable business, and

(ii) to maximise the net worth of the State's investment in the Corporation,

(b) To exhibit a sense of social responsibility by having regard to the interests of the community in which it operates,

(c) Where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in Section 6(2) of the *Protection of the Environment Administration Act 1991*,

(d) To exhibit a sense of responsibility towards regional development and decentralisation in the way in which it operates."

These objectives highlight the desirability of utilising performance indicators and standards that are used by other similar businesses, because this will allow section (2)(a)(i) above to be tested. These objectives also highlight State Water's community service obligations and environmental sustainability obligations and the potential to develop performance indicators and standards that address these obligations.

2.3.2 Primary functions

The primary functions of State Water are expressed in section 6 of the *State Water Corporation Act 2004*:

(1) "The principal functions of the Corporation are as follows:

(a) To capture and store water and to release water:

(i) to persons entitled to take the water, including release to regional towns,

(ii) for the purposes of flood management, and

(iii) for any other lawful purpose, including the release of environmental water,

(b) to construct, maintain and operate water management works,

(c) any other functions conferred or imposed on it by the operating licence or by or under this or any other Act or law."

The Act outlines State Water's function as an operator of bulk water supply, with emphasis on the management and operation of water supply infrastructure to deliver water to customers. State Water can undertake any activities that support the above functions or the aforementioned objectives, provided that they are not inconsistent with any Act or law.

2.4 Functions and powers conferred on State Water in the operating licence

State Water's operating licence can confer on it specified functions and powers of the Minister for Natural Resources under the *Water Management Act 2000* or the *Water Act 1912*. Functions and powers conferred on State Water under the *Water Management Act 2000* apply in catchments with

Water Sharing Plans in place, whereas the functions and powers under the *Water Act 1912* apply in catchments currently without Water Sharing Plans. Under the Interim Operating Licence, it is proposed that a number of functions and powers could be conferred on State Water. Minor amendments and qualifications to these functions and powers are expected to occur by agreement between the Minister for Natural Resources and the Minister for Energy, Utilities and Sustainability prior to the issuing of the Initial Operating Licence. Based on correspondence between the two ministers, a list of the functions and powers expected to be conferred on State Water in the Initial Operating Licence is shown in Table 2-1 and Table 2-2. These functions and powers generally relate to water accounting, billing and metering, directing actions to protect water sources and protection against fraudulent activities. The majority of these functions and powers rely upon having an adequate water accounting system in place, collecting monies for water delivered, communicating with access licence holders and undertaking investigations or remedial actions when the water resource is under threat. Many of these functions and power require notification to DIPNR before they are executed.

- **Table 2-1 Functions and powers to be conferred on State Water by DIPNR under the Water Management Act 2000 (S.McNicol, State Water, pers.comm. 12/11/2004)**

Section	Description of power	Limitation of exercise of power
71T & 71V	Assignment of water allocations	Must be consistent with the relevant water management plan. Inter valley assignment must have **DIPNR's consent**. Interstate assignment must have **DIPNR and MDBC consent**.
76	Re-crediting of water accounts	Must be consistent with any regulation
78	Suspension of access licences	State Water can only suspend, but not cancel an access licence
85 & 85A	Keeping of water allocation accounts	Must be consistent with relevant available water determination and any water restrictions declared.
85B	Penalties for water taken illegally	May impose civil penalties and debit water accounts up to five times the volume taken illegally
109	Suspension of approvals	State Water can only suspend, but not cancel an approval
114	Imposition of fees and charges	Must be **consistent with IPART determinations**. Fees and charges cannot be waived or remitted without **DIPNR consent**.
323	Imposition of water restrictions	State Water must **inform DIPNR**
324	Requests for information	Nil
325	Directions concerning waste of water	Must be consistent with guidelines and must **inform DIPNR** and provide reasons for the action to DIPNR
326-331	Directions to protect water sources, stop work, amend or modify a work or to preserve basic landholder rights	Must **inform DIPNR** and provide reasons for the direction
332 & 334	Specify and undertake remedial measures	Nil
335	Commencing of proceedings in the Land and Environment Court	Must **inform DIPNR** of the intention to commence proceedings
362A, B &C	Recovery of fees and charges	Nil
392	Rights to control water	State Water can only control water using these rights if a water management plan exists.

- **Table 2-2 Functions to be conferred on State Water by DIPNR under the Water Act 1912**

Section	Description of power	Limitation of exercise of power
20AF	Water ordering	Subject to any specific condition on any licence
22C, 24, 117B and 194	Raising water charges	State Water will act as the Minister for Natural Resources agent for sending out accounts, receiving monies, forwarding the natural resource component of the water charges, taking debt recovery actions. The resource management component of charges can only be waived with **DIPNR's consent**.
20A	Approving or refusing temporary transfer of water allocations	Nil

2.5 Functions assigned to State Water under contract

In addition to the above functions conferred explicitly on State Water in the operating licence, DIPNR has assigned functions to State Water under contract outside of the operating licence. These functions are expected to include:

- Billing and metering of unregulated river customers
- Billing and metering of groundwater customers

Any performance standards and indicators relating to these functions are likely to be specified within the contracts between State Water and DIPNR. According to DIPNR (K.Alvarez, DIPNR, pers.comm.6/10/2004), State Water will only provide these functions for the duration of the contract, at which point the contract can be renewed or the contract may be awarded to another contractor. The duration of the contract will not necessarily align with the term of the Initial Operating Licence. Public reporting of functions assigned under contract are only expected to be line items on revenue received from State Water's billing and metering operations (T.McGlynn, DIPNR, pers.comm. 6/12/2004).

2.6 Functions under the water allocation process

Performance standards and indicators should only be directed at State Water's areas of responsibility. The delineation of responsibility between State Water and DIPNR in allocating water is currently not governed by clear agreed protocols. The draft memorandum of understanding between DIPNR and State Water outlines the following process for allocating water in regulated river systems (State Water & DIPNR, 2004):

1) DIPNR monitors streamflow data and provides it to State Water as per the data supply contract between the two parties.
2) State Water monitors the volume in storage and water delivered to date.

3) State Water undertakes a resource assessment and makes a recommendation to DIPNR on the available water determination.
4) DIPNR makes the available water determination and announces it to access licence holders, including any conditional allocations because of system capacity constraints. In practice, State Water advises customers of the decision.
5) State Water credits water accounts.
6) State Water debits water accounts when an order is made.
7) State Water delivers water to access licence holders who order the water.

This process runs reasonably smoothly on most systems, however there have been instances reported by State Water where DIPNR has not made an available water determination in areas not governed by a Water Sharing Plan. When this occurs, the default available water determination under the *Water Act 1912* is 100% and unless State Water makes an announcement on DIPNR's behalf, it could be unable to meet its obligations to customers throughout the season.

The draft memorandum of understanding specifies a date for the initial allocation announcement for the season and a time frame over which DIPNR must decide upon allocation enhancements or available water determination increments after receiving the resource assessment. No targets are set for when the resource assessments are to be completed.

Supplementary water announcements are made on regulated streams during unregulated flow conditions. The short time involved between detecting a supplementary water event and its passing means that State Water assumes all of the responsibilities for announcing these events, as recommended in the draft memorandum of understanding between State Water and DIPNR. State Water must act in accordance with the provisions of the Water Sharing Plans in deciding whether to announce a supplementary water event and it is proposed that DIPNR approves the process, but otherwise is not involved in the declaration of supplementary water events. Once the event is deemed to be occurring, State Water must then announce the allocation in an equitable and timely manner and perform its water debiting and crediting functions.

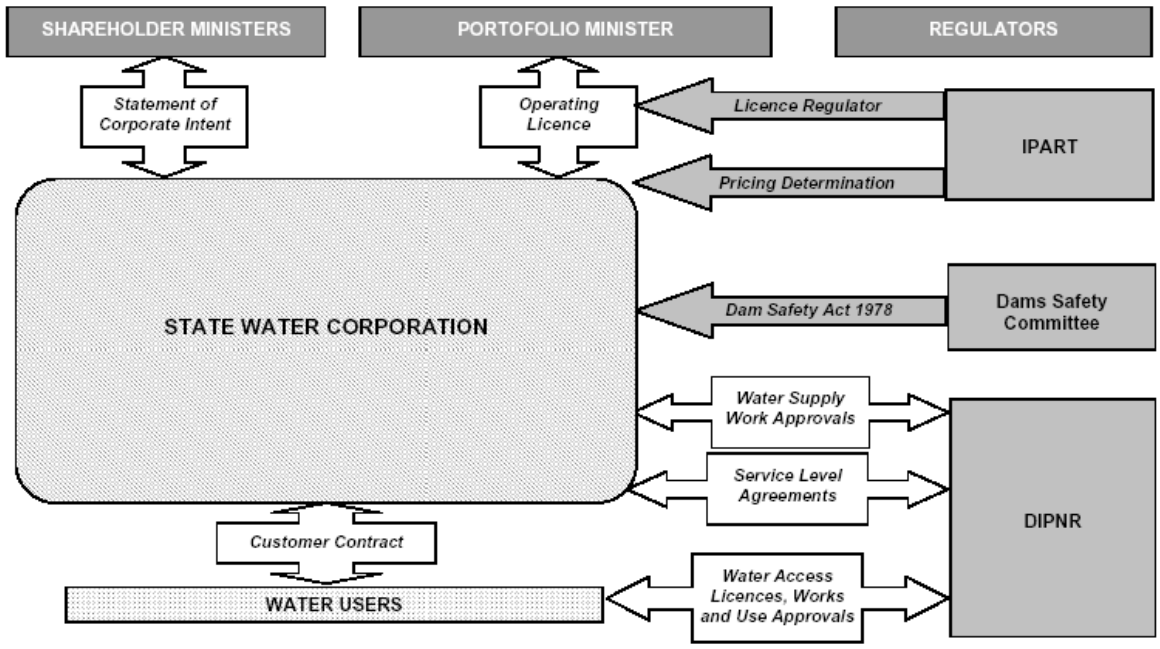
On unregulated streams, State Water performs metering and billing functions under contract, but DIPNR is ultimately accountable for these functions. DIPNR has responsibility for any reductions in access licence volumes due to low flow conditions.

2.7 Regulatory mechanisms

There are a number of regulatory mechanisms that direct State Water's activities. These are illustrated in Figure 2-1 and are discussed each in turn. The two primary mechanisms for regulating State Water's activities are the operating licence, regulated by IPART, and Water

Supply Works Approvals, regulated by DIPNR. In this diagram, the "shareholder ministers" are the Minister for Energy, Utilities and Sustainability, as well as the Treasurer.

- **Figure 2-1 State Water Regulatory Relationships (IPART, 2004)**



2.8 Treasury and the Department of Energy, Utilities and Sustainability

State Water has a Statement of Corporate Intent with its shareholder ministries of the Department of Energy, Utilities and Sustainability (DEUS) and Treasury. The Statement of Corporate Intent is a confidential document not made available for this study. It is believed to set performance targets for financial management and hence is not directly relevant to performance targets for water delivery and flood management. State Water's draft Corporate Plan outlines State Water's financial plan, which includes the intention to report on various short and medium term financial performance indicators. Reporting separately on these indicators in the operating licence will result in regulatory duplication. Any performance indicators and standards that IPART recommends that result in additional costs to State Water may affect State Water's ability to meet the conditions in its Statement of Corporate Intent.

2.9 Independent Pricing and Regulatory Tribunal

IPART is conducting the review of State Water's operating licence, of which the development of performance standards and indicators is one component. IPART is an independent regulatory body whose role in this area is to help ensure that State Water operates its business in a way that is consistent with the objectives set out for it in the Act, and to prevent it from abusing its monopoly power.

Under the *State Water Corporation Act 2004*, IPART is required (IPART, 2004):

- To make recommendations to grant, amend or cancel State Water's operating licence;
- To impose, amend or cancel conditions in relation to the operating licence;
- To monitor or report on compliance with the operating licence;
- To determine the operating licence fee (if any);
- To impose monetary penalties or require other action to be taken in relation to contraventions of the operating licence; and
- To prepare operational audits of State Water at times directed by the Minister in accordance with the operating licence.

This legislation gives IPART the power to develop performance standards and indicators for State Water, specify them in the operating licence, monitor performance against these standards and indicators and take action if performance is unsatisfactory. IPART also has the responsibility of setting maximum prices that State Water can charge for its bulk water services, however consideration of and performance indicators or standards in relation to this aspect of IPART's role is beyond the scope of this consultancy.

2.10 The Department of Infrastructure, Planning and Natural Resources (DIPNR)

DIPNR is the water resource manager in New South Wales. DIPNR will regulate State Water's activities directly through Water Supply Works Approvals. These works approvals are informed at a statewide level by the State Water Management Outcomes Plan, and at a regional level by the Water Sharing Plan for each river valley. Works approvals will require State Water to operate according to Implementation Manuals, which will specify operating procedures to ensure that water is released in compliance with Water Sharing Plans. The detail to be contained within the Water Supply Work Approvals and Implementations Manuals is still being finalised by DIPNR and is not expected to be completed until early 2005 (T.McGlynn, DIPNR pers.comm. 24/11/2004).

2.10.1 State Water Management Outcomes Plan

The State Water Management Outcomes Plan (SWMOP) provides direction for all water management in New South Wales. The SWMOP was gazetted on 18 December 2002 and all targets are valid from that date. The SWMOP sets long-term outcomes and five-year (ie by the end of 2007) management targets for water management. Auditing conducted under the SWMOP by DIPNR will include State Water's ability to manage its water management works to contribute to the meeting of these outcomes and targets. There are a total of 38 targets with various sub-targets within most targets. The SWMOP is a statement of objectives for water management and is not an appropriate instrument for auditing State Water's operations because of the delay between operation and review. The SWMOP will rely on other mechanisms, such as Water Sharing Plans, to achieve its outcomes. Annual auditing of State Water's operations through other mechanisms, such as auditing against works approvals and implementation manuals, is likely to input into the

review of the SWMOP. Any performance indicators and standards should, where relevant, contribute to the meeting of SWMOP targets.

Particular SWMOP 5 year targets which are relevant to State Water's business are as follows (DLWC, 2002):

Target 4c - The channel capacity of all lower river and effluent creek systems used for the delivery of regulated water should be determined. Subject to reasonable socio-economic impacts, limits on daily supply volumes should be established for effluent systems such that they do not exceed 80 percent of the channel capacity for more than 10 percent of days in each month of each year. Where daily supply volumes are currently substantially less than channel capacity, alternative limits should be established to reduce the impact of unseasonal flows arising from future access licence dealings.

Comment: Achieving this target would be a DIPNR responsibility because it is a waterway management issue, but it will have implications for State Water's delivery functions if design channel capacities are reduced.

Target 15 - At least 90 percent of approved water management works for the extraction of surface or ground waters (excepting domestic and stock bores) metered and reported in each water source that is subject to a gazetted Water Sharing Plan.

Comment: Achieving this target will be a State Water responsibility for regulated river customers. Achieving this target for groundwater and unregulated river customers will be a DIPNR responsibility, which may be directed to State Water under contract.

Target 23b - Remove at least 10, and structurally modify 15 of the priority weirs recommended for action across the State (eg install fishways).

Comment: Achieving this target will be best achieved through the memorandum of understanding between DPI and State Water, as discussed in Section 2.12. State Water will not necessarily own all of the priority weirs and may not need to be accountable for reaching this target if structures owned by other owners are of higher priority.

Target 23c - Establish improved operational protocols for priority operable weirs that will reduce their environmental impacts.

Comment: Establishing improved operational protocols will be by agreement between State Water and other parties, and the direction in the operating licence to establish memorandum of understandings with DPI and DIPNR will be the best way to achieve this.

Target 26 - Dams responsible for cold water pollution identified, a priority listing prepared, and action initiated to ensure that the temperature regime below these dams is kept within the 20th to 80th natural percentile range for each month (or within bounds determined by site specific investigations), by ensuring:

Target 26a - Structural modification of at least 2 priority dams.

Comment: State Water will be responsible for achieving this target after a multi-agency task force has identified the priority dams. The two highest priority dams may not necessarily be owned by State Water.

Target 26b - Improved operational protocols established for priority dams with existing temperature management infrastructure.

Comment: This target will be achieved through the working of the multi-agency task force on cold water pollution prevention. Performance standards and indicators will be specified in works approvals, to be issued by DIPNR, after operational protocols are codified by the multi-agency task force.

2.10.2 Water Sharing Plans

Water Sharing Plans set out the rules for water sharing between the environment and extractive users in specified areas, and for determining how much water will be available for extraction in those areas. These plans can include (IPART, 2004):

- mandatory conditions to which access licences and water supply work approvals are to be subject;
- monitoring and reporting requirements to be imposed as conditions of approvals issued under the Water Management Act; and
- how accounts for a particular area or water source should be operated.

Water Sharing Plans have a life of 10 years and can be amended by the Minister during this period. Each plan is to be reviewed by the Minister within the fifth year of its term and to be audited at least every 5 years by an audit panel appointed by the Minister. Each plan is to contain performance indicators that are to be monitored throughout the term and reported on as part of the review or audit.

To date, Water Sharing Plans have not been introduced for all areas. However, Water Sharing Plans have commenced for most inland regulated river systems and the remaining Water Sharing Plans are anticipated to commence within the next 12 months (B.Guardoll, DIPNR pers.comm. 12/11/2004).

The indicators developed for Water Sharing Plans in regulated rivers are shown in Appendix A. The indicators for unregulated rivers are essentially the same, with some different measurement techniques. There are also local variations in a small number of plans. For both regulated and unregulated rivers, these indicators relate to the monitoring of:

- change in ecological condition;
- change in the flow regime;
- change in water quality;
- the extent to which basic landholder water requirements have been met;
- the extent to which local water utility and major utility water requirements have been met;
- change in economic benefits derived from water extraction and use;
- extent of recognition of spiritual, social and customary values of water to Aboriginal people; and
- extent to which native title rights have been met.

Specific comment on the suitability of these indicators for monitoring SW performance is discussed in Section 4.3 of this report.

The detail for how these indicators will be measured and presented has not been finalised within the Water Sharing Plans. State Water's operations will primarily influence the change in flow regime and the extent to which landholder and utility requirements have been met.

2.10.3 Water Supply Works Approvals and Implementation Manuals

DIPNR is to issue Water Supply Works Approvals (works approvals) to State Water in relation to each regulated river water source. These approvals are intended to ensure that water is delivered to water users in compliance with Water Sharing Plans. The approvals can be subject to conditions, including mandatory conditions imposed under the Water Sharing Plans and other conditions that the Minister sees fit to impose, including conditions relating to the protection of the environment.

Works approvals for State Water have not yet been issued by DIPNR. They are likely to include minimal documentation and will rely on the accompanying Implementation Manuals to specify conditions relating to reporting and monitoring requirements, annual compliance reporting and environment protection requirements.

DIPNR have indicated that the works approvals are expected to set performance standards and indicators for cold water pollution management once works are in place to manage cold water pollution (K.Alvarez, DIPNR pers.comm.6/10/2004). The timing of this will depend upon Statewide multi-agency strategies to mitigate cold water pollution. Works approvals are not

expected to require performance standards and indicators to be set for reservoir water quality monitoring (including temperature) and fish passage.

Details of Implementation Manuals have not yet been finalised by DIPNR, however preliminary draft copies of a Manual indicate that the documents will be fairly comprehensive and contain a number of explicitly stated performance indicators and standards. These include detailed auditing of the provision of water for the environment, such as the provision of minimum daily flows and wetland water requirements, and the extent to which consumptive water requirements have been met. Public reporting by DIPNR on the works approvals will include identification of any non-compliances with Water Sharing Plans (T.McGlynn, DIPNR pers.comm. 6/12/2004).

2.11 Dams Safety Committee

The Dams Safety Committee is a statutory body set up under the *Dams Safety Act 1978*. The regulatory requirements imposed by the Committee are a major driver of the maintenance undertaken by State Water to ensure dam safety, which is a significant area of capital expenditure.

The Dams Safety Committee's functions include the surveillance of dams (as listed in a schedule to the Act), investigation of any activity in relation to the dams, and formulation of measures to ensure the safety of the dams. The Committee also has extensive powers, including to enter land and undertake tests on the dams, to direct dam owners to carry out activities if it considers that the dam is in danger of becoming unsafe, and to take control of the dam where a state of emergency exists in relation to the dam. To minimise the risks posed by dams, the Committee requires dam owners (such as State Water) to undertake (DSC, 2003b):

- regular monitoring and surveillance of their dams;
- appropriate operation and maintenance procedures and practices for the dams;
- ongoing assessment of the dam's behaviour (based on monitoring and surveillance information) and any action required to ensure that the dams are maintained in a safe condition;
- regular review of the compliance of the dams with current requirements;
- preparation of Dam Safety Emergency Plans, in association with plans prepared by the State Emergency Service, to mitigate the effects of downstream flooding, either due to natural conditions or a dam failure.

The Committee also audits the effectiveness of these dam safety measures by requiring dam owners to submit five-yearly Surveillance Reports.

2.12 Department of Primary Industries

The Department of Primary Industries (DPI) incorporates Fisheries Management. DPI administers the *Fisheries Management Act 1994*. Section 218 of the act states that:

"a public authority that proposes to construct, alter or modify a dam, weir or reservoir on a waterway (or to approve of any such construction, alteration or modification): (a) must notify the Minister of the proposal and (b) must, if the Minister so requests, include as part of the works for the dam, weir or reservoir, or for its alteration or modification, a suitable fishway or fish by-pass."

This requirement under the *Fisheries Management Act 1994* can trigger the retro-fitting of structures by State Water for fish passage. Activities that involve dredging and reclamation are regulated under Section 199 of the Act and require notification to DPI.

DPI and State Water currently have a memorandum of understanding that has a term of three years and is reviewed on an annual basis. In the current review of the memorandum of understanding it is proposed to include the following environmental performance indicators related to fish management:

- Number of priority structures addressed with regard to the provision of fish passage;
- Kilometres of free fish passage gained as a result of State Water fishway construction works;
- Kilometres of free fish passage gained as a result of the removal of obsolete State Water owned in-stream barriers;
- Kilometres of free fish passage gained as a result of changes to water delivery operating protocols at State Water owned instream barriers;
- Number of offtake structures improved by cold water pollution mitigation strategies and/or works;
- Kilometres of waterway improved by cold water pollution remediation;
- Area (Ha) of willow (and other weed) removal;
- Area (Ha) of riparian vegetation rehabilitation; and
- Area (Ha) of resnagging undertaken in association with State Water works.

The revised version of the memorandum of understanding is scheduled to commence on 1 January 2005.

2.13 Department of Environment and Conservation

The Department of Environment and Conservation (DEC) has indicated that it will not be licensing State Water directly. It will however be monitoring the impact that State Water is having on the quality of water downstream of its reservoirs and weirs. It will consider what action needs to be taken to ensure downstream river health, on a case by case basis as required and in consultation with State Water. It can direct actions to be taken by State Water, if necessary. Water quality and river health impacts caused by construction, maintenance or decommissioning of works will be covered by State Water's existing obligations with DEC that apply to any potential water polluter under the *Protection of Environment Operations Act 1997*. Section 120 of the Act states that "a

person who pollutes any waters is guilty of an offence." Pollution of water includes changing the quality of water.

2.14 Natural Resources Commission

The Natural Resources Commission undertakes monitoring of performance indicators during the review and audit of Water Sharing Plans at intervals of not more than five years. The focus of these audits is the extent to which the Plans contribute to achieving or not achieving natural resource management standards and targets. It is envisaged that State Water's performance would be an input to that process and that the findings of the Natural Resources Commission could reflect on State Water's ability to adhere to the Water Sharing Plan rules. The delay between daily operation and the 5-year review of the Water Sharing Plan means that this process provides limited opportunity for State Water to correct any actions in contravention of the Water Sharing Plan and is not a suitable mechanism for ensuring compliance. The focus of the 5 year review is more likely to be on examining longer-term ecological responses to the Water Sharing Plan rules.

A copy of the Natural Resources Commission's draft state-wide standards and targets is contained in its consultation, released in November 2004 (NRC, 2004).

2.15 Conclusions

The conclusions arising from this section of the report are as follows:

- State Water has well defined core functions and powers under the *State Water Corporation Act 2004*, as well as functions and powers conferred on State Water in the operating licence, which performance standards and indicators should primarily be targeted towards.
- State Water's responsibilities in unregulated and groundwater supply systems will be regulated by contracts with the Department of Infrastructure, Planning and Natural Resources (DIPNR).
- The principal alternative regulatory mechanism on State Water's operations will be DIPNR's Water Supply Works Approvals and accompanying Implementation Manuals. Specifying conditions on State Water's licence in the area of environmental management and flood management will most likely result in regulatory overlap, but may be warranted for the Initial Operating Licence in areas of regulatory uncertainty. The works approvals and implementation manuals are still being developed, but are scheduled to be ready for adoption prior to the commencement of the Initial Operating Licence.
- State Water has obligations to the Department of Primary Industries (DPI) under the *Fisheries Management Act 1994*, which is supported by a memorandum of understanding with DPI. Specifying conditions on State Water's operating licence in this area will most likely result in overlap with standards and indicators in the memorandum of understanding.

- State Water has obligations under the *Protection of the Environment Operations Act 1997* to not pollute, where polluting can include changing water quality. The Department of Environment and Conservation (DEC) regulates this Act.
- The regulatory mechanism for dam safety is via the Dams Safety Committee. Specifying conditions on State Water's operating licence in this area of operation will most likely result in regulatory overlap.

3. Stakeholders in State Water's business

3.1 Introduction

This section of the report considers the views of the main stakeholders in State Water's business on the development of performance standards and indicators for State Water, as well as State Water's own view of its purpose, vision and values. The aim of this section of the report is to present a summary of expectations for the performance standards and indicators. This is important because performance standards and indicators should be designed to provide information on areas of concern for stakeholders.

3.2 State Water Purpose, Vision and Values

The purpose, vision and values of State Water are expressed in its Annual Report (State Water, 2003) and highlight that State Water management is focussed on meeting the needs of its stakeholders and being accountable to them.

Purpose – "State Water seeks continuous improvement as a means of effectively meeting the expectations and needs of customers, stakeholders and staff."

Vision – "To be recognised as the leading water delivery business, improving life with water."

Values – "We will be:

- *Accountable* – We will deliver our charter in an effective manner
- *Consultative* – We will communicate and consult with our stakeholders
- *Reliable* – We will provide products and services that meet agreed expectations of stakeholders
- *Innovative* – We will strive for better solutions to meet stakeholders' needs

We will have:

- *Integrity* – Open and honest in everything we do
- *Respect* – Regard and consideration for all stakeholders' needs."

These core values and promises by State Water are fundamentally consistent with the development of performance indicators and standards for its business. Stating performance indicators and standards on its operating licence will formalise its accountability. Performance indicators and standards ensure compliance for stakeholders, but also offer an opportunity for State Water to display its skills and help reach its vision of being recognised as the leading water delivery business. This could result in the export of skills to other water businesses.

State Water staff confirmed that the State Water board was seeking high performance in its operations (B.Sims, State Water pers.comm. 7/10/2004).

3.3 Outcomes of stakeholder consultation

Sinclair Knight Merz, together with the IPART Secretariat, held meetings with representatives of DIPNR, the World Wide Fund for Nature (WWF), the Inland Rivers Network, the Nature Conservation Council (NCC) and the NSW Irrigators' Council. These meetings were followed up with brief discussions with representatives of Murray Irrigation Limited, Murrumbidgee Irrigation Limited, the Department of Environment and Conservation and the Department of Primary Industries (Fisheries). These groups were considered to be representative of the main stakeholders in State Water's operations. IPART received numerous written submissions on its Issues Paper on the review of the operating licence, including submissions from other groups such as private irrigation companies, Sydney Catchment Authority and the Total Environment Centre. These submissions were examined for any comments on performance standards and indicators. A summary of the outcomes from these discussions and written submissions is as follows. This summary is by no means comprehensive and is intended to highlight key stakeholder issues in relation to performance standards and indicators, not to replicate stakeholder submissions on the operating licence.

3.3.1 Environment groups

Environment groups expressed concerns that DIPNR would be unable to adequately audit State Water's performance in the area of environmental management, particularly in the short-term. This stemmed from DIPNR's perceived high workload in developing Water Sharing Plans, Water Supply Works Approvals and Implementation Manuals and the lack of detail provided to the public to date on the details within the works approvals and implementation manuals.

Environment groups saw the operating licence as an opportunity to ensure environmental protection and enhancement arising from State Water's operations and would like to see standards and indicators for areas of operation that affect the environment.

Environment groups would like to see environmental stewardship from State Water and that if State Water observes that its actions are causing environmental damage, then it should take action if DIPNR were not in a position to do so.

A particular issue that was raised was bank slumping due to sharp reductions in releases from dams. Environment groups would like to see a specified minimum rate of fall similar to natural hydrograph rates of fall, for release of water from State Water's dams.

3.3.2 Irrigator groups

Irrigator groups were generally satisfied with the existing water delivery service and reporting on that service and with participation on the Customer Service Committees. Irrigator groups would like the performance standards and indicators to drive business performance. Any performance indicators and standards should not increase the price of water to irrigators.

Transparently accounting for water in the available water determination process was considered important, particularly in dry years, because irrigators are interested in knowing the reasons why allocations are low. This includes transparently accounting for unaccounted for water and any greater than expected river or evaporative losses.

Some irrigators had expressed frustration about the timing of notification for supplementary flow access, with notification only being received after the opportunity to divert water had passed. The speed with which interim announcements were made because of changed river conditions was also a concern. It was expressed that it was not clear what protocols exist for notifying customers of system delivery constraints, such as river channel capacities, which can result in customers not getting full access to their entitlement.

In the area of water efficiency, it was noted that farmers and irrigation companies are closely scrutinised on water efficiency, but there are no comparable indicators for State Water and/or DIPNR. It would be useful to have an indicator of water delivery efficiency for State Water that is comparable with water delivery and water use efficiency indicators within irrigation districts and on-farm.

In the area of asset management, irrigators would like to see some transparency in accounting to make sure that the return of dividends to the State Government is not compromising the renewal of assets.

Concerns were expressed about conditions being placed on licences about the quality of water discharged from irrigated areas, but without having any control over the quality of water supplied by State Water.

3.3.3 Department of Infrastructure Planning and Natural Resources (DIPNR)

DIPNR believed that any performance standards and indicators should relate only to State Water's core functions under the *State Water Corporation Act 2004*. Activities undertaken by State Water on unregulated streams and groundwater management will be controlled by a contract between DIPNR and State Water and should not be stated in the operating licence. DIPNR will also specify performance standards and indicators in its works approvals and Implementation Manuals, and any standards or indicators relating to Water Sharing Plans or other environmental management objectives will be covered in the works approvals and the Implementation Manuals. DIPNR

explained that the water accounting system that State Water operates to keep track of water debits and credits for access licence holders has a number of automatic checks that prevent errors or misuse. These accounts can be viewed by DIPNR at any time (K.Alvarez, DIPNR pers.comm. 6/10/2004).

DIPNR made specific comment on State Water's operational water losses. DIPNR considers that because State Water largely uses river reaches to supply water, some of the water lost from rivers will have environmental benefit as groundwater recharge and the rest evaporates at a rate that is beyond the State Water's control.

3.3.4 Department of Primary Industries

The Department of Primary Industries (DPI) expressed that the current Memorandum of Understanding between State Water and DPI is operating very effectively and there have been no issues with non-compliance or failure to meet the obligations within the memorandum of understanding by either party to date (N.Rayns, DPI pers.comm. 18/11/2004). Separate reporting as part of the operating licence on performance indicators specified in the memorandum of understanding is considered unnecessary by DPI.

DPI and State Water are currently completing a catchment assessment and prioritisation process to identify dams and weirs that are of highest priority for remediation of fish passage. This may result in undertaking fish passage works at a different asset, which is of greater priority, rather than at the asset which triggered the regulatory requirement.

3.3.5 Department of Environment and Conservation (DEC)

DEC saw State Water's role in the short-term as participatory in contributing to strategies to mitigate negative environmental impacts from its operations. These included inter-agency efforts to reduce cold water pollution and to promote fish passage. DEC will not be separately licensing State Water, but rather will be maintaining a watching brief over State Water's operations and recommending any changes to improve river health on a case by case basis. DEC noted that there is a process for dealing with environmental impacts arising from particular actions (eg construction or decommissioning of infrastructure) and that this will not need to be specifically addressed in the operating licence. DEC will establish a memorandum of understanding with State Water to consult with DEC before commencing any construction or deconstruction activities that may impact upon river health.

DEC believe that State Water's reservoir operations could potentially affect downstream water quality, particularly in the areas of thermal pollution, algal blooms, dissolved oxygen and the mobilisation of heavy metals in reservoir sediments. DEC has previously directed a water supply authority to alter its reservoir operation to reduce the mobilisation of heavy metals. Baseline monitoring to identify water quality issues is considered by DEC to be part of State Water's

ecologically sustainable development obligations under the *Protection of the Environment Administration Act 1991*, as directed under Clause 5 of the *State Water Corporations Act 2004*.

3.4 Conclusions

This section of the report established that:

- State Water has high expectations of its own performance. It believes that performance standards and indicators should be relevant to operations for which State Water has sole responsibility, will drive efficiency improvement, are meaningful and will not be costly to measure. They should encourage continuous improvement of performance by allowing benefits to accrue to State Water.
- Environment groups would like to see the operating licence contain performance indicators and standards on areas of State Water's operation that affect the environment, including general reporting requirements where environmental performance is not uniquely attributable to State Water.
- Irrigator groups are keen to see indicators that ensure adequate notification by State Water for changes to delivery conditions. Monitoring and reporting against performance standards and indicators should not result in increases to water delivery charges.
- The Department of Infrastructure, Planning and Natural Resources regards the setting of performance standards and indicators on the environment as its regulatory responsibility under the *Water Management Act 2000*.
- The Department of Primary Industries considers the current memorandum of understanding with State Water to be working effectively to deliver outcomes on fisheries management.
- The Department of Environment and Conservation (DEC) does not intend to separately regulate State Water, but will maintain a watching brief and consider appropriate actions if undesirable environmental impacts occur from State Water's operations.

4. Industry Performance Indicators and Standards

4.1 Introduction

The previous sections of the report examined the regulatory framework in which State Water operates and stakeholder views on the role of performance standards and indicators in State Water's operating licence. This section of the report examines the indicators and standards currently adopted by State Water as part of its self-auditing and compares them with the set of indicators and standards used by comparable businesses across Australia. The regulatory framework in which these other businesses operate is slightly different and hence there will be some differences in the performance indicators and standards used.

4.2 Current indicators used by State Water

4.2.1 State Water's Key Result Areas and Performance Measures

State Water has five key result areas with specific measures of success against these key result areas, although State Water has indicated its intention to expand this to include two further key result areas. The current key result areas are customer service, water delivery, asset management, business development and State Water staff, with additional key result areas proposed for environmental management and stakeholder recognition. IPART's terms of reference are to provide advice on performance indicators and standards for "delivery of water, flood management and any other matters".

Each of the performance measures used within each key result area was discussed with State Water in order to understand what each measure is designed to achieve. Through this process, it was understood that State Water is planning to amend its performance measures and saw little relevance in some of its current indicators. Many of these indicators are not reported on in the State Water Annual Report despite being identified as a performance indicator within the Annual Report.

The list of State Water's current water performance measures, as presented in its 2002/03 Annual Report, is reasonably comprehensive. The list is not reproduced in this section of the report, other than to present the water delivery performance measures in Table 4-1, which are of primary importance to the operating licence. The comments against each indicator were a first pass analysis of the appropriateness of these existing indicators and informed the subsequent analysis to include, modify or exclude these existing indicators and standards in the operating licence, or to replace them with alternative and more suitable indicators from other sources. Other performance indicators under other key result areas are discussed where appropriate with reference to recommended performance standards and indicators in Section 6 of this report.

- **Table 4-1 State Water's Annual Report Performance Indicators (State Water, 2003)**

Key Result Area 2 – Water Delivery	
Performance Measure	Comments
1. Compliance to (Water Sharing Plan) rules (%)	Water Sharing Rules are reasonably complex and the details of how compliance should be measured in this area are intended to be spelled out in the Water Supply Works Approval and Implementation Manual. This measure will be appropriate once the detail of assessing compliance is completed by DIPNR. Duplicate reporting will occur with both DIPNR and IPART if this indicator is adopted.
2. Operational Surplus (ML)	The operational surplus is the amount of water that State Water delivers in excess of that required to meet downstream water requirements. Minimising the surplus means that State Water is not releasing more water than it needs to meet its water delivery requirements. An adjustment is made for unregulated inflows that occur downstream of State Water's storages, but the measure includes any rainfall rejections that end up flowing down the river. This measure is appropriate to use.
3. Shortfalls in Operational Targets (% of time)	State Water has various minimum flows that it should provide at the downstream end of its service areas. These are specified in Water Sharing Plans or by agreement in areas not covered by a Water Sharing Plan. If State Water does not meet these requirements then it has potentially not released enough water from its dams. This indicator could also indicate water theft. This item is a component of the first indicator on percentage compliance with the Water Sharing Plans. This measure is considered appropriate to use, although it is acknowledged that DIPNR will also report on this indicator.
Water operation costs / ML delivered (%)	This performance measure is designed to indicate efficient operation of the system. This measure would need to be climatically adjusted to allow for the fact that many operational costs are fixed, but the volume of water delivered varies climatically. For this reason, this indicator is considered potentially misleading.

It can be seen from the above table that State Water's existing performance indicators in the core business area of water delivery are generally appropriate to use. There is some duplication between operational shortfalls and compliance with the Water Sharing Plans, because both measure State Water's performance in meeting downstream minimum flow targets. The water operational costs per ML of water will be misleading if not climatically adjusted.

4.2.2 Customer Service Charter

State Water's current Customer Service Charter expires at the end of 2004 and it is in the process of developing a new charter. This new charter is only available in draft form and may be subject to

further change before its adoption. This section comments on water delivery indicators and standards in the existing charter. Comments on the performance indicators and standards in the proposed charter are made in the discussion of performance standards and indicators in Section 6, where relevant. A copy of both the current and proposed charter is contained in Appendix B.

The existing charter provides performance measures in the same five key result areas as the annual report. The performance measures are similar, but not identical and in many cases there is a greater level of detail specified in the Customer Service Charter. A brief commentary of State Water's performance measures in its Customer Service Charter is shown in Table 4-2 for the key result area of water delivery. Comments are made on the appropriateness of each indicator in order to inform the subsequent decision on whether this indicator should be specified in the operating licence in its current form, in a modified form or not at all.

Table 4-2 State Water's Customer Service Charter Performance Indicators and Standards (State Water, 2003)

Key Result Area 2 – Water Delivery	
Performance Indicator of Standard	Comments
Water orders - customers will place orders as per licence conditions - contact the licence holder in relation to any non-complying orders within 24 hours of order being placed - Orders processed within 24 hours (North, Central and South Areas) - Orders processed next working day (Coastal Area)	An error in the water order should not unduly delay water delivery. A 24 hour turnaround for detecting and reporting order errors is considered reasonable. There will be a delay between receipt of the order and processing the order, as well as time required to contact the licence holder. The separate time for the coastal area is because offices are not staffed on weekends.
Delivery of water - 95% delivered as specified in complying orders and 100% delivered within three days after the time specified in complying orders.	This measure is for delivery on the scheduled day. This measure is reasonable and is discussed further in the next chapter of the report.
Operational targets - Flow targets met 95% of the time - Operational surplus less than 10% of regulated flow (as corrected for seasonal "wetness")	Flow is the end of system as specified in Water Sharing Plans. The regulated flow is the volume released from the dam. Both of these indicators are appropriate, but there is insufficient documentation of past performance to assess the suitability of these targets.

Key Result Area 2 – Water Delivery	
Performance Indicator of Standard	Comments
Environmental flows - As specified in valley Water Sharing Plans	This is a target of 100% compliance with flow targets in the Water Sharing Plans. This target is in conflict with the operational target for end of system flows to be met 95% of the time.
Off allocation announcements - Timing of announcements to be within 12 hours of the flow reaching the first section (Central, North and South Areas) - Timing of announcements to be made within 12 hours of the flow reaching the first section when made on a working day (Coastal).	State Water has indicated that it takes up to four hours to calculate supplementary water events once a rainfall event occurs. A 12 hour turnaround time is considered reasonable, particularly if the event commences outside of business hours. The definition of the "first section" is problematic because this is not explicitly defined in writing.
Temporary Transfers - Process all correctly completed applications within 10 working days from receipt of correct and complete paperwork including payment. - Inter valley: process applications to stage of approval by DIPNR Regional Director within 10 days (Coastal, North and South Areas)	A processing time of ten working days seems long and could potentially be expedited in the future with less paperwork and more electronic based systems. Historical data on processing times and a thorough understanding of the application process would be required to amend this target.
Flood / Airspace Operations - Dam specific operations carried out in accordance with Flood Operation Manuals	Flood operation manuals are prescriptive and compliance with them can be easily audited.
Valley Water Operations Plans - As required by Water Management Act	It is not clear what this indicator is referring to, but might relate to the Water Sharing Plan or Implementation Manual.
Valley Operations Reports - To be provided quarterly, including temporary transfers, town water supply use, end of system flows, etc.	Operations reports have a summary of relevant supply and usage information for customer service committees. This is an appropriate goal for the Customer Service Charter but is an excessive requirement in the operating licence. Other measures on customer satisfaction are likely to capture dissatisfaction about operations reports.

4.3 Environmental indicators in Water Sharing Plans

The detail of performance indicators and standards in the Implementation Manuals is yet to be released. The indicators developed for Water Sharing Plans in regulated rivers are shown in Appendix A. The indicators for unregulated rivers are essentially the same, with some different measurement techniques. There are also local variations in a small number of plans.

These performance indicators are considered too generic and lacking in detail to be of any practical use. There is no evidence that these performance indicators have been publicly reported on to date and it is expected that they will be superseded by specific performance indicators and standards in DIPNR's Implementation Manuals.

Some specific shortcomings are that performance can be highly dependent on climatic conditions. DIPNR's indicators in the Water Sharing Plans are generally useful indicators of environmental condition, but are not designed to isolate State Water's contribution to meeting a certain level of environmental performance. An example is the change in flow measurement performance indicator, which is characterised by the number of days above or below certain natural percentile flows during a year of operation. The underlying causes for poor performance against this indicator could be due to (i) extreme climatic conditions (ii) poorly designed environmental flow rules in the Water Sharing Plans or (iii) lack of adherence to the environmental flow rules by State Water or other water authorities. If State Water operations contribute to poor performance on this indicator, then there are likely to be more direct indicators of State Water performance, such as adherence to recommended environmental flow releases or timely introduction of triggers to reduce or prohibit the taking of water.

For these reasons, the performance indicators and standards specified in the Water Sharing Plans are not considered appropriate to regulate State Water's activities and this will need to be undertaken in the works approvals or the operating licence.

4.4 Indicators used by comparable businesses

A number of comparable businesses were examined to determine the extent to which they use performance standards and indicators for their businesses. Businesses were deemed to be comparable if they delivered bulk water predominantly through regulated storages to rural customers. State Water has conducted its own assessment of the similarity of businesses, which generally aligns with this assessment (Catapult Consulting, 2004). A list of bulk water delivery businesses and their similarity with State Water is as follows:

Goulburn-Murray Water – delivers bulk water to urban water authorities as well as delivering water to individual regulated and unregulated river rural customers in Northern Victoria. Goulburn-Murray Water is comparable in size and operations to State Water.

River Murray Water – regulates river flows in the River Murray and delivers water to New South Wales, Victoria and South Australia in accordance with the Murray-Darling Basin Agreement.

SA Water – delivers both treated urban and untreated rural water and undertakes urban wastewater disposal in South Australia. SA Water does not manage any major water storages for supply to

irrigators and relies upon minimum flows in the River Murray regulated by other bulk water operators. Its performance standards and indicators were not relevant to State Water.

Southern Rural Water – delivers bulk water to urban water authorities as well as delivering water to individual regulated and unregulated river rural customers in Southern Victoria. Southern Rural Water operates fewer storages than State Water.

SunWater – delivers water to irrigators in Queensland and manages over 100 dams and weirs, but unlike State Water is also manages an extensive pipeline and channel network.

Western Australia Water Corporation – delivers both urban and rural water. Performance standards and indicators for the delivery of water from Argyle Dam to the Ord River Irrigation Scheme will be relevant to State Water.

Wimmera-Mallee Water – delivers bulk water to an urban water authority as well as delivering water to individual regulated and unregulated river rural customers in the Wimmera-Mallee region of Victoria. The overwhelming majority of customers are stock and domestic users, with minimal supply to irrigators.

There are some differences between the role of State Water and other similar water delivery businesses across Australia. Each of the above authorities operates under different legislation and in a different regulatory environment than State Water. For instance, Goulburn-Murray Water delivers water to the farm gate, whereas State Water's services stop at river offtakes. Similarly, SA Water treats some of its water whilst State Water delivers only raw water.

The specific performance standards and indicators for these businesses are not listed individually, but have been used to inform the development of performance standards and indicators for State Water. Where these are drawn upon to set a performance standard or indicator for State Water, this is referred to in the development of individual indicators in Section 5 of this report.

4.5 Industry benchmarking reports

Industry benchmarking reports are important because they are publicly available and relate to State Water's objectives under the *State Water Corporation Act 2004* to operate as effectively as any comparable business.

4.5.1 Annual Accountability Report of the Victorian Water Industry

The Victorian Water Industry Association (VWIA) undertakes an annual accountability report of the Victorian Water Industry (VWIA, 2003). Participation in the accountability report is voluntary, but is currently supported by all rural and urban water businesses in Victoria. Relevant indicators

used for rural water businesses in the area of water delivery, flood management and related matters include:

Rural Size and Population Serviced: Regional boundary (km^2), operating area (km^2), percentage of system supplied by gravity (%) or by low pressure pumping (%) or by high pressure pumping (%), stock and domestic area supplied (ha), irrigation area supplied (ha), number of towns supplied and urban population supplied, number of irrigation customers, number of stock and domestic customers, number of other customers.

Rural Water Assets: Number of dams, number of weirs, number of groundwater bores, number of pumping stations, total length of irrigation supply channels (km), total length of irrigation supply pipelines (km), total length of stock and domestic supply channels (km), total length of stock and domestic pipeline (km).

Complaints: Number of cases to independent dispute resolution body, number of enquiries to independent dispute resolution body and the number of these enquiries that proceed to level 1, 2 or 3 formal complaints (increasing level indicates more severe complaint).

Occupational Health and Safety: Number of days lost to injury, lost time injuries frequency rate, workforce turnover.

Staff Training: percentage of staff taking part in training, training expenses ($ per employee).

Rural demand management: Total water supplied (ML), irrigation water supplied (ML), stock and domestic water supplied (ML), bulk urban water supplied (ML), environmental flows supplied (ML).

Financial profile: Revenue, depreciation based operating costs, renewals based operating costs.

The adoption of any of these indicators will need to be relevant to State Water's business, but where they are adopted, it will allow comparison with rural water businesses in Victoria.

4.5.2 Performance Indicators for Rural Water Businesses

Sinclair Knight Merz (2004) undertook a review of performance indicators for rural water businesses in Victoria on behalf of the Essential Services Commission in Victoria. The report categorised indicators according to certain assessment criteria such as whether the indicators were measurable, auditable and controllable. This included performance indicators in common with the Victorian Water Industry Annual Accountability Report, as well as additional indicators.

4.5.3 Performance Monitoring Report for Australian Non-Major Urban Water Utilities

The Australian Water Association (AWA) produces an annual performance monitoring report on non-major urban water utilities. This includes the Fish River Water Supply Authority. The performance monitoring report includes a utility profile that indicates the type of service that each utility provides. Fish River provides bulk storage, bulk transfer and water treatment services but unlike many other water utilities in the report, it does not provide water reticulation, sewage treatment or sewerage reticulation services.

The AWA report presents around 100 performance indicators, which are too numerous to reproduce in this report. Many of these indicators are not relevant to State Water's business, both as a bulk water supplier and as a local water utility, because it does not have a reticulation or wastewater business. A response rate by the 71 utilities that participate in the AWA survey is provided for each indicator and shows that the majority of water utilities report on almost all indicators.

Excluding sewage management, the performance indicators and standards cover the following areas: business performance; employment, outsourcing and capital expenditures; environmental management systems; climate; water system characteristics such as population serviced; number of water assets employed; water supplied by sector; water consumption characteristics; system water losses; sources of water; bulk water reconciliation; levels of water treatment; recycled water supplied by sector; residential pricing and tariff structure; sources of revenue; average residential water bills; economic returns and asset renewals for water utilities; water quality compliance; demand management; environmental and public health incidents and investments; customer interruptions; costs and cost recovery ratios for operation, treatment and energy.

These indicators are particularly relevant for assessing the performance of the Fish River Water Supply Scheme.

4.5.4 WSAA Facts

The Water Services Association of Australian (WSAA) comprises Australia's major urban water utilities. In New South Wales it includes Gosford City Council, Hunter Water, Sydney Water and the Sydney Catchment Authority. Every year WSAA produces a summary of performance indicators by organisation. This information includes climate data, customer statistics, volume supplied, asset numbers, water breaks and supply interruptions, compliance against water quality guidelines, complaints, pricing and finances, capital expenditure and asset valuations.

Whilst many of these indicators are relevant only to major urban water authorities, some of them are generic to water businesses in general and may be relevant to Fish River. The indicators used were generally consistent with those used by the Australian Water Association for non-major water

utilities. The duplication of indicators in WSAA Facts and the AWA report give greater confidence that these indicators are commonly accepted in the industry.

4.5.5 ANCID Benchmarking Report

The Australian National Committee on Irrigation and Drainage (ANCID) prepares an annual benchmarking report on Australian Irrigation Water Providers. The ANCID reporting assesses irrigation companies (State Water's customers) and the performance indicators are targetted at water delivery from river offtakes to the farm gate and drainage from irrigation areas. That is, there are no performance indicators directly relevant to State Water's business.

4.6 Other Operating Licences

IPART is the regulator for a number of other operating licences, including those for Hunter Water, Sydney Water and the Sydney Catchment Authority. Hunter Water and Sydney Water are water supply utilities and have a fundamentally different role to State Water, other than its role in the operation of the Fish River Water Supply Scheme. The Sydney Catchment Authority is similar to State Water in that it is a bulk water supplier, however its customer base is urban, which means that the method of water allocation and delivery is different to State Water's methods. There is therefore limited value in comparing performance standards and indicators in existing operating licences with those proposed for State Water.

Hunter Water and Sydney Water's system performance indicators and standards include reporting on water interruptions, water pressure and sewage overflow. None of these indicators and standards are relevant to State Water's operations in a rural water business. Hunter Water and Sydney Water are also required to report on various indicators on water demand and supply, recycled water, demand management, water quality and environmentally sustainable development.

The Sydney Catchment Authority has reporting requirements for water quality, provision of environmental flows and reliability of supply.

4.7 Conclusions

This section of the report established that:

- State Water does not currently report on all of its performance indicators in its Annual Report.
- State Water agrees that some of its existing performance indicators do not address a specific need and are difficult to interpret, but in the area of water delivery the majority of its indicators are considered sound.
- State Water is in the process of consulting with its Customer Service Committees about the performance indicators and standards in its Customer Service Charter. The draft charter is significantly different to the current charter.

- Existing environmental indicators published in Water Sharing Plans are suited to measuring environmental outcomes but do not specifically isolate State Water's contributions to those outcomes and hence are not considered appropriate to adopt.
- Seven comparable businesses were identified that report on performance standards and indicators on an annual basis. Not all indicators from these businesses are relevant because of the different regulatory framework in which they exist and the different functions of these other water businesses.
- Four industry benchmarking reports were identified. Of these, the benchmarking of rural water industries in Victoria is of most relevance to State Water's core functions, whilst the performance monitoring report of Australian non-major urban water utilities is highly relevant to the Fish River Water Supply Scheme.
- Each of the indicators readily available from the above sources will help to inform the selection of performance indicators and standards for State Water's business.

5. Criteria for Selecting Performance Indicators and Standards

5.1 Introduction

This section of the report draws upon the three preceding chapters to formulate performance standards and indicators for inclusion in State Water's operating licence. It includes a discussion of the areas of operation for which performance indicators and standards should be considered, the desirable attributes of indicators and standards, and the process for assigning a standard to an indicator.

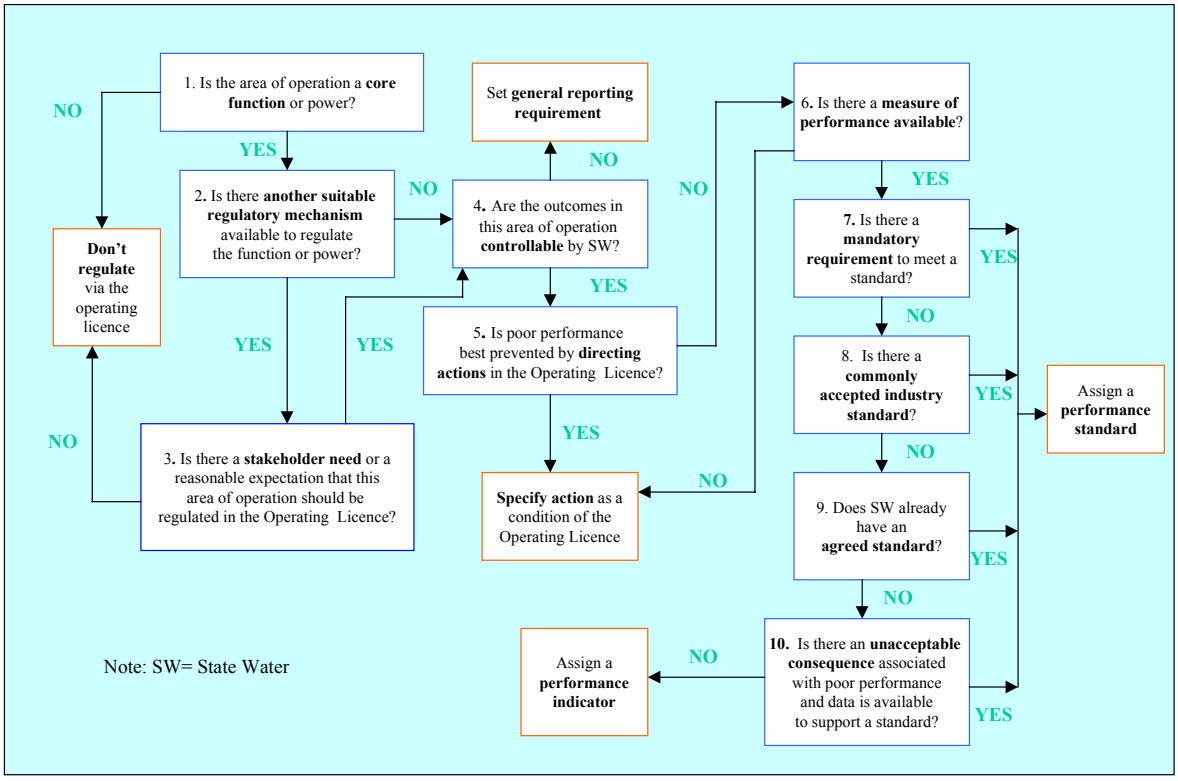
5.2 Process for regulating State Water performance

There are various options available for the regulation of State Water's activities within the proposed regulatory framework. For IPART, these options include the following possible actions:

1. Set a performance standard;
2. Set a performance indicator;
3. Set a general reporting requirement – this is an indicator that does not monitor State Water's "performance", because it is not controllable by State Water, but which is still of general interest to the public, is measurable by State Water and is affected by State Water's activities;
4. Direct an action – this specifies an activity that State Water should undertake, such as the development of a Total Asset Management Strategy. This regulates a process to achieve an outcome, rather than the outcome itself; or
5. Do not regulate via the operating licence, which may be a legitimate action for reasons of regulatory overlap.

The decision process for deciding which of these five paths to take is shown in Figure 5-1 and is discussed in the following section of this chapter of the report.

■ **Figure 5-1 Decision tree for regulating State Water's operations by IPART**



5.3 Criteria for selecting areas of performance to monitor

As discussed in previous chapters, State Water has a wide variety of functions and powers, with multiple regulatory mechanisms available to control those functions and powers. The regulatory framework in which State Water operates is still materialising and as such there is some degree of uncertainty about which areas require performance to be assessed within the operating licence.

A number of criteria were adopted for selecting the areas for which performance indicators and standards should be developed:

1. Does the area of operation contain a core function or power of State Water? Core functions are those specified under the *State Water Corporations Act 2004*, as well as those conferred on State Water in the operating licence. It does not include those functions performed by State Water under contract to DIPNR. The decision to exclude functions undertaken for DIPNR under contract was taken for two reasons, namely that (i) State Water will not necessarily conduct those functions for the duration of the operating licence and those functions could be awarded to another business in the future; and (ii) DIPNR is accountable for those functions performed under contract and it is not considered to be the role of IPART to regulate what is a direct assignment from DIPNR. In summary, if State Water is not responsible for the area of operation or if its actions do not influence

that area of operation, then it should not be held accountable for actions in that area of operation in the operating licence.

2. Is an alternative regulatory mechanism available that will adequately address this area of operation? The two principal mechanisms for regulating State Water are the works approvals and the operating licence. There is some debate about the best mechanism to use for particular areas of operation. Ideally, the works approvals are a regulatory mechanism best suited to environmental management and protection of the water resource, whilst the operating licence is best suited to protection of the customer against misuse of monopoly power, noting that the environment is also a customer of State Water. This delineation aligns with the core functions of the two main regulatory bodies. Works approvals are related to the operation of individual structures and are therefore better suited than the operating licence to directing actions at individual structures. However the works approvals are still able to achieve integrated water management outcomes along a river length beyond the individual structure, for example by specifying minimum flows to be provided at a location downstream of State Water's infrastructure in accordance with a Water Sharing Plan. The term operating licence is a term of convenience and does not require all aspects of "operation" to be directed solely by the operating licence if another regulator can better regulate an area of operation in which it has expertise. Where an alternative regulatory mechanism is available, there must be a clear indication from those regulators that they will address that area of operation. The lack of completeness of alternative regulatory mechanisms would not generally justify the duplication of regulatory functions if the alternative regulatory mechanism is scheduled for implementation prior to or at the same time as the implementation of the Initial Operating Licence. However, as discussed below, some regulatory overlap may however be justified in the initial operating licence to satisfy stakeholder needs.

3. Is there a stakeholder need to regulate this area of operation? Stakeholders have expressed a clear desire for the operating licence to address particular areas of State Water's operations. Some of State Water's functions may not necessarily require regulation by IPART if there is not a stakeholder need to regulate that area of operation. Where an alternative regulatory mechanism exists, but stakeholder uncertainty in the ability of the regulator to act effectively in the short-term is high, stakeholders may require regulatory duplication in the short-term. This could potentially expand IPART's role, on a temporary basis, from protecting the consumer to ensuring that State Water's statutory obligations (under the *State Water Corporation Act 2004*) in areas such as the environment are met.

4. Is there a reasonable expectation for public reporting on this area of operation in the industry? If an indicator or standard is commonly used or if it is a standard in the industry, then it meets a particular stakeholder need that may not necessarily have been expressed during the stakeholder consultation for this project and should be regulated by some means.

If the above four criteria are not met for a particular area of operation, then IPART should not be looking to regulate this activity in the operating licence.

5.4 Controllability

Once an area of operation has been identified as requiring regulation by IPART in the operating licence, the next key test is whether State Water can exclusively control outcomes in that area of operation and what the best available mechanism is to control that area of operation. In some areas of State Water's operations there is a multi-agency responsibility to improving outcomes, because these outcomes are not controllable by State Water alone. These areas of operation are best regulated by a general reporting requirement that does not reflect upon State Water's performance, but which will assist in guiding future policy development to achieve a better management outcome for the State. This information could result in setting performance standards in future operating licences after policy has been formulated and responsibility delineated. An example of this would be the prevention of cold water pollution from storages not yet fitted with the means to control the temperature of water released. The criteria used to specify whether an area of operation should have a general reporting requirement attached to it are:

1. Is the area of operation affected but not controllable by State Water's operations?
2. Is State Water the best placed agency to monitor and report in this area of operation?
3. Has a need been expressed to report on this area of operation?
4. Will there be public benefit in reporting in this area of operation?

If an area of operation is controllable by State Water, directing actions in the operating licence can prevent poor performance rather than relying on State Water to take appropriate actions and measuring the outcome. An example of this is the specification in the Initial Operating Licence for State Water to develop a Total Asset Management Plan and an Environmental Management Plan rather than setting a myriad of performance standards and indicators for these areas of operation.

IPART should generally not restrict State Water in the way that it can achieve its outcomes because that limits the responsiveness of State Water in managing its own business. State Water knows its business better than an independent regulator and is best placed to innovate to improve performance. As a regulator, IPART can then measure performance and only direct actions if poor performance is observed.

General reporting requirements should also be set for those parameters that help to interpret performance standards and indicators and which allow performance to be assessed between comparable businesses and over time. As noted in Section 4.4, there are no businesses that are identical to State Water and therefore any indicators to help interpret performance in relation to other businesses is beneficial.

5.5 Indicators versus standards

Performance indicators, as the term suggests, indicate performance but without explicitly judging whether that performance is satisfactory. Performance indicators can only guide improvement through the subjective interpretation of these indicators as "good" or "bad" performance relative to other organisations or performance in previous years. Once a performance indicator has been established, a standard can be assigned to the indicator to make the interpretation of performance an objective measure.

The criteria for deciding to assign a performance standard rather than just specifying a performance indicator to a particular area of operation are as follows:

1. Is there a mandatory requirement to meet a certain performance standard? Mandatory requirements include those specified in legislation or regulation. If a mandatory minimum standard exists then it should be adopted. This criteria was not invoked in the procedure for selecting performance standards and indicators, but would include any mandatory requirements under relevant federal or state legislation or regulation that are not necessarily monitored or reported against specifically for State Water's business.

2. Is there a commonly accepted industry performance standard? Commonly accepted standards include those reported upon in benchmarking reports or by other water authorities. If a commonly accepted standard exists, then it should be adopted if appropriate to State Water's business.

3. Does State Water have an already agreed standard to meet? State Water has developed some of its existing standards in consultation with the Customer Service Committees. Provided that the standard does not conflict with mandatory requirements, then it should be considered for adoption. If it conflicts with a commonly accepted industry performance standard, then justification must be shown for why the standard is more appropriate than that used elsewhere in the industry.

Where the above three criteria are not met, it is very difficult to assign a performance standard without extensive stakeholder consultation. Additional performance standards that do not meet the above criteria are denoted as such in this report and must in addition meet the following criterion:

4. Is there an unacceptable consequence of not meeting a given performance standard? This is a subjective criterion that requires the interpretation of an "unacceptable consequence". If there is an outcome that has a clear unacceptable consequence and there is sufficient data available to reasonably support a new standard, then that standard should be developed and adopted.

5.6 Desirable attributes for performance indicators

The desirable attributes of performance indicators for State Water are as follows (adopted from SKM, 2004 and UTS, 2004):

- *Comprehensible* - The indicators should be easy to understand and unambiguous;
- *Measurable* - The degree of performance should be capable of being measured in a consistent manner;
- *Comparable* – The degree of performance should lend itself to comparison from year to year and at different locations;
- *Auditable* - The indicators should be capable of being verified for audit purposes;
- *Controllable* - The indicators should measure parameters that are within the control of State Water, including climatic variability;
- *Cost-effective* – The cost of monitoring and reporting of the indicator should not outweigh the information value of the indicator;
- *Relevant* - The indicators should be relevant and important to State Water and its stakeholders and address its core functions under the *State Water Corporations Act 2004* and any functions conferred on it under the operating licence.

In the area of water delivery and flood management, the comparability and controllability of an indicator is particularly important. State Water cannot influence climatic conditions and hence its performance should not be dependent upon whether conditions are particularly wet or dry. This includes revenue dependent indicators.

5.7 Desirable attributes for performance standards

Performance standards should have the same qualities as performance indicators, but with the additional attributes that they are:

Achievable – The performance standard should be realistic to the extent that it is achievable.

5.8 Types of performance indicators

There are a number of different types of indicators, listed as follows:

Absolute indicators – measure performance directly. An example of an absolute indicator would be the volume of water supplied.

Progress indicators – measure performance relative to previous year(s) as a difference between current and previous year(s). Progressive indicators must be able to change over the full life of the indicator (ie not reach a ceiling or floor value) and should ideally be directly comparable from year to year.

Standardised indicators – measure performance relative to a system value that standardises the result from year to year and across different locations. An example of a standardised indicator would be the volume of water supplied relative to reservoir inflows.

Differential indicators – measure performance relative to an optimum or desirable condition. These indicators are dependent upon knowing the optimum or desirable condition. An example of a differential indicator would be the volume of water delivered relative to the optimum water delivery.

Absolute indicators are the most readily available indicators, but are also the indicators that are the least meaningful for assessing performance. Standardised and differential indicators are more complex and more costly to measure, but provide the most meaningful and least ambiguous indication of performance.

5.9 Types of performance standards

There are a number of different types of standards, listed as follows:

Time-based targets – these are designed to meet a certain standard within a certain time frame. They have a deadline and are defunct once this deadline has passed or the target has been met. Time-based targets can be used to drive short to medium term improvements in performance.

Progressive improvement targets – these are designed to make improvements on previous years but without setting a long-term target. The minimum standard becomes the previous year's performance. Progressive improvements are likely to be achievable in the short-term, but may not be sustainable once steady state conditions have been reached and no further improvements are practically possible.

Minimum absolute standards – specify a minimum target that must be met at all times. This typically applies to water quality, where dropping below a certain standard results in a loss of amenity. Minimum absolute standards are generally directed towards maintaining a current high level of performance.

5.10 Indicators to prevent future poor performance

Indicators that directly detect poor performance against State Water's core functions and powers should be adopted in the operating licence. Other indicators, such as the degree of investment in training and asset replacement, do not indicate current poor performance in water delivery and flood management, but may affect performance in these areas in the future. The decision about whether to pro-actively regulate aspects of State Water's business that could potentially affect future performance in core functions is a matter for IPART and relevant stakeholders to consider. This decision should be based on the perceived risk associated with not reporting on these

indicators versus the cost of reporting on them. Indicators in this category are discussed individually in Section 6.

5.11 Classification of indicators by key result area

State Water's current five key result areas in its Annual Report and Customer Charter are customer service, water delivery, asset management, business development and State Water personnel. Where practical, the discussion of performance indicators and standards to address State Water's core functions is aligned with these key result areas for ease of comparison with the Customer Charter and State Water's Annual Report. This was not always possible, for instance, because there is no key result area for environmental management. State Water's draft Corporate Plan amends these key result areas into seven critical success factors, which apart from the key result areas above, also include targets for success in the areas of environmental management and stakeholder engagement (State Water, 2004).

5.12 Regional versus organisation-wide indicators

State Water is divided into four customer service areas which potentially provides a driver for internal competition if indicators are reported upon for each customer service area rather than just for State Water's performance as a whole. All of the recommended indicators would lend themselves to regional reporting, with the exception of the optional research and development and training indicators, which include overheads and customer service indicators that do not identify the service area in which the customer is located. The use of regional indicators will not involve any additional resources to prepare if the data for these indicators need to be aggregated from a smaller scale.

5.13 Conclusions

This section of the report established the criteria for selecting areas of operation that should be addressed by performance standards and indicators in the operating licence. The key considerations were whether:

- the area of operation includes a core function or power of State Water, as defined in legislation or by regulation in the operating licence;
- an alternative regulatory mechanism is already available or will be available upon implementation of the Initial Operating Licence;
- there is a stakeholder need to regulate a particular area of operation or a reasonable expectation that it should be regulated;
- poor performance in that area of operation is best prevented by a course of action decided by State Water or whether IPART should specify the action directly; and
- the outcomes in that area of operation are controllable by State Water.

If outcomes are not controllable by State Water, but State Water's actions contribute to those outcomes, then a general reporting requirement is specified which may lead to policy development and subsequent regulation of performance.

The decision about assigning a standard to an indicator was based on whether:

- there is a mandatory requirement to meet a certain performance standard (eg under relevant federal or state legislation or regulation);
- there is a commonly accepted industry performance standard;
- there is a standard that has already been agreed between State Water and its customers; and/or
- there is an unacceptable consequence of not meeting the given standard and data is available to support the adoption of that standard.

6. Performance Indicators and Standards for State Water

6.1 Introduction

This section of the report presents individual performance indicators recommended for inclusion in State Water's operating licence. The decision to include a particular performance indicator or standard is guided by the outcomes of the previous chapters of this report. Each indicator or standard adopted includes a discussion of the particular objectives and characteristics of the indicator or standard and provides justification for why it should be included in the operating licence. A summary table listing the selected performance indicators and their attributes is presented at the end of this chapter.

The areas of operation discussed in this section of the report are listed in Table 6-1, including the reasons for its inclusion. These reasons relate back to the criteria for selecting an area of operation (Section 5.3), which included whether it was a core function for State Water, whether it is regulated by other means, and whether there is a stakeholder need for regulation. Based on this table, there is a clear mandate for IPART to regulate the areas of water delivery, customer service, flood management, water accounting and billing and policing. Asset management is partially regulated by the Dams Safety Committee and Treasury. There is the potential for regulatory duplication in the area of environmental management, but a clear stakeholder need has been expressed for IPART to consider regulating some aspects of this area. The mandate for IPART to regulate State Water's management of personnel and business development is not as clear, however these two areas of operation align with two of State Water's key result areas and are reported on by similar water businesses, and therefore warrant some discussion.

■ **Table 6-1 Areas of operation for consideration in the operating licence**

Area of operation	Incorporates State Water core function or power?*	Regulated by means other than the operating licence?	Stakeholder need or reasonable expectation for regulation?
Water delivery	Yes	No	Yes
Customer service	Yes	No	Yes
Flood management	Yes	No	Yes
Asset management	Yes	Yes – Dams Safety Committee and Treasury	Yes
Water accounting and billing regulated river customers	Yes	No	Yes
Policing	Yes	No	Yes
Personnel	Yes	Partially through Workcover	No
Business development	Yes	No	No
Environment and recreation	Yes	Yes – Primarily DIPNR	Yes

*as defined in Section 2 of this report or as required to support its core functions

6.2 Water delivery

State Water's core function is the delivery of water to customers from storages and weirs. Specifying performance indicators and standards for this area of operations addresses State Water's core responsibilities under the *State Water Corporation Act 2004*. It is strongly recommended that all of the following indicators in the area of water delivery are adopted in the operating licence.

Timing of notice of non-complying water orders – Water orders that do not comply to access licence conditions will not be delivered by State Water. If this occurs, then the customer must be notified as quickly as possible so that he/she can either amend the order to comply with the access licence or to make alternative arrangements.

Standard: 100% of licence holders to be contacted within one working day of the non-complying order being placed. This standard is currently adopted by State Water in its Customer Service Charter and is considered a reasonable time to process the order. There are no indicators reporting on this issue for comparable businesses. The specification for a response time of "one working day" is made because the coastal region office is not open on weekends to process orders. An order received at 2pm on a Monday should be responded to no later than 2pm on the following

Tuesday. Ideally, this response time should be shortened in the future with the use of electronic ordering procedures and automated routines to detect non-complying orders and should be earmarked for detailed review at the conclusion of the Initial Operating Licence.

Percentage of complying orders delivered with required notice – This is a measure of State Water's ability to deliver water on time. This can be further broken down into the percentage of orders delivered on the scheduled day, within ± 1 day of the scheduled day of delivery and beyond ± 1 day of the scheduled delivery day. This measure can be influenced by climatic conditions, however State Water should be able to adapt its delivery of water to account for higher seasonal evaporation rates. The period of required notice is specified in the customer's access licence and although this is specified by DIPNR, the period of required notice has been long established by river flow travel times and is not expected to change. Complying orders will be those that are in accordance with access licence conditions.

Standard: 95% of complying orders to be delivered within ± 1 day of the scheduled day of delivery. State Water has a target in its current Customer Service Charter of 95% of complying orders to be delivered as specified in complying orders on the scheduled day of delivery, with an additional standard of 100% delivery within three days. This indicator was not specifically reported on in the 2002/03 State Water Annual Report. The recommended target varies slightly from the existing target and would align State Water's timeliness of delivery with the comparable business of Goulburn-Murray Water, which has illustrated that this target is achievable in the majority of water supply systems (G-MW, 2003). A delivery tolerance of one day is considered acceptable for State Water's customers because (i) many customers will have storage sufficient to cope with deliveries a day ahead or behind schedule if the timing of water delivery is critical and (ii) most crops can be watered a day early or a day late without reductions in crop yield. This is supported by Goulburn-Murray Water's performance indicator in this area. Failure to deliver water within one day could create inconvenience for customers and disrupt optimum water application regimes for irrigators, particularly for efficiently irrigated water sensitive horticultural crops.

State Water noted that a tolerance of one day may be too short for customers with long delivery times from regulated storages and that a target of delivery within ± 2 days would be more appropriate for river travel times greater than 12 days (B.Sims, State Water pers.comm. 23/11/2004). The principal reason given for this was because delivery is dependent upon river pumpers not taking water without ordering or not taking more than the amount ordered. State Water however has penalties at its disposal to discourage the unauthorised taking of water and reporting on the recommended indicators in the area of policing will condition any poor performance in water delivery. It is therefore recommended that only a one day tolerance on delivery of water should be adopted as the performance standard, and that State Water should cross-reference its performance against this standard with indicators in the area of policing if it attributes poor performance in this area to the unauthorised taking of water.

Timing of supplementary water announcements – Under the draft memorandum of understanding with DIPNR, State Water has full responsibility for announcing supplementary water events. Irrigator groups have commented that a lead-time for supplementary water announcements is important to enable irrigators to take advantage of additional water that is available. A supplementary water announcement can occur because of reservoir spills, in which case all customers downstream of the reservoir will need to be notified. It may also occur because of unregulated inflows downstream of a reservoir that is not spilling, in which case only customers downstream of a certain point in the river will need to be notified. The ability to make the announcement depends on the timing of the rainfall event and the time that State Water takes to identify and communicate the supplementary water announcement. If a rainfall event occurs in the evening after State Water staff have left the office, then the calculations to determine the nature and extent of the supplementary water event will not be undertaken until the next working day. The ability to predict a rainfall event by examining weather forecasts and rainfall radar information (where available) will also reduce State Water's processing time. The ability to make supplementary water announcements is also dependent on DIPNR's timely provision of streamflow data.

Standard: Supplementary water announcements to be made within four hours of an indicator streamflow gauge detecting a supplementary water event on a working day. State Water has a standard in its current Customer Service Charter to make supplementary water announcements within 12 hours of the flow reaching the first section. The definition of the "first section" is however problematic and is not well defined. A travel time of twelve hours will disadvantage many customers for whom the flood event will have passed by the time a supplementary water announcement is made. The draft Customer Service Charter being developed by State Water in consultation with its Customer Service Committee's has shortened this response time to be "within four hours of event occurring as assessed by State Water", which is consistent with the recommended standard for the operating licence. There are no equivalent standards for this indicator used by comparable businesses, however this issue has been raised as important by State Water's customers and warrants a suitable indicator. To further refine this standard, State Water will need to codify the process for announcing supplementary water events using streamflow triggers relevant to particular river reaches. Codifying this process will allow IPART to subsequently audit State Water's performance on this issue. The processing time of four hours from detection at the streamflow gauge does not include the additional time that State Water has if it is forecasting the supplementary water event. A processing time of four hours will allow the majority of water users to access supplementary water.

Percentage of time that daily minimum flow targets are met – State Water has minimum flow targets that it is required to meet. These minimum flow targets are specified by DIPNR in the Water Sharing Plans or by agreement in areas not covered by a Water Sharing Plan. There is some

regulatory overlap if IPART adopts this indicator, because it is also likely to be specified by DIPNR in its works approvals. However, given the concerns of environment groups, the ease with which this indicator can be reported on and the potential consequences of not providing minimum environmental flows, this indicator should be adopted for the period of the Initial Operating Licence. If minimum flow targets are not met then State Water is not releasing enough water from its storages for the environment. State Water can improve on this indicator by refining the relationship between reservoir releases and downstream minimum flow targets for given seasonal conditions. Factors beyond State Water's control that may affect performance against this indicator include water theft, the taking of water under basic landholder rights, metering errors at diversion points, streamflow measurement errors and unseasonal river losses to groundwater or evaporation. This indicator will most likely display better performance in systems with shorter travel times than systems with long travel times. Where flow data is designated by DIPNR as missing, then this indicator cannot be reported on for this period.

It is envisaged that this indicator would be in place for the duration of the Initial Operating Licence and would be removed in subsequent licences once DIPNR has its compliance framework in place. Reporting against the provision of environmental flow freshes or specific deliveries for wetlands is not recommended for the operating licence. These cannot be as easily audited as minimum flows and the short-term consequences of not providing these flows are in most cases not as drastic as not meeting minimum flows. This is because the provision of high flow events occurs naturally on an infrequent basis and whilst important in the long-term, ecosystems are better adapted to coping in the short-term with extended periods without freshes. Ecosystems in perennial streams are not well adapted to cease to flow events and the environmental consequences of mismanagement of minimum flows can be dire in the short-term. For these reasons it is not recommended that these other aspects of environmental flow provision in the Water Sharing Plans have performance indicators assigned to them as part of the operating licence.

Standard: No standard is recommended for this indicator. Both DIPNR (D.Everson, DIPNR pers.comm. 24/11/2004) and State Water (Geoff Borneman, State Water pers.comm. 8/11/2004) have indicated that there is a degree of tolerance in not providing target minimum flows all of the time. This implies that the minimum environmental flows have been designed such that there will not be a loss of ecological value when streamflows drop below the recommended minimum flows for short periods of time. The compliance rules for maintaining minimum flows have not yet been formulated in the Implementation Manuals, however based on preliminary drafts of the manuals they are expected to include a trigger for notification if minimum flows are below target for several days in a row. Achieving 100% compliance on a daily basis is considered unachievable in practice by both DIPNR and State Water, but according to State Water, 100% compliance on an average weekly basis should be achievable. It is therefore recommended that this indicator be calculated on a daily basis as a rolling seven day average. Given that there will be some tolerance associated

with this indicator, no standard has been recommended, because there is a risk that the standard specified in the operating licence would be in conflict with the standard specified in the Implementation Manuals, creating confusion and usurping DIPNR's role in assessing compliance with Water Sharing Plans.

Volume of operational surplus as a percentage of water delivered (%) – The operational surplus is the volume of water that exceeds the end of system minimum flow targets. This is caused by State Water releasing too much water from its storages relative to what was actually required by its customers and for the environment. Operational surplus can be driven by rainfall rejections beyond State Water's control. The measuring of this indicator also relies upon the accurate provision of streamflow data by DIPNR. Where flow data is designated by DIPNR as missing, then this indicator cannot be reported on for this period.

Standard: There is no standard set for this indicator for the Initial Operating Licence, because there is insufficient information readily available on the current operational surplus. An operational surplus of 10% of regulated flow is currently specified as a target in State Water's Customer Service Charter, however advice from State Water (D.Berry, State Water pers.comm.25/10/2004) is that this standard is not currently well defined. No minimum standard is also specified for this indicator because DIPNR have indicated that an operational surplus is a de-facto environmental flow and could have environmental benefits in some river systems. Nevertheless, it is recommended that this indicator should be reported on to identify any gross management of water delivery functions that result in an abnormally high operational surplus relative to previous years.

6.2.1 General reporting requirements for water delivery

Auxiliary indicators as part of general reporting requirements will aid in the interpretation of the above mentioned performance indicators and standards and will permit meaningful comparisons of performance between State Water and other water businesses, as well as meaningful comparisons over time. All of these auxiliary indicators are utilised in one or more of the industry benchmarking reports on water authority performance listed in Section 4.5. None are measures of performance that are controllable by State Water. The Tribunal Secretariat has queried the need for these indicators and IPART may want to rely on State Water's voluntary reporting of these indicators as part of its annual reporting, rather than making this a mandatory requirement in the operating licence. However, including these indicators in the operating licence as part of State Water's general reporting requirements is recommended in order to ensure that State Water's objective under the *State Water Corporation Act 2004* to operate as effectively as any other water business can reasonably be tested in the future. They will also assist in IPART's auditing of the operating licence where performance standards have not been reached by State Water.

Available water determination – The available water determination is an indicator required to interpret State Water's performance in the areas of water delivery and customer service. This should be reported as an initial allocation, a conditional allocation (eg in the Murrumbidgee system) and an end of season allocation. In high allocation years, water is in plentiful supply and demands placed on State Water's services will be lessened. There are likely to be more rainfall rejections and it will be easier for State Water to meet the recommended performance indicator of the end of valley minimum flow targets. In low allocation years, State Water's services will be in high demand and the ability to deliver water on time and in the correct amounts will have potentially significant consequences for irrigator livelihood and for the maintenance of aquatic ecosystems. Non-revenue water is likely to increase with higher and sometimes uncertain river losses and greater propensity for water theft.

According to the draft memorandum of understanding between DIPNR and State Water, State Water performs the resource assessment and provides it to DIPNR for review prior to public announcement of the available water determination. DIPNR can amend State Water's recommendation on the available water determination as it sees fit. This indicator is therefore not controllable by State Water under the current regulatory arrangements, but once the allocation announcement is made, it compels State Water to deliver certain volumes of water, regardless of whether State Water's own determination considers this achievable. There has been some discussion about the potential for State Water to assume the function of making and announcing the available water determination without reference to DIPNR. If State Water assumes this responsibility, then performance indicators should be specified relating to the timeliness of allocation announcements.

Number of water orders – Indicates the number of water orders that State Water processes in a year. This is not a performance indicator, but rather is an indicator of the resources that State Water needs to commit if the number of water orders increases or decreases from year to year. It helps to inform the performance indicator on the percentage of complying orders delivered within a certain time frame, as well as performance indicators on customer satisfaction.

Volume of water ordered (GL) – The volume of water ordered is a useful indicator to detect any discrepancies between the volume of water ordered and the volume of water actually taken, which will be reported in the water balance discussed below. This general reporting requirement will help to inform the performance indicator on operational surplus, because an operational surplus can eventuate if water is being ordered and delivered to the river offtake, but not actually taken by the customer. Under the majority of regulated river Water Sharing Plans, the volume of water debited from a customer's water account is the volume of water taken. However, the Minister has the discretionary power to change the debiting to occur when the water is ordered. This can occur when the volume of water ordered has been exceeding the volume of water being taken and this cannot be explained by rainfall or other unavoidable factors (eg Section 43 of the Macquarie and

Cudgegong Water Sharing Plan). Reporting on this information will help to inform State Water and DIPNR about river valleys where water is being wasted that could otherwise be used to supply the environment in a more strategic way or consumptive users later in the season. This indicator is easier to report on than the volume of rainfall rejections, which requires the linking of individual rejections to local rainfall conditions. This indicator will highlight where further investigation is required into the reasons for rejecting water orders.

Number of dams and weirs – indicates the number of structures that State Water must maintain in order to deliver water to its customers. A separate category should exist for regulated storages versus unregulated storages and weirs. This indicator is unlikely to show change on an annual basis, but will be important for placing performance indicators on fish passage in context.

Water balance – in addition to the above general reporting requirements, the operating licence should direct State Water to present a water balance for each river valley, including the volume of water supplied by customer type (bulk irrigation, stock and domestic, bulk urban, environmental flows or other), change in storage, the volume of water lost to groundwater or evaporation and any other unaccounted for water. A separate category for "other" customers can be required if significant releases are made for hydropower or for major industrial customers that are not also used for the major categories of use. Environmental flows should only include water that is specifically required to meet environmental flow objectives as specified in Water Sharing Plans. For environmental flows, a standard accounting method will need to be established to ensure that there is no double counting of water delivered to the environment subsequently being used for consumptive purposes by State Water's customers. Specifying this general reporting requirement will meet the desire expressed by both irrigation companies and environment groups to account for where water resources have been delivered on an annual basis.

6.3 Flood management

The *State Water Corporation Act 2004* identifies one of State Water's primary functions to be the capture, storing and release of water for the purposes of flood management. The main compliance issue is whether State Water operates its storages in compliance with its Flood Operations Manual. In its preliminary draft Water Supply Work Approval, DIPNR has indicated that it will specify a performance indicator for compliance with the Flood Operations Manual. Inclusion of this indicator within the operating licence would therefore result in regulatory overlap.

The downstream impact of a flood can be mitigated by the maintenance of airspace in dams. State Water has a Flood Operations Manual for each of its dams, which specifies various storage targets at different times of the year and how to pre-release water immediately prior to a large inflow event. Dam managers and operators prepared the manuals, which State Water has inherited from its predecessor government departments. Flood operations are complicated and adherence to the manual does not guarantee that there will be no impacts from flooding. It should only guarantee

that impacts from flooding are reduced for the given inflow event and given storage contents at that time, and that the integrity of water supply assets is suitably protected. Where State Water adheres to its Flood Operations Manual but there are still complaints about its flood management, this would drive an investigation into the appropriateness of the Flood Operations Manual.

Standard: 100% compliance with Flood Operations Manual release rules. If IPART did want to include this indicator as part of the operating licence, then 100% compliance should be the specified standard. Compliance will be measured by the adherence to the release rules. This standard is consistent with State Water's current standard in its Customer Service Charter. The consequences of not adhering to the release rules for flood protection can be dire, with potential preventable downstream damage to property and loss of life. This standard is not recommended for the operating licence because of regulatory overlap with DIPNR's Implementation Manuals.

6.4 Water accounting and billing

State Water populates water accounts after the available water determination has been signed off by DIPNR. State Water then manages the accounts of access licence holders, debiting and crediting them as required. The water accounting and billing functions of State Water are functions that are conferred on State Water by DIPNR under the operating licence. Failure to carry out these functions appropriately could result in the incorrect loss of access to water by licence holders and the over or under charging of customers. Performance indicators and standards in this section do not cover the performance of the accounting system, which is designed by DIPNR, and should not replace the auditing of a selection of individual water accounts by IPART during its audits, which is considered the most appropriate means of regulating customer billing. The specification of minimum periods within which bills should be issued is not considered necessary for inclusion in the operating licence because it will be picked up in customer complaints and because it will be picked up by Treasury where slow billing affects State Water's revenue stream.

Specific indicators have not been designed for the billing of unregulated and groundwater customers, because those functions will be covered by separate contracts with DIPNR.

Percentage of water management works for the extraction of surface waters that are metered in accordance with metering standards (%) – This is a measure of State Water's ability to measure how much water its customers are taking and accurately account for water diversions. According to State Water, all of its major consumers are metered (A. Immaraj, State Water pers.comm. 8/11/2004), with only minor consumers not being metered, such as domestic and stock users. Hence State Water is likely to perform well on this indicator. Poor performance would only occur if State Water fails to invest in meter maintenance and replacement. Specifying this indicator allows State Water to accurately maintain its water accounts, bill customers and detect water theft. State Water could not conduct its business properly and meet its obligations under the operating licence if customers are not accurately metered. Metering standards for an individual meter type

require a meter accuracy to within ±5% of true metered values (State Water & DIPNR, 2004). There is no policy on which type of meter is appropriate for a particular application and this decision is best left to State Water because it will vary according to the particular circumstances at a diversion point. This indicator relies upon knowing the total volume of water use, some of which will be estimated because it is unmetered.

Standard: 90% of water management works for the extraction of surface waters to be metered in accordance with metering standards. The majority of water use is currently metered. This target directly supports the State Water Management Outcomes Plan (SWMOP) target for 2007. Based on State Water's comments, current performance against this indicator is expected to be high. The SWMOP target is based on the percentage of water management works rather than the percentage of extractions by volume. It is unclear at what point the unmetered water management works account for a small volume that it is not cost-effective to meter and whether 90% is a meaningful target in accounting for the majority of water use by volume.

After 2007, when the SWMOP target should be met, the operating licence could be amended to specify the standard as a proportion of diverted volume that is metered rather than the number of works, which better indicates State Water's ability to account for the available resource. Alternatively, if State Water demonstrates high performance in this area, this performance standard could be dropped in preference to ensuring that State Water's TAMP has a suitable program in place for maintenance and management of meters.

Processing time for intra-valley temporary transfers (days) – State Water processes temporary water transfers under a function conferred on it under the operating licence. Temporary transfers only occur because there is a need for the water by the buyer and any undue delay in the timing of temporary transfers can adversely affect irrigators in particular. A transfer order submitted by an access licence holder may not comply with the necessary requirements for the transfer to take place. Processing of inter-valley trade requires approval by DIPNR, while interstate trade requires approval by both DIPNR and the Murray-Darling Basin Commission. Adherence to minimum processing times for inter-valley and interstate water trades will be beyond State Water's control because of this reliance on other agencies for approval and hence no minimum processing times are specified.

A minimum processing time for notifying applicants of a non-complying order is not specified because the time required will be up to four days, depending upon which point in the approvals process the non-compliance is detected.

Standard: Process complying temporary transfers within four working days of receipt of payment. This is the standard proposed by State Water in its new Customer Services Charter. It is a significant improvement on the ten day processing time in its current Customer Services Charter.

There are various procedures to go through when processing a temporary transfer and the minimum processing time of four days is considered reasonable, particularly if State Water has to consult with other organisations (eg local councils, DIPNR, etc.) before approving transfers in particular cases.

6.5 Policing

State Water has a policing role under the functions conferred on it in the operating licence from the *Water Management Act 2000*. When setting performance standards and indicators for this area of operation, performance indicators are not recommended where State Water must inform DIPNR as part of its policing role. This includes the directing of actions to protect water sources, stop work, etc. Areas of operation where State Water can undertake a policing action without reference to another authority is a potential area for misuse of power and hence performance indicators have been recommended for these areas. The powers conferred on State Water under the operating licence are discretionary and a number of options are available to State Water when access licence conditions are breached, as outlined in State Water's draft Water Overuse Policy (State Water, 2004). These include taking no action, a reprimand, imposing financial or volumetric penalties or suspension of access licences. Any policing in relation to the taking of water without an access licence is a DIPNR responsibility and is beyond the control of State Water to enforce.

The setting of standards for policing is considered inappropriate. This is because there should be no incentive for State Water to take actions other than to protect its own business interests (eg to prevent theft of water that it could otherwise sell) or to act as an additional watchdog within the community under a memorandum of understanding with DIPNR.

Volume of water taken in excess of access licence conditions – The volume of water taken in excess of access licence conditions impacts upon the available resources in the supply system and influences State Water's ability to deliver water. State Water would detect water taken in excess of licence conditions by comparing water meters with the available volume in an account at any given time. This could also be detected if downstream customers are complaining that their water is not being delivered or if minimum flow targets are not being met. This indicator can be ambiguous because reporting a low volume of water taken in excess of licence conditions can mean either that little water is being taken in excess of licence conditions or that water is being taken but not detected by State Water. The public value of this indicator will increase over time, because any anomolous annual values can be identified with reference to long-term conditions. This indicator measures State Water's performance if there are public perceptions that water is being taken illegally without it being detected by State Water. This indicator is also useful for interpreting the penalties issued by State Water relative to the volume of water taken in excess of access licence conditions. The volume of water reported under this indicator should be for all water taken in

excess of licence conditions, regardless of the magnitude of the over use, whether that over use was inadvertant and whether the account has subsequently been re-balanced through water trading.

An indicator for the number of incidences of water taken in excess of access licence conditions was considered but not recommended because the volume of water taken is likely to be more important for protecting deliveries for legitimate transactions and for maintaining environmental flows. It will also enable easier interpretation of the volumetric penalties metered out by State Water.

Standard: There is no standard set for this indicator for the Initial Operating Licence, because this indicator will vary from year to year. Over time, the volume of water taken illegally should be minimised provided that this aligns with anecdotal evidence from customers. There should be no long-term upwards trends in this indicator.

Value of penalties imposed by State Water for taking of water in excess of access licence conditions ($) – Under Section 85B of the *Water Management Act 2000*, State Water can impose fees and charges up to five times the value of fees and charges normally associated with the taking of that water. This power is discretionary in nature and therefore warrants public reporting so that State Water is not imposing financial penalties to improve its revenue base or its return to Treasury. Reporting on this indicator will alert the public to any significant changes in the penalties issued from year to year that may reflect changes to State Water's over use policy that are not communicated to the public.

Standard: There is no standard set for this indicator because there should be no incentive for State Water to impose penalties other than for the protection of its business.

Volume of penalties imposed by State Water for taking of water in excess of access licence conditions (ML) – Under Section 85B of the *Water Management Act 2000*, State Water can debit an account by up to five times the volume of any water taken in excess of access licence conditions. This indicator will act in the same manner as the dollar value of penalties imposed and its selection is motivated in the same way.

Standard: There is no standard set for this indicator because there should be no incentive for State Water to impose penalties other than for the protection of its business.

Number of access licences suspended – State Water can suspend access licences under Section 78 of the *Water Management Act 2000*. Whilst unlikely, State Water could potentially abuse its power by suspending an unwarranted number of licences. Specifying a performance indicator for this activity will help to track whether State Water is responsibly using its power.

Standard: There is no standard set for this indicator for the Initial Operating Licence, because there should be no incentive for State Water to suspend access licences.

Number of approvals suspended – State Water can suspend approvals under Section 109 of the *Water Management Act 2000*. Approvals can be suspended, for instance, when the holder of a water management work approval fails to comply with actions directed by State Water in relation to that work under Sections 326 to 331 of the *Water Management Act 2000* (eg to protect water sources). This indicator will act in the same manner as the number of access licences suspended and its selection is motivated in the same way.

Standard: There is no standard set for this indicator for the Initial Operating Licence, because there should be no incentive for State Water to suspend approvals.

6.6 Customer service

The current Customer Service Charter contains most of State Water's performance indicators and standards on areas of service provision and water delivery, although this list of performance indicators and standards is reduced under the proposed Charter. A potential approach could involve the establishment of an over-arching indicator that measures percentage compliance against the customer charter. However, given the variety of indicators stated under the Customer Service Charter, a single measure of compliance against the Charter does not provide adequate information for the purposes of public accountability and nor is an over-arching indicator transparent enough to drive State Water's performance. For this reason, it is recommended that the key indicators of public interest in the area of water delivery and flood management that are stated in the Customer Service Charter should be separately reported on to IPART. Performance indicators in customer service will only be of value if State Water can classify the area of business towards which those indicators are pointing. A commentary on State Water's current performance indicators in the Customer Service Charter were previously commented upon in Section 4.2.2 of this report and are drawn upon where appropriate in this discussion.

Customer satisfaction survey achievement (Rating) – Customer satisfaction surveys are commissioned by most service industries. The survey should provide a measure of the degree of satisfaction of State Water's Customers with State Water's business and should seek to identify any particular areas of State Water's business that customers are dissatisfied with. Areas of business that customers are dissatisfied with need not necessarily be reported to IPART, but should be available for auditing. It is important that the survey is conducted by an independent organisation and that the survey is repeatable and comparable from year to year, regardless of which company conducts the survey. The rating categories do not necessarily need to be explained in detail, but must be auditable if required. State Water currently conducts a customer satisfaction survey every second year, which will be a suitable frequency for IPART's operational audits, which are to be conducted every second year. Under its draft Customer Service Charter, State Water is proposing to extend the period between surveys to three years because the Customer Advisory Committees consider them a waste of resources and duplicate the role of the Customer Advisory Committees.

It is recommended however that State Water maintain a survey frequency of every second year. The cost associated with the surveys is not significant (in the order of $20,000 per survey) and State Water has indicated that it would not object to a survey frequency of every second year if directed by the operating licence (B.Sims, State Water pers.comm. 25/11/04).

Standard: At least 75% of respondents to customer satisfaction surveys should be satisfied with State Water's services. It is difficult to set an appropriate target for this indicator, although serious concerns would be raised if more customers were dissatisfied with State Water than those that are satisfied. Goulburn-Murray Water has a target of 75% of customers satisfied, but it is expected that State Water could achieve slightly better performance on this issue because it performs fewer functions directly with individual landholders than Goulburn-Murray Water does. State Water has set a target of 75% in its draft Corporate Plan, which aligns its goal with a comparable business. The definition of customer satisfaction will be inherent in the survey design and cannot be further specified in the operating licence. The outcomes of a customer satisfaction survey are fickle in nature because they are partially conditioned by the survey design and the interviewer and for this reason IPART may wish to not specify a performance standard for this indicator, pending the outcomes of surveys over the period of the Initial Operating Licence.

Number of customer complaints to State Water – A complaint is a written or verbal expression of dissatisfaction about an action, proposed action or service provided by the business, its employees or contractors. An enquiry does not constitute a complaint. The operating licence for Sydney Water recommends adherence to Australian Standard *AS4269-1995 Complaint Handling* for identifying complaints (Governor of NSW, 2000), which would be appropriate for State Water as well.

This indicator requires the separation of enquiries from formal complaints, with a standard scale for assessing the severity of a complaint. Complaints from separate customers arising from the same cause count as separate complaints. This indicator is important because it is a direct measure of the degree of dissatisfaction with State Water and because complaints can drive improvements in service delivery. Complaints in urban areas are specified per 1,000 properties, with more than 20 complaints per 1,000 properties being above average (VWI, 2003). A similar measure for rural water delivery does not exist.

IPART should specify as part of the Initial Operating Licence that State Water should develop a complaints classification system to support this indicator. This would enable complaints about particular areas of business to be isolated, thereby driving improvement in State Water's performance. The cost of directing such an action is discussed further in Section 8.3 of this report.

Standard: There is no standard set for this indicator. A maximum of 20 complaints per 1,000 properties or some other performance standard standardised to the total population serviced by

State Water could be established after data collection over the period of the Initial Operating Licence. Changes of more than 10% in this indicator from one year to the next should however act as a trigger for further investigation.

Number of complaints for arbitration – indicates the number of complaints about State Water directed to an independent arbitrator, currently the Energy and Water Ombudsman of NSW, or to any other body, such as the Consumer Trade and Residential Tribunal. This performance indicator will support reporting on Clause 4.8.1 of the State Water Interim Operating Licence, which requires State Water to report on complaints to a court or tribunal. This indicator requires the separation of enquiries from formal complaints, with a standard scale for assessing the severity of a complaint. State Water would be reliant on receiving information on this indicator from the independent arbitrator, however it is likely that State Water will be involved in any cases directed to the independent arbitrator and will have access to this information. Complaints that are directed towards an independent arbitrator usually occur after a difference of opinion between State Water and the customer that results in a deadlock, inaction or loss of trust. The number of complaints directed to an independent arbitrator will generally be small and is expected to fluctuate from year to year as individual cases arise.

Standard: There is no standard set for this indicator. A standard could be established after data collection over the period of the Initial Operating Licence. Changes of more than 10% in this indicator from one year to the next should however act as a trigger for further investigation.

6.6.1 General reporting requirements for customer service

Number of customer enquiries to State Water – This general reporting requirement is not an indicator of performance, but it may be of general interest to stakeholders with regard to State Water's objective to operate "at least as effectively as any other business" under Section 5 of the *State Water Corporation Act 2004*. State Water should manage its communications so that it balances expenditure on communication with customers with the cost of fielding customer enquiries. Enquiries do not constitute a complaint. An enquiry is a written or verbal enquiry about an action, proposed action or service provided by the business, its employees or contractors. Enquiries from separate customers arising from the same cause count as separate enquiries. Small changes in this indicator from year to year are expected and can be ambiguous. When auditing this indicator, long-term trends or very significant (say >10%) changes in the number of enquiries in a given year will be more meaningful and act as a warning for further investigation of the nature of the enquiries. An increase in the number of enquiries could indicate that State Water is not communicating well with its customers and a sharp increase from one year to the next could indicate poor communication on a new major issue. An increase in the number of enquiries could also indicate that it is communicating very well and its customers are more aware and interested in contributing to State Water's decision making. State Water receives a number of enquiries about

issues related to the functions of DIPNR or other State agencies and these enquiries should be separately accounted for and will be useful for the State Government's assessment of the clarity of the separation of power in the water industry from the customer's viewpoint. This indicator is also a useful auxiliary indicator for the number of customer complaints.

6.7 Asset management

Asset management is partly regulated by the Dams Safety Committee on issues of dam safety and partly by Treasury on issues of capital, operations and maintenance expenditure. Hence the role of IPART in regulating indicators for asset management is limited. Good asset management is not necessarily a measure of current water delivery performance, but rather it is an area of operation that indicates whether appropriate decisions are being made to ensure future water delivery performance. Asset management indicators monitor the sustainability of the business to ensure that adequate funds are being reinvested in the business so that customers in the future are not faced with dilapidated assets and the inability to pay for replacement assets.

Inappropriate asset management can potentially affect the ability of State Water to deliver water to its customers and to control floods. In a worst case scenario, the catastrophic failure of a dam would have potentially severe consequences, followed by an ongoing inability to meet customer needs for water delivery. The two areas within asset management that are highly relevant to water delivery relate to dam safety and the timely maintenance and replacement of assets.

On the latter issue, State Water is required to have in place a Total Asset Management Strategy under its operating licence and any performance indicators should not duplicate the role of IPART in auditing the Total Asset Management Strategy. Directing State Water to have a Total Asset Management Strategy is considered a more appropriate means of regulating State Water in this area than specifying a myriad of performance indicators such as the number of assets in particular risk categories. Financial indicators, such as expenditure on capital works, are reported to Treasury, which would not want to compromise the long-term revenue stream of State Water. Information on financial indicators can be seen in State Water's annual report (State Water, 2003) or in Treasury's annual overview of the performance of NSW government businesses (NSW Treasury, 2004), which is categorised by individual business.

On the issue of dam safety, the NSW Dams Safety Committee regulates asset management functions relating to dam safety. It is considered sufficient for State Water to comply with the Dams Safety Committee requirements on this issue and it does not require separate regulation by IPART. The Dams Safety Committee requires, for example, Dam Safety Emergency Plans to be reviewed and updated annually, and tested at least every five years (DSC, 2003b). Owners of all extreme, high and significant consequence category dams are required to meet certain obligations to ensure that those dams are appropriately managed. The Dams Safety Committee reports on the risk category of all prescribed dams in NSW and whether a surveillance report was carried out.

The progress of upgrade works on dams with identified deficiencies is listed in the Dams Safety Committee annual report.

The only disadvantage with the Dams Safety Committee Annual Report is that it does not report on dams by dam owner in an easily readable form, however this is considered a minor inconvenience and does not warrant further action. IPART could approach the Dams Safety Committee to discuss whether the Annual Report could be reformatted to better track performance by individual dam owners. This could include, for example, a clear statement of performance for the main dam owners in responding to Dams Safety Committee requests, rather than or in addition to a commentary on Statewide dam management issues.

6.8 State Water personnel

The two areas of staff management that can potentially affect the quality of service for water delivery are workplace safety, which results in loss of corporate knowledge, and training, which increases corporate knowledge. As discussed previously in Section 5.10, these indicators are not directly related to water delivery or flood management, but rather they influence State Water's future ability to adequately deliver water or manage floods. For this reason and after discussion with the Tribunal Secretariat, these indicators are not recommended for inclusion in the operating licence, with preference given to setting performance standards and indicators on aspects of water delivery directly. If IPART decided after public consultation to adopt performance indicators in this area, recommended indicators would be as follows. No standards would be recommended for these indicators for the term of the Initial Operating Licence if they are adopted as performance indicators.

Lost time injury frequency rate – this is a standard industry measure of the frequency of workplace injuries. It is defined as the number of lost time injuries per one million hours worked. It is noted that Workcover legislation only requires State Water to report on and keep a log of individual workplace incidents and does not require it to report on performance indicators

Average lost time rate – this is the average number of days lost per lost time injury and is needed in conjunction with the lost time injury frequency rate to fully understand injury rates.

Training costs per employee ($ per employee) –The training expenses per employee is not a standardised measure that can be compared from year to year because of inflation, but it is widely used in a variety of businesses and will allow comparison with other businesses in any given year. State Water is likely to be able to currently report on the expenses associated with courses, but may not be able to separately account for the cost of employee time spent attending training.

Training costs (amount spent / total labour costs) – this is a standardised measure of State Water's commitment to training and is not affected by inflation or variation in revenue. State Water

is likely to be able to currently report on the expenses associated with courses, but may not be able to separately account for the cost of employee time spent attending training.

6.9 Business development

Business development activities are an expression of State Water's commitment to improve all aspects of its business, including water delivery and flood management. As discussed previously in Section 5.10, these indicators are not directly related to core functions such as water delivery or flood management, but rather they can influence State Water's future ability to adequately carry out these core functions. For this reason and after discussion with the Tribunal Secretariat, these indicators are not recommended for inclusion in the operating licence, with preference given to setting performance standards and indicators on aspects of water delivery directly. If IPART decided after public consultation to adopt performance indicators in this area, recommended indicators would be as follows. No standards would be recommended for these indicators for the term of the Initial Operating Licence, if they are adopted as performance measures.

Research and development expenditure ($) – Research and development spending is an indicator of State Water's commitment to improving its operations and facilitates best practice management. The research and development expenditure is not a standardised measure that can be compared from year to year because of inflation and is not directly comparable with other businesses of a different size.

Participation in Statewide and National Forums (no. and type) – State Water should keep abreast of the latest changes to policy that may affect State Water's business. It should also seek to disseminate best practice management to other water industry players. This indicator would be a list of each type of forum and the number of meetings attended by State Water staff. Examples of forums could include ANCOLD meetings, ANCID meetings, Water Sharing Plan meetings, MDBC forums or any other relevant forums. This indicator will provide customers with confidence that State Water is not operating in isolation from other leaders and policy makers in the water industry.

6.10 Environment and recreation

State Water has an objective under Section 5 of the *State Water Corporation Act 2004* "to conduct its operations in compliance with the principles of ecologically sustainable development contained in Section 6(2) of the *Protection of the Environment Administration Act 1991*" where its activities affect the environment. These principles include the precautionary principle, intergenerational equity and the conservation of biological diversity and ecological integrity. State Water also has an obligation not to pollute downstream waterways, where a change in water quality due to State Water's actions could constitute pollution.

Performance indicators and standards are generally not recommended for State Water's operating licence, because:

(i) State Water is not able to control the environmental condition of the water resource; and

(ii) DIPNR rather than IPART is the regulator of the environmental condition of the resource.

A performance standard has been recommended for delivery of minimum flows to the environment in accordance with Water Sharing Plan rules, as discussed in the development of performance indicators for water delivery in Section 6.2 of this report. Creating an over-arching measure of compliance against Water Sharing Plans for State Water is considered problematic because of the level of detail required to calculate an overall measure and because this extensive task for each river valley would duplicate a task that should be undertaken by DIPNR. The key aspects of the Water Sharing Plans that State Water should be accountable for are the delivery of water to the environment and to consumptive users, which have performance indicators and standards outlined in Section 6.2.

Environment groups have expressed a desire to include general reporting requirements on the environment for State Water because of its ESD obligations, because its activities affect the environment and because of uncertainty regarding the nature and extent of regulation by DIPNR in its works approvals and implementation manuals. Where possible, these are designed to concentrate on areas that can be influenced by State Water and that do not duplicate the detailed compliance reporting likely to be required by DIPNR.

State Water is required to prepare an Environment Management Plan as part of its Interim Operating Licence. The environment management plan is likely to specify procedures to follow during construction, operation and maintenance, as well as targets for energy consumption. The details of the environment management plan are not directly relevant to water delivery and flood management. If the Environment Management Plan includes energy targets, then it is recommended that targets should be set carefully for generation of hydropower, as this may interplay with water delivery performance indicators.

The five environmental issues that are of potential relevance to the operating licence are water quality, bank slumping, thermal pollution, environmental harm and fish passage, each of which are discussed in turn below. It is recognised that thermal pollution is a water quality issue, but because it is covered by separate government initiatives it has been separately discussed.

Recreational water use is discussed in the context of water quality. State Water has public liability obligations to ensure that its land and structures are safe for recreational users, however this will be fairly self-regulating because of the likelihood that State Water and/or its Board of Directors will be sued for any failure of duty of care. The safety of recreational water users therefore does not

require regulation by IPART. Loss of amenity for recreational water users such as swimmers, anglers and water-skiers will not be self-regulating and hence regulating to maintain recreational amenity of storages is discussed in this report. Loss of amenity is generally driven by poor water quality and generally aligns with loss of environmental value.

6.10.1 Water Quality

State Water's storage and delivery functions can potentially impact on water quality in various ways. These include release of poor quality water through operation (eg nutrients, low dissolved oxygen, heavy metal mobilisation, etc) or the loss of amenity within a storage because of poor water quality. The latter category includes algal blooms occurring in reservoirs.

It is acknowledged that reservoir water quality is influenced by a number of factors beyond State Water's control, which primarily includes upstream water quality.

State Water will not be required to monitor water quality in, upstream or downstream of its regulated storages and weir pools as part of the Water Supply Works Approvals for each storage (T.McGlynn, DIPNR, pers.comm. 6/12/2004). DIPNR expects State Water's water quality monitoring program to be driven by the desire to avoid public liability and to be able to meet customer expectations for good quality water. There may however be some water quality parameters that can be recorded in a storage to help improve the quality of water released from the dam. These could include depth profiles of dissolved oxygen and temperature as well as measurement of nutrients in sediments and to determine nutrient fluxes in and out of those sediments, which can be of value when researching the triggers for algal blooms. These parameters are not routinely monitored in reservoirs across Australia and tend to be associated with site specific investigations where a prior problem has been identified. Any water quality monitoring conducted by State Water in this regard should ideally be co-ordinated with DIPNR's water quality monitoring network.

By agreement with DIPNR, any water quality data collected by State Water is expected to be made available to DIPNR and hence will allow DIPNR, as the water resource manager, or DEC, to direct any remedial actions for State Water to undertake.

Guidelines for recreational water quality are specified in Australian and New Zealand Environment Conservation Council (ANZECC) (2000). Recreational water use is divided into three categories: primary contact (where water comes in frequent direct contact with the skin, such as swimming), secondary contact (where water comes in less frequent direct contact with the skin, such as fishing), and passive recreation (where direct contact with the skin is unlikely). The guidelines are listed in Appendix D for each type of contact. It is not recommended that State Water is required to report on compliance with these guidelines as part of the operating licence, because it represents

non-core business for State Water. The main cause of lack of amenity for recreational water users will be blue-green algae.

DEC has indicated that it will observe State Water's activities in the area of water quality and direct State Water to change its operations or works to reduce its polluting activities to downstream areas if there is a complaint or enquiry about its operations. Hence there is an existing regulatory mechanism by which State Water will be directed to amend its operations or structures.

Nevertheless, for the purposes of public reporting it is recommended that the following general reporting requirement is adopted in the operating licence:

Algal blooms (no. of events in storages and weirs by alert level) – State Water does not have any control over the quality of water that it receives and nor does it have control over the quality of unregulated inflows that are delivered to its customers. However, State Water's storage operation and release policy can influence the potential for algal blooms. Having an indicator for algal blooms will encourage State Water to examine its storage operations in order to minimise reservoir overturning that triggers some blooms. Algal blooms have defined alert levels relating to algae counts. Algal blooms in weirs on unregulated streams may occur in conjunction with blooms on the river reach in which the weir is situated, in which case the bloom will also be reported by DIPNR. State Water has indicated that some blooms on unregulated rivers may be confined to weir pools and hence they should be reported.

In New South Wales, if blue-green algae are toxic and algal counts exceed 15000 cells/ml, the area will be put on high alert. If the blue green algae is non-toxic but exceeds 15000 cells/ml, it will be further assessed for its bio-volume and if this exceeds $2mm^3$ /L then the area will be put on high alert. No alert is made for all other events (MSCCRACC 2001).

State Water has indicated that it must notify other agencies of blue-green algae events in State Water storages. Once this notification to DIPNR and other interested agencies has occurred, it is not State Water's responsibility to notify the general public, other than to warn recreational water users of its storages.

6.10.2 Bank slumping

Environment groups expressed a desire for the operating licence to specify maximum rates of fall for hydrographs released from State Water's reservoirs in order to avoid bank slumping. When water levels drop quickly from a high level to a low level because reservoir outlet valves have been closed, then this can cause river banks to collapse, eroding the river banks and increasing sediment loads in the river.

Regulating this environmental impact is a responsibility of DIPNR as the resource manager, and the implementation manuals would be an appropriate place to specify maximum rates of river fall downstream of reservoirs. It is believed that a small number of Water Sharing Plans already contain maximum rates of change for reservoir releases, where this has been identified as a significant problem. For this reason, it is not recommended that IPART require State Water to report on bank slumping in the operating licence.

If IPART deemed that there was a need for a performance standard in this area then one could be developed. This would involve undertaking a study of natural hydrographs at sites downstream of reservoirs and performing a statistical analysis to determine the range of typical natural rates of fall. At high flows, these rates of fall will be a function of storm and catchment characteristics, whilst at low flows the rates of fall will be a function of baseflow recession from groundwater. The indicator to prevent bank slump should be primarily targetted at the moderate to high flow range, where natural rates of fall will be greatest. State Water could then be expected to release water within these rates of fall. This desktop analysis would probably be appropriate for specifying a performance standard, but could be further informed by on-ground examination of river banks. This may be required if the bank conditions are no longer natural because of past erosion, and the banks can no longer tolerate rates of fall at the upper end of the rates of fall observed naturally.

6.10.3 Thermal pollution

There are two aspects to the issue of thermal pollution. These are firstly the directing of works to allow operation to control cold water pollution and secondly the specifying of operating rules to minimise cold water pollution once multi-level offtakes are in place.

Many of State Water's larger storages do not have multi-level offtakes and hence do not permit the temperature of water released downstream to be controlled (DIPNR, 2004b). There is a proposed Statewide strategy for implementing works to mitigate the effects of cold water pollution in storages, including State Water's storages. State Water will have limited input into the process of prioritising works under the proposed strategy and no control over the outcome of where works will be undertaken and when. The process for selecting a site for remedial works must consider the opportunity cost of investing in those works because reservoir retrofitting is expensive and the money spent may be better utilised in revegetation or carp control etc. This decision would be beyond State Water's area of jurisdiction and hence no performance standards, indicators or general reporting requirements are recommended for the number of storages with thermal pollution problems.

It is envisaged that once works have been completed, such as the construction of multi-level offtakes, operating rules are likely to be defined to minimise cold water pollution. DEC have indicated that they will not be regulating State Water for cold water pollution and envisage that DIPNR will have responsibility for regulating cold water pollution through the works approvals

(G.Dunkerley, DEC pers.comm. 26/10/04). DIPNR confirmed this and in future intend to include operating rules in the works approvals for State Water to adhere to in order to minimise thermal pollution (K Alvarez DIPNR, pers. comm).

In its memorandum of understanding with State Water, the Department of Primary Industries (DPI) Fisheries Management will provide an annual report containing information on the number of offtake structures improved by cold water pollution mitigation strategies and/or works, as well as the kilometres of waterway improved by cold water pollution mitigation. These indictors adequately cover reporting of State Water's involvement in cold water pollution mitigation. IPART should note, however, that the memorandum of understanding requires DPI to provide an annual report to State Water, but does not require State Water to release that information to the public. For this reason, IPART may wish to direct State Water to report on any performance indicators specified in its memorandum of understanding with DPI. DPI have stated that they would support publicly releasing the annual report as a requirement of the Memorandum of Understanding (N.Rayns, DPI pers.comm. 18/11/2004).

If IPART does wish to specify performance indicators in the operating licence, then a typical indicator would be the difference between estimated optimum and actual temperature below dams. Estimated optimum temperature is typically based on measurements upstream of the dam or measurements from a reference stream in an adjacent unregulated catchment. This indicator has been used by DIPNR (2004b) to indicate the presence of thermal pollution. Any such indicator would need to consider temperature variation throughout the day and throughout the year, because natural temperature conditions vary markedly with time. The indicator would require input from ecologists with expertise in cold water pollution management to design the monitoring program.

6.10.4 Fish passage

State Water's role of constructing and maintaining water management works includes the construction and maintenance of fishways at its reservoirs and the maintenance of structures that impede fish passage.

Similar to the issue of thermal pollution, there is first a process of identification of structures that impede fish passage to direct remedial works, and secondly a process of operation and maintenance to ensure continued fish passage once the structure has been upgraded. State Water have a regulatory obligation under the *Fisheries Management Act 1994* to install fishways when some dams and weirs are in need of repair as part of infrastructure maintenance or if a new structure is built (DPI, 1999). DPI would ideally like to see this program of natural replacement of assets accelerated, because it is an area of concern for DPI.

A memorandum of understanding (MOU) between State Water and DPI is currently in place for a period of three years and is reviewed and extended annually. The MOU facilitates the provision of

advice by DPI to State Water on the issue of fish passage, recognising the independence of DPI to provide its services in accordance with relevant legislation. The advice provided includes input into State Water's asset management, capital works, operation and maintenance. The MOU includes a number of performance indicators in the area of fish passage that DPI will report on annually to State Water:

- Number of priority structures addressed with regard to the provision of fish passage;
- Kilometres of free fish passage gained as a result of State Water fishway construction works;
- Kilometres of free fish passage gained as a result of the removal of obsolete State Water owned in-stream barriers; and
- Kilometres of free fish passage gained as a result of changes to water delivery operating protocols at State Water owned in-stream barriers.

These indicators are considered suitable measures of State Water's performance in this area of operation. On the basis of the above, it is not recommended that any particular performance standards and indicators in this area are included in State Water's operating licence and that the requirement to work together with DPI as part of its memorandum of understanding is sufficient to meet State Water's minimum regulatory obligations. IPART should note, however, that the memorandum of understanding requires DPI to provide an annual report to State Water, but does not require State Water to release that information to the public. For this reason, the operating licence should direct State Water to report on any performance indicators specified in its memorandum of understanding with DPI. DPI have stated that they would support publicly releasing the annual report as a requirement of the Memorandum of Understanding (N.Rayns, DPI pers.comm. 18/11/2004).

The advantage of this approach is that it allows DPI to adapt the indicators to best achieve outcomes for fish management. The indicators are being applied for the first time and there may need to be minor modifications to them when they are applied. DPI is best placed to make any adjustments. The disadvantage of this approach is that State Water are under no legal obligation to report on these indicators, whereas if they were specified in the operating licence, then State Water would have a regulatory obligation to report on them to IPART. DPI have reported that the memorandum of understanding with State Water has operated well to date and that State Water have co-operated fully to achieve positive outcomes in this area. Hence, for the Initial Operating Licence, there is considered to be no need for IPART to regulate this area of operation unless DPI subsequently reports lack of co-operation from State Water.

6.10.5 Environmental harm

State Water's actions can result in environmental harm. For example, poor water quality events or lack of storage can trigger fish kills in storages and weirs. This could also extend to loss of native vegetation. Environment groups have expressed a need for State Water to report on this measure of environmental condition. This is not a measure of State Water's performance, because the cause of environmental harm could be due to upstream water quality or for biological reasons beyond State Water's control. State Water will however be in the best position to detect environmental harm at the earliest possible time.

The memorandum of understanding between DPI and State Water does not make any mention of environmental harm nor any protocols for dealing with environmental harm. Ideally, this would be the appropriate place to ensure that State Water notifies DPI of a fish kill event. This may trigger additional water quality sampling by DPI or post-mortems to discover the cause of the fish kill. For other types of environmental harm, State Water should notify DIPNR. It is therefore recommended that IPART direct State Water through the operating licence to establish protocols for dealing environmental harm in its memoranda of understanding.

6.11 Flow monitoring

State Water has expressed a desire to assume responsibility for streamflow monitoring. This view is supported by a number of irrigation companies, who see State Water's ease of access to streamflow data as important for improving its service delivery. Streamflow monitoring is currently carried out by DIPNR and data is provided to State Water as required. State Water already has telemetered access to a number of streamflow gauges so that data can be provided on demand. For this reason, flow monitoring by DIPNR is not regarded as a constraint to State Water providing its services to an appropriate standard. In Victoria, for example, flow monitoring is provided by a private contractor and Goulburn-Murray Water and Southern Rural Water specify which gauges they require instant access to and conduct regular audits as stakeholders in the data.

If State Water assumes responsibility for streamflow monitoring in the future, it is recommended that DIPNR, as the main stakeholder in the data, should specify minimum standards for data collection, storage, quality assurance and reporting. This should be performed under contract and it is not recommended that this activity is regulated under the operating licence.

6.12 Conclusions

The application of the above criteria led to the development of the performance indicators and standards recommended for inclusion in State Water's Initial Operating Licence, listed in Table 6-3. The attributes of these indicators and standards are listed in Table 6-2. General reporting requirements are also specified to report on areas of operation affected but not solely controllable by State Water's activities, or to support the interpretation of performance indicators and standards

with other water businesses and over time. General reporting requirements are not measures of State Water's performance and hence form a separate category to performance indicators and standards.

In addition to the performance standards and indicators listed in Table 6-3, a number of other recommendations are made:

- Performance indicators for fish passage, cold water pollution and other riparian and aquatic habitat activities are expected to be included in State Water's new memorandum of understanding with DPI, to apply from 1 January 2005, and should not be duplicated in the operating licence. IPART should direct State Water to publicly report on these performance indicators.
- State Water should be required to establish protocols for notifying other departments of incidents of environmental harm as part of its memoranda of understanding with DIPNR, DPI and DEC.
- State Water should be required, as part of its memorandum of understanding with DIPNR, to specify targets for when resource assessments should be completed.
- The following standards or indicators for bank slumping and cold water pollution should only be adopted by IPART if it perceives that there is a particular stakeholder need for regulatory duplication with DIPNR:
  - Changes in the rate of reservoir release to not exceed natural rates of hydrograph fall.
  - Deviation from reference temperature conditions downstream of regulated storages.
- Indicators in the following areas should only be adopted by IPART if it perceives that there is a long-term benefit in reporting on these indicators to prevent future poor performance:
  - Lost time injury frequency rate;
  - Average lost time rate;
  - Training costs per employee;
  - Training costs as a proportion of total labour costs;
  - Research and development expenditure; and
  - Degree of participation in Statewide and national forums (no. and type).

Table 6-2 - Selected indicators and standards for State Water (excluding Fish River scheme)

			Type			Attributes							Use			
Indicator selected	Units	Minimum Standard	General Reporting Requirement	Performance indicator	Performance standard	Comprehensible	Measurable	Comparable	Auditable	Controllable	Cost-effective	Relevant	Indicator used by other businesses	Indicator used by State Water	Standard used by other businesses	Comments
Time required to contact licence holders with non-complying orders	hrs	100% within one working day		●	●	✓	✓	✓	✓	✓	✓	✓		●		
% of orders delivered with required notice	%	95% within ±1 day of scheduled day		●	●	✓	✓	✓	✓	✓	✓	✓	●	●	●	
Time required to announce supplementary water events	hrs	within 4 working hours		●	●	✓	✓	✓	✓	✓	✓	✓		●		Start of processing period must be defined
% of time that minimum flow targets are met on a rolling average weekly basis	%			●		✓	✓	✓	✓	✓	✓	✓		●		
Operational surplus	ML or GL			●		✓	✓	✓	✓	✓	✓	✓		●		
Available water determination	% of entitlement		●			✓	✓	✓	✓	×	✓	✓	●	●		
No. of water orders	no.		●			✓	✓	✓	✓	×	✓	✓	●			
Volume of water ordered	GL		●			✓	✓	✓	✓	×	✓	✓				Not controllable by State Water
No. of regulated storages (major storages)	no.		●			✓	✓	✓	✓	✓	✓	✓	●			Unlikely to show change on an annual basis
No. of unregulated storages (minor storages and weirs)	no.		●			✓	✓	✓	✓	✓	✓	✓	●			Unlikely to show change on an annual basis
Annual water balance by river system	ML or GL		●			✓	✓	✓	✓	×	✓	✓	●			Varies with climate
% of water management works metered to appropriate standards	%	90%		●	●	✓	✓	✓	✓	✓	✓	✓				Meets SWMOP target
Time required to process complying temporary transfers	days	100% processed within four working days		●	●	✓	✓	✓	✓	×	✓	✓				May depend on input from other agencies
Volume of water taken in excess of access licence conditions	ML or GL			●		×	✓	✓	✓	×	✓	✓				Can be ambiguous and not controllable by State Water
Value of penalities imposed by SW for taking water in excess of licence	$			●		×	✓	✓	✓	×	✓	✓				Can be ambiguous and not controllable by State Water
Volume of penalties imposed by SW	ML			●		×	✓	✓	✓	×	✓	✓				Can be ambiguous and not controllable by State Water
No. of access licences suspended	no.			●		✓	✓	✓	✓	✓	✓	✓				
No. of approvals suspended	no.			●		✓	✓	✓	✓	✓	✓	✓				
Customer satisfaction survey achievement	Rating	≥75% of customers satisfied		●	●	✓	✓	✓	✓	✓	✓	✓	●	●	●	
No. of customer complaints to State Water	no.			●		✓	✓	✓	✓	✓	✓	✓	●			
No. of customer complaints for arbitration	no.			●		✓	✓	✓	✓	✓	✓	✓	●			Data to be provided by independent arbitrator
No. of customer enquiries to State Water	no.		●			✓	✓	✓	✓	✓	✓	✓	●			
Lost time injury frequency rate	no. per 1mil.hrs worked			●		✓	✓	✓	✓	✓	✓	✓	●			
Average lost time rate	days			●		✓	✓	✓	✓	✓	✓	✓	●			
Training costs per employee	$/employee			●		✓	×	✓	✓	✓	✓	✓	●			May not be measurable with State Water's current accounting systems
% of total labour costs spent on training	%			●		✓	×	✓	✓	✓	✓	✓	●			May not be measurable with State Water's current accounting systems
Research and development expenditure	$			●		✓	✓	×	✓	✓	✓	✓				Not comparable year to year nor between businesses
No. of statewide and national forums attended by State Water	no. and type			●		✓	✓	✓	✓	×	✓	✓	●			Irregular forums mean that participation is not always controllable
No. of algal blooms in State Water storages and weirs	no. by alert level		●			✓	✓	✓	✓	×	✓	✓	●			Inflow water quality not controllable by State Water
Change in rate of reservoir release to not exceed natural rates of hydrograph fa	% of previous day's flow	100% compliance		●	●	✓	✓	✓	✓	✓	✓	✓				To be regulated by DIPNR
Deviation from reference stream temperature	degrees celcius		●			✓	✓	✓	✓	×	✓	✓				To be regulated by DIPNR and dependent on outlet work configuration

- **Table 6-3 Selected standards and indicators for inclusion in the Initial Operating Licence**

Area of Operation	Reporting requirement	Description of standard or indicator
Water delivery	Performance standards	▪ 100% of licence holders to be contacted within one working day of the non-complying order being placed ▪ 95% of complying orders to be delivered with ± 1 day of the scheduled day of delivery ▪ Supplementary water announcements to made with four hours of an indicator streamflow gauge detecting a supplementary water event on a working day
	Performance indicators	▪ Percentage of time that daily minimum flow targets are met (on a rolling average weekly basis) ▪ Operational surplus as a percentage of water delivered to consumers (%)
	General reporting requirements	▪ Available water determination (initial, conditional and end of season allocation) ▪ Number of water orders ▪ Number of dams and weirs ▪ Water balance for each river valley ▪ Volume of water ordered (GL)
Flood Management	N/a	None recommended
Water accounting and billing	Performance standards	▪ 90% of water management works for the extraction of surface waters to be metered accordance with metering standards ▪ Temporary intra-valley transfers to be processed within four working days of receipt of payment
Policing	Performance indicators	▪ Volume of water taken in excess of access licence conditions (ML) ▪ Value of penalties imposed by State Water for taking of water in excess of access licence conditions ($)

Area of Operation	Reporting requirement	Description of standard or indicator
		▪ Volume of penalties imposed by State Water for taking of water in excess of access licence conditions (ML) ▪ Number of access licences suspended ▪ Number of approvals suspended
Customer service	Performance standards	▪ At least 75% of respondents to customer satisfaction surveys should be satisfied with State Water's services.
	Performance indicators	▪ Number of customer complaints to State Water ▪ Number of customer complaints for arbitration
	General reporting requirements	▪ Number of customer enquiries to State Water
Asset management	N/a	None recommended
State Water personnel	N/a	None recommended
Business development	N/a	None recommended
Environment and Recreation	General reporting requirements	▪ Number of algal blooms by alert level in State Water weirs and storages

7. Fish River Water Supply Scheme

7.1 Introduction

The Minister for Energy, Utilities and Sustainability currently operates the Fish River Water Supply Scheme. From 1 January 2005, State Water will assume responsibility for operation of the scheme. State Water's role in operating the Fish River scheme and the nature of its infrastructure is different to its operations throughout the rest of the State. For this reason, the development of performance indicators and standards for Fish River has been considered separately in this chapter of the report.

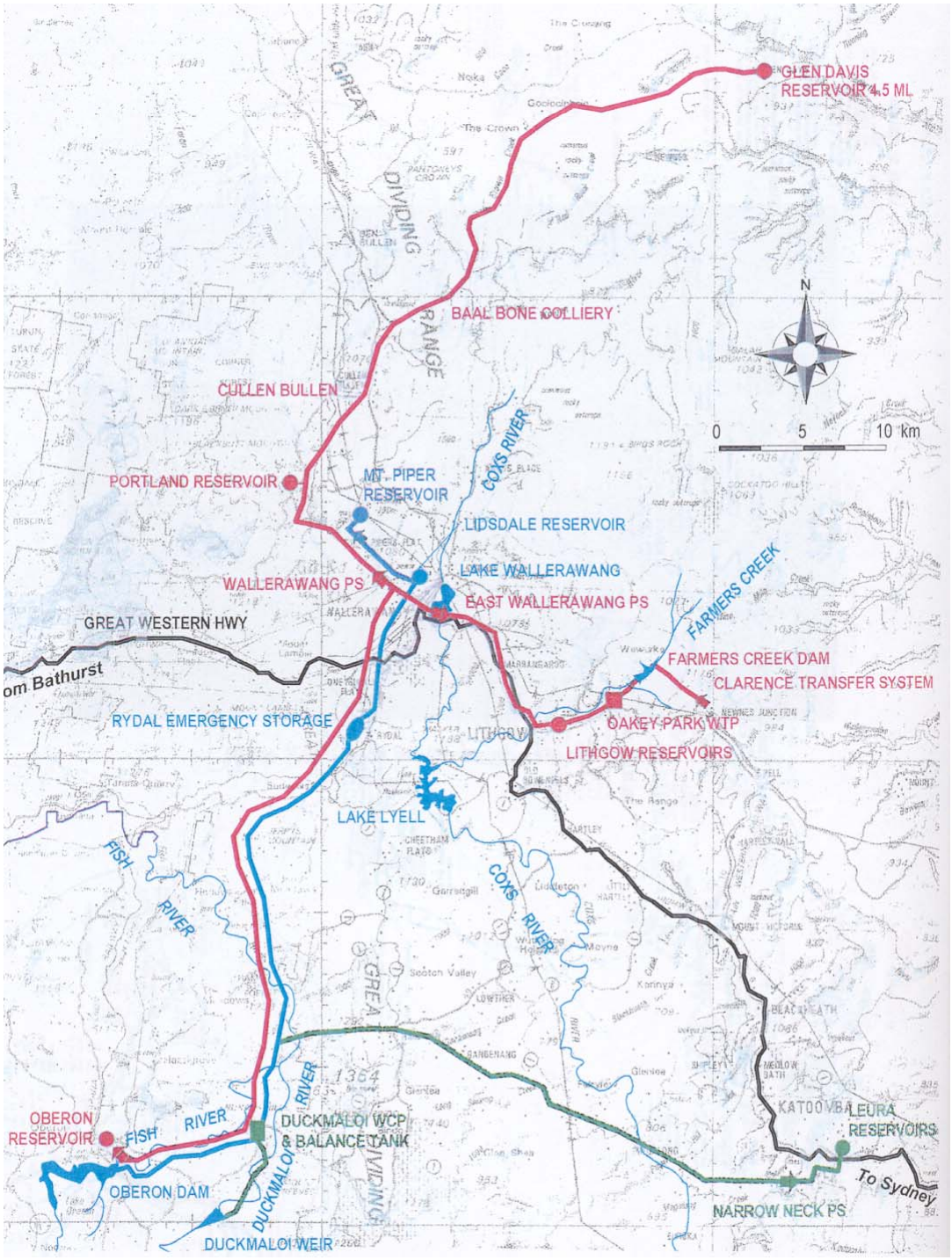
7.2 Scheme Description

The Fish River Water Supply Scheme is located in the Blue Mountains west of Sydney and falls within the upper reaches of the Macquarie River basin. A map of the scheme is shown in Figure 7-1. The scheme incorporates reservoirs and diversion weirs, similar to State Water's bulk rural water supply operations, but also includes around 230 km of supply mains, five pumping stations, two service reservoirs and water treatment facilities (AWA, 2002).

Under Part 1 Section 3 of the *State Water Corporation Act 2004*, the water management works associated with the scheme comprise:

> "the concrete dam on Fish River at Oberon and Duckmaloi Weir, together with:
> (a) its associated gravitation main, concrete reservoirs, reticulation systems and treatment works, and
> (b) the pumping station at Oberon, and
> (c) all incidental and connected works, and
> (d) all additions, amplifications, improvements and extensions to that scheme."

- **Figure 7-1 Fish River Scheme**



7.3 Regulatory framework

The regulatory framework in which the Fish River Water Supply Works are operated is different to State Water's other operations as a bulk water supplier. Fish River is currently operated as a public

water supply works under Chapter 5 Part 1 of the *Water Management Act 2000*. The works are controlled and administered directly by the Minister administering the *Water Management Act* and hence there is no licence issued for the operation of the works.

Under the proposed arrangements to be invoked by the *State Water Corporation Act 2004*, responsibility for the operation of the Fish River Water Supply Works will be transferred to State Water. The current provisions for operation of the scheme directly by the Minister will be revoked at the same time and will no longer govern scheme operation. The Fish River catchment is not currently covered by a Water Sharing Plan and therefore the provisions of the *Water Act 1912* will initially apply. In this context, State Water will assume the role of a water management authority and will be granted a water management licence under Part 9 of the *Water Act 1912*. Under the Act, a water management licence authorises its holder:

> "(a) to take and use water from any water source, and
> (b) to construct or use a water management work"

Water management licence conditions are to be specified by DIPNR. The conditions on the water management licence are being drafted by State Water before being finalised by DIPNR and will not be available in a draft form until December 2004 (P.Percival, State Water pers.comm. 1/11/2004). The conditions on the licence are expected to be minimal to the extent that they reflect the current operating rules for the scheme, but no additional or changed conditions. The water management licence will specify the provision of currently agreed environmental flows and the volume of water to be delivered to each user group, as specified in existing contracts.

Once a Water Sharing Plan is specified for the catchment, which is likely to occur over the lifetime of the Interim Operating Licence, the legislation governing State Water's operation of the Fish River scheme will change. State Water will become a water supply authority and its water management licence will be converted to a major utility access licence plus a Water Supply Works Approval under the *Water Management Act 2000*. The functions of a water supply authority under Clause 292 of the *Water Management Act 2000* are:

"(a) subject to the Minister's approval, to construct, maintain and operate water management works and other associated works,
(b) to conduct research, collect information and develop technology in relation to water management,
(c) to do anything for the purpose of enabling the objects of this Act to be attained."

State Water will have various functions under part (c) of Section 292 of the *Water Management Act 2000*, namely that it may:

- Enter into commercial operations with the approval of the Governor;
- Provide assistance to other statutory bodies with the consent of DIPNR;
- Enter land to read meters and carry out works;
- Break up roads (in relation to water management works);
- Alter the position of conduits;
- Dig up ground to find the source of pollution.

It is also the duty of a water supply authority to exercise its functions consistently with the principles of ecologically sustainable development (ESD), as described in section 6 (2) of the *Protection of the Environment Administration Act 1991*. The development of specific ESD indicators is beyond the scope of this study, but would transferable from the set of indicators developed by Sydney Water, Hunter Water and the Sydney Catchment Authority as part of their operating licences.

The transfer of the water management licence to the works approval and access licence will involve separating activities associated with works from those associated with the taking and using of water. This transition should occur without significant changes to the conditions under which the scheme operates, with the main change being the potential additional of any requirements specified in the Water Sharing Plan.

7.4 Existing Customer Agreements

Customers of the Fish River Water Supply Scheme include the four major consumers of Delta Electricity, Lithgow Council, Sydney Catchment Authority and Oberon Council, plus around 200 smaller consumers. The four major consumers account for 99% of the water supplied by volume, with the minor customers using 200 ML/yr, which corresponds to around 1% of the total water supplied.

The Minister currently has existing long-term (20 year) agreements with the major consumers. These agreements were recently re-formatted into a simpler language and re-signed, and hence are not expected to expire over the life of the Initial Operating Licence. Minor consumers are supplied water by agreement with no expiration date specified on the agreement.

From these agreements, it would appear that the major consumers are able to negotiate the inclusion of any relevant performance indicators or standards within their individual contracts and will have a level of protection and reporting suitable to their individual needs. Minor consumers are less likely to be able to negotiate the same level of protection as they are not essential to the profitability of the Fish River works.

The agreements are commercial-in-confidence, but in general terms they cover the quality of water to be supplied, the volume to be supplied on an annual and daily basis, conditions about metering accuracy, dispute resolution procedures and specific services or expenses for which Fish River Water Supply is to be reimbursed by the customer.

7.5 Stakeholder expectations

No consultation has occurred with customers of the Fish River Water Supply Scheme, apart from a submission from the Sydney Catchment Authority in response to IPART's issues paper. The Sydney Catchment Authority were satisfied with the current operation and management of the scheme (G.Head, SCA pers.comm.24/11/2004). Operators of the scheme have indicated that existing customer agreements and quarterly reporting to the Customer Advisory Committee ensure accountability to consumers. The Customer Advisory Committee includes representatives from all major consumers. Minor consumers are not represented on the committee, because there has been little interest by the minor consumers in governance of the scheme (W.Battye-Smith, FRWS pers.comm. 18/11/2004). Scheme operators report that there have been no complaints from minor consumers in recent years. Complaints about lower pressures in parts of the system (90 m head reduced to 25 m head) were resolved through education. The Fish River Board's policy of no new connections prior to the implementation of a Water Sharing Plan is the area most likely to attract criticism from stakeholders, but this does not warrant any action by IPART.

7.6 Strategic Business Plan Levels of Service

The Fish River Water Supply Scheme currently has a number of targets for providing a certain level of service. These are specified in its business plan (FRWS, 2002) and can be found in Appendix C. These include targets for:

- Peak and average volume deliverable;
- Response times for unplanned interruptions;
- Frequency of unplanned interruptions;
- Water restriction frequency and minimum storage during design drought; and
- Water quality guideline compliance.

It can be seen in the performance targets in Appendix C that the level of service for response times for unplanned interruptions is lower for the minor consumers than it is for the major consumers. This perhaps illustrates the hypothesis that minor consumers are unable to negotiate the same level of service as major consumers, but also reflects the greater consequence of the interruption to services to major consumers.

7.7 Existing Reporting on Performance

The Fish River Water Supply Authority currently prepares quarterly and annual reports for its Customer Advisory Committee. These reports include the following information:

- Monthly rainfall totals;
- Monthly volume in Oberon Dam, which is the main water supply storage in the system;
- Rate of change in the volume in Oberon Dam and forecast storage volumes;
- Monthly volume supplied to consumers and long-term average volume supplied;
- Monthly volume released from Oberon Dam and Duckmaloi Weir;
- Non-revenue water volume and percentage of total intake;
- Raw water quality (total coliforms, e.coli, colour, turbidity, iron, manganese, aluminium and pH) and comparison against drinking water quality guidelines;
- Filtered water quality (total coliforms, e.coli, colour, turbidity, iron, manganese, aluminium and pH) and comparison against drinking water quality guidelines;
- Number of water supply pipeline breaks and number of leaks repaired;
- A summary of capital works activities;
- Reportable incidents for occupational health and safety;
- A summary of any environmental issues encountered; and
- Details of water restriction levels.

The Fish River Water Supply Authority also participates in the Australian Water Association's annual benchmarking report of non-major urban water utilities. This report includes numerous performance standards and indicators as previously listed in Section 4.5.3. Fish River's continued participation in the AWA's benchmarking reports will provide adequate public reporting of scheme performance.

7.8 Performance Indicators and Standards

Performance indicators and standards for the Fish River Water Supply Scheme should be primarily directed at protecting minor consumers. Whilst some of the major consumers are serviced by a monopoly water supplier, the threatened withdrawal of their business would have far ranging ramifications for State Water and Treasury and for this reason they are probably able to negotiate the inclusion of suitable performance standards in their individual contracts. Minor consumers are unlikely to have the same negotiating power with State Water and will need to be protected by other means.

Initially, apart from the specification of environmental flows and annual water delivery volumes, no performance indicators and standards are expected to be specified by DIPNR. Irrespective of the details of the regulatory framework in which the scheme is operated, most of the performance indicators that were recommended in Section 6 of this report would be relevant for the Fish River scheme. The exceptions are those performance indicators and standards relating specifically to the operation of a natural waterway as a carrier to deliver water. These exceptions include the time required to contact licence holders about non-complying orders, the percentage of orders delivered with complying notice, the time required to announce supplementary water announcements, the operational surplus and the time required to process temporary transfers.

It is recommended that State Water should continue to provide suitable information to the Australian Water Authority for its annual benchmarking report of Australian Non-Major Urban Water Utilities. This specification will only ensure that indicators are reported on and will not ensure that minimum standards are met.

The following performance indicators and standards were considered for inclusion in the operating licence for State Water in relation to the Fish River Water Supply Scheme. The merit of each is discussed below.

Compliance with Australian Drinking Water Guidelines – These guidelines produced by the NHMRC and ARMCANZ cover minimum water quality requirements for potable water supply. This includes minimum standards for public health as well as minimum standards for taste and odour. These guidelines are the desirable water quality target for drinking water throughout Australia. Some customers do not require potable water and hence compliance with drinking water guidelines should be confined to parts of the supply system where potable water is to be supplied.

Standard: 100% compliance with Australian Drinking Water Guidelines where potable water is being supplied. Lack of compliance with Australian Drinking Water Guidelines can compromise public health and should not occur. Water quality in the Fish River catchment is good and there are only occasional water quality problems when water needs to be supplied from Duckmaloi Weir.

Water delivery efficiency – Water delivery efficiency for a water delivery system is the volume of water delivered to customers divided by the volume of water diverted from rivers. In the case of the Fish River scheme, the latter would be the volume of water diverted from Oberon Dam or Duckmaloi Weir. The volume of water delivered would be the amount metered at the points where water is supplied to the four major consumers. This performance indicator is a measure of State Water's ability to detect and repair leaks in the system. Low water delivery efficiency will result in waste of water and the imposition of more frequent restrictions.

Standard: A water supply efficiency of 90% should be maintained. For a fully piped distribution system, water supply efficiency should be high relative to earthen channel systems. Fish River has relatively few pipes to manage and should be able to maintain an efficiency comparable to the best water utilities in Australia. In 2000/01, the scheme reported losses of 6%, which means that this minimum standard is achievable for the scheme. Distribution losses of 10% would place the Fish River scheme approximately in the top 30% of comparable business across Australia (AWA, 2001).

Water conservation – No standards or indicators are recommended for water conservation other than to maximise water delivery efficiency. It is unclear whether State Water has a role in specifying water conservation targets, or whether this is the function of its major consumers.

Water pressure – No performance indicators are recommended for minimum water pressure. This is because the Fish River scheme is not a reticulated water supply scheme and does not provide reticulated water supply to the majority of its customers. For those that do receive water directly from the water supply pipeline, pressures are well above minimum standards of 15-20 m head, with water delivered at pressures of around 60-70 m head (W.Battye-Smith, FRWS, pers.comm. 1/11/2004). Consumer agreements specify that consumers must have their own water supply tank in order to receive water and that delivery pressures downstream of the landholder's tank is the landholder's concern. This means that any pressures standards are not required. If this becomes a concern because of very low pressures (<15m), this will be detected in complaints from the minor consumers, which is a separate indicator. If a minimum pressure standard were to be adopted for consumers that take directly off the supply mains, a minimum pressure of 15-20 m head at the property boundary is a standard minimum.

Water supply interruptions – Interruptions to water supply can have significant consequences if they occur for extended periods of time. Some interruptions will be expected for general maintenance and occasional unplanned pipeline breakages. Water supply interruptions are often unplanned and sometimes beyond State Water's control, such as when earthmoving equipment damages a pipe. The frequency of pipeline breakages is expected to be small because the Fish River scheme does not operate a reticulated water supply. There will also be a supply buffer in most cases where State Water is supplying a balancing storage operated by its customers. Water supply interruptions are typically specified by four measures:

- The number of planned water supply interruptions;
- The number of unplanned water supply interruptions;
- The average duration of planned water supply interruptions; and
- The average duration of unplanned water supply interruptions.

The acceptable standard for each of these indicators can only be specified by agreement with customers of the Fish River scheme. If customers are aware of potentially long or frequent water supply interruptions, then they may be able to manage their own water supply differently, for example by maintaining a buffer in private tanks. For this reason, no standard is recommended for the operating licence. State Water should consult with customers of the Fish River Water Supply Scheme to determine an appropriate target for the number and duration of water supply interruptions. The Fish River Water Supply Scheme does however have an existing standard for the response time for water supply interruptions, which is discussed below.

Standard: The response time for unplanned supply interruptions to be within 24 hours. The response time is defined as the time between notification of the interruption until the time that State Water staff arrives on site to rectify the problem. The response times for major consumers are shorter than this and can be negotiated by these major consumers directly with State Water. The standard recommended is 24 hours rather than the "one working day" specified in the strategic business plan, because it is considered that water supply interruptions should not be required to wait until Monday morning if they occur on a Friday night. This would mean that a consumer could be without water for up to three days. Data available from the Australian Water Association indicates that the average duration of unplanned interruptions by almost all non-major water utilities is less than four hours. This indicates that a 24-hour response time, which does not include the time required to fix the problem, should be easily achievable. This standard could be further negotiated between State Water and minor consumers and should be reviewed in IPART's operational audits by examining any customer complaints about response times.

Reliability of supply – The reliability of supply is a measure of the proportion of the time that water restrictions are likely to occur. The Fish River Scheme has a drought management plan with four stages of restriction, which endeavours to share the water supply reductions between each of its major consumers. It is recommended that the level of service objectives for reliability of supply should be expressed in terms a minimum storage that should not be breached under the worst drought on record, along with the annual maximum frequency of low level and severe restrictions, and the maximum duration of restrictions. These can only be reformulated by agreement with minor consumers and hence in the interim the existing level of service criteria should be adopted.

Standard – Restrictions should not occur for more often than 5% of the time and not more frequently than 1 year in 10 on average. The maximum restriction level should be 20% of unrestricted demand supplied during a repeat of the worst drought on record. The frequency and duration of restrictions specified should be as agreed by State Water's consumers and different levels of service are accepted by different communities in accordance with the cost of avoiding restrictions. The Fish River Water Supply scheme have strongly recommended against adopting this standard, because it will reduce the flexibility of the operators to manage an individual drought

event. This standard is not designed to restrict State Water's ability to manage a drought, rather it is designed to ensure that State Water manages consumer demand and undertakes supply augmentations in order to maintain a minimum reliability of supply in the long-term. This will be particularly important as it makes decisions on new connections to the scheme. If State Water strongly objects to the setting of performance standards for reliability of supply, then IPART should specify in the operating licence that State Water is required to consult with its Customer Advisory Committee on reliability of supply impacts arising from any new connections and is required to re-assess its reliability of supply on a five yearly basis. This timeframe for review of reliability of supply is consistent with the reviews typically undertaken by non-metropolitan urban water supply utilities.

Research, development and training – In relation to research, development and training, as a water supply authority, State Water has an obligation under the *Water Management Act 2000* to "conduct research, collect information and develop technology in relation to water management." This provides greater impetus for IPART to adopt performance standards and indicators in this area for Fish River than it does for State Water's other areas of business. Even if IPART does not include performance indicators in relation to research, development and training for State Water as a whole, the following indicators are still recommended for adoption for the Fish River scheme:

- Training costs per employee
- Training costs as a proportion of total labour costs
- Research and development expenditure
- Degree of participation in Statewide and national forums (no. and type)

No standards are assigned to these indicators for the Initial Operating Licence. It is acknowledged that specifying indicators that report on expenditure do not indicate the quality or relevance of training, however apart from the indicator on participation in forums, there are no other appropriate indicators available for this purpose.

An alternative course of action could be for IPART to direct State Water to outline a research, development and training program, however this would require technical expertise to reasonably audit such a program. By participating in Statewide and national forums, State Water will keep abreast of latest technologies and will be encouraged to invest in appropriate new technology through self-regulation against similar competing businesses.

Figure 7-2 – Summary of recommended performance standards and indicators for the Fish River Water Supply Scheme

Area of Operation	Reporting requirement	Description of standard or indicator
Water delivery	Performance standards	▪ Percentage of time that end of system minimum flow targets are met (ie downstream of Oberon Dam and Duckmaloi Weir) ▪ A water supply efficiency of 90% should be maintained, where water supply efficiency is the volume of water supplied to consumers divided by the volume of water diverted from rivers ▪ Restrictions should not occur more often than 5% of the time and not more frequently than 1 year in 10. The maximum restriction level should be 20% of unrestricted demand supplied during a repeat of the worst drought on record.
Water quality	Performance standards	▪ 100% compliance with Australian Drinking Water Guidelines where potable water is being supplied
Flood Management	N/a	None recommended
Water accounting and billing	Performance standards	▪ At least 90% of water management works for the extraction of surface waters to be metered in accordance with metering standards
Policing	Performance indicators	▪ Volume of water taken in excess of access licence conditions (ML or GL)
Customer service	Performance standards	▪ At least 75% of respondents to customer satisfaction surveys to be satisfied with State Water's services
	Performance indicators	▪ Number of customer complaints to State Water ▪ Number of complaints for arbitration
	General reporting requirements	▪ Number of customer enquiries to State Water

Area of Operation	Reporting requirement	Description of standard or indicator
Asset management	Performance standards	▪ The response time for unplanned supply interruptions to be within 24 hours
	Performance indicators	▪ The number of planned water supply interruptions ▪ The number of unplanned water supply interruptions ▪ The average duration of planned water supply interruptions ▪ The average duration of unplanned water supply interruptions
State Water personnel	N/a	None recommended
Business development	Performance indicators	▪ Training costs per employee ▪ Training costs as a proportion of total labour costs ▪ Research and development expenditure ▪ Degree of participation in Statewide and national forums (no. and type)
Environment and Recreation		▪ Number of algal blooms by alert level.

7.9 Conclusions

It is recommended that the standards and indicators recommended for State Water's business as a whole should be reported on separately for the Fish River scheme as a whole where relevant to State Water's role as a water management/supply authority for the scheme. These are as follows:

- Percentage of time that end of system minimum flow targets are met (ie downstream of Oberon Dam and Duckmaloi Weir)
- At least 75% of respondents to customer satisfaction surveys to be satisfied with State Water's services
- At least 90% of water management works for the extraction of surface waters to be metered in accordance with metering standards
- Volume of water taken in excess of access licence conditions (ML or GL)
- Number of customer complaints to State Water
- Number of complaints for arbitration
- Number of algal blooms by alert level

Optional indicators relating to bank slumping should be adopted for the Fish River Scheme if IPART adopts them for State Water's business as a whole.

In addition to these performance standards and indicators, it is recommended that State Water should adopt the following performance standards and indicators specific to the Fish River Water Supply Scheme:

- 100% compliance with Australian Drinking Water Guidelines where potable water is being supplied.
- A water supply efficiency of 90% should be maintained.
- The response time for unplanned supply interruptions to be within 24 hours.
- The number of planned water supply interruptions;
- The number of unplanned water supply interruptions;
- The average duration of planned water supply interruptions;
- The average duration of unplanned water supply interruptions; and
- Restrictions should not occur for more often than 5% of the time and not more frequently than 1 year in 10. The maximum restriction level should be 20% of unrestricted demand supplied during a repeat of the worst drought on record.

No general reporting requirements are considered necessary to report along with these indicators, provided that State Water continues the current contribution of the Fish River scheme to the

Australian Water Association's annual benchmarking report of non major urban water businesses, and that it continues to provide quarterly and annual reports to its Customer Advisory Committee.

In relation to business development, as a water supply authority, State Water has an obligation to "conduct research, collect information and develop technology in relation to water management," which can be reflected in the adoption of the following four recommended indicators for the Fish River scheme:

- Training costs per employee
- Training costs as a proportion of total labour costs
- Research and development expenditure
- Degree of participation in Statewide and national forums (no. and type)

8. Implications of Adopting the Proposed Standards and Indicators

8.1 Introduction

The majority of performance standards and indicators recommended in Sections 6 and 7 are either currently reported on by State Water or the data is available for State Water to report on them. For some of these indicators and standards there will be some additional data collection, processing and reporting costs for State Water. This section of the report estimates the magnitude of these additional costs and also summarises those instances where State Water will be reliant on receiving information from other data providers to report on its standards and indicators. These additional costs do not include the costs of reporting to IPART for its operational audits, which would occur regardless of the nature of the performance indicators and standards specified.

8.2 Codifying of supplementary water announcements

It is recommended that a manual should be developed to codify the announcement of supplementary water events. An informal process is already being undertaken by State Water to announce supplementary water events, but with some flexibility in the triggers selected. The lack of documentation for this process, including appropriate forecasting procedures, affects State Water's ability to announce quickly and reliably the supplementary water events. Streamflow triggers could be set for indicator gauges so that as soon as streamflow data is telemetered to State Water it can quickly announce a supplementary water event.

An indicative cost to undertake such as study would depend upon the extent of information and confidence in State Water's existing processes, but is expected to be in the order of $30,000 to $100,000. This would include around $5,000 for data collection, with the remaining budget examining relationships between streamflow gauges and potentially utilising DIPNR's IQQM models. This project would be investigative in nature, hence the wide range of the estimated budget.

8.3 Classifying customer complaints

State Water does not currently have a system in place to classify its complaints and to separate them from enquiries according to an agreed industry definition. The development of a system to classify complaints into particular areas of operation would provide greater guidance to State Water on the areas of operation that it needs to improve on, as well as the areas of operation in which it that it is performing well.

An indicative cost to develop a conceptual model for classifying customer complaints could be in the order of $10,000 to $20,000. The subsequent implementation of a reporting system to record the complaints by area of business would depend on the flexibility of State Water's current records

system. This cost is difficult to estimate, but could amount to around $20,000 if reprogramming of an existing computer system is required. Additional training for customer service staff to operate the system could cost in the order of $5,000. The total cost to State Water for this item could be in the order of $50,000. There are not considered to be any additional ongoing costs associated with maintaining such a system.

8.4 Determining natural rates of hydrograph fall

Maximum rates of hydrograph fall are not currently specified in all Water Sharing Plans. A study should be undertaken to determine the range of natural rates of fall below State Water's reservoirs for the purposes of determining maximum rates of change for reservoir releases. This study is an environmental management responsibility and as such should fall in the domain of DIPNR. The study would involve examining natural hydrographs upstream of dams, prior to dam construction or from reference streams and undertaking a statistical analysis to determine the rate of fall that occurred naturally. These rates of fall should be specified separately for quickflow and baseflow components of streamflow, which may be simplistically be denoted as occurring above and below a certain flow value, because bank slump is only likely to be affected by rates of fall during high flow conditions. These natural rates of fall should be used to specify release rules for inclusion in Water Sharing Plans.

An indicative cost to complete this analysis, assuming no field verification is required by geomorphologists, would be in the order of $40,000. Field verification could potentially double that cost. It is assumed that this would be a cost to DIPNR and not to State Water.

8.5 Training costs

Training costs were in the optional list of indicators for IPART to consider. If training costs are to be calculated for a performance indicator, State Water would need to establish a system for separately accounting for time spent training staff. An indicative cost for establishing such a system would be $20,000, which would involve $10,000 to develop the system and $10,000 to notify staff of the protocols for accounting for training time.

8.6 Additional staff

The higher standard recommended for the operation of the Fish River Water Supply Scheme in relation to response times for unplanned interruptions will require staff to respond within 24 hours of the interruption being reported. This may require additional staff to be on call during weekends if this is not currently the case, with work conducted on weekends also attracting penalty rates. It is not possible to put an exact cost on this service, because it will depend on the current weekend staffing arrangements for the Fish River scheme and the frequency with which staff will be required on weekends. A nominal cost of $10,000 has been assigned.

8.7 Memoranda of understanding to support information exchange

A small number of indicators require State Water to obtain information from its customers or other agencies. State Water should incorporate requests for data to support these indicators in memoranda of understanding with these stakeholders.

Complaints to independent arbitrator – State Water will be required to request data from the Water and Energy Ombudsman and any other relevant complaints resolution body in order to report on the number of complaints to an independent arbitrator about State Water. It is assumed that this will not necessarily require additional funding if State Water is a party to the arbitration process.

8.8 Conclusions

The majority of the information required to support the recommended list of indicators is already being collected by State Water and will not involve additional resources or funding. Indicative up-front costs to State Water for potential work arising from recommendations in this report total in the order of $90,000 to $160,000, as shown in Table 8-1 and Table 8-2, with no significant additional ongoing costs. Note that these tables also include indicative costs for performance standards and indicators discussed in earlier sections of the report but not recommended for adoption, so that the implications of adopting these indicators are known if IPART decides to include them in the operating licence.

Table 8-1 Preliminary estimates of additional costs for State Water's performance standards and indicators

Area of operation	Performance standards, indicators and general reporting requirements	Action required	Indicative up-front cost ($)
Water delivery	Timing of notice of non-complying orders	None	$0
	% of complying orders delivered with required notice	None	$0
	Timing of supplementary water announcements	Codifying of supplementary water announcements	$30,000-$100,000
	% of time that daily minimum flow targets are met	None	$0
	Volume of operational surplus	None	$0
	Available water determination	None	$0
	Number of water orders	None	$0
	Volume of water ordered	None	$0
	Number of dams and weirs	None	$0
	Water balance	None	$0
Flood management	Compliance with flood operations manual	None	$0

Area of operation	Performance standards, indicators and general reporting requirements	Action required	Indicative up-front cost ($)
Water accounting and billing	% of water management works that are metered	None	$0
	Processing time for intra-valley temporary transfers	None	$0
Policing	Volume of water taken in excess of licence conditions	None	$0
	Value of penalties imposed by State Water for taking of water in excess of licence conditions	None	$0
	Volume of penalties imposed by State Water for taking of water in excess of licence conditions	None	$0
	Number of access licences suspended	None	$0
	Number of approvals suspended	None	$0
Customer service	Customer satisfaction survey achievement	None	$0
	Number of customer complaints to State Water	Classifying customers complaints	$50,000
	Number of complaints for arbitration	None	$0
	Number of customer enquiries to State Water	None	$0
State Water personnel	Lost time injury frequency rate	None	$0
	Average lost time rate	None	$0
	Training costs per employee	Separate accounting for training costs	$20,000
	Training costs as a % of total labour costs	Separate accounting for training costs	Included in $20,000 above
Business development	Research and development expenditure	None	$0
	Participation in Statewide and National Forums	None	$0
Environment and recreation	Number of algal blooms by alert level	None	$0
	Deviation from natural rates of hydrograph fall	Study to determine natural rates of hydrograph fall	$40,000-$80,000 to DIPNR
	Difference between actual and optimum temperature conditions	Study to determine optimum temperature conditions	$100,000 to DIPNR
	Number of priority structures addressed with regard to fish passage	None	$0

Area of operation	Performance standards, indicators and general reporting requirements	Action required	Indicative up-front cost ($)
	Km of free fish passage gained as a result of fishway construction works	None	$0
	Km of free fish passage gained as a result of the removal of obsolete in-stream barriers	None	$0
	Km of free fish passage gained as a result of changes to water delivery operations	None	$0

- **Table 8-2 Preliminary estimates of additional costs for Fish River performance standards and indicators**

Area of operation	Performance standards, indicators and general reporting requirements	Action required	Indicative up-front cost ($)
Water delivery	% of time that minimum flow targets are met	None	$0
	Water supply efficiency	None	$0
	Frequency of restrictions	None	$0
Water quality	Compliance with Australian Drinking Water Guidelines	None	$0
Water accounting and billing	% of water management works that are metered	None	$0
Policing	Volume of water taken in excess of access licence conditions	None	$0
Customer service	Number of customer complaints to State Water	None (included in indicator for whole of State Water's business)	$0
	Number of complaints for arbitration	None	$0
	Number of customer enquiries	None	$0
	Customer satisfaction survey achievement	None	$0
Asset management	Response time for unplanned interruptions	Fish River staff required on-call on weekends	$10,000
	Number of planned water supply interruptions	None	$0
	Number of unplanned water supply interruptions	None	$0

Area of operation	Performance standards, indicators and general reporting requirements	Action required	Indicative up-front cost ($)
	Average duration of planned water supply interruptions	None	$0
	Average duration of unplanned water supply interruptions	None	$0
State Water personnel	Lost time injury frequency rate	None	$0
	Average lost time rate	None	$0
	Training costs per employee	Separate accounting for training costs	$0 (Included in equivalent cost for State Water's business as a whole)
	Training costs as a % of total labour costs	Separate accounting for training costs	$0 (see above)
Business development	Research and development expenditure	None	$0
	Participation in Statewide and National Forums	None	$0
Environment and recreation	Number of algal blooms by alert level	None	$0
	Deviation from natural rates of hydrograph fall	Study to determine natural rates of hydrograph fall	$0 (included in costs for State Water's business as a whole)
	Difference between actual and optimum temperature conditions	Study to determine optimum temperature conditions	$0 (included in costs for State Water's business as a whole)
	Number of priority structures addressed with regard to fish passage	None	$0
	Km of free fish passage gained as a result of fishway construction works	None	$0
	Km of free fish passage gained as a result of the removal of obsolete in-stream barriers	None	$0
	Km of free fish passage gained as a result of changes to water delivery operations	None	$0

9. Conclusions

This study provided advice on performance standards and indicators to be included in State Water's Initial Operating Licence. As a result of undertaking this study, the following conclusions are drawn.

Regulatory environment:

- State Water has well defined core functions and powers under the *State Water Corporation Act 2004*, as well as functions and powers conferred on State Water in the operating licence, which performance standards and indicators should primarily be targeted towards.
- State Water's responsibilities in unregulated and groundwater supply systems will be regulated by contracts with the Department of Infrastructure, Planning and Natural Resources (DIPNR).
- The principal alternative regulatory mechanism on State Water's operations will be DIPNR's Water Supply Works Approvals and accompanying Implementation Manuals. Specifying conditions on State Water's licence in the area of environmental management and flood management will most likely result in regulatory overlap, but may be warranted for the Initial Operating Licence in areas of regulatory uncertainty. The works approvals and implementation manuals are still being developed, but are scheduled to be ready for adoption prior to the commencement of the Initial Operating Licence.
- State Water has obligations to the Department of Primary Industries (DPI) under the *Fisheries Management Act 1994*, which is supported by a memorandum of understanding with DPI. Specifying conditions on State Water's operating licence in this area will most likely result in overlap with standards and indicators in the memorandum of understanding.
- State Water has obligations under the *Protection of the Environment Operations Act 1997* to not pollute, where polluting can include changing water quality. The Department of Environment and Conservation (DEC) regulates this Act.
- The regulatory mechanism for dam safety is via the Dams Safety Committee. Specifying conditions on State Water's operating licence in this area of operation will most likely result in regulatory overlap.

Stakeholder expectations:

- State Water has high expectations of its own performance. It believes that performance standards and indicators should be relevant to operations for which State Water has sole responsibility, will drive efficiency improvement, are meaningful and will not be costly to measure. They should encourage continuous improvement of performance by allowing benefits to accrue to State Water.

- Environment groups would like to see the operating licence contain performance indicators and standards on areas of State Water's operation that affect the environment, including general reporting requirements where environmental performance is not uniquely attributable to State Water.
- Irrigator groups are keen to see indicators that ensure adequate notification by State Water for changes to delivery conditions. Monitoring and reporting against performance standards and indicators should not result in increases to water delivery charges.
- The Department of Infrastructure, Planning and Natural Resources regards the setting of performance standards and indicators on the environment as its regulatory responsibility under the *Water Management Act 2000*.
- The Department of Primary Industries considers the current memorandum of understanding with State Water to be working effectively to deliver outcomes on fisheries management.
- The Department of Environment and Conservation (DEC) does not intend to separately regulate State Water, but will maintain a watching brief and consider appropriate actions if undesirable environmental impacts occur from State Water's operations.

Existing performance standards and indicators

- State Water does not currently report on all of its performance indicators in its Annual Report.
- State Water agrees that some of its existing performance indicators do not address a specific need and are difficult to interpret, but in the area of water delivery the majority of its indicators are considered sound.
- State Water is in the process of consulting with its Customer Service Committees about the performance indicators and standards in its Customer Service Charter. The draft charter is significantly different to the current charter.
- Existing environmental indicators published in Water Sharing Plans are suited to measuring environmental outcomes but do not specifically isolate State Water's contributions to those outcomes and hence are not considered appropriate to adopt.
- Seven comparable businesses were identified that report on performance standards and indicators on an annual basis. Not all indicators from these businesses are relevant because of the different regulatory framework in which they exist and the different functions of these other water businesses.
- Four industry benchmarking reports were identified. Of these, the benchmarking of rural water industries in Victoria is of most relevance to State Water's core functions, whilst the performance monitoring report of Australian non-major urban water utilities is highly relevant to the Fish River Water Supply Scheme.

- Each of the indicators readily available from the above sources will help to inform the selection of performance indicators and standards for State Water's business.

Criteria for selecting performance standards and indicators:

This section of the report established the criteria for selecting areas of operation that should be addressed by performance standards and indicators in the operating licence. The key considerations were whether:

- the area of operation includes a core function or power of State Water, as defined in legislation or by regulation in the operating licence;
- an alternative regulatory mechanism is already available or will be available upon implementation of the Initial Operating Licence;
- there is a stakeholder need to regulate a particular area of operation or a reasonable expectation that it should be regulated;
- poor performance in that area of operation is best prevented by a course of action decided by State Water or whether IPART should specify the action directly; and
- the outcomes in that area of operation are controllable by State Water.

If outcomes are not controllable by State Water, but State Water's actions contribute to those outcomes, then a general reporting requirement is specified which may lead to policy development and subsequent regulation of performance.

The decision about assigning a standard to an indicator was based on whether:

- there is a mandatory requirement to meet a certain performance standard (eg under relevant federal or state legislation or regulation);
- there is a commonly accepted industry performance standard;
- there is a standard that has already been agreed between State Water and its customers; and/or
- there is an unacceptable consequence of not meeting the given standard and data is available to support the adoption of that standard.

The application of the above criteria led to the development of the indicators and standards recommended in Section 10 of this report.

Implications of adopting recommended standards and indicators:

The majority of the information required to support the recommended list of indicators is already being collected by State Water and will not involve additional resourcing or funding. Indicative up front costs for potential work required totals in the order of $90,000 to $160,000, with no significant additional ongoing costs. If only the recommended indicators are adopted, this cost could be as low as $30,000 to $100,000. Additional funding for weekend work and having on-call staff may be required to meet the desired target for unplanned service interruptions for the Fish River Water Supply Scheme. Funding of $40,000 to $80,000 should also be provided to DIPNR to specify rules for maximum changes in reservoir release rates.

10. Recommendations

The application of the above criteria led to the development of the performance indicators and standards recommended for inclusion in State Water's Initial Operating Licence, listed in Table 1 of the executive summary of this report. General reporting requirements are also specified to report on areas of operation affected but not solely controllable by State Water's activities, or to support the interpretation of performance indicators and standards with other water businesses and over time. General reporting requirements are not measures of State Water's performance and hence form a separate category to performance indicators and standards.

In addition to the performance standards and indicators listed in Table 1 of the executive summary of this report, a number of other recommendations are made:

- Performance indicators for fish passage, cold water pollution and other riparian and aquatic habitat activities are expected to be included in State Water's new memorandum of understanding with DPI, to apply from 1 January 2005, and should not be duplicated in the operating licence. IPART should direct State Water to publicly report on these performance indicators.
- State Water should be required to establish protocols for notifying other departments of incidents of environmental harm as part of its memoranda of understanding with DIPNR, DPI and DEC.
- State Water should be required, as part of its memorandum of understanding with DIPNR, to specify targets for when resource assessments should be completed.
- The following standards or indicators for bank slumping and cold water pollution should only be adopted by IPART if it perceives that there is a particular stakeholder need for regulatory duplication with DIPNR:
  - Changes in the rate of reservoir release to not exceed natural rates of hydrograph fall.
  - Deviation from reference temperature conditions downstream of regulated storages.
- Indicators in the following areas should only be adopted by IPART if it perceives that there is a long-term benefit in reporting on these indicators to prevent future poor performance:
  - Lost time injury frequency rate;
  - Average lost time rate;
  - Training costs per employee;
  - Training costs as a proportion of total labour costs;
  - Research and development expenditure; and
  - Degree of participation in Statewide and national forums (no. and type).

Performance standards and indicators for the **Fish River Water Supply Scheme** are listed in Table 2 of the executive summary of this report. It is recommended that the standards and indicators recommended for State Water's business as a whole should be reported on separately for the Fish River Water Supply Scheme where relevant to State Water's role as a water management/supply authority for the scheme.

Optional indicators relating to bank slumping and cold water pollution should be adopted for the Fish River Scheme if IPART adopts them for State Water's business as a whole.

No general reporting requirements are considered necessary for the Fish River Water Supply Scheme, provided that State Water continues the current contribution of the Fish River scheme to the Australian Water Association's annual benchmarking report of non major urban water businesses, and that it continues to provide quarterly and annual reports to its Customer Advisory Committee.

In relation to business development, as a water supply authority, State Water has an obligation to "conduct research, collect information and develop technology in relation to water management," which can be reflected in the adoption of the recommended business development indicators for the Fish River scheme.

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Appendix A Example Performance Indicators in Water Sharing Plans

- **Table 11-1 – DIPNR Performance Indicators in Water Sharing Plans for Regulated Rivers (DIPNR, 2004)**

Performance indicators for a Regulated River Water Sharing Plan			
Performance indicator	**Related objective**	**As measured by:**	**Commentary**
(a) Change in ecological condition of the water source and dependent ecosystems.	clause 10 (a) clause 10 (c)	• Monitoring of ecological response to changed flow regimes, by IMEF (each water source will have specific hypotheses from the set developed under IMEF). • Other relevant studies as may be undertaken in specific water sources.	• IMEF tests a number of hypotheses to indicate how elements of river ecology respond to different aspects of the flow regime (including EFRs, irrigation flows, and floods and wetland connectivity).
(b) Change in low flow regime	clause 10 (a) clause 10 (c)	• Number of days per water year where flow is below natural 95th and 80th percentiles. • Average and maximum number of days per water year of continuous periods of flow which is below natural 95th and 80th percentiles. • Measurement at end of system and specified key sampling sites.	• Government's River Flow Objectives (RFOs) 1 and 6. • Analysis would need to incorporate reference to seasonal indicators. • Long term modelling will reflect the influence of climate on flows. • Appropriate data relating to flow distribution, such as summer/winter cropping balance, agronomical practices, on farm storage development, management and operation of environmental releases etc. • Baseline audit should be the modelled WSP scenario (rather than natural flows).
(c) Change in moderate to high flow regime	clause 10 (a) clause 10 (c)	• Number of days per water year where flow is above natural 30th 15th and 5th percentiles.	• RFO 3

Performance indicators for a Regulated River Water Sharing Plan			
Performance indicator	**Related objective**	**As measured by:**	**Commentary**
		• Average and maximum number of days per water year of continuous periods of flow which is above natural 30th, 15th and 5th percentiles. • Measurement at end of system and other key sampling sites in the water source.	
(d) Change in water quality	clause 10 (d)	• Assessment and statistical analysis of key water quality parameters, and relationship to flow.	• The Plan rules will contribute to a long term change in water quality by affecting flow regimes and flow management to address issues such as algal management. • There are many non-water sharing plan related factors that affect water quality (eg land-based activities and thermal pollution).
(e) Extent to which basic landholder rights requirements have been met	clause 10 (f)	• Basic rights allowances made according to plan provisions/implementation program requirements. • Flows adequate to meet basic rights requirements (taking into consideration allowances for delivery).	• Basic rights usage figures in water sharing plans are estimated volumes (not actual use). • Basic rights represents a very small proportion of water extraction in regulated systems.
(f) Extent to which local water utility and major utility requirements (where major utilities are involved in urban water provision) have been met.	clause 10 (b)	• Percentage of years that reserves were adequate to satisfy urban water requirements.	

Performance indicators for a Regulated River Water Sharing Plan			
Performance indicator	**Related objective**	**As measured by:**	**Commentary**
(g) Change in economic benefits derived from water extraction and use	clause 10 (e)	• Change in regional gross margins versus annual total extractions based on year 1 benchmarks (as represented in IQQM). • Movement of water to higher value crops as measured by increases in area and/or water extracted by these enterprises versus lower value uses. • Change in unit price of water transferred. • Annual total volume of access licence transferred (ML) in each water year.	• There are many factors affecting economic status of a region, for example commodity prices, other sources of water (eg groundwater). • The PI is intended to isolate as much as possible the effects of water availability and price on the gross margin returns at a regional level. • Assessment undertaken as part of plan performance monitoring will make assumptions to attempt to identify the impact of the plan provisions.
(h) Extent of recognition of spiritual, social and customary values of water to Aboriginal people.	clause 10 (h)	• Assessment of amount and type of information collected to identify the range of values of water to Aboriginal people.	• The collection of information on the values associated with water is considered the first step in addressing the objects of the Act. It would be expected that at the end of 5 years there should be relevant information collected for each water source, as a minimum requirement.
(i) Extent to which native title rights have been met.	clause 11 (h)	• Native title rights allowances made according to plan provisions/implementation program requirements.	

- **Table 11-2 – DIPNR Performance Indicators used in IMEF process (DLWC, undated)**

HYPOTHESIS	INDICATORS	ECOLOGICAL ASPECTS
Algae	Algal counts Temperature Nutrients Turbidity	Nuisance algal blooms seem to occur more frequently during extended periods of low flows. Increased flows at certain times of the year may flush or prevent algal blooms.
Low flow habitat	Oxygen Temperature Salinity	The unnaturally high frequency of low flow conditions is likely to have stressed the aquatic biota by reducing the available habitat area. In addition, low flows promote the development of physical and chemical stratification, which can lead to deoxygenation of bottom water and consequent restriction of fish and most water bugs to the oxygenated upper layer of the river.
Biofilms and silt	Biofilm (chlorophyll, biomass and composition) Metabolism Turbidity Current speed Waterbugs Fish	Low and relatively stable flow conditions are likely to have led to the build-up of silt and sand on stony beds in riffle areas, with associated colonisation by mature biofilms dominated by less edible algae. An increase in flow variability is expected to achieve scouring of silt build-up and resetting of biofilms to algae favoured by some types of water bugs.
Terrestrial organic matter	Wetted area Zooplankton Water bugs Microbial activity Dissolved and particulate organic carbon	An increase in flow is expected to wet leaf litter on banks and in billabongs. Wetted leaf litter may provide a food source for animals such as yabbies and increase levels of dissolved organic matter (DOM) as a result of leaching. Microbial activity in the water column, enhanced by elevated DOM, may increase zooplankton populations, which will provide more food for small fish (including larvae and juveniles).
Wetlands	Wetted area Water bugs Plants Birds Frogs	Freshes and small floods will provide over-bank flows into dry basins or parts of larger wetlands that would otherwise be wetted only by less frequent large floods. Replenishment of these areas will create wetland habitat for a wide range of plant and animal species.
Fish	Fish (species, size and condition) Habitat description	Commercial catch statistics indicate that populations of at least the larger native freshwater fish species have declined dramatically over much of New South Wales in the last 150 years. These declines are mainly believed to be due to interference with migration through the construction of dams, weirs and levees, and interference with environmental conditions for spawning (temperature depression and reduced flooding frequencies).
Estuarine nutrient supply	Carbon Nutrients	There is evidence that the annual production of fish and prawns in the Hunter River estuary depends on the volume of river inflow in each year. This is possibly because the river inflow brings organic carbon or nutrients that are important in supporting the estuarine food web. Pumping water from the river, especially in the early stages of flow events when most carbon and nutrients are typically transported, may be reducing the carbon and nutrient supply to the estuary.

Appendix B State Water Customer Service Charter (Draft and Current)

STATE WATER CUSTOMER SERVICE CHARTER
DRAFT FOR COMMENT

Note: *A committee of the Lachlan, Macquarie and Murrumbidgee CSCs developed this charter. It has been circulated to the eight CSCs for comment and will be adopted by the Board on 1 January 05 in the final form. The Initial Operating Licence will be active from 1 July 2005 and so this Charter will be reviewed in the second half of 2005 as a reality check, to allow further CSC input and to make sure it is aligned the Operating Licence.*

This charter outlines your rights and obligations as a customer on regulated rivers and sets out the standards of customer service that you can expect. It is our commitment to our customers under the provisions of the Annual Operating Plan.

CUSTOMER SERVICE

State Water responsibility	**Customer responsibility**
State Water will be readily contactable by Customers. We will be available during standard working hours 8:30am to 4:30pm at our offices or on mobile phone. We will respond within one working day to any telephone messages, faxes or voicemails, and within 3 working days to any emails. On weekend and public holidays, the duty operations officer or Senior Operations Engineer will respond to any problems or urgent issues with water delivery which are conveyed to them.	Customers will leave clear contact details, availability and clearly state the nature of the problem or issue.
We will provide electronic systems to handle all standard water ordering, billing, trading and account management tasks on a continuous basis. State Water will provide customer account queries hotline (1800 353 091).	Customers will endeavour to use electronic systems for standard tasks or transactions.
State Water will provide quality Customer Service, promptly, efficiently and courteously at all times.	The Customers will treat State Water staff with courtesy and provide relevant information required for us to provide customer service.
State Water will develop and publish compliance, debt management, water trading and water restriction processes for Customer Service (transparent decision making).	Customers will familiarise themselves with the published processes

State Water will treat customer information with privacy and confidentiality in accordance with Freedom of Information legislation.	Customers are required to provide water extraction, property water management infrastructure and cropping details to State Water by electronic means where possible.
State Water will communicate with customers effectively and equitably, publishing relevant information on the Internet.	Customers will communicate with State Water effectively, providing all relevant information.
State Water will provide complaints handling process for customers. The point of first contact in State Water will assist in resolution of issues.	Customers will avoid multiple points of contact
State Water will provide a dispute resolution process for customers and suppliers	Customers will familiarise themselves with and use the published processes
State Water will undertake a customer satisfaction survey every 3 years.	Customers to respond to survey when asked.
State Water will develop and publish Code of Practice and Procedures on Debt Management. The Procedures will include 'How to pay' and 'Where to pay' information. State Water will commence bulk water billing within eight weeks of the end of the period and will provide at least 3 options for payment	Customers must pay accounts promptly, using the options provided.
State Water will advise landholder (unless pursuing compliance action) prior to entering property and adopt Best Management Practice.	Landholder /Customer to advise SW of any special entry requirements and allow free access.
State Water will comply with requirements under various Acts including SOCA, SWCA, WMA, WA, OH&S, DSA.	Customers will comply with requirements under various Acts including SWCA, WMA, WA, OH&S.

WATER DELIVERY

State Water will increase its operational efficiency and maximise the delivery of available water to customers consistent with Water Sharing Plans.	Customers must not waste water particularly when there are restrictions.
State Water will credit AWD water into customer accounts within 7 days of resource being available in storage and	Customers will maintain a positive balance in their water accounts at all times.

provide this information to all customers by media release and internet within the same timeframe.	
State Water to report extraction performance against water ordering to customers.	Customers must place orders accurately, and amend orders to +/- 5% of extraction within one day, and report meter reading within 2 days of extraction.
State Water to reschedule orders in consultation with customer within one day of known shortage.	Customers must advise the relevant operations officer and/or CSO of any known shortages or problems with supply
State Water will investigate climatic modelling to improve predictive capability of daily demand to supplement water orders.	Customers will provide relevant information to enable accurate forecasts of demand
Supplementary water announcement to be made within four hours of event occurring as assessed by State Water. In South Area announcement within four hours of DIPNR approval and in Coastal Area announcement within four hours on week days only.	Customers must only pump or divert supplementary water in accordance with announced dates for access
State Water to develop checklist for determining supplementary events.	Customers must familiarise themselves with the checklist
Meter requirements – State Water to finalise Metering Standards by 31 January 2005, to comply with National Standards within two years, and individual CSCs to implement Metering Standards with specific requirements in valleys.	Customers must maintain compliance with the Metering Standards and cooperate with State Water in assessments if the meter is non-compliant
Complying intra valley water trades will be processed within four working days.	Customers will provide accurate and complete information and the full fees required to process the transfer
Any water going through a licensed work meter will be charged regardless of the nature/purpose of use, unless State Emergency Provisions are triggered.	Customers must advise State Water if State Emergency Provisions are triggered in response to directions by Rural Fire Service or in connection with declared emergency conditions under the State Emergency Services Act.
State Water will develop a compliance/penalties regime in	Customers will comply with the requirements

conjunction with CSCs.	of the regime

ASSET MANAGEMENT

State Water will manage asset maintenance and renewal to provide assets in a fit for purpose state.	CSCs to sign off on Levels of Service on all matters other than dam safety.
State Water will ensure continuing involvement of CSCs in TAMP process.	The CSCs will actively involve in the review of the TAMP.
State Water to provide asset management services at efficient cost as defined by inter valley and industry benchmarks.	
State Water to demonstrate compliance with best management standards.	
State Water to identify beneficiaries in cost sharing arrangements.	

BUSINESS DEVELOPMENT

State Water will comply with Operating Licence.	
State Water will run a cost efficient and effective business, benchmarked against similar industries, and will report transparently to CSCs.	
State Water will report on valley by valley basis including Profit and Loss, Balance Sheet and budget versus actual reporting.	
State Water to develop communication protocols between the Board and CSCs.	The CSCs will familiarise themselves with the protocols
State Water to look at opportunities to grow the business.	

OUR PEOPLE

State Water will ensure it is staffed to provide adequate service levels throughout the year, and provide a review that caters for the long-term needs of the business.	Customers consider it important that succession planning and a career path are integral to the management and success of SW.

State Water will ensure that its staff are adequately trained in safe and effective operations and customer service	Customers will provide safe access and sites

State water

State Water

Customer Service Charter

2002-2004

As adopted by State Water Management Team 6.2.03

Introduction

State Water was established on 1 September 1997, in response to the national water reform process and the national competition policy reforms of the Council of Australian Governments. State Water became fully operational on 1 July 1998, ensuring the separation of the roles of rural bulk water resource operator (State Water) from resource regulator (DLWC).

As a commercial business of the Department of Land and Water Conservation, State Water is committed to providing products and services to the satisfaction of its customers and other stakeholders. State Water seeks continuous improvement as a means of effectively meeting the expectations and needs of customers, stakeholders and staff.

State Water is committed to continuously improving through the delivery of its vision:

To be recognised as the leading water delivery business,
improving life with water.

State Water's mission is:

To continually improve:
our business to achieve commercial success;
our customer service to exceed expectations;
and to work with stakeholders to manage resources with care.

The six core values that guide State Water staff in the performance of their work are:

Accountability
Consultation
Reliability
Innovation
Integrity
Respect

Making significant improvements in customer levels of service requires the cooperation and support of State Water and its stakeholders. For this reason, this Charter is based on the concept of mutual obligation. This recognises that customers and other stakeholders have rights – as well as responsibilities.

Responsibilities of State Water customers include obtaining a licence where required by the Water Management Act, complying with consent conditions, ordering water in accordance with the correct procedures, paying water accounts on time, etc.

As its part of the mutual obligation, State Water must clearly communicate the information it requires and standards that must be met and will strive to meet the levels of service included in this Customer Service Charter. The Customer Service Charter nominates levels of service targets designed to provide a benchmark and to facilitate service delivery improvement.

The categories of this Charter relate to State Water's five Key Result Areas (KRAs) which are indicators of the success of the business:

KRA 1: Customer Service
KRA 2: Water Delivery
KRA 3: Asset Management
KRA 4: Business Development
KRA 5: Our People

Each element of undertaking in this Charter is categorised under a KRA, then by one or more of the three requirement areas:

Legal/Standards Requirements
- the action is required in response to legislation, statute, policy, standard, etc

Financial Requirements
- the action is required to meet accepted accounting practices
- non-compliance may have financial implications for State Water

Customer Service Requirements
- these undertakings are voluntary actions by State Water but are seen as integral to meeting the expectations and needs of customers, stakeholders and staff.

State Water's Customer Service Charter is a clear expression of the services State Water provides. The Charter enables customers to check their expectations against what is offered and provides a mechanism for giving feedback if those expectations are not met. It also enables the organisation to describe the realistic levels of service they can expect, relative to the resources available.

This first version of the Customer Service Charter is an attempt to define levels of service targets as a benchmark so customer service can be improved over time. The charter will be reviewed in consultation with the Customer Service Committees during the last quarter of 2003 and an amended version issued for 2004 – 2006.

The concept of penalties if State Water does not provide the target levels of service nominated in this Charter has been raised by several parties. This is not practicable without considerable expense for the development of comprehensive and expensive statewide data collection and reporting systems. Experience with other organisations using a voluntary reporting system has shown the process quickly become irrelevant and is not used by staff. Consequently, the introduction of penalties for non-compliance has not been implemented.

KRA 1: CUSTOMER SERVICE	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Correspondence & Communication – Customers and Stakeholders:			
- Acknowledge letter within seven days	✓		✓
- Substantial reply within 28 days			✓
- Ministerials: respond as requested (urgent, routine, to note)	✓		
- Audit office: follow Departmental guidelines	✓		
- Communiques to customers: issue quarterly or as requested (area or valley basis)			✓
- Water Allocation Statements: issue quarterly or as requested (system basis)			✓
- Media releases: issue as required with copies to all CSC members			✓
- Relevant customer information provided on Internet, consistent with accessibility standards			✓
- Customer Service Committees (CSCs):			
- Draft agendas distributed a month before meeting			✓
- Business papers distributed two weeks before meeting			✓
- Minutes (inc one page summary) distributed within two weeks of meeting			✓
- Nominating organisations kept informed of CSC issues			✓
- Customer issues brought to CSCs by members			✓
- CSC progress reported to Director-General DLWC, General Manager State Water and nominating organisations annually			✓

KRA 1: CUSTOMER SERVICE	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Phone Calls			
- Answered within seven rings or divert to voice mail			✓
- Messages responded to within two days of staff member returning to his/her desk			✓
- Voice mail: to be used where available when staff member is away from desk for any extended period of time			✓
Bill Payments			
- In accordance with accounting standards	✓	✓	
- Regulated and unregulated customers to be invoiced by the end of August each year			✓
- Groundwater customers to be invoiced by the end of September each year			✓
- Barwon region customer invoiced quarterly, within 15 days of the close of the billing period			✓
- Payment to be made within 30 days of the date of invoice		✓	
Office Hours			
- Working Weekdays (Monday to Friday) 9.00am - 4.30pm where more than one staff member works in a facility			✓
- Hours to be advertised outside office			✓
Contact Lists			
- staff lists updated monthly, or as required			✓
- CSC lists updated monthly, or as required			✓

KRA 2: WATER DELIVERY	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Water orders - customers will place orders as per licence conditions - contact the licence holder in relation to any non-complying orders within 24 hours of order being placed - Orders processed within 24 hours (North, Central and South Areas) - Orders processed next working day (Coastal Area)	✓		✓ ✓ ✓
Delivery of water - 95% delivered as specified in complying orders and 100% delivered within three days after the time specified in complying orders			✓
Operational Targets (as per Water Sharing Plan) - Flow targets met 95% of time - Operational surplus less than 10% of regulated flow (as corrected for seasonal "wetness")	✓ ✓		✓ ✓
Environmental Flows - As specified in valley water sharing plans	✓		
Off Allocation Announcements - Timing of announcements to be within 12 hours of the flow reaching the first section (Central, North & North Areas) - Timing of announcements to be within 12 hours of the flow reaching the first section when made on a working day (Hunter)			✓ ✓
Temporary Transfers - Process all correctly completed applications within 10 working days from receipt of correct and complete paperwork including payment. - Inter valley: process applications to stage of approval by DLWC Regional Director within 10 days (Coastal, North & South Areas)			✓ ✓
Flood / Airspace operations - Dam specific operations carried out in accordance with Flood Operation Manuals	✓		✓
Valley Water Operations Plans - As required by Water Management Act	✓		
Valley Operations Reports - To be provided quarterly, including temporary transfers, town water supply use, end of system flows, etc			✓

KRA 3: ASSET MANAGEMENT	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Average asset management costs - Average asset management cost per ML of average annual delivery* - Maintenance cost as a % of replication value			✓ ✓
Compliance - 95% of issues identified by audit addressed within 12 months	✓		
Surveillance (day to day surveillance activities) - 95% of required surveillance completed on time - Report any incidents within 12 hours of identification	✓ ✓		
Safety surveillance (service agreement) - Annual inspections: target 90% (dependent on weather conditions and availability of staff) - Five-yearly inspections: target 90% (dependent on weather conditions and availability of staff) - Incidents reported to Surveillance Unit within 12 hours of identification - Incidents managed in accordance with Dam Safety Emergency Plans	✓ ✓		✓ ✓
Service Levels - Meet agreed customer levels of service for water delivery 90% of time - Manage floods without compromising structural integrity - Asset management program conducted to achieve customer levels of service 90% of time			✓ ✓ ✓

* Total Asset Management Plan costs per valley per year incurred in supplying water to customers, community and the environment

KRA 4: BUSINESS DEVELOPMENT	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Financial reports - Annual statements prepared within three months of the end of each financial year - State Water valley expenditure reports provided to the CSC meeting following the end of October, January, April and August - Financial reports comply with accounting standards	✓		✓ ✓
Debtors - Debts collected as per State Water Debt Collection Policy - Suspension/cancellation of licences for non-payment of water accounts		✓	✓ ✓
IPART - IPART requirements met	✓		

KRA 5: OUR PEOPLE	LEGAL / STANDARDS REQUIREMENTS	FINANCIAL REQUIREMENTS	CUSTOMER SERVICE REQUIREMENTS
Training & Staff Development – Competencies / skill levels maintained – Staff turnover maintained at less than 10% per year			✓ ✓
OH&S - Each work site to comply with at least 95% of the OH&S Management System requirements, as measured by audit			✓
Staff Satisfaction - Staff survey carried out every two years, with continuing increase in morale index - Managers to give formal feedback to staff annually			✓ ✓

Accountability

The following State Water staff are responsible for meeting the service levels outlined in this Charter:

Customer Service: Customer Service Managers and Customer Service Committee Members (for CSC consultation), General Manager
Water Delivery: Operations Engineers, Customer Service Managers and customers (for water orders)
Asset Management: Senior Assets Engineers, Customer Service Managers, Manager Asset Services
Business Development: Commercial Accountant, Manager Business Planning and Development, Manager Commercial Services, General Manager
Our People: Business Planning and Development Manager, Customer Service Managers and General Manager

More information

For more information about State Water's Customer Service Charter, contact:

State Water Head Office, PO Box 717, Dubbo NSW 2830
Ph: (02) 6841 7521 Fax: (02) 6884 2603 Email: statewater@dlwc.nsw.gov.au

Feedback and Suggestions

State Water has established eight Customer Service Committees throughout NSW. These valley-based committees represent customers in providing advice to State Water on a range of issues, including customer service requirements, billing policies, debt management and negotiating water pricing strategies to IPART.

If you have any feedback about any aspect of State Water's operations or would like to make a suggestion, please contact your Customer Service Manager. He can put you in touch with the Customer Service Committee in your valley:

North Area: Jubrahil Khan, Customer Service Manager (02) 6752 9733
- Gywdir, Border Rivers, Namoi and Peel Valleys

South Area: Robert Shuttle, Acting Customer Service Manager (02) 6953 0763
- Murray, Lower Darling and Murrumbidgee Valleys

Central Area: Geoff Borneman, Customer Service Manager (02) 6841 7432
- Macquarie and Lachlan Valleys

Coastal Area: Greg Hillis, Customer Service Manager (02) 6542 4409
- all coastal unregulated valleys, all coastal groundwater areas and Toonumbar, Hunter and Brogo regulated valley sections

Appendix C Fish River Water Supply Business Plan Performance Standards

Levels of Service

The expectations of all the stakeholders, whether it is the community, government, or commercial customers, need to be clearly defined and gaps between current and target performance identified. The Levels of Service demonstrate that FRWS recognises and is positively responding to these needs.

- They serve to communicate the standards required from the water supply system.
- They define FRWS's deliverables, and
- They can be used as a basis for review and shaping FRWS's plans for the future.

It must also be understood that there can be no negotiation with customers on Levels of Service which are of lower standard than regulatory requirements.

In determining the Levels of Service, the standard of service desired, must be balanced with the cost of providing the service. The Levels of Service are designed to represent the best level of service possible for a cost that the consumers are willing to pay and that is sustainable in the long term.

The Levels of Service define the deliverables and are the driving force for the water supply schemes' management and development. Achieving the target Levels of Service is the Primary Objective.

The Levels of Service are the primary means of establishing FRWS's service and performance goals. These need to be regularly reviewed and updated as part of the process of continual improvement. Service targets reflect a balance between the desired service and what is practical and affordable in the current circumstances. These considerations take into account legislative requirements, industry standards and customer demands.

Future changes may occur with consumer demand and industry trends. Environmental protection legislation is a major influence. Increasing environmental standards may force FRWS to review its Levels of Service to meet higher standards of service. An increase in costs may result.

The current and target Levels of Service set out in the following tables have been set in consultation with the major consumers. All the detailed planning in this document is based on achieving these goals. It is intended that the business plan will be regularly reviewed and the Levels of Service will be reassessed where necessary.

The Levels of Service outlined in this plan represent the performance levels the Scheme intends to provide and aim for. They are not intended as a formal customer agreement, but rather a goal which FRWS intends to achieve through a process of continual improvement.

Water Quality

FRWS currently supplies water to all its major and minor consumers. Supplies to Lithgow City Council[2], Cullen Bullen and Rydal[3] are clarified at Duckmaloi Clarification Plant before supply via the Stage 1 pipeline. Oberon Council and all consumers on the Stage 2 and 3 pipelines receive raw water, from Oberon Dam.

FRWS is a bulk water supply authority and water delivered to customers will not generally meet the 1996 NH&MRC/ARMCANZ Guidelines for Drinking Water.

Based on historical records the water quality targets below are achievable and are those, which will be used by the FRWS until the water quality review has, been completed

All the major consumers are kept informed of the water quality provided by the Scheme through a monthly report which details the water quality results for their sampling area.

Parameter	Criteria	Measure	Level of Service	
			1999/2000 Compliance (%)	Target Compliance (%)
CLARIFIED WATER				
Faecal Coliforms	0	Organisms /100mL	100	100
Coliforms	10	Organisms / 100mL	98	95
True Colour	15	True Colour Units (TCU)	100	95
Turbidity	5	Nephelometric Turbidity Units (NTU)	99	95
Iron	0.3	mg/L	99	85
Manganese	0.1	mg/L	100	80
Aluminium	0.2	mg/L	84	85
pH	6.5-8.5		76	95
UNCLARIFIED WATER				
Faecal Coliforms	0	Organisms /100mL	96	100
Coliforms	10	Organisms / 100mL	95	95
True Colour	50	True Colour Units (TCU)	100	95
Turbidity	5	Nephelometric Turbidity Units (NTU)	100	95
Iron	0.3	mg/L	100	85
Manganese	0.1	mg/L	95	80
Aluminium	0.2	mg/L	99	85
pH	6.5-8.5		100	95

Some complaints about the Scheme's water quality were made in 1996 and 1997 by Lithgow City Council's customers. These were mainly the result of having two separate water sources

[2] This excludes Lidsdale which is currently on the Stage 2 pipeline. FRWS intends to supply Lidsdale from Stage 1 in the near future.

[3] Both the stage 1 and 2 pipelines run through Rydal. The majority of Rydal is supplied from Stage 1, however there is a small number of consumers currently supplied with chlorinated water from Stage 2.

and have been partly resolved by the clarification of all Stage 1 water, sourced from both Duckmaloi Weir and Oberon Dam. The quality of water provided to these consumers will be improved with the construction of the filters at Duckmaloi Clarification Plant.

More generally, FRWS is initiating a water quality review in order to address water quality issues for all consumers. This will include a review of the requirements of all the major consumers and establish new water quality Levels of Service for the Scheme.

Required Annual Supply

Under the current system, each major consumer is allocated a minimum annual quantity of water (MAQ), which they are required to pay for, whether it is taken up or not. The Department of Land and Water Conservation has previously reviewed the policy of implementing a capacity sharing arrangement to replace this system.

The introduction of capacity sharing would mean that each major customer would be allocated a share of inflows and a vertical slice of the Oberon Dam storage. Under this scheme each major consumer will be able to operate their 'sub-storage' to best meet their needs and transfers between consumers would also be allowed to occur. However, capacity sharing would not fully meet Treasury requirements for the Scheme to operate on a commercial basis.

In place of a MAQ, a required annual supply (RAS) has been determined for each major consumer group. Total supplies proposed under the RAS have remained the same for Delta Electricity, Sydney Catchment Authority and Lithgow City Council, but have significantly increased for Oberon (from 264ML to 750ML) and the Minor Consumers (from 60ML to 300ML).

	Unit	Level of Service			
		1998/99 Usage	1999/00 Usage	MAQ	RAS
Delta Electricity	Megalitres per annum	8,153	6,050	8,184	8,184
Sydney Catchment Authority	Megalitres per annum	3,242	3,262	3,650	3,650
Lithgow City Council	Megalitres per annum	1,003	859	2,092	2,092
Oberon Council	Megalitres per annum	871	765	264	750
Minor Consumers	Megalitres per annum	164	182	60	300
Total		**13,333**	**11,118**	**14,250**	**14,976**

Peak Daily Demands

As part of the Levels of Service, FRWS has agreed to supply a certain peak day demand to the major consumers as shown below.

	Unit	Level of Service
		Peak Demand
Wallerawang and Mount Piper Power Stations	Megalitres	27.25
Sydney Catchment Authority	Megalitres	16
Oberon Council	Megalitres	4.7
Lithgow	Megalitres	7.29
Wallerawang	Megalitres	1.2
Lidsdale	Megalitres	1.2
Rydal	Megalitres	0.06
Portland	Megalitres	1.4
Cullen Bullen	Megalitres	0.15
Glen Davis	Megalitres	0.4
Total		**59.65**

Currently the Scheme is meeting these targets by supplying the demand quantity (57.79ML peak day release from the dam was measured on 12 January 2001). However it is expected that the construction of the Duckmaloi Filtration System will restrict the peak daily demand supplied to the Lithgow City Council's customers to an expected maximum flow of 6 megalitres per day.

Response Times to Supply Interruptions

The response time is defined as the time between notification of FRWS of the interruption, to the time a crew arrives on site to commence rectification. This component of the Levels of Service sets out the response times that consumers can expect when an unplanned interruption occurs to supply. An unplanned interruption to supply is an incident where normal water services are not available and no prior notice is provided by FRWS. Due to the size of the Scheme total response times are difficult to set, but all reasonable effort will be made to reduce any impact of failure.

	Level of Service	
	Current	Target
Category 1 Failure – Major Consumers Failure to maintain continuity or quality of supply to one or more major consumers or any major failure. ***(Typical causes of this type of failure would be water main breaks, pumping station failure or valve failure. Typical effects would include major property damage, large volumes of water wasted, risk of personal injury or to public health or major environmental impacts.)***	2 hours during working hours 3 hours outside working hours	2 hours during working hours 3 hours outside working hours
Category 2 Failure – Minor Consumers Failure to maintain continuity or quality of supply to a number of minor consumers. ***(Typical causes would be minor water main breaks, leaking connections or partial valve failure. Typical outcomes of this type of failure include minor property damage or minor environmental damage.)***	4 hours during working hours 5 hours outside working hours	4 hours during working hours 5 hours outside working hours
Category 3 Failure – All Consumers Failure to maintain continuity or quality of supply to a single consumer. ***(Typical causes would be from a water main or hydrant, inadequate maintenance of pipes or partial failure of connections. Typical effects would include poor pressure or reduced flow, reduced aesthetic quality of the water without a health risk, minimal impact on the environment.)***	One working day	One working day
Minor Problem or Complaint – All Consumers A minor problem or complaint which can be dealt with at a time convenient to the customer and water authority.	Within 2 weeks	Within 2 weeks

Frequency of System Failures (Unplanned Interruptions)

The table below shows how many interruptions of this nature each consumer should expect and in some cases the currently agreed targets. FRWS will monitor performance and make estimates of the likely duration of the interruption. FRWS would seek to meet these targets in 1999 and improve on these statistics in the future. Through a process of continual improvement FRWS aims to reduce response times and improve the condition of the system's assets.

	Level of Service	
	Current	Target
Delta Electricity		
Wallerawang Power Station	Operations: 80 hours (prelimin.) Domestic and Fire	Operations: 80 hours (prelimin.) Domestic and Fire
Mount Piper Power Station	6 hours per 7 days	6 hours per 7 days
Sydney Catchment Authority	3-5 days Not more than twice yearly Not more than once monthly	3-5 days Not more than twice yearly Not more than once monthly
Oberon Council	1 day per 2 years	1 day per 2 years
Lithgow City Council	1-4 hours: 3 monthly 4-8 hours: 6 monthly Over 8 hours: never	1-4 hours: 3 monthly 4-8 hours: 6 monthly Over 8 hours: never
Minor Consumers	Not more than two working days on any occasion Not more than twice in any one year	Not more than two working days on any occasion Not more than twice in any one year

Water Supply Restrictions

In order to meet the Levels of Service outlined above in prolonged dry weather conditions, FRWS may need to impose water supply restrictions in accordance with the drought contingency plan which supports the 5/10/20 percent rule as specified below.

	Level of Service
Restrictions will not be applied for more than	5% of the time
Restrictions should not be imposed more than	Once per 10 year period on average
Through a repeat of the worst drought on record the system should not be restricted by more than	20% of normal demand

Appendix D Water Quality Guidelines for Recreational Water Use

An Australian users of *Guidelines for Recreational Water Quality and Aesthetics* is being prepared in accordance with NWQMS and NHMRC statutory procedures. However, until this is available the Australian and New Zealand Environment Conservation Council (ANZECC) 2000 guidelines should be used.

Recreational use can be divided into 3 categories:

1. Primary - activity with frequent, direct contact with the water eg. swimming, water skiing. This water should be free from faecal contamination, pathogenic organisms and other hazards so as to protect the health and safety of the user.

2. Secondary - activities with less frequent body contact eg. boating, fishing. Due to less direct contact with the water, microbiological guidelines are lower (although where shellfish are taken from the water, the guidelines should not be lower). Quality of water should be maintained so there is limited alteration of fish habitat.

   The waterbody should be free from logs and stumps, and excessive algal growth managed so as to protect skiiers and boats from injury or harm.

3. Passive – waterbodies for aesthetic purposes only. These waters should not be altered in any way that restricts their ability to support aesthetically valuable flora and fauna. The water should be free from floating debris, oil, grease, undesirable colour, odour and taste and undesirable aquatic life eg. algal blooms.

Parameter	Guideline
Microbiological	
Primary Contact	Median bacterial content taken over swimming season should not exceed ■ 150 faecal colliform organisms/100mL; or ■ 35 enterococci organisms/100mL. Pathogenic free living organisms should be absent from fresh water bodies (testing for pathogens is not necessary unless temperature is greater than 24^{o}C.
Secondary Contact	Median value in should not exceed ■ 1,000 faecal coliform organisms/100mL; or ■ 230 enterococci organims/100mL.
Nuisance Organisms	Macrophytes, phytoplankton scums, filamentous algal mats, sewerage fungus etc should not be present in excessive amounts *
Direct Contact	Direct contact activities should be discouraged if algal levels of

Parameter	Guideline
	15,000 – 20,000 cells/mL are present (depending on algal species).
Physical and Chemical	
Visual clarity and colour	To protect visual clarity for swimming, the horizontal sighting of a 200mm diameter black disc should exceed 1.6 metres. To protect aesthetic quality of a waterbody ▪ Natural clarity should not be reduced by more than 20%; ▪ Natural hue of the water should not be changed more than 10 points on the Munsell Scale; ▪ The natural reflectance of the water should not be changed more than 50%
pH	pH should be within the range 5.0-9.0, assuming buffering capacity of the water is low near extremes of the pH limits
Temperature	For prolonged exposure temperature should range between 15-35^{o}C
Toxic chemicals	Water containing chemicals that are toxic or irritating to the skin are unsuitable for recreation. Toxic substances should not exceed values outline in ANZECC Vol 4 Chapter 5 Table 5.2.3 and 5.2.4. Chemicals listed in these tables are in the table below.
Surface films	Oil and petrochemicals should not be noticeable as a visible film on the water, not detectable by odour

* Refer to Volume 4, Chapter 5 Section 3.3 of the ANZECC Guidelines (2000) that relate to nutrient concentrations necessary for limiting excessive plant growth.

Chemicals in Table 5.2.3 (general chemicals) of Volume 4, Chapter 5 of the Guidelines are listed below.

Inorganic

- Arsenic
- Asbestos
- Barium
- Boron
- Cadmium
- Chromium
- Cyanide
- Lead
- Mercury
- Nickel
- Nitrate-N
- Nitrite-N
- Selenium
- Silver

Organic

- Benzene
- Benzo(a)pyrene
- Carbon tetrchloride
- 1,1-dichloroethene
- 1,2-Dichloroethene
- Pentachlorophenol
- Polychlorinated biphenyles
- Tetrechloroethene
- 2,3,4,6-Tetrachlorophenol
- Trichlorethene
- 2,4,5-Trichlorophenol
- 2,4,6-Trichlorphenol

Radiological

- Gross alpha activity
- Gross beta activity

Other Chemicals

- Aluminium
- Ammonia
- Chloride
- Copper
- Oxygen
- Hardness (as $CaCO_3$)
- Iron
- Manganese
- Organics
- pH
- Phenolics
- Sodium
- Sulfate
- Sulfide
- Surfactant
- Total dissolved solids
- Zinc

Chemicals in Table 5.2.4 (pesticides) of Volume 4, Chapter 5 of the Guidelines are listed below:

- Acephtae
- Alachlor
- Aldrin
- Amitrol
- Asulam
- Azinphos-mehtyl
- Barban
- Benomyl
- Bentazone
- Biomazil
- Carbaryl
- Carbendazim
- Carbofuran
- Carbophenothion
- Chlordane
- Chlordimeform
- Chlorfenvinphos
- Chlorpyrifos
- Clopzralid
- Cyhexatin
- 2,4-D
- DDT
- Demeton
- Diazinon
- Dicamba
- Dichlobenil
- 3,6-Dichloropicolinic acid
- Dichlorvos
- Diclofol-methyl
- Dicofool
- Dieldrin
- Difenzoquat
- Dimethoate
- Diquat
- Disulfoton

- Diruon
- DPA
- Endosulfan
- Endothal
- Endrin
- EPTC
- Ethion
- Ethoprophos
- Fenchlorphos
- Fenitrothion
- Fenoprop
- Fensulfothion
- Fenvalerate
- Flamprop-methyl
- Fluometuron
- Formothion
- Fosamine (ammonium salt)
- Glyphosate
- Heptachlor
- Hexaflurate
- Hexazinone
- Lindane
- Maldison
- Methidathion
- Methomyl
- Metolachor
- Metribuzin
- Mevinphos
- Molinate
- Monocrotophos
- Nabam
- Nitralin
- Omethoate
- Oryzalin
- Paraquat
- Parathion
- Parathion-methyl
- Pendimethalin
- Perfluidone

- Permethrin
- Picloram
- Piperonyl butoxide
- Pirimicarb
- Pirimiphos-ethyl
- Pirmiphos-methyl
- Profenofos
- Promecarb
- Propanil
- Propargite
- Propoxur
- Pyrazophos
- Quintozene
- Sulprofos
- 2,4,5-T
- Temephos
- Thiometon
- Thiophanate
- Thiram
- Trichlorofon
- Triclopyr
- Trifluralin