

**Mid-term Review of  
Sydney Catchment Authority's  
Operating Licence**

**Report to Minister for the Environment  
September 2002**

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL  
OF NEW SOUTH WALES**



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## 1 INTRODUCTION

The Minister for the Environment asked the Independent Pricing and Regulatory Tribunal of New South Wales (the Tribunal) to conduct the mid-term review of the Sydney Catchment Authority's Operating Licence, as required under this licence. The Minister's terms of reference require the Tribunal to review whether the licence is fulfilling its objectives, as well as a range of other issues. (A copy of the terms of reference is provided in Attachment 1.)

The Tribunal has completed this review. Its key findings and recommendations are summarised in section 1.1.

The existing licence has a 5 year term that ends on December 31, 2004. An end of term review is to commence in January 2004.

The rest of this report describes the process the Tribunal used to undertake this review, and explains each of the recommendations in more detail.

### 1.1 Summary of recommendations

The Tribunal is recommending that no changes should be made to the Catchment Authority's Operating Licence at this mid-term review. However, it recommends that the Minister require the Catchment Authority to develop a demand and supply management strategy and is also proposing that some issues be reconsidered at the end of term review.

The Tribunal's recommendations are highlighted in sections 1.1.1 to 1.1.5.

#### 1.1.1 Licence objectives

Most stakeholders agreed the licence satisfies the requirements of the Act and is fulfilling its objectives. However, the Tribunal believes the demand management requirements should be strengthened.

#### Recommendation

- 1. The Tribunal recommends that no changes should be made to the licence at this time.***
- 2. The Tribunal recommends the Minister require the Catchment Authority to develop a demand and supply management strategy by 31 December 2003.***

***This strategy should be developed in consultation with Sydney Water Corporation and the Department of Land and Water Conservation (DLWC) to facilitate an integrated approach across the agencies. It should also take into account any relevant Government decisions including those made in response to the reports of the Healthy Rivers Commission.***

***The strategy should address the following key areas:***

- Leakage from the Catchment Authority's systems***
- Customer awareness and education about the need to manage demand***
- Support for water efficiency measures for customers other than those of other water supply agencies***

- ***Scenario planning to examine the security of existing supply, opportunities for improving/protecting supply quality, alternative supply options, and impacts of increased environmental demands.***

***The strategy should also include clear indicators and milestones against which the Catchment Authority's performance can be assessed in the annual operational audit. In addition the strategy, including the scenario planning, should be available to the public.***

### **1.1.2 Memoranda of Understanding**

No stakeholders identified obligations in the existing Memoranda of Understanding (MOUs) that should be incorporated in the licence.

#### **Recommendation**

***The Tribunal recommends that no additional obligations from the existing Memoranda of Understanding be incorporated into the Operating Licence.***

### **1.1.3 Water quality obligations**

NSW Health and the Catchment Authority are satisfied that existing water quality obligations for supplying water for water treatment are adequate. Other stakeholders were concerned that water quality obligations for other uses, such as environmental flows, are not adequately addressed in the licence.

#### **Recommendation**

***The Tribunal recommends that:***

- ***no changes be made to the existing water quality obligations for the supply of water for water treatment***
- ***water quality obligations for water supplied for uses other than water treatment, including environmental flows, be considered at the end-of-term review***
- ***all water quality obligations in the licence be reviewed at the end-of-term review to ensure they are consistent with government decisions, including those made following consideration of the Healthy Rivers Commission reports that are to be implemented through the Regional Environmental Plan.***

### **1.1.4 Risk Management Plan (RMP)**

The Tribunal believes that the Risk Management Plan (RMP) is key to the Catchment Authority's operations and that it has a different focus to the Regional Environmental Plan (REP) which has not yet been gazetted. It recognises there are deficiencies in the existing RMP and that the Catchment Authority has undertaken to improve it.



## Recommendation

### *The Tribunal recommends that:*

- *the requirement for the Risk Management Plan be retained in the Operating Licence*
- *any duplication with the Regional Environmental Plan be considered at the end-of-term review, by which time the Regional Environmental Plan will be finalised*
- *the Catchment Authority's improvements to the Risk Management Plan be monitored in the annual operational audits*
- *the Tribunal consider whether the Risk Management Plan is achieving its purpose at the end-of-term review.*

### **1.1.5 Performance criteria for catchment infrastructure works**

The Tribunal believes the Catchment Infrastructure Works Performance Criteria (performance criteria) are important for ensuring the reliability of Sydney's water supply and for managing the supply and demand balance. However, it considers there is insufficient information to recommend changes to the criteria at this time.

Prior to the end of term review, the Tribunal proposes to:

- track progress and collect information on water balance issues based on the information requirements listed in Table 1 (on page 21)
- produce an issues paper on water balance scenarios and regulatory options for the performance criteria
- host a public forum on these issues.

## Recommendation

*The Tribunal recommends that there should be no changes to the existing catchment infrastructure works performance criteria at this stage but that these criteria be reconsidered at the end of term review.*

## 2 REVIEW PROCESS

The Tribunal conducted the mid-term review of the Catchment Authority's Operating Licence in accordance with Part 4b of the *Independent Pricing and Regulatory Tribunal Act 1992* and the terms of reference provided by the Minister. The review was conducted concurrently with the mid-term review of Sydney Water Corporation's Operating Licence.

In March 2002, the Tribunal released an issues paper that discussed the key issues for both these reviews, and sought submissions from the Catchment Authority, Sydney Water Corporation and other stakeholders. It received submissions from 11 organisations, and placed these submissions on the IPART website. Attachment 2 lists the submissions.

On 23 July 2002, the Tribunal conducted a workshop with stakeholders to further discuss the issues. Attachment 3 lists the workshop participants. At this workshop, the Tribunal indicated it would accept additional submissions. One additional submission was received.

The Tribunal has made its recommendations, taking into account all of the information and analysis obtained through this review process.

### 3 LICENCE OBJECTIVES

The objectives of the Operating Licence are to enable and require the Catchment Authority to:

- manage and protect the Catchment Area and Catchment Infrastructure Works
- supply bulk water
- regulate certain activities within the Catchment Area.<sup>1</sup>

In line with these objectives, the licence also requires the Catchment Authority to meet the objectives and requirements of the *Sydney Water Catchment Management Act 1998*, comply with the quality and performance standards included in the licence, and be subject to an annual audit of its compliance with the licence.

In line with the terms of reference, the Tribunal has reviewed whether the Operating Licence is fulfilling these objectives. It also considered three related issues raised during the review process. These were the need to strengthen demand management obligations in the licence, incorporate ecologically sustainable development as an objective of the licence, and reflect some of the elements of the recent Statements of Joint Intent, arising from Government decisions on the Healthy Rivers Commission reports, in the licence.

#### 3.1 Recommendation

The Tribunal believes the Catchment Authority's Operating Licence is meeting its objectives. It therefore recommends that no changes be made to the licence at this time.

However, it believes the Catchment Authority's demand management obligations should be strengthened, and recommends that the Minister require the Catchment Authority to develop a demand and supply management strategy by 31 December 2003.

This strategy should be developed in consultation with Sydney Water Corporation and the Department of Land and Water Conservation (DLWC) to facilitate an integrated approach across the agencies. It should also take into account any relevant Government decisions including those made in response to the reports of the Healthy Rivers Commission.

The strategy should address the following key areas:

- Leakage from the Catchment Authority's systems
- customer awareness and education about the need to manage demand
- support for water efficiency measures for customers other than those of other water supply agencies
- scenario planning to examine the security of existing supply, opportunities for improving/protecting supply quality, alternative supply options, and impacts of increased environmental demands.

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<sup>1</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 2.1.1.

The strategy should also include clear indicators and milestones against which the Catchment Authority's performance can be assessed in the annual operational audit. In addition the strategy, including the scenario planning, should be available to the public.

## **3.2 Issues considered**

### **3.2.1 Whether the licence is fulfilling its objectives**

The Tribunal sought comments from stakeholders on whether the current Operating Licence reflects the objectives and requirements of the *Sydney Water Catchment Management Act 1998*, and whether it is fulfilling its objectives.

These comments indicate that nearly all stakeholders believe the current licence does reflect the objectives and requirements of the Act and is fulfilling its objectives.

The Tribunal also believes that the licence fulfils its objectives. There are provisions in the licence that enable and require the Catchment Authority to:

- manage and protect the catchment and the catchment infrastructure works
- supply bulk water
- regulate certain activities in the catchment area.

Primarily these provisions are contained in Part 4 of the licence which enables the Authority to exercise any functions conferred or imposed on it under the *Sydney Water Catchment Management Act 1998* (the Act) and any other Act. Part 4 also enables and requires the Authority to provide, operate and maintain viable systems and services for supplying bulk water in its area of operations.

Other provisions in the licence support the Catchment Authority's achievement of these objectives. These include requirements for plans of management for the catchments, performance criteria for the catchment infrastructure works and an environment plan. Licence requirements supporting the objective of enabling and requiring the Catchment Authority to supply bulk water include obligations to meet health guideline values and a requirement for a Risk Management Plan.

The Catchment Authority is subject to an annual operational audit of its performance against the requirements of the Licence.

### **3.2.2 Demand management**

Some stakeholders believe that the Catchment Authority would be better able to meet its objectives if the existing demand management conditions in its licence were strengthened. These conditions require the Catchment Authority to:

- manage demand consistent with the requirements in Sydney Water Corporation's licence
- consider as a priority whether there is scope for Sydney Water to implement cost-effective demand management strategies when evaluating any augmentation of the Catchment Infrastructure Works

- manage demand consistent with the requirements of its Water Management Licence.<sup>2</sup>

The Nature Conservation Council believes that since Sydney Water Corporation is not meeting the demand management targets set in its operating licence, the Catchment Authority may be failing to meet its own obligations.<sup>3</sup> It suggests that specific obligations should be included in the Catchment Authority's licence to strengthen the demand management provisions.<sup>4</sup> These might include obligations to undertake programs for water efficiency for all of its customers, and to prepare a joint communication strategy with Sydney Water Corporation.

Other stakeholders support the need to strengthen the demand management licence conditions, and suggest that leakage from the Catchment Authority's own systems should be regulated.<sup>5</sup>

The Healthy Rivers Commission report on the Georges River – Botany Bay System, released in 2001, emphasises the need for whole of system management, and that effective demand management requires an integrated effort from the Sydney Catchment Authority (as the bulk water supplier), the Sydney Water Corporation (as the reticulation and wastewater manager), and DLWC (as a key regulating authority).<sup>6</sup>

The Tribunal recognises that as the bulk water supplier, the Catchment Authority has a significant role in managing both supply and demand. It agrees with stakeholders that the Catchment Authority's obligations in this area should be strengthened. However, it also acknowledges that the Catchment Authority has already initiated some demand management activities, including a leakage assessment of its infrastructure.<sup>7</sup> In addition, it is mindful that any new demand management obligations should complement the activities of Sydney Water Corporation and DLWC, though responsibility should be clearly attributable to the Catchment Authority.

Given these factors, the Tribunal considers an appropriate way to strengthen the Catchment Authority's obligations is for the Minister to require the Catchment Authority to develop a demand and supply management strategy, in consultation with Sydney Water Corporation and DLWC.

### 3.2.3 Other issues

The Total Environment Centre believes an additional objective should be added to the licence, to require the Catchment Authority to conduct its operations in accordance with the principles of ecologically sustainable development.<sup>8</sup> However, this is already a principal objective of the Act, and the licence requires the Catchment Authority to meet the objectives

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<sup>2</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 8.3.

<sup>3</sup> Nature Conservation Council of NSW submission to mid-term reviews of SCA's and SWC's Operating Licences, May 2002.

<sup>4</sup> Nature Conservation Council of NSW submission to mid-term reviews of SCA's and SWC's Operating Licences, May 2002.

<sup>5</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, 23 July 2002, p 46.

<sup>6</sup> Healthy Rivers Commission of New South Wales, *Final Report – Independent Inquiry into the Georges River – Botany Bay System*, September 2001.

<sup>7</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, April 2002, p 37.

<sup>8</sup> Total Environment Centre submission to mid-term reviews of SCA's Operating Licence, May 2002.

of the Act. The Tribunal does not see a need to duplicate this objective in the Operating Licence.

The Healthy Rivers Commission has prepared a number of reports for the Government on river systems in Sydney's water catchments. Government decisions on the recommendations made in these reports have been published in Statements of Joint Intent. The decisions oblige the Catchment Authority to work with other agencies to achieve objectives for healthy rivers. There may be merit in reflecting some elements of the Statements of Joint Intent in the Catchment Authority's Operating Licence. The Tribunal will consider this issue at the end-of-term review.

## 4 MEMORANDA OF UNDERSTANDING

The Catchment Authority's Operating Licence requires it to enter into Memoranda of Understanding (MOUs) with the Water Administration Ministerial Corporation (WAMC), the Environment Protection Authority (EPA) and NSW Health.

In line with the terms of reference, the Tribunal has considered whether any obligations in these MOUs should be incorporated into the licence. The Tribunal also indicated in its letter to the Minister on the 2000/01 operational audit, that it would raise the issue of the role of the MOUs at the mid-term review,<sup>9</sup> as deficiencies in the MOU with the EPA were identified in both the 1999/2000 and 2000/2001 audits.

### 4.1 Recommendation

The Tribunal recommends that no additional obligations from the existing Memoranda of Understanding be incorporated into the Operating Licence.

### 4.2 Issues considered

#### 4.2.1 Obligations in the MOUs

No stakeholders identified additional obligations in the existing MOUs that should be incorporated in the Operating Licence. The Tribunal is satisfied that any obligations in the MOUs that should be in the licence have already been incorporated.

#### 4.2.2 Role of MOUs

Most stakeholders agree that the role of the MOUs is to facilitate cooperative relationships between the Catchment Authority and other agencies. There is also strong support for key obligations on the Catchment Authority in the MOUs to be incorporated in more formal regulatory instruments, such as the Operating Licence or licences regulated by other agencies including DLWC and EPA.<sup>10</sup>

In the 1999/2000 audit of the Catchment Authority's operations, the auditors identified deficiencies in its MOU with the EPA. This MOU was then amended and publicly exhibited. No public submissions were received, and the revised MOU was adopted.

In the 2000/01 audit, the auditor found that the amended MOU did not address the deficiencies identified in the previous audit. In particular, the auditor was concerned about the Catchment Authority's limited powers to regulate pollution from existing sources in the catchment.<sup>11</sup> The EPA issues licences for many existing sources of pollution in the catchments, setting limits for discharges of pollutants. To effectively manage risks to water quality from existing developments, the auditor believes a sound and cooperative working relationship is required between the EPA and the Catchment Authority.

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<sup>9</sup> IPART, *Sydney Catchment Authority Operational Audit 2000/2001*, November 2001.

<sup>10</sup> See for example, Total Environment Centre submission to mid-term review of the SCA's Operating Licence, May 2002.

<sup>11</sup> IPART, *Sydney Catchment Authority Operational Audit 2000/01*, November 2001, pp 104-105.

The Total Environment Centre and the Nature Conservation Council believe the Catchment Authority should be required to develop a new MOU with the EPA.<sup>12</sup> However, both the Catchment Authority and the EPA are satisfied that the existing MOU is operating effectively.

The Tribunal agrees that a cooperative relationship between the EPA and the Catchment Authority is necessary for effective management of the catchment. The Tribunal considers that the Catchment Authority should use its best endeavours to maintain such a relationship. However, the Operating Licence and, in particular, the MOUs are not appropriate substitutes for institutional arrangements or for addressing the problems that arise from split responsibilities for catchment management, particularly in the absence of a Regional Environmental Plan.

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<sup>12</sup> Nature Conservation Council of NSW and Total Environment Centre submissions to the mid-term reviews of SWC's and SCA's Operating Licences, May 2002.



## 5 WATER QUALITY OBLIGATIONS

Clause 6.2 of the Operating Licence requires the Catchment Authority to meet a range of water quality obligations in relation to the supply of bulk water for water treatment. These obligations are based on the *Australian Drinking Water Guidelines 1996*, and relate to water characteristics that may not be substantially removed or reduced through the water treatment processes used by the Catchment Authority's customers.<sup>13</sup> The characteristics include levels of pesticides in the water and some chemical and radiological parameters.

In line with the terms of reference, the Tribunal has reviewed these obligations. It also considered two other issues relating to water quality raised during the review process. These relate to water supplied for other uses including environmental flows, and catchment and system management to achieve water quality objectives.

### 5.1 Recommendation

The Tribunal recommends that:

- no changes be made to the existing water quality obligations for the supply of water for water treatment
- water quality obligations for water supplied for uses other than water treatment, including environmental flows, be considered at the end-of-term review
- all water quality obligations in the licence be reviewed at the end-of-term review to ensure they are consistent with government decisions, including those made following consideration of the Healthy Rivers Commission reports that are to be implemented through the REP.

### 5.2 Issues considered

#### 5.2.1 Water supplied for water treatment

NSW Health believes that existing water quality obligations in the Catchment Authority's Operating Licence are adequate, and it is unnecessary to include further health-related water quality obligations.<sup>14</sup> The Catchment Authority also believes the existing obligations are adequate at this time.<sup>15</sup>

The Catchment Authority considers that its planned research and development programs will help the Tribunal determine the need to modify water quality obligations at the end-of-term review. These programs include a limnological<sup>16</sup> study of Lake Burragorang and Prospect Reservoir, which will provide a better understanding of contaminant movement in the lake, and assist decision-making on the appropriate levels at which water may be taken

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<sup>13</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, schedule 4.

<sup>14</sup> NSW Health submission to the mid-term reviews of SCA's and SWC's Operating Licences, May 2002.

<sup>15</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, April 2002, p 21.

<sup>16</sup> Limnology is the study of inland waters. This includes rivers, creeks, billabongs, ponds, pools, swamps, lakes, salt-lakes and other wetlands.

from the dam.<sup>17</sup> The Catchment Authority's Bulk Raw Water Quality Management Plan outlines other initiatives.

The Total Environment Centre and the Nature Conservation Council suggest that the licence should include some reference to best practice guidelines for health-related issues, including *Cryptosporidium*, *Giardia* and endocrine disrupting chemicals.<sup>18</sup> However, NSW Health disagrees. It advises that guidelines for *Cryptosporidium* and *Giardia* were considered during the last revision of the *Australian Drinking Water Guidelines, 1996*, but the current focus on system management and risk minimisation was deemed to be more effective.<sup>19</sup> NSW Health believes existing licence conditions adequately reflect this focus.

### 5.2.2 Water supplied for other uses

Some stakeholders believe the existing water quality obligations for uses other than for water treatment may not be adequate and should be reviewed. These uses include environmental flows and inter-basin transfers. For example, at the workshop hosted by the Tribunal, Charles Essery from DLWC stated that:

Currently the [water quality] monitoring seems to be focused very much on the delivery of water to Sydney Water, which is understandable. But the Catchment Authority has the mandate to actually try and look at the whole of the catchment and try to improve it ... Downstream [it] does have a major impact and maybe some of the future requirements, particularly when we get into the environmental flows regime, may need to be incorporated.<sup>20</sup>

In relation to environmental water quality, the Operating Licence requires the Catchment Authority to meet the requirements for any discharges or releases under licences issued by the EPA or DLWC.

The Government has established the Expert Panel on Environmental Flows and the Hawkesbury Nepean River Management Forum to advise it on requirements for environmental flows. These bodies are expected to make their recommendations during 2003. It is anticipated that they will highlight the need for water quality obligations for environmental flows and other downstream uses, if necessary.

The Tribunal therefore recommends that it review the adequacy of the existing Operating Licence conditions at the end-of-term review, when it has access to these bodies' findings.

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<sup>17</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, April 2002, p 22.

<sup>18</sup> Nature Conservation Council of NSW and Total Environment Centre submissions to the mid-term reviews of SCA's and SWC's Operating Licences, May 2002.

<sup>19</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, 23 July 2002, p 70.

<sup>20</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, 23 July 2002, p 72.

### 5.2.3 Catchment and system management

Healthy Rivers Commission reports have recommended the implementation of an integrated, whole-of-catchment and adaptive management approach to achieve improved water quality throughout Sydney's catchments.<sup>21</sup> The Government has decided that this approach should be implemented through the Regional Environmental Plan (REP), which is currently in draft form.

The Tribunal recognises that the water quality obligations under the Catchment Authority's Operating Licence may not be fully consistent with the obligations imposed on it under the REP. It therefore considers that water quality obligations in the licence should be reviewed at the end-of-term review, when the REP will have been gazetted, to ensure that they are consistent with the content of the REP and reflect the Government's decisions made following consideration of the Healthy Rivers Commission reports.

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<sup>21</sup> New South Wales Government, *Statement of Joint Intent for the Hawkesbury Nepean River System*, 12 March 2001, pp 20-24.

## 6 RISK MANAGEMENT PLAN

The Catchment Authority's primary function is to protect the quality and quantity of water in the catchment areas.<sup>22</sup> There is a requirement in its Operating Licence to develop a Risk Management Plan (RMP) following the first catchment audit. This audit was conducted by the CSIRO in 1999/2000.

This plan is intended to be one of the Catchment Authority's key instruments for managing water quality. Its purpose is to identify and assess sources of pollution in the Catchment Area, and to reduce or remove this pollution to improve the quality of bulk water supplied to customers.

The Regional Environmental Plan (REP) is currently being developed by PlanningNSW under the *Environmental Planning and Assessment Act 1979*. The aim of the REP is to integrate current and future actions to protect the water catchments supplying Sydney and adjoining regions.

In line with the terms of reference, the Tribunal has reviewed the need for the RMP in light of requirements under the REP and has also considered whether the RMP achieves its purpose.

### 6.1 Recommendation

The Tribunal recommends that:

- the requirement for the Risk Management Plan be retained in the Operating Licence
- any duplication with the Regional Environmental Plan be considered at the end-of-term review, by which time the Regional Environmental Plan will be finalised
- the Catchment Authority's improvements to the Risk Management Plan be monitored in the annual operational audits
- the Tribunal consider whether the Risk Management Plan is achieving its purpose at the end-of-term review.

### 6.2 Issues considered

#### 6.2.1 The need for the RMP

Although PlanningNSW anticipated that the REP would be finalised prior to this mid-term review, it now believes this plan will be gazetted in late 2002 at the earliest.<sup>23</sup> Once this plan is gazetted, the Catchment Authority will be required to develop Rectification Action Plans within five years. It is possible that these Rectification Action Plans will duplicate some of the content of the RMP.

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<sup>22</sup> *Sydney Water Catchment Management Act, 1998*, Clause 15 (2).

<sup>23</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, 23 July 2002, p 69.

However, most stakeholders, including the Catchment Authority believe that the RMP's role and focus are different to those of the REP, and that there will be a continued need for this plan even when the REP is finalised. The Catchment Authority agrees that the Rectification Action Plans to be developed as part of the REP process may duplicate parts of the RMP. However, a significant component of the RMP focuses on the management of catchment infrastructure works, and this area will not be addressed under the REP.

Given these factors, the Tribunal believes it is appropriate to retain the requirement for the RMP in the Operating Licence, and to consider any duplication between the RMP and the REP at the end-of-term review.

### **6.2.2 Whether the RMP achieves its purpose**

The Operating Licence lists a range of requirements that the RMP must meet to achieve its purpose. These are to:

1. identify, assess and provide a tool for managing pollution sources
2. understand and evaluate how pollutants are modified between their source and the water storage, and their impacts on bulk water quality
3. identify opportunities to improve the operation of catchment infrastructure works.

The 2000/01 audit identified that the RMP does not assess how pollutants are modified between their source and the water storages, or evaluate their impact on the quality of bulk water. It also does not assess the risks to water quality associated with the operation of Catchment Infrastructure Works.<sup>24</sup> The Catchment Authority acknowledges these deficiencies and proposes to review the RMP as prescribed under clause 6.7.5 of the Operating Licence.<sup>25</sup> This requires the Catchment Authority to review the plan on completion of catchment audits and to amend the plan following public consultation.

The Tribunal is concerned about the deficiencies in the existing plan, as the RMP is a critical part of the Catchment Authority's operations. However, it recognises the Catchment Authority's proposal to improve the plan and believes the nature of the plan means there is scope for continuous improvement. The Tribunal proposes to closely monitor improvements to the RMP through the annual operational audits, and to reconsider whether the plan meets all the requirements listed in the Operating Licence and is thus achieving its purpose at the end-of-term review.

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<sup>24</sup> IPART, *Sydney Catchment Authority Operational Audit 2000/01*, November 2001, p 49.

<sup>25</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, April 2002, p 25.

## **7 PERFORMANCE CRITERIA FOR CATCHMENT INFRASTRUCTURE WORKS**

The Catchment Authority's Catchment Infrastructure Works include its water storages and water mains, and their connected works. The Operating Licence requires it to operate and manage these works to provide the Sydney Water Corporation with a long-term standard of service that accords with the four performance criteria set out in schedule 2 of the licence. These criteria essentially set limits for the frequency, duration and severity of water restrictions, and establish the minimum amount of water to be maintained in the storages.

In line with the terms of reference, the Tribunal has reviewed these performance criteria, having regard to:

- the need to maintain an adequate level of security for the water supply
- demand management objectives
- the need to ensure environmental flows are achieved in rivers below the Catchment Authority's dams
- the Government policy to avoid augmentation of the Catchment Infrastructure Works.

### **7.1 Recommendation**

The Tribunal recommends that there should be no changes to the existing catchment infrastructure works performance criteria at this stage but that these criteria be reconsidered at the end of term review.

Prior to the end of term review, the Tribunal proposes to:

- track progress and collect information on water balance issues based on the information requirements listed in Table 1 (on page 21)
- produce an issues paper on water balance scenarios and regulatory options for the performance criteria
- host a public forum on these issues.

### **7.2 Issues considered**

#### **7.2.1 Maintaining a balance between supply and demand for water**

In September 2000, the Minister for the Environment announced that construction of Welcome Reef Dam to augment Sydney's water supply will be deferred indefinitely. This means that the balance between supply and demand for water in the Sydney area needs to be managed within the constraints of the existing infrastructure. Available information suggests that currently this balance is almost being achieved. The Catchment Authority estimates that under existing operating conditions, the safe yield from its storages is around 600GL per annum.<sup>26</sup> Sydney Water Corporation's demand in 2001/02 was 625GL.

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<sup>26</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, April 2002, p 31.

However, a range of factors will make it increasingly difficult to maintain this balance, by increasing demand and significantly reducing the yield from the storages. Three of the key factors are:

- increasing population in Sydney Water's area of operations (some forecasts estimate Sydney's population will reach around 5 million people by 2020)
- the likelihood that the Government will commit to increased environmental flows, to improve downstream river health and for other social and economic benefits
- the potential need to manage water transferred from the Shoalhaven to the Catchment Authority's storages differently, to ensure demand in the Shoalhaven can continue to be met and reduce environmental impacts.

One of the ways in which the difficulty could be reduced is by amending the performance criteria to allow more frequent, longer and/or more severe water restrictions. This would increase the amount of water the Catchment Authority could reliably release from its storages to meet demand, since less water would need to be stored to avoid restrictions. Other ways include reducing demand through the water conservation targets in Sydney Water Corporation's licence, improving management of irrigation downstream from the storages, and increasing the use of alternative water supplies (such as reuse and recycling).

At the workshop, the Tribunal presented some scenarios to demonstrate the potential effect on the water balance of changing key variables including the performance criteria, environmental flows and inter-basin transfers. These scenarios were based on preliminary data provided by the Catchment Authority and the Expert Panel on Environmental Flows and are shown in Figure 1.

For each scenario, assumptions were made about changing a variable, and the resulting yield that could be reliably provided<sup>27</sup> was plotted against historical and projected demand. (Please note that the information presented in Figure 1 should not be considered final or to necessarily represent the most likely scenarios. The Expert Panel plans to further refine its modelling and to have the data independently verified.)

Under the first scenario, it was assumed that the performance criterion on reliability is set at 95 per cent. (This criterion is currently 97 per cent, which means that if restrictions were applied for 12 months, they would only occur once every 33 years (on average) and that for most of the 12 months only level 1 restrictions (which require a 7 per cent reduction in demand) could be imposed. A 95 per cent reliability criterion would mean that restrictions applied for 12 months could occur once every 20 years (on average).) The Catchment Authority's modelling indicates that such a change would increase yield from the current 600GL per annum by an estimated 60GL per annum.<sup>28</sup>

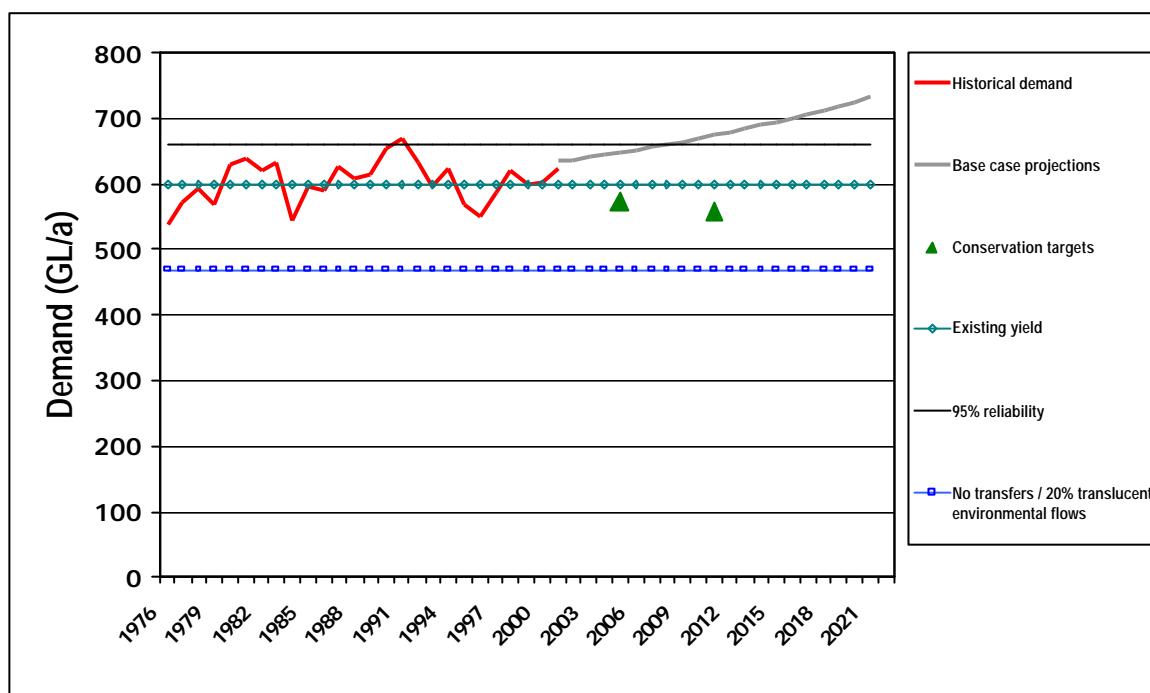
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<sup>27</sup> This is sometimes referred to as the 'safe yield' and is the maximum amount of water that can be guaranteed each year from a reservoir system with an acceptably small risk of reducing the reservoir storage to zero.

<sup>28</sup> Sydney Catchment Authority submission to mid-term review of the SCA's Operating Licence, p 34.

Under the second scenario, it was assumed that environmental flows are set at 20 per cent translucent flows (this means that 20 per cent of inflows to the Catchment Authority’s storages are released as environmental flows in a way that mimics the natural variability of river flows), and that no inter-basin transfers are available from the Shoalhaven.<sup>29</sup> The modelling suggests that these changes would reduce yield to an estimated 470GL per annum. This is significantly lower than the existing level of demand and the level of demand that might be achieved if Sydney Water Corporation meets its water conservation targets.

**Figure 1 Water balance scenarios based on preliminary modelling**



Source:

Data is preliminary data provided by Expert Panel on Environmental Flows incorporating modelling by the Institute for Sustainable Futures and SMEC and data provided by the Sydney Catchment Authority. It does not represent any recommendations or decisions made by the Expert Panel or the Government.

Notes:

- (1) *Base case projections* assumes per capita demand remains at current levels but allows for some reductions for expected gains from existing regulations eg. continued replacement of toilets with water efficient dual flush models.
- (2) Population projections used were provided by ABS in June 2002.

These scenarios demonstrate the need to consider how supply and demand will be managed into the future. There is potential to increase supply by changing the performance criteria. However, it is important to consider the criteria in the overall context of the water balance. Government decisions on environmental flows and inter-basin transfers have the potential to significantly reduce supply. Population growth will put increasing pressure on the level of demand. Stakeholders at the workshop strongly advocated that the Tribunal adopt an integrated approach to any recommendations it makes about the performance criteria.<sup>30</sup>

<sup>29</sup> Under existing operating rules, water is pumped from the Shoalhaven when the Catchment Authority’s storages fall below 60 per cent.

<sup>30</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, 23 July 2002, pp 20-21.



The Tribunal agrees with this view. It has therefore decided not to recommend any changes to the reliability criteria at this stage, because it believes it does not have sufficient reliable information about other aspects of the water balance. It proposes to reconsider the criteria at the end-of-term review, when it has had an opportunity to collect more information (see section 7.2.3 below).

## 7.2.2 Limitations of existing licence conditions

The Tribunal also identified some issues in relation to the way the licence conditions related to the performance criteria are expressed. These include that:

1. the criteria are expressed in an unnecessarily complicated way that makes them difficult to interpret
2. the assessment of compliance with the criteria is based on probabilistic modelling, which means there is inherent uncertainty in assessing performance
3. the criteria and assessment of compliance is framed in terms of the Catchment Authority's capacity to meet Sydney Water Corporation's forecast demand, rather than Sydney Water Corporation's actual demand.

In the period leading to the end-of-term review, the Tribunal believes it will be important to address these issues.

## 7.2.3 Proposed way forward

The Tribunal has identified the information it believes it needs to recommend if changes should be made to the performance criteria, and summarised this information in Table 1. Participants at the workshop were asked to comment on the table and whether it adequately captured the key information requirements.

Most stakeholders recognised the need for more information to inform a review of the reliability criteria and supported the collection of information listed in the table. The Tribunal proposes to use Table 1 as the basis for gathering information and promoting discussion of the relevant issues prior to the end-of-term review. It believes the resulting information will provide a better basis for making its recommendations.

The Tribunal believes research on community preferences will be an important input to the review of the criteria. It recognises the difficulties in obtaining useful information on community preferences and attitudes raised by stakeholders at the workshop, but acknowledges the willingness of both the Catchment Authority and Sydney Water Corporation to address this issue. As stated by Graeme Head, Chief Executive of the Sydney Catchment Authority:

[Community willingness with respect to restrictions] is a very complex part of the picture and we're going to have to work a lot harder to develop an understanding of exactly what that willingness might look like in practice in different scenarios... so I strongly support us doing more and better work on that issue.<sup>31</sup>

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<sup>31</sup> IPART, *Transcript of Mid-term review workshop of the Operating Licences for Sydney Water Corporation and Sydney Catchment Authority*, p 25.

Some stakeholders were concerned that perfect information would never be available and that this should not prevent changes being made to the performance criteria. The Total Environment Centre is concerned that lack of information at the end-of-term review may again prevent a recommendation on the reliability criteria, and recommends that the reliability criterion be changed from 97 per cent to 95 per cent now to allow for trials of environmental flows.<sup>32</sup>

The Tribunal recognises these concerns but believes it would be premature to recommend changes to the criteria at the mid-term review, particularly prior to the findings of the Expert Panel on Environmental Flows and the recommendations of the Hawkesbury Nepean River Management Forum.

The Tribunal also proposes to produce an issues paper and to facilitate a public forum that focuses on water balance scenarios and the regulatory options for the performance criteria prior to the end-of-term review.

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<sup>32</sup> Total Environment Centre supplementary submission to mid-term reviews of SCA's and SWC's Operating Licences, August 2002.

**Table 1 Information requirements for review of the reliability criteria**

<b>Information Required</b>	<b>Source</b>	<b>Availability</b>
<p><b>System capabilities</b></p> <p><i>An understanding of the capacity of the existing infrastructure, its operating rules including inter-basin transfers, and modelling of how these would be affected by changes to the reliability criteria</i></p>	Expert Panel, Catchment Authority, Sydney Water	2003
<p><b>Population projections</b></p> <p><i>Estimates of Sydney's population and populations in catchment areas to at least 2020</i></p>	PlanningNSW, Sydney Water, Catchment Authority	Ongoing (Projections incorporating 2001 census data to be released by PlanningNSW by end 2002)
<p><b>Urban design</b></p> <p><i>An understanding of how planned urban expansion and consolidation may affect demand for water (in Sydney and catchment areas)</i></p>	PlanningNSW, Sydney Water, Catchment Authority	Ongoing (Modelling tools to be available by end 2002 from PlanningNSW and Sydney Water)
<p><b>Environmental flows</b></p> <p><i>Information on the allocations necessary for environmental flows and how they will affect the amount of water available for other uses</i></p>	Hawkesbury Nepean Forum, Department of Land and Water Conservation	2003
<p><b>Water sharing planning</b></p> <p><i>An understanding of how water sharing plans will affect inter-basin transfers from the Shoalhaven and demand for and efficiency of downstream irrigation</i></p>	Department of Land and Water Conservation	Ongoing
<p><b>Demand management</b></p> <p><i>An understanding of the potential for demand management savings and how these will affect the supply and demand balance.</i></p>	IPART Consultancy, DLWC, Water CEOs	2002
<p><b>Community preferences</b></p> <p><i>An understanding of the community's attitudes towards and acceptance of restrictions and water conservation measures</i></p>	Research by Sydney Water and Catchment Authority including consultation with stakeholders	end 2003
<p><b>Other jurisdictions</b></p> <p><i>An understanding and evaluation of regulatory frameworks and instruments used to manage reliability in other jurisdictions</i></p>	Catchment Authority Consultancy, Melbourne Watersmart Committee, Secretariat research.	2002

## 8 OTHER ISSUES

### 8.1 Coal mining in the catchments

Some stakeholders are concerned about the impacts of coal mining in parts of the catchment. The Nature Conservation Council is concerned about pollution of stream waters by escaping coal mine gases and by sediments.<sup>33</sup> The Total Environment Centre is concerned that:

... longwall mining in the catchment will adversely effect security of supply through cracking of stream beds and damage to infrastructure such as weirs and pipelines.<sup>34</sup>

The Government has made a decision (based on the Healthy Rivers Commission Report on the Hawkesbury Nepean River System) that aims to mitigate the impacts of underground coal mining. This decision requires the Department of Mineral Resources to change the process for approving new underground coal mining, so that this process involves explicit assessment of the impacts on river health, including groundwater, river flows, geomorphology and water-related ecosystems, and the implementation of measures to mitigate adverse impacts.<sup>35</sup>

The Tribunal does not believe that the Operating Licence is the appropriate instrument for limiting the impacts of coal mining in the catchments, and supports this decision.

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<sup>33</sup> Nature Conservation Council of NSW submission to mid-term reviews of SCA's and SWC's Operating Licences, May 2002.

<sup>34</sup> Total Environment Centre submission to mid-term reviews of the SCA's and SWC's Operating Licences, May 2002.

<sup>35</sup> NSW Government, *Statement of Joint Intent for the Hawkesbury Nepean River System*, 12 March 2001.

## ATTACHMENT 1 TERMS OF REFERENCE

### Mid-term review of Operating Licence for Sydney Catchment Authority

1. The Tribunal is requested, pursuant to section 4B of the *Independent Pricing and Regulatory Tribunal Act 1992* to conduct the mid-term review of Sydney Catchment Authority's Operating Licence.
2. As is required under clause 2.3.1 of the Operating Licence the Tribunal must review whether the licence is fulfilling its objectives.
3. As required under the Operating Licence the Tribunal must:
  - a) advise the Minister on whether any obligations in the Memoranda of understanding should be incorporated into the Licence (clause 3.3.6)
  - b) review the Catchment Authority's obligations under clause 6.2 of its licence for water supplied for Water Treatment (clause 6.5)
  - c) review the need for the Risk Management Plan in light of the requirements under the Regional Environmental Plan (clause 6.7.7). The Tribunal should consider whether the risk management plan achieves its purpose and the objectives of the licence relating to catchment management
  - d) review the Catchment Infrastructure Works performance criteria set out in Schedule 2 of the operating licence (clause 8.1.3). In reviewing the performance criteria the Tribunal should have regard to:
    - (i) the need to maintain an adequate level of security for the water supply
    - (ii) demand management objectives
    - (iii) the need to ensure environmental flows are achieved in rivers below the Authority's dams
    - (iv) the Government policy to avoid augmentation of the Catchment Infrastructure Works.
  - e) consider other aspects of the Catchment Authority's performance that are relevant to an assessment of whether the Operating Licence is meeting its objectives.
4. When recommending the terms of the operating licence, the Tribunal must:
  - a) take into account relevant considerations from the reviews of the licences of the Sydney Water Corporation and Hunter Water Corporation
  - b) consult with relevant parties as necessary
  - c) consider the impact of performance standards on the cost of service provision.

The Tribunal's review and recommendations must be provided by 30 September 2002.

## **ATTACHMENT 2 LIST OF SUBMISSIONS**

Department of Housing  
Department of Local Government  
Department of Land and Water Conservation  
Nature Conservation Council  
NSW Environment Protection Authority  
NSW Health  
PlanningNSW  
Public Interest Advocacy Centre  
Sydney Catchment Authority  
Sydney Water Corporation  
Total Environment Centre

## ATTACHMENT 3 WORKSHOP PARTICIPANTS

### Organisation

Department of Housing  
 Department of Housing  
 Department of Housing  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Department of Land & Water Conservation  
 Environment Protection Authority  
 Environment Protection Authority  
 Environment Protection Authority  
 Environment Protection Authority  
 Expert Panel on Environmental Flows  
 GHD  
 Gosford City Council  
 Hunter Water Corporation  
 Independent Pricing & Regulatory Tribunal  
 Independent Pricing & Regulatory Tribunal  
 Independent Pricing & Regulatory Tribunal  
 Independent Pricing & Regulatory Tribunal  
 Independent Pricing & Regulatory Tribunal  
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 Independent Pricing & Regulatory Tribunal  
 Independent Pricing & Regulatory Tribunal  
 Institute of Sustainable Futures  
 Ministry of Energy and Utilities  
 MWH Australia Ltd  
 Nature Conservation Council  
 NSW Health  
 NSW Treasury  
 NSW Treasury  
 NSW Treasury  
 Office of Minister for Energy  
 PlanningNSW  
 PlanningNSW  
 Public Interest Advocacy Centre  
 Stormwater Industry Association  
 Sydney Water Corporation  
 Sydney Water Corporation  
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 Sydney Water Corporation  
 Sydney Water Corporation  
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### Person

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 Neil Sandall  
 Pat Boow  
 Russell Beatty  
 Charles Essery  
 Peter Schneider  
 Salim Vhora  
 Gary Hamer  
 Steve Nicholls  
 Doug Rhodes  
 Lisa Corbyn  
 Joe Woodward  
 Natasha Lee  
 Peter Moreza  
 Bob Wilson  
 Maurice Pignetelli  
 Kevin Tomlinson  
 Brad Foot  
 Tom Parry  
 Jim Cox  
 Colin Reid  
 Felicity Hall  
 Liz Livingstone  
 Kylie Miller  
 Nigel Rajaratnam  
 Gerard O'Dea  
 Michael Sedwell  
 Stuart White  
 Dennis Fardy  
 Shane O'Brien  
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 Cristine Cowie  
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 Peter Hamilton  
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 John Wood  
 Alex Walker  
 Angela Tsoukatos  
 Denise Dawson  
 Steven Baxter  
 Richard Birrell  
 Eric de Rooy  
 Gavin Morrison  
 Greg Reynolds

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Amit Chanan  
Yasoda Muralitharan  
Chris Maddock  
Ian Tanner  
Robert Emmanuel  
Leigh Martin  
Jill Merrin



## **ATTACHMENT 4 GLOSSARY**

Act	Sydney Water Catchment Management Act 1998
Catchment Authority	Sydney Catchment Authority
DLWC	Department of Land and Water Conservation
EPA	Environmental Protection Authority
GL	Gigalitres
HRC	Healthy Rivers Commission
IPART	Independent and Regulatory Tribunal of NSW
ML	Megalitres
MOU	Memorandum of Understanding
NSW	New South Wales
NSW Health	NSW Health Department
REP	Regional Environment Plan
RMP	Risk Management Plan
Sydney Water	Sydney Water Corporation
Tribunal	Independent Pricing and Regulatory Tribunal of NSW
WAMC	Water Administration Ministerial Corporation