

# **Sydney Catchment Authority Operational Audit 2004/2005**



# IPART

**INDEPENDENT PRICING AND  
REGULATORY TRIBUNAL  
of New South Wales**

# **Sydney Catchment Authority**

## **Operational Audit 2004/2005**

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**Compliance No 23**

**February 2006**

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

Our reference: 05/253

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10 February 2006

The Hon Bob Debus, MP  
Minister for the Environment  
Level 36  
Governor Macquarie Tower  
1 Farrer Place  
SYDNEY NSW 2000

Dear Minister

**Operational Audit of Sydney Catchment Authority 2004-2005**

In accordance with Section 32 of the *Sydney Water Catchment Management Act 1998*, the Tribunal is pleased to submit the independent Operational Audit Report of Sydney Catchment Authority for the period from 1 July 2004 to 30 June 2005.

The Tribunal notes that this is the last Audit of the Authority's performance under the old Operating Licence, with a new Licence for the period 2006 to 2010 having taken effect from 1 January 2006

The Audit has found that:

*The SCA has performed at a generally high to full level of compliance within the Operating Licence, with some minor exceptions. It has established a foundation of management plans and work programs and, overall, demonstrated good performance in the implementation of those plans.*

Having considered the Audit report, the Tribunal recommends that no penalties should be imposed on the Authority. However, the Audit highlighted a number of significant issues which are addressed below.

**Provision of information to the Auditors**

In the Audit Report, the Auditors have found that there is insufficient information with which to make a compliance assessment for clauses 8.1.2, dealing with the Schedule 2 performance criteria, and 8.3.2, which requires the Authority to manage water conservation consistent with the demand management requirements within Sydney Water Corporation's Operating Licence. The basis for these findings was that certain requested information was not provided to the Auditors as it was considered by the Authority to be Cabinet in Confidence.

The Tribunal fully understands and supports the need for Cabinet confidentiality, a principle which has existed for centuries in Westminster style democracies and by which the Tribunal is bound under section 25A of the *Independent Pricing and Regulatory Tribunal Act 1992* (the Act).

The Act also confers on the Tribunal licence auditing functions covering both the Catchment Authority and a number of other utility businesses. To fulfil these functions the Tribunal is dependent on the provision of information from these businesses. Whilst appreciating the Authority's obligation not to disclose material which is Cabinet in Confidence, the Tribunal believes that in most cases, alternative non-confidential information should be able to be provided to satisfy the Audit process.

The Tribunal notes that in the six years that Operational Audits of the Authority's Licence have been conducted this is the first time that issues have arisen regarding Cabinet in Confidence information. The need to address this issue has resulted in some delays and disruption to the Audit process.

As this issue is likely to arise again, the Tribunal will endeavour to reach agreement with the Catchment Authority on arrangements for dealing with Cabinet in Confidence material during future Audits. This agreement would cover the identification and notification of such information and arrangements for providing alternative non-confidential information where available.

With respect to clauses 8.1.2 and 8.3.2, the Tribunal has undertaken its own investigation in an effort to ascertain whether the Authority has complied with these aspects of the Licence. These issues are discussed in further detail below:

#### **Clause 8.1.2**

This clause provides that the Authority ensure that Catchment Infrastructure Works are designed, operated and managed to provide Sydney Water Corporation with a long term standard of service which accords with the performance criteria set out in Schedule 2 of the Licence. Schedule 2 essentially sets out operating rules governing the allowable frequency, duration and severity of water restrictions.

The Auditors expressed concern that the WATHNET model (used by the Authority to calculate the sustainable yield and performance against the Schedule 2 criteria) was not sufficiently robust and accurate to show that all the Schedule 2 criteria had been met. The Auditors alleged that this was because the Authority had not provided information, which it considered Cabinet in Confidence, to the Auditors to show that these refinements had been carried out.

As a result the Tribunal sought additional information from the Authority on whether the WATHNET model was within the bounds of acceptable accuracy and whether the Authority had complied with the Schedule 2 criteria over 2004/05.

The Authority has indicated that actions to improve and refine the WATHNET model are taking place on an ongoing basis and that any outstanding improvement actions had simply been overtaken by more urgent work required as part of the Metropolitan Water Plan. The Authority has indicated that any delays should be seen in the context of the existing WATHNET which is in line with best practice in terms of its accuracy and robustness.

The Authority have supported these assurances with written information showing a timeline of actions to review and improve the model and evidence that the model and modelling methodology have been peer reviewed and found to be of acceptable accuracy by experts in this field.

On the basis of the assurances and information provided, the Tribunal is satisfied for the purposes of the 2004/05 Audit that the WATHNET model and modelling methodology operates within the bounds of reasonable accuracy.

In terms of the Authority's performance against the Schedule 2 criteria, the Tribunal has expressed concern over whether the Authority is fully complying with all aspects of the criteria. For example, the reliability criteria states, "*that, on average, restrictions will not need to be applied more often than 30 months in 1,000 months.*" This means that restrictions should only occur for 3% of months, on average, a ratio of 1 month of restrictions every 2.8 years.

The Tribunal notes that mandatory water restrictions have been in place since 1 October 2003, a continuous period of 29 months. This coupled with the last period of mandatory restrictions from November 1994 to October 1996 (a period of 24 months), means that over the last 1000 months (83.3 years) restrictions have been in place for at least 53 months (4.4 years).

The Authority argues that the period of restrictions from 1994 to 1996 should not count for the purposes of compliance assessment, as the water restrictions then imposed were based on a different set of rules to those specified in the Operating Licence. For example, restrictions were introduced when the total system storage remained above 55%, which is currently the trigger point for restrictions to commence. The Authority also believes that compliance with the Schedule 2 criteria should be determined via the WATHNET model rather than comparing the criteria to actual performance. Moreover, it is arguable that the reliability criteria relate more to the planning than to the performance of the system.

Given the complexity of this issue the Tribunal has been unable to conclude on the basis of the information available to it that the Catchment Authority is in breach of the reliability criteria.

The Tribunal notes that this is the last Audit of the SCA under the old Licence and that from 1 January 2006 a new Licence for the SCA has taken effect. The Schedule 2 performance criteria are not contained in the new Licence. Instead, the SCA is required to publicly report on the sustainable yield and the key assumptions (including the performance criteria) approximately 12 months from the commencement of the Licence and subsequently upon any material changes to the yield or assumptions.

As such the performance criteria is now a reporting rather than compliance requirement and the terms of the criteria are no longer "set in stone" in the Licence itself. This provides an opportunity for the Authority to review the criteria to ensure that they both accurately reflect the likely frequency, duration and severity of restrictions that the community can expect and is expressed in a way that is as clear and understandable as possible.

### Clause 8.3.2

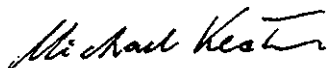
This clause requires the Authority, to the extent which it is able, to manage water conservation consistent with the demand management requirements in Sydney Water Corporation's Operating Licence. The Auditor noted that whilst the Authority was understood to have participated in a number of initiatives, documentation had not been provided to provide evidence of such participation due to Cabinet in Confidence status being claimed.

In subsequent discussions with the Tribunal, the Authority has indicated that it believes that it has complied with the requirements of clause 8.3.2 to the limited extent to which it is able and has provided a written summary of actions undertaken to comply with this requirement.

Based on the evidence provided, the Tribunal accepts for the purposes of the 2004/05 Audit, that the SCA has carried out a number of actions satisfying the requirements of clause 8.3.2.

Please do not hesitate to contact me by telephone on (02) 9290 8411 if I can be of further assistance.

Yours sincerely

A handwritten signature in dark ink, appearing to read 'Michael Keating', with a stylized flourish at the end.

Michael Keating AC  
Chairman



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**Sydney Catchment Authority  
Operational Audit 2004/05**

March 2006





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## Abbreviations

Acronym	Description
Act	<i>Sydney Water Catchment Management Act 1998</i>
ADWG	Australian Drinking Water Guidelines
AER	Annual Environment Report
ANCOLD	Australian National Committee on Large Dams
ANZEC	Australia and New Zealand Environment Council
AS	Australian Standard
ASP	Accelerated Sewerage Program
Authority	Sydney Catchment Authority
BWSA	Bulk Water Supply Agreement
CE	Chief Executive
CEO	Chief Executive Officer
CPS	Catchment Protection Scheme
CRC	Co-operative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSS	Catchment Support System
DA	Development Application
DAR	Development Application Register
DEC	Department of Environment and Conservation
DEUS	Department of Energy, Utilities and Sustainability
DLWC	(Former) Department of Land and Water Conservation (NSW)
DoH	Department of Health (NSW)
DIPNR	Department of Infrastructure, Planning and Natural Resources (NSW)
DSC	Dam Safety Committee
DSEP	Dam Safety Emergency Plan
DST	Decision Support Tool
EASI	Environmental Assessment of Sites and Infrastructure
EIS	Environmental Impact Statement
EISB	External Independent Scientific Body
EPA	Former Environment Protection Authority (NSW), now part of DEC
EPPR	Environmental Plan Progress Report
ERP	Expert Reference Panel



Acronym	Description
ESD	Ecologically Sustainable Development
ESG	Executive Steering Group
GHD	GHD Pty Ltd
GIS	Geographical Information System
GM	General Manager
G&M	Gauging and Monitoring
HCP	Healthy Catchments Program
HVRF	Hunter Valley Research Foundation
IPART	Independent Pricing and Regulatory Tribunal (NSW)
JOG	Joint Operational Group
k	Kilo (1000)
kg	Kilogram
kWh	Kilowatt hour
LEP	Local Environmental Plan
LGRP	Local Government Reference Panel
M	Million
ML	Megalitre (1 million litres)
MOU	Memorandum of Understanding
NATA	National Analytical Testing Authority
NHMRC	National Health and Medical Research Council
NPWS	Former National Parks and Wildlife Service (NSW), now the Parks and Wildlife Division of DEC
O&M	Operating and Maintenance
PENGO	Peak Environmental Non-Government Organisation
PIN	Penalty Infringement Notice
PSD	Pollution Source Database
ppm	Parts per million
QA	Quality Assurance
RAP	Rectification Action Plan
RCC	Regional Consultative Committee
REP	Regional Environmental Plan
RTA	Roads and Traffic Authority
RZI	Riparian Zone Index
R&D	Research and Development



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Acronym	Description
SASM	Special Areas Strategic Management Group
SASPoM	Special Areas Strategic Plan of Management
SCA	Sydney Catchment Authority
SCC	Shoalhaven City Council
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy
SES	State Emergency Services
SLG	Strategic Liaison Group
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
SWC	Sydney Water Corporation
SWCMA	Sydney Water Catchment Management Act
WAMC	Water Administration Ministerial Corporation
WCC	Wingecarribee City Council
WFP	Water Filtration Plant
WML	Water Management Licence (under the Water Act 1912)
WSSAPoM	Wingecarribee Swamp and Special Area Plan of Management

## Glossary/definitions

### General terms and definitions

Term	Meaning
Act	<i>Sydney Water Catchment Management Act, 1998.</i>
Audit period	1 July 2004 to 30 June 2005.
Auditor	GHD Pty Ltd
Bulk Water	Water supplied by the SCA to Sydney Water under the Bulk Water Supply Agreement and by the SCA to customers other than Sydney Water.
Bulk Water Supply Agreement	The Bulk Water Supply Agreement between the SCA and Sydney Water.
End of Term Review	A review of the Operating Licence to be undertaken on or about 1 January 2004.
Environmental Flow	A release of water from storage so as to provide a flow of water in a river or other natural waterway that mimics natural seasonal flows and aims to restore or maintain the ecology of the waterways concerned.
Function	Means a power, authority or duty.
Mid-term Review	A review of the Operating Licence during 2002.
Minister	The Minister responsible for administering the provisions of the <i>Sydney Water Catchment Management Act, 1998.</i>
Operating Licence	The licence under which the SCA operates between 19 April 2000 and 31 December 2004. The licence was subsequently extended until 31 December 2005.
Water Management Licence	A Water Management Licence granted under the <i>Water Act, 1912</i> and issued by DLWC on 23 April 2001 and modified on 11 February 2003.

### Compliance table assessment

Term	Meaning
Grading of Compliance	The following compliance ratings are used to grade compliance achievement.
Full compliance	All requirements of the condition have been met.
High compliance	Most requirements of the condition have been met with some minor technical failures or breaches.
Moderate compliance	The major requirements of the condition have been met.
Low compliance	Key requirements of the condition have not been met but minor achievements regarding compliance have been demonstrated.
Non compliance	The requirements of the condition have not been met.
Insufficient information	Relevant, suitable or adequate information to make an objective determination regarding compliance was not available to the auditor.
No requirement	The requirement to comply with this condition does not occur within the audit period or there is no requirement for SCA to meet, such as a definition or a requirement placed upon another agency.



## Preface

GHD Pty Ltd (GHD), in association with the Hunter Valley Research Foundation (HVRF), was commissioned by the Independent Pricing and Regulatory Tribunal (IPART) to undertake the 2004/05 Operational Audit of the Sydney Catchment Authority (SCA).

The audit's context is provided by the principal and special objectives of the SCA (under the *Sydney Water Catchment Management Act 1998, Section 14(1) and 14(2)*), which are directed to the protection of water quality, public health and catchment management, and the sound management of infrastructure works. In addition to the requirements of the Operating Licence, the audit included one Ministerial requirement related to bulk water quality and recommendations to improve outcome delivery.

The 2004/05 Operational Audit covers the period from 1 July 2004 to 30 June 2005 and is the sixth audit undertaken since the SCA commenced operations in July 1999. During the audit period, the SCA has been required to comply with the five-year Operating Licence that took effect from 19 April 2000. Additional compliance requirements were also imposed by the Minister following the 2003/04 Operational Audit.

The audit methodology involved the preparation of an audit plan, inception meetings, application of audit questionnaires, interviews, documentation review and reporting. The audit questionnaires directly related to the respective clauses of the Operating Licence conditions. Evidence was assembled through document review, interviews and analysis to determine compliance.

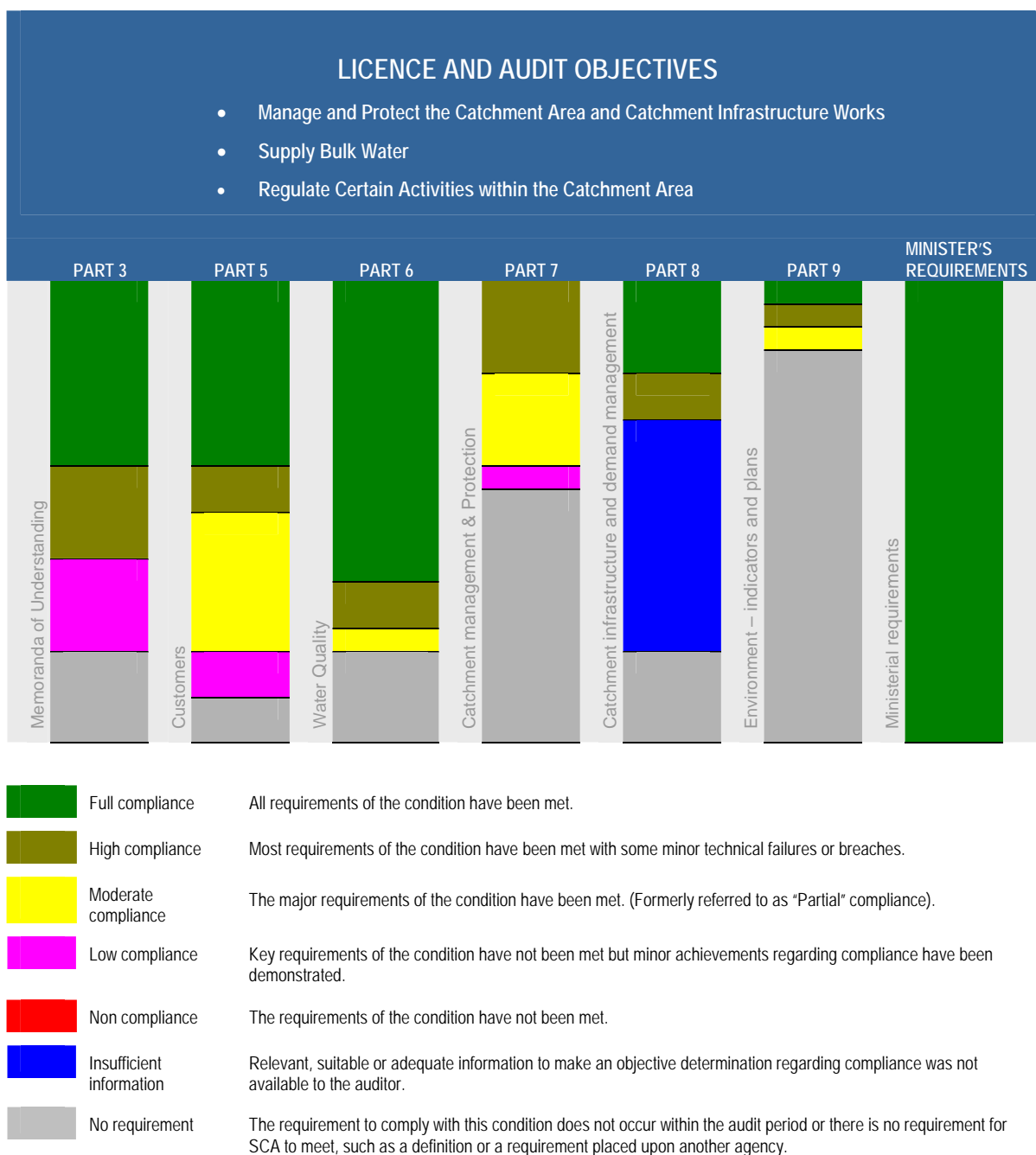
This audit report has been specifically prepared to meet the requirements of the audit brief and Part 10 of the Operating Licence.

The findings of the report are presented in a format consistent with the Operating Licence structure and not in a "prioritised order" or "order of significance".

## Executive Summary

The Sydney Catchment Authority (SCA) has managed its resources to achieve predominantly High to Full compliance with the Operating Licence, although some areas of Low to Moderate compliance have been recorded. Figure 1.0 provides an indicative overview of the SCA's level of compliance.

**Figure 1.0 Overview of compliance for 2004/05 audit period.**



NOTE: Figure is indicative only.

Compliance with each Part of the Operating Licence for the 2004/05 audit period is summarised below.

### **Memoranda of understanding (Part 3)**

The SCA achieved **High compliance** for maintaining Memoranda of Understanding (MOUs) with the Environment Protection Authority (now DEC), the Water Administration Ministerial Corporation (WAMC) and NSW Health, in accordance with the provisions of the SCA's Operating Licence.

The SCA's performance in implementing the MOU with NSW Health and with the EPA (DEC) was assessed as **Full compliance**. The SCA's performance in implementing the MOU with the WAMC was assessed as **Low compliance**. The DLWC and the SCA initiated a review of the MOU in April 2001 that was initially to be completed by 21 December 2001. The review has not been completed and some essential requirements of the MOU are not being complied with.

### **Customers (Part 5)**

The SCA received **Full compliance** for clauses under the Bulk Water Supply Agreement with Sydney Water. The current Bulk Water Supply Agreement (BWSA) between Sydney Water and SCA continues to be valid until 31 December 2005.

The SCA's performance was assessed as **Moderate compliance** in relation to establishing water supply agreements with other customers. Signed agreements are still outstanding with the two bulk customers, Wingecarribee and Shoalhaven Councils. All regular retail customers have signed agreements. Some customer agreements expired during the year and the SCA had a program of renewing these agreements as required.

As has been the case in previous audit periods, the SCA's performance under the complaint handling clauses was mixed, with rankings from **Low** to **Full compliance**. The complaints handling procedure was not fully compliant with AS4269-1995 and information about the complaint handling procedure was not sent to all customers during the audit period.

The SCA has been rated from **Low** to **Full compliance** in relation to the requirements for consultative committees. While most requirements for consultative committees have been met, a key issue has been the lack of involvement of all the stakeholder groups as required by the Licence.

### **Bulk water (Part 6)**

The SCA was assessed as **High to Full compliance** with the requirements for the quality of the bulk water supplied for water treatment. There is potential for the quality of the bulk water to deteriorate, for example, with falling dam levels or with drought breaking rains and the SCA has control measures in place to manage the impact of such events.

**Moderate compliance** was assessed in relation to reaching agreement with customers on water quality supplied for other (than water treatment) uses.

The SCA was assessed as being in **Full compliance** for catchment and system management. The SCA is undertaking a large body of work that has the objective of properly managing the catchments and ensuring the quality of the bulk water meets the required standards. This has been brought together in a *Healthy Catchments Program 2003 – 2007*.

SCA undertakes a program of water quality monitoring in accordance with an Annual Water Quality Monitoring Program that has been developed in consultation with Sydney Water and NSW Health and was assessed as **Full compliance**.

The SCA was assigned **Full compliance** in meeting the requirements for the development of a five year Risk Management Plan. The SCA has now finalised an excellent Water Quality Risk Management Framework.

The SCA has prepared an Incident Management Plan in accordance with the requirements of the Licence and has continued to work on trialling and improving the Plan.

### **Catchment management and protection (Part 7)**

The SCA continued to apply its resources to achieve **High compliance** against the requirements for catchment management and protection.

**No requirement** applied to many Licence clauses relating to catchment management, as the planning targets had been met in earlier years. **High compliance** was assessed for many of the remaining tasks, including the improvements in making available unpublished water quality data.

SCA's "*best endeavours*" to coordinate and collect data on water quality in the catchment continues at a **Low compliance** (particularly in regard to data collected by other organisations).

The establishment of a formal link to Councils to advise SCA of development commencement, as directed by the Minister in 2000/01, was again assessed as **Low compliance**.

The SCA demonstrated the major requirements under the Special Areas Strategic Plan of Management (SASPoM) have been met and was assessed as **Moderate compliance**.

**High compliance** was assessed for SCA's continued professional approach to its catchment planning role (under SEPP 58).

### **Catchment infrastructure works (Part 8)**

The SCA has developed an excellent Catchment Infrastructure management system for managing bulk water quality. This system has been audited in previous audit periods and remains at **Full compliance**.

A compliance rating of **Insufficient information** has been given for the long term standard of service (reliability, security and robustness) required by the Licence for the specified average annual demand for water. There was a lack of relevant information in this year's audit. There is significant doubt that the current WATHNET model used to determine compliance against Schedule 2 criteria is sufficiently up to date or accurate to provide reliable identification of performance.

The SCA has demonstrated **Full compliance** with the requirements of the Dam Safety Committee (DSC). Whilst there was minor slippage in the program for the production of formal reports to the DSC and the testing of the Dam Safety Emergency Plans, the DSC has confirmed that these actions are being undertaken within a timeframe acceptable to the DSC.

A compliance rating of **Insufficient information** has been given regarding SCA's activities related to managing water conservation. The SCA outlined a number of activities but did not provide detailed reports or information that enabled the Auditor to verify the extent and technical reasonableness of SCA's work in this area.

A **High compliance** rating was given for SCA's work on considering any additional scope for cost-effective demand management strategies by Sydney Water

### **Environment (Part 9)**

The SCA demonstrated **High to Full compliance** for the annual environmental reporting requirements of the Licence. However, failure to publish the environmental reports within the required timeframe resulted in a **Moderate compliance** for this requirement.

The SCA demonstrated variable compliance in meeting the strategies and targets of the Environment Plan. Compliance ranged from **Low to Full compliance**.

There was a decline in performance for seven (out of 30) environmental indicators and three (out of 18) ESD indicators, predominantly attributable to the impact of the current drought conditions.

The SCA demonstrated **High compliance** regarding the release of environmental flows from storages in accordance with the Water Management Licence issued by DIPNR.

### **Ministerial requirements**

SCA demonstrated **Full compliance** in meeting the Ministerial Requirement for Bulk Water Quality.

## ‘The big picture’

The Sydney Catchment Authority (SCA) has, over 2004/05, demonstrated sound performance in implementing its charter as described in the Operating Licence to protect water quality in the catchment areas that provide Sydney, the Blue Mountains and Illawarra with bulk raw water. The SCA performed at a generally high to full level of compliance with the requirements of the Operating Licence, management plans and work programs with some exceptions.

The Auditor has assessed SCA's performance against its Operating Licence and the following key matters are identified as forming the “*big picture*”. In brief:

### **Bulk water quality**

- ▶ The quality of bulk water supplied for water treatment to SCA customers (Sydney Water, Shoalhaven Council, Wingecarribee Council) met all health guidelines and met most of the aesthetic requirements required by the Licence. Over the past 5 years, no significant water quality issues have arisen, however, the potential exists for water quality to deteriorate with falling dam levels or drought breaking rains.

SCA, in cooperation with Sydney Water, assessed such risks and determined there are sufficient control measures in place to reduce the residual risk to public health to a low level.

The Water Quality Monitoring Program helps SCA confirm its compliance with health and aesthetic related quality requirements of bulk water. The Program provides information for a broad range of water quality standards, monitoring, investigation and reporting requirements. Water quality information is provided to NSW Health, key customers and the public in accordance with the Licence, although the reporting of incidents was an area that could be improved.

- ▶ The SCA has a sound system for the *management of bulk water quality*. This includes a well-developed and impressive Water Quality Risk Management Framework that was finalised during the Audit period and utilised the findings of the Catchment Audits. The framework provides information that shows the SCA is complying with the requirements of the Licence relating to catchment management and system management of public water supplies. An Interagency Response Plan has been prepared in response to the Catchment Audit and this indicates that the various recommendations of the Catchment Audit are being actioned. The SCA is undertaking a large number of initiatives identified in the Framework that, over time, can be expected to significantly improve water quality and to reduce the risk of occurrences of poor bulk water quality. The SCA's reporting of progress on actions required by the Framework can be improved by reporting against targets and Key Performance Indicators.
- ▶ The Bulk Water Quality Incident Response Plan includes provision to notify NSW Health immediately upon certain triggers being exceeded and to provide water quality monitoring results to NSW Health. If NSW Health assesses a risk to public health, NSW Health is to liaise with the customers and issue a ‘boil water’ notice, if necessary, and to provide input to communications issued by the SCA for staff, customers, media and the Minister.

The Plan was subject to a full review in the audit period to make the Plan current and to remove ambiguity.

To ensure the quality of the bulk water, the SCA and NSW Health worked closely together on key matters including the Annual Water Quality Monitoring Plan, the Pathogen Monitoring Plan and the Cyanobacterial Risk Management Strategy.

The SCA, Sydney Water and NSW Health liaised regularly regarding water quality and strategies to protect water quality. The SCA also met regularly with Shoalhaven and Wingecarribee Councils to consider water quality issues, for example, elevated levels of cyanobacteria in the supply reservoir.

- ▶ The SCA reached agreement on the quality of water supplied to almost all customers (approximately 60) that use bulk water other than for water treatment and has advised them of the need for treatment if used for human consumption.
- ▶ The SCA continued to demonstrate it met all requirements for *managing and operating its catchment infrastructure works* to minimise risks to human health from the bulk water it supplies.

#### **Bulk water quantity**

- ▶ Insufficient information was provided to the Auditor to confirm the catchment infrastructure works could meet the required average annual demand of 583 000 ML/yr. The ability of the supply prediction model to accurately and reliably predict performance could not be confirmed and remains to be demonstrated. This results in low confidence that the catchment infrastructure can meet future water requirements.
- ▶ Similarly, insufficient information was provided to enable the Auditor to determine the SCA's compliance related to *water conservation*, that is, the extent and technical reasonableness of SCA's activities that support Sydney Water's demand management programs. Without achieving further water savings, Sydney may be faced with further restrictions or the requirement for new sources of supply.

#### **Catchment management**

- ▶ The SCA must apply its "*best endeavours*" to manage the various sources of pollution *to protect and manage its catchments*, although the SCA does not have full control of such factors. It continued an active program of catchment protection by identifying areas and activities of higher risk (such as the Kangaroo River) and applying its resources, such as compliance, planning and assessment accordingly.
- ▶ Evidence of this risk management approach included SCA's "*Healthy Catchments Program*" framework, the use of water quality risk data to determine priorities for catchment management (for example, inspection and compliance action and development assessment through SEPP 58). It is noted that such risks are in the context of the prolonged drought conditions which prevailed before and during the audit period. Opportunities available to the SCA related to improved transparency in catchment program expenditure and improved coordination with local government in notification of development applications, conditions of approval and compliance.
- ▶ The SCA has demonstrated a sound approach to the management of its Special Areas and Wingecarribee Swamp. However, opportunities remain for full and accurate annual reporting of financial expenditure and an increased rate of implementation, to meet the Ministerial approved timetable. Expenditure levels are generally at, or below, those recorded some four



years ago. The SCA demonstrated simplified and streamlined inter-agency decision making (with the Department of Environment and Conservation) in the management of Special Areas.

- ▀ The lack of the *Regional Environment Plan, "Sustaining the Catchments"*, continued to impact on SCA's ability to protect water quality from existing high risk developments and the application of, for example, "*Rectification Plans*".
- ▀ The SCA achieved a high rate of Development Application (DA) assessment within statutory timeframes and continue to foster working relationships with local Councils. Opportunities remain to establish formal systems of direct notification of all DAs submitted to Councils and monitoring the effectiveness and compliance of consent conditions.
- ▀ The SCA met most of its requirements for *environmental flow* releases from its storages except for one incident as a result of operator error and the temporary suspension of requirements at Tallowa Dam and Woronora Dam as a result of the prolonged drought.
- ▀ The SCA demonstrated variable performance in meeting the strategies and targets of the Environment Plan.

The SCA's performance against the *Environmental Indicators and the ESD indicators* was highly variable. It was not possible to assess whether the environmental indicators are trending towards an overall decline or improvement in environmental performance as a result of a lack of measurement or reporting of data. The SCA's performance against 16 indicators (nine environmental and seven ESD indicators) compared to the previous year could not be determined.

There was a decline in performance for seven (out of 30) environmental indicators and three (out of 18) ESD indicators, predominantly attributable to the impact of the current drought conditions. For example, continued increase in energy consumption (and greenhouse gas emissions) due to pumping of bulk water from the Shoalhaven, reduction in the volume of water released from the SCA's storages and continued reduction in the volume of bulk water in storage

### Customers

- ▀ The SCA established agreements with its *customers* for the supply of bulk water, although agreements with Wingecarribee and Shoalhaven Councils and the status of a number of water users continued to remain unresolved. Lack of agreements gives no guarantee of adequate supply or quality of water to customers.
- ▀ The SCA's performance in *complaint handling* was mixed, and there are concerns that not all complaints are being recorded and resolved in a systematic manner. Therefore, community/customer concerns may not be adequately addressed. Insufficient information or evidence was provided to enable the Auditor to fully assess SCA's performance.
- ▀ The representation of experts on its *Consultative Committees* did not comply with the Licence. Lack of expertise on the Consultative Committees may indicate that not all stakeholder groups relevant to the successful performance of the SCA may be represented.
- ▀ The SCA maintains *Memoranda of Understanding* (MOUs) to ensure cooperative working relationships with the Environment Protection Authority (now DEC), the Water Administration Ministerial Corporation (WAMC), and NSW Health. In 2004/05, SCA demonstrated good working relationships except for WAMC (DIPNR), for which the MOU continues to be out of date and some of its essential requirements are not being met.





CLIENTS | PEOPLE | PERFORMANCE

## Comparison of SCA compliance with the previous five years

This section of the report provides a tabular summary of the compliance achieved by the SCA in the 2004/05 audit period compared to compliance levels attained for the five previous audit periods. Table A provides a summary of compliance with each auditable requirement of the Operating Licence.

It is evident from Table A that:

- ▶ The SCA's performance against most of the Licence requirements continues to achieve High to Full compliance;
- ▶ The compliance levels for Bulk Water Quality remained generally at High to Full compliance;
- ▶ There was some decline in compliance with the requirements for the Consultative Committee. This was a result of the absence of some of the stakeholder groups identified in the Licence;
- ▶ No requirement applied to many Licence clauses relating to catchment management in 2004/05, as the planning targets had been met in earlier years. High compliance was assessed for many of the remaining tasks, including the improvement in making available unpublished water quality data;
- ▶ A lower level of compliance was evident in relation to water supplied to "other users". This was a result of the lack of signed agreements with customers;
- ▶ There was insufficient information to make an assessment of compliance for the management of catchment infrastructure works and demand management;
- ▶ Overall levels of compliance for the Environment Plan, ESD and Environmental Indicators remain unchanged from last year. However, a lower level of compliance was evident in relation to environmental reporting by the required date;
- ▶ The majority of clauses reported as No requirement for this audit period were also reported as No requirement in previous years. These relate to the development of plans and other milestones that have now been satisfied, to requirements not enacted during the audit period, or to "definitions" or requirements on agencies other than the SCA; and
- ▶ There are a number of variations from High to Full compliance between years on individual clauses. These results reflect changing priorities and resourcing that take place within organisations from year to year. The Auditor does not believe that this signifies any trend unless numerous clauses also demonstrate a consistent change in level of compliance.

**Table A: Operating Licence - summary of compliance over the last six years**

Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
<b>3 MEMORANDA OF UNDERSTANDING</b>							
3.3.1	Maintain MOUs for Licence term	High	Full	High	High	Full	Full
3.3.2	MOU to form basis of co-operative relationships with:	Low	Partial	Partial	High	Full	Full
	WAMC (now DIPNR)						
	NSW Health	Full	Full	Full	Full	Full	Full
	EPA (now DEC)	Full	Full	Full	High	Partial	Full
3.3.3	SCA to enter into additional MOUs as directed by the Minister	NR	NR	NR	NR	NR	NR
<b>5 CUSTOMERS</b>							
<b>5.1</b>	<b>Customer – Sydney Water Corporation</b>						
5.1.1	Supply of Bulk Water to Sydney Water	Full	Full	Full	Full	Full	Full
5.1.2	Review terms of bulk supply to Sydney Water	Full	Full	Full	Full	Full	NR
5.1.3	Best endeavours to gain Sydney Water's agreement	Full	Full	Full	Full	Full	NR
<b>5.2</b>	<b>Customers – other than Sydney Water Corporation</b>						
5.2.1	Best endeavours to customers other than Sydney Water	Moderate	High	High	Full	High	Partial
<b>5.3</b>	<b>Customer Complaints</b>						
5.3.1	Establish internal complaints handling	Full	Full	Full	High	Full	Full
5.3.2	Complaints handling to be based on Australian Standard	Moderate	Partial	Partial	Partial	Insuff info	Partial
5.3.3	Make available customer handling information	Full	High	High	Full	Full	Partial
5.3.4	Provide information and post on website each year	Moderate	Full	Full	Full	Full	Partial
5.3.5	Report details on complaints handling	Low	Low	Partial	High	Insuff info	Partial
<b>5.4</b>	<b>Consultative Committees (CC)</b>						
5.4.1	Establish and consult with CC	High	High	High	High	Full	High
5.4.2	Establish first CC within 3 months (by 19/07/00)	NR	NR	NR	NR	Full	Partial
5.4.3	Appoint CC members consistent with Licence	High	High	High	Full	Full	Partial



Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
5.4.4	Groups from which CC to comprise	Moderate	Partial	Partial	Full	Full	Partial
5.4.5	Number of CC a member can sit on	NR	NR	NR	NR	NR	NR
5.4.6	Term of appointments for CC members	Low	Full	Full	Full	Full	NR
5.4.7	Replacement of a CC member before term expiry	Moderate	Full	Full	Full	Full	NR
5.4.8	Establishment of CC charter by 19/10/00	NR	Full	High	NR	Full	NR
5.4.9	Charter required for each CC	Full	Full	High	NR	Full	NR
5.4.10	CC to have possession of information required	Moderate	Partial	Full	High	Full	NR
5.4.11	CC Charter to be posted on website	Full	Full	High	Full	Full	NR
5.4.12	Effectiveness of CC to be included in end of term review	NR	NR	NR	NR	NR	NR
<b>6 BULK WATER QUALITY</b>							
<b>6.1</b>	<b>Interpretation</b>						
6.1	Definitions of guidelines and water treatment	NR	NR	NR	NR	NR	NR
<b>6.2</b>	<b>Water Supplied for water treatment</b>						
6.2 (a)	SCA to meet health guideline values under Schedule 4	Full	Full	Full	Full	Full	Insuffic info
6.2 (b)	SCA must comply with specific bulk water standards	High	High	High	High	Partial	Partial
6.2 (c)	Liaise with water customers on strategies to ensure safe water	Full	High	High	Full	Full	Full
<b>6.3</b>	<b>Water supplied for other uses</b>						
6.3.1	Best endeavours used to reach agreement on water quality standards for water supplied to customers for purposes other than treatment	Moderate	High	High	Full	High	Partial
6.3.2	Advise customers of potential uses for bulk water and need for treatment if used for human consumption	Moderate	High	High	High	Partial	Partial
<b>6.4</b>	<b>Catchment and System Management</b>						
6.4	Comply with drinking water relating to catchment and system management.	Full	Full	Full	Full	Full	High
<b>6.5</b>	<b>Review of obligations regarding water quality</b>						
6.5	Licence Review Body to review obligations as part of Mid-term review	NR	NR	NR	NR	NR	NR

Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
<b>6.6 Water Quality Monitoring and Reporting</b>							
6.6.1	Develop a WQ monitoring program	Full	Full	Full	Full	Full	Full
6.6.2	Routine monitoring requirements of program a, b, c, d	Full	Full	Full	Full	Full	Full
6.6.2	e) Representative of bulk water	Full	Full	Full	High	Full	Full
6.6.3	Supply of monitoring results to customers and DoH	Full	Full	Full	Full	Partial	NR
6.6.4	Requirements for event based monitoring	Full	Full	Full	Full	High	Full
6.6.5	Develop a database for all monitoring results	Full	Full	Full	Full	Full	Full
6.6.6	Features of monitoring reported by 30/11 each year	Full	Full	Full	Full	Full	Full
6.6.7	Requirements for the monitoring report	Full	High	Full	Full	Partial	Full
6.6.8	Availability of monitoring report	Full	Full	Full	Full	Full	Full
<b>6.7 Water Quality Planning - Risk Management Plan (RMP)</b>							
6.7.1	Risk Management Plan prepared following first audit	Full	Full	High	Full	Full	Full
6.7.2	Identify and assess sources of pollution	Full	Full	High	Full	Partial	Full
6.7.3	Requirements for developing RMP	Full	Full	High	Full	High	Full
6.7.4	Parties to comment during preparation of RMP	NR	NR	NR	Partial	Full	High
6.7.5	Review of RMP following catchment audits	Full	Full	Full	Full	NR	NR
6.7.6	RMP amended only after public consultation	High	Full	NR	Full	NR	NR
6.7.7	RMP to be reviewed mid-term	Full	Full	Full	Full	NR	NR
6.7.8	IPART audit SCA's required actions under the RMP	High	High	Full	Full	NR	NR
<b>Water Quality Planning – Incident Management Plan (IMP)</b>							
6.7.9	Prepare IMP by 1 July 2000	NR	NR	NR	Full	Full	Full
6.7.10	IMP to minimise human health risk	Full	Full	Full	Full	Full	Full
6.7.11	IMP to contain procedures for management of water incidents	Full	Full	Full	Full	Full	Full
6.7.12	Requirements of IMP for advising stakeholders of risk	Full	Full	Full	Full	Full	Full
<b>6.8 Environmental Water Quality</b>							
6.8.1	Meet environmental water quality	NR	NR	NR	NR	NR	Partial



Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
	requirements of EPA or DLWC (now DIPNR)						
<b>7 CATCHMENT MANAGEMENT</b>							
<b>7.1 Authority to Manage and Protect</b>							
7.1.1	Manage and protect the Catchment Area	High	High	High	High	High	High
7.1.2	Best endeavours to coordinate collection of data	Low	Low	Low	Partial	High	High
7.1.3	Make unpublished data on river health available	High	Low	Low	Low	Partial	Partial
<b>7.2 Special Areas Strategic Plan of Management (SASPoM)</b>							
7.2.1	Definition of Special Areas Strategic Plan of Management	NR	NR	NR	NR	NR	NR
7.2.2	Consultation with NPWS in giving effect to SASPoM	Moderate	Partial	High	High	Partial	Partial
7.2.3	Report to Licence Regulator by 01/09 each year on SASPoM	Moderate	Partial	High	High	High	NR
7.2.4	Review SASPoM with NPWS every 5 years	NR	NR	NR	NR	Full	Full
7.2.5	Minister to be advised of any amendment to SASPoM	Moderate	Low	NR	NR	Full	Full
<b>7.3 Wingecarribee Swamp &amp; Special Area Plan of Management (WSSPoM)</b>							
7.3.1	Definition of Wingecarribee Swamp and Special Area Plan of Management	NR	NR	NR	NR	NR	NR
7.3.2	Review WSSPoM with NPWS by 1/11/00	NR	NR	NR	NR	Full	Full
7.3.3	New WSSPoM to consider rehabilitation and restoration	NR	NR	NR	NR	Full	Full
7.3.4	New WSSPoM must be put into effect	Moderate	Partial	Partial	Partial	High	High
7.3.5	Report to Licence Regulator by 01/09 each year on WSSPoM	High	High	High	High	Full	NR
7.3.6	Review WSSPoM with NPWS every 5 years	NR	NR	NR	NR	Full	NR
7.3.7	Any alteration required to be brought to notice of Minister	NR	NR	NR	NR	Full	NR
<b>7.4 Regional Environment Plan</b>							
7.4.1	Compliance required with REP	NR	NR	NR	NR	NR	NR
7.4.2	Promotion of REP including stakeholder education	NR	NR	NR	NR	NR	NR
7.4.3	Licence Regulator to consider planning instruments in annual audit	NR	NR	NR	NR	NR	NR



Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
<b>7.5</b>	<b>State Environmental Planning Policy</b>						
7.5.1	Comply with SEPP 58	High	High	High	High	High	High
7.5.2	Licence Regulator to consider SEPP in annual audit	NR	NR	NR	NR	NR	NR
<b>8 CATCHMENT INFRASTRUCTURE</b>							
<b>8.1</b>	<b>Management of Catchment Infrastructure Works</b>						
8.1.1	Manage infrastructure to minimise human health risks	Full	Full	Full	Full	Full	Partial
8.1.2	Catchment infrastructure works designed, operated and managed according to Schedule 2 requirements: -	Insuffic info	Full	High	Full	Full	Full
	Reliability	Insuffic info	Full	High	Full	Full	Full
	Robustness	Insuffic info	Full	High	Full	Full	Full
	Security	Insuffic info	Full	High	Full	Non	Full
	Operate within Designated Drought Conditions	Insuffic info	Full	High	Full	Full	Full
8.1.3	Schedule 2 performance criteria reviewed mid-term	NR	NR	NR	NR	NR	NR
<b>8.2</b>	<b>Dam Safety</b>						
8.2	Compliance with dam safety requirements	Full	Full	Full	Full	Full	Full
<b>8.3</b>	<b>Demand Management</b>						
8.3.1	Demand management consistent with the Water Management Licence	NR	NR	NR	NR	NR	NR
8.3.2	Water demand managed in accord with Sydney Water's Operating Licence	Insuffic info	High	Full	Full	Full	High
8.3.3	Improved demand management by Sydney Water to be considered before augmenting catchment works	High	Partial	Full	Full	NR	NR
<b>9 ENVIRONMENT</b>							
<b>9.1</b>	<b>Environment Plan (EP)</b>						
9.1.1	Prepare draft EP by 31/12/00, final by 30/06/01	NR	NR	NR	NR	Full	NR
9.1.2	Final EP to be submitted to the Minister for approval. Public consultation required to develop draft and final EP	NR	NR	NR	NR	Full	High
9.1.3	Requirements for the EP	NR	NR	NR	NR	Full	NR



Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
9.1.4	EP must set targets and timetable	NR	NR	NR	NR	Partial	NR
9.1.5	EP to include an energy management policy	NR	NR	NR	NR	Full	NR
9.1.6	EP available from website	Full	Full	Full	High	NR	NR
9.1.7	EP amended following public comment/Minister approval	NR	NR	NR	NR	NR	NR
<b>9.2 Environmental and ESD Indicators</b>							
9.2.1	Prepare a draft list of environmental indicators by 01/07/00 and draft list of ESD indicators by 01/10/00	NR	NR	NR	NR	Full	Full
9.2.2	Environmental Indicators to allow direct monitoring of environment	NR	NR	NR	NR	Full	NR
9.2.3	ESD indicators to allow degree of compliance with ESD	NR	NR	NR	NR	Full	NR
9.2.4	Final list of indicators to the Minister by 1 January 2001	NR	NR	NR	NR	Full	NR
9.2.5	Requirements for draft indicators	NR	NR	NR	NR	Full	High
9.2.6	Consistent with other environmental Indicators	NR	NR	NR	NR	Full	Full
9.2.7	SCA to give consideration to catchment auditor	NR	NR	NR	NR	Full	Full
9.2.8	Public comment for 40 days required for environmental Indicators	NR	NR	NR	NR	Full	Full
9.2.9	Monitoring and compiling environmental Indicators to start by 01/03/01	NR	NR	NR	NR	High	NR
9.2.10	Sydney Water's environmental indicators to be used in interim period	NR	NR	NR	NR	Full	Full
9.2.11	Draft and final environmental indicators reviewed at end of term	NR	NR	NR	NR	NR	NR
9.2.12	Requirements of ESD indicators	NR	NR	NR	NR	Full	NR
9.2.13	Public comment for 40 days required for ESD indicators	NR	NR	NR	NR	Full	NR
9.2.14	Monitoring and compiling ESD indicators to start by 01/03/01	NR	NR	NR	NR	High	NR
9.2.15	Draft and final ESD indicators reviewed at end of term	NR	NR	NR	NR	NR	NR
<b>9.3 Reporting</b>							
9.3.1	Environment Plan to be reported on annually	Full	Full	Full	Full	NR	NR





Licence Clause	Summary of Requirement	2004/05	2003/04	2002/03	2001/02	2000/01	1999/00
9.3.2	Requirements for Environment Plan report	Full	Full	Full	High	NR	NR
9.3.3	Year to year report on environmental and ESD indicators	High	High	High	Low	NR	NR
9.3.4	Publicly available within 1 month of completion	Moderate	Full	Full	Full	NR	NR
<b>9.4 Environmental Flows</b>							
9.4.1	Final report on environmental flows by 19/10/01	NR	NR	NR	NR	Full	Full
9.4.2	Requirements for draft report on environmental flows	NR	NR	NR	NR	Non	Non
9.4.3	Minister may appoint independent expert panel	NR	NR	NR	NR	NR	NR
9.4.4	Composition of expert panel	NR	NR	NR	NR	NR	NR
9.4.5	Term of independent expert panel	NR	NR	NR	NR	NR	NR
9.4.6	Review role of independent expert panel	NR	NR	NR	NR	NR	NR
9.4.7	Panel to provide socio-economic impact assessment	NR	NR	NR	NR	NR	NR
9.4.8	Cooperation and assistance to expert panel	NR	Full	Full	Full	NR	NR
9.4.9	Environmental flows from water storages prior to Water Management Licence	NR	NR	NR	NR	High	High
9.4.10	Implementation of environmental flow requirements under the Water Management Licence.	High	High	High	High	High	NR



Table B provides a summary of compliance levels reached by the SCA in the 2004/05 audit period for the Ministerial requirements. As Ministerial requirements are specific to each operational year, yearly comparisons with previous operational audits are not applicable.

**Table B: Ministerial requirements for 2004/05 – summary of compliance**

Issue	Ministerial Requirement	2004/05 Compliance
Bulk Water Quality	<i>“Quantify, as far as possible, the variations in bulk water quality that may occur under the high risk situations identified in the Risk Management Framework. Confirm that SCA’s customers are aware of these variations so that they can plan accordingly, to ensure that treated water that they supply in turn to their customers, will comply with the required objectives.”</i>	<b>Full</b>

## Summary of key recommendations

The **key recommendations** from the 2004/05 Operational Audit are presented below (grouped by the audited parts of the Operating Licence). The recommendations are made to provide IPART and the Sydney Catchment Authority with a basis for continuous improvement.

Additionally, secondary recommendations are presented in the body of this report. These have been provided to facilitate improved performance and compliance for subsequent audit periods.

### Memoranda of understanding

That the SCA:

- R4.1 Prepare and implement a new Memorandum of Understanding with the WAMC as required by the provisions of the Operating Licence, by June 2006.

### Customers

That the SCA:

- R5.1 Finalise and sign contracts with Wingecarribee and Shoalhaven Councils for the supply of bulk water.
- R5.2 Determine the status of the eight “customers” without agreements in association with the NSW Department of Natural Resources and sign contracts with parties identified as customers of the SCA.
- R5.3 Record all complaints made to the organisation as per the AS4269-1995.
- R5.4 Conduct an independent survey of customers and key stakeholders to determine the level of satisfaction with the SCA’s performance, particularly relating to complaints management.

### Bulk water

That the SCA:

- R6.1 Improve its reporting of actions under the *Water Quality Risk Management Framework*, including reporting against performance indicators and targets for each initiative.

### Catchment management and protection

That the SCA:

- R7.1 Establish improved financial accountability and transparency of its expenditure in catchment management programs, by including full expenditure (by strategy, program and totals) and yearly trends (current and preceding two years expenditure) in its Annual Implementation Reports.



- R7.2 Consider the outsourcing, competitive tendering or an alternate service agreement with DEC, to ensure cost effective provision of its Land Management Program.
- R7.3 Undertake, as part of the required five yearly review of the Special Areas Strategic Plans of Management, Special Areas Plan of Management, an “*independent, external and expert*” assessment of the SCA’s performance in implementing the Plans and include the assessment findings in a public report (by 1 September 2006). The report should include recommendations into the:
- Extent and timeliness of the implementation of the Strategies and Key Actions (against the Minister’s approved timetables);
  - Clarity of implementation status and performance and the reporting of expenditure; and
  - Impact of SCA decisions that some Key Actions were now redundant or require amendment.
- R7.4 Utilise its MOU with DEC and the Joint Management Agreement with DEC Parks and Wildlife Division to achieve full and timely expenditure and performance certification of the service by DEC, for inclusion in the *Annual Report on the Implementation of the Special Areas Strategic Plan of Management Special Areas Plan of Management*.

## Infrastructure

That the SCA:

- R8.1 Complete upgrade work on the WATHNET model; including updating of its structure (for example, size of demand centres and transfer constraints between them), checking and updating streamflow data, incorporating climatic variability of demand and completing ‘degree of fit’ runs to recent history (say 1998 to 2005) to verify it is correct and best represents current conditions.

## Environment

That the SCA:

- R9.1 Report on its assessment of overall performance against the Environmental and ESD Indicators, as part of its Annual Environmental Report.
- R9.2 Produce, and make publicly available, annual environmental reports in a timely manner.

# 1. Introduction and objectives

## 1.1 The Sydney Catchment Authority

The Sydney Catchment Authority (SCA) was established in July 1999 by the NSW Government in response to a series of water quality incidents in Sydney the previous year. The "McClellan Inquiry" had recommended that an independent agency be established to protect water quality in the catchment areas that provide Sydney, Wollongong and the Blue Mountains with bulk raw water. The water storages, infrastructure and many of the management and operational functions were transferred from the Sydney Water Corporation (Sydney Water) to the SCA. The area of operations for which the SCA is responsible is shown in Figure 1.1. A schematic representation of the water storage and infrastructure under the control of the SCA is shown in Figure 1.2.

The 'Inner' Catchments have always been subject to stringent land-use controls in order to protect water quality. However, the 'Outer' Catchments have been subjected to increased development in the last 50 years and their management was divided between many agencies at State and local government level, as well as by private landholders. The inter-relationship between the SCA and other organisations and stakeholders is shown in Figure 1.3.

The roles and responsibilities of the SCA derive from the *Sydney Water Catchment Management Act, 1998* (the Act) and the Operating Licence issued pursuant to Section 25 of the Act.

## 1.2 Independent and Pricing Regulatory Tribunal

On 1 November 2000 the Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act commenced. Under Schedule 1 of that Act, the Operational Audit function of the Licence Regulator was transferred to the Independent Pricing and Regulatory Tribunal (IPART).

## 1.3 Scope of Operational Audit

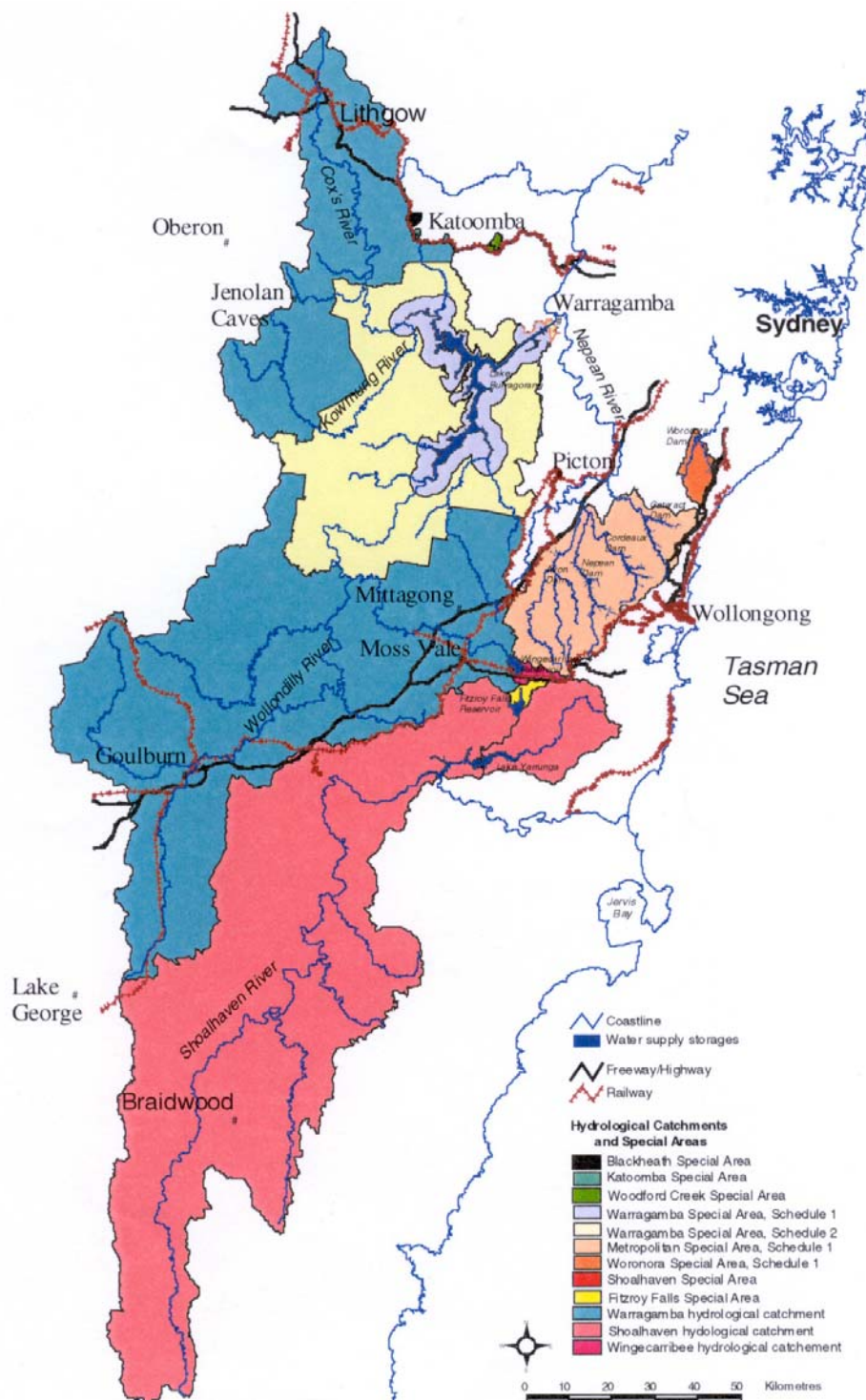
This is the sixth audit of the Sydney Catchment Authority against the requirements of the current Operating Licence. The audit covers the period from 1 July 2004 to 30 June 2005.

The scope of the audit is defined in Part 10 of the Operating Licence and broadly includes assessment of compliance against the Parts of the Licence as outlined in Table 1.1.

The scope of the audit also includes assessment of compliance against the Ministerial requirement, as presented in the letter from the Minister for the Environment to the SCA dated 8 March 2005, and the identification of factors that have influenced the SCA's compliance.

The detailed audit brief is contained in Appendix A. The Operating Licence and the Minister's requirement are provided in Appendix B and Appendix C, respectively.

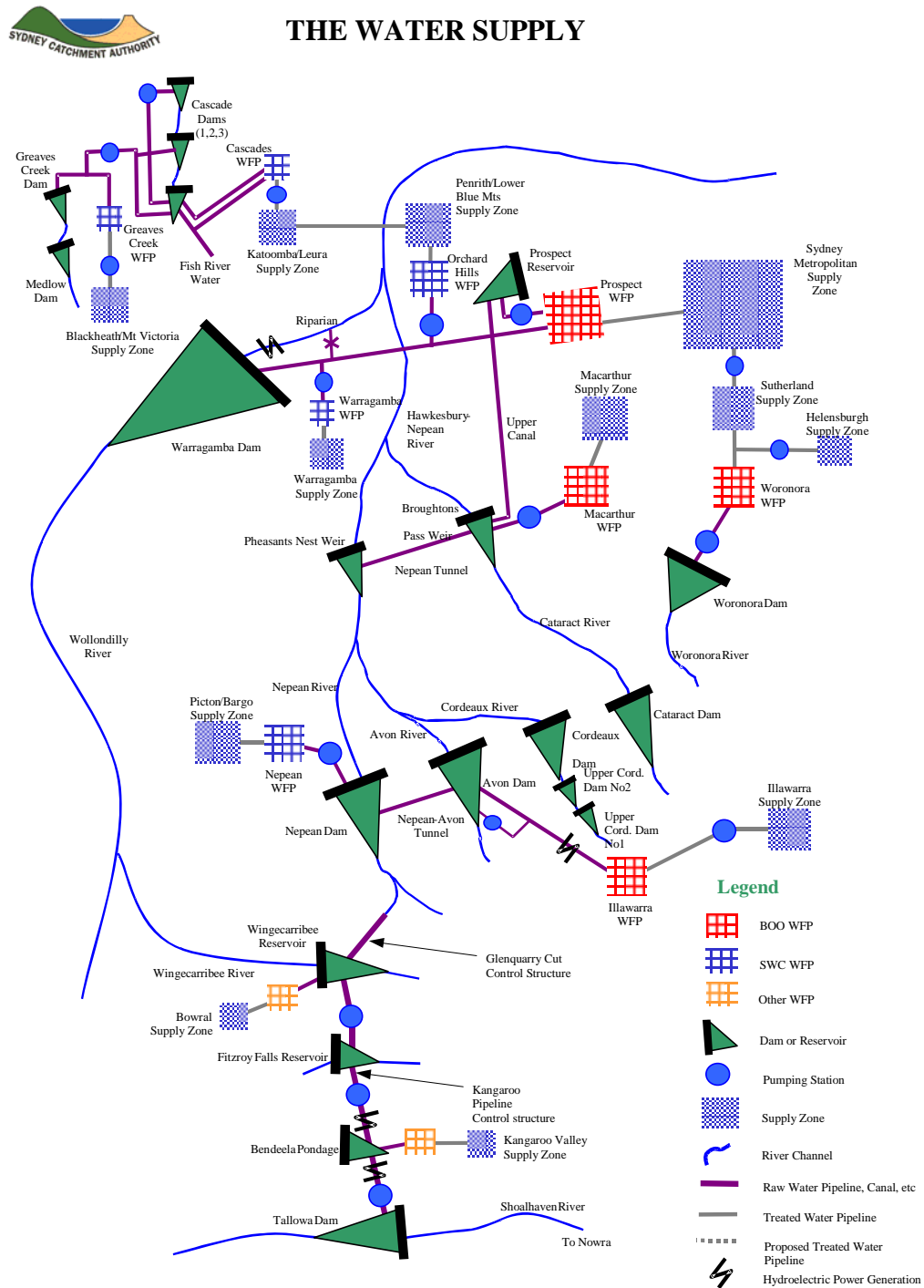
**Figure 1.1 Sydney Catchment Authority – catchments and special areas**



Source: Sydney Catchment Authority

Note: Areas transferred to NPWS (now DEC) via the SASPoM are not recognised in this figure.

**Figure 1.2 SCA schematic of infrastructure and operational control**

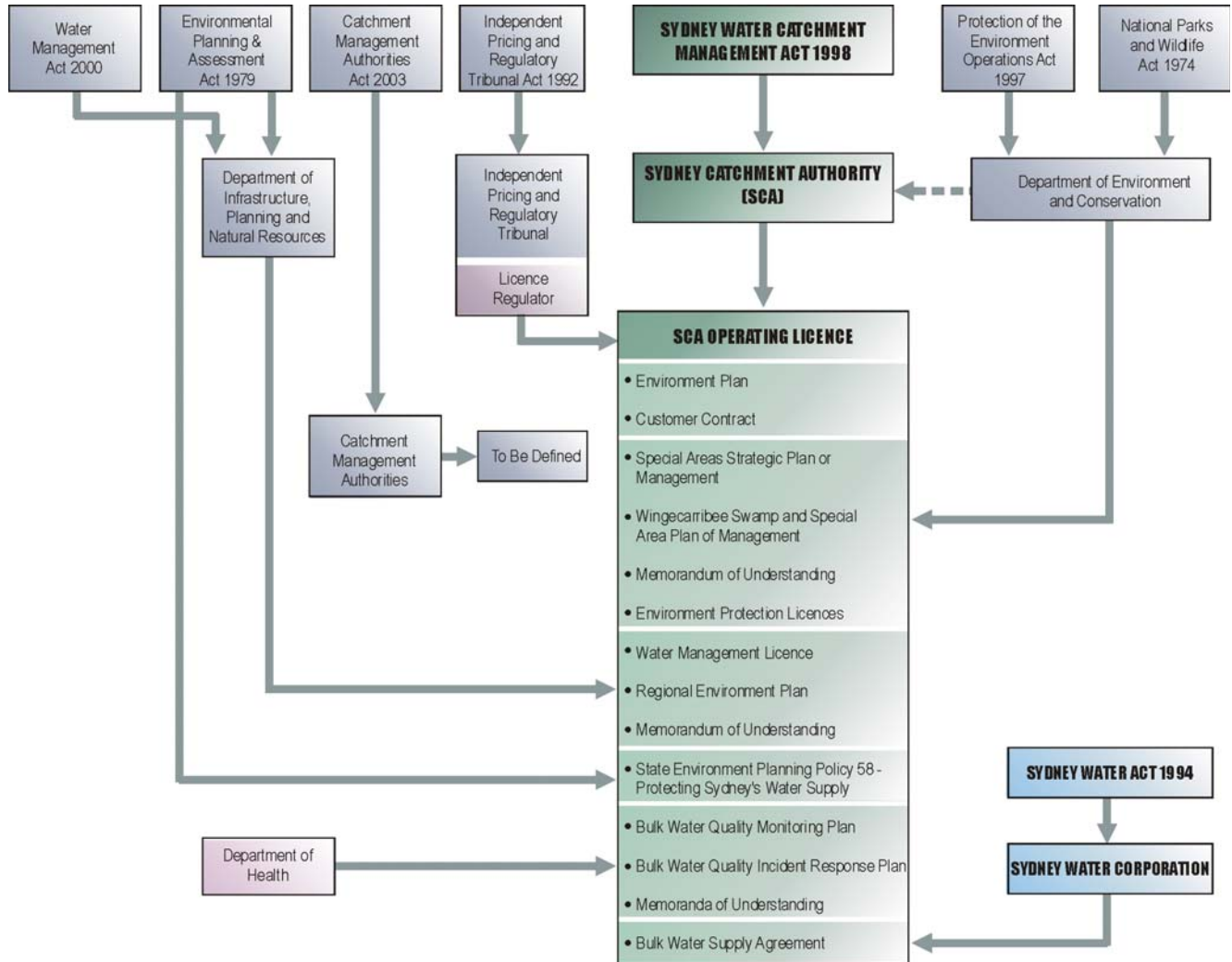


Source: Sydney Catchment Authority

Note: SCA infrastructure only includes infrastructure upstream of water filtration plants (WFP). Other infrastructure is controlled by organisations other than the SCA.



**Figure 1.3 Inter-organisational structure – Sydney Catchment Authority**



Source: Sydney Catchment Authority



**Table 1.1 Scope of the audit**

Licence Part		General requirements	Report section
Part 3	Memoranda of Understanding	Memoranda of Understanding with the Department of Health, the Environment Protection Authority and the Water Administration Ministerial Corporation (Now DIPNR).	Chapter 4
Part 5	Customers	Including: Sydney Water; other customers; customer complaints; consultative committees.	Chapter 5
Part 6	Bulk Water Quality	Including: water supply; monitoring; planning and risk management; environmental water quality.	Chapter 6
Part 7	Catchment Management and Protection	Including: Catchment management; Special Areas Strategic Plan of Management; Wingecarribee Swamp and Special Area Plan of Management; REP, SEPP 58.	Chapter 7
Part 8	Management of Catchment Infrastructure	Including: catchment infrastructure; dam safety, demand management.	Chapter 8
Part 9	The Environment	Including: environment plan, environmental and ESD indicators; reporting; environmental flows.	Chapter 9

## 1.4 Structure of the audit report

This report on the 2004/05 Operational Audit has been presented in a format that provides information directed at different levels of readership to enable an understanding of the SCA's operations and its compliance with statutory requirements.

The audit report has been prepared to meet the audit brief and the audit requirements of the Operating Licence. The report is structured in sections that correspond to the key areas (parts) of the Operating Licence (see Table 1.1 above). The findings of the report are not presented in a "prioritised order" or "order of significance". Each section of the report provides the following for each key area:

- A *compliance summary* addressing the principal compliances and any non-compliances relevant to each area of the audit;
- A *requirements summary* placing in context and summarising the requirements of the Operating Licence against which the performance of the SCA is assessed;
- *Substantive evidence and findings* that support the assessments of compliance, presented in a tabular format, breaking each Licence condition into sub-clauses and including:
  - A statement describing the *level of compliance* with the Licence condition; and
  - An appraisal of the *findings* of the audit based on the evidence provided.
- An assessment of compliance with any *Ministerial requirements*, where applicable.

This is followed by (where required):

- A discussion or expansion of comments on compliance for each key area;
- Factors affecting compliance for each key area; and

- Recommendations for each key area.

The Ministerial requirement is reported in Table 6.2

## 2. Audit methodology

### 2.1 Standards

The Operational Audit was undertaken adopting a methodology consistent with ISO 14011 and to meet the specific requirements of IPART. ISO 14011, “*Guidelines for Environmental Auditing*”, provides a *systematic approach* to defining the requirements of the audit, planning, interpreting Licence conditions, collecting audit evidence, objectively assessing the evidence, and reporting in a clear and accurate manner. It also ensures that the audit has been conducted in accordance with an established and recognised audit protocol.

### 2.2 Audit preparation

The audit methodology used in the preparation of this report is described below.

#### Draft audit plan

To ensure that the audit requirements outlined in the Operating Licence and the brief were addressed, the scope of the audit was confirmed with IPART and a draft audit plan prepared.

The audit methodology was amended this year after discussions with IPART. The main changes were:

- ▶ SCA responding in writing to the audit questionnaires prior to the interviews. The written response and supporting documentation meant that formal interviews were not required for some Licence conditions, deemed ‘low risk’ by IPART;
- ▶ IPART requested the SCA Managing Director to sign off on the comments provided in response to the second draft audit report; and
- ▶ An additional meeting with SCA, IPART and GHD, at the second draft stage, to respond to any major issues with the draft audit.

#### Inception meetings

Following the preparation of the draft audit plan, inception meetings were held with the SCA’s Managing Director and other representatives on 4 August 2005. IPART representatives also attended the meetings.

The primary objective of this meeting was to develop working relationships, mutual understanding and expectations relating to the requirements and process of the audit, to discuss and agree upon the changes to the audit methodology and to provide an opportunity for the SCA to present an overview of compliance and progress since the previous audit period.

#### Audit questionnaires

Specific audit questionnaires were developed for all requirements within the scope of the audit. These questionnaires were designed to establish *substantive compliance* with the Licence requirements as well as to *identify factors that have or may have impacted on performance in the future*.

The audit questionnaires also assessed the underlying procedures that the SCA has in place relevant to the requirements and the application of these procedures by the SCA. This was designed to verify that the underlying management processes within the organisation are sound, and there is confidence that work is carried out systematically and in accordance with internal procedures.

Audit questionnaires were, in most cases, provided to the SCA two weeks prior to the audit interviews to allow the SCA opportunity to respond to the questionnaire in writing, prepare for the interview and collate the necessary documentary evidence.

## 2.3 Conduct of the audit

To ensure a positive relationship, audit protocols were established at the inception meeting between the Auditor and SCA representatives. The protocols were designed to assist efficient and transparent information transfer and to foster an open and professional working relationship between all parties.

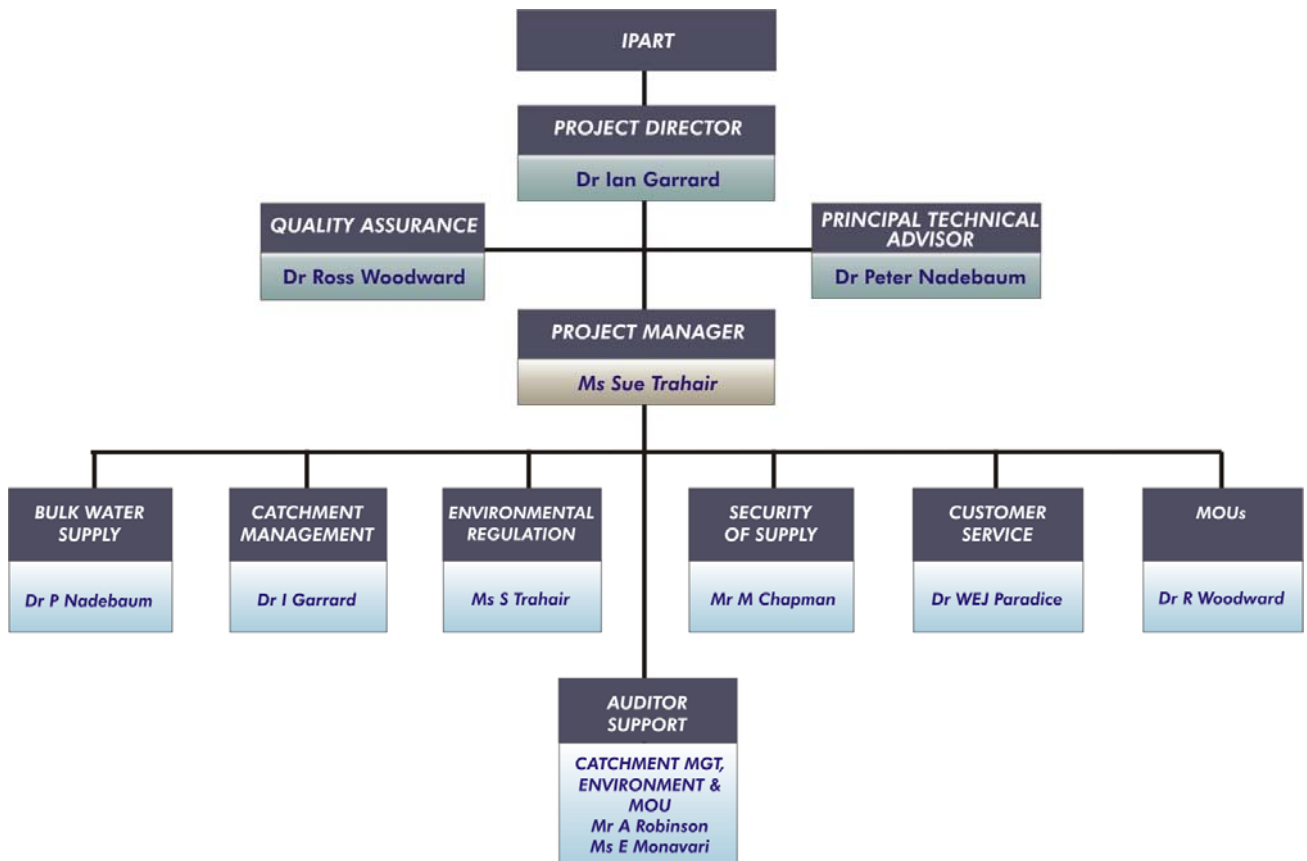
## 2.4 Audit interviews

Interviews were conducted by the specialist auditors between August and October 2005. The interviews were generally guided, but not limited, by the pre-prepared questionnaires and the SCA was provided the opportunity to present evidence towards demonstrating compliance with the Licence requirements.

## 2.5 Audit team

The audit team consisted of specialist auditors from GHD Pty Ltd and Hunter Valley Research Foundation. The audit was coordinated by the Project Manager calling on the expertise of the team members for the auditing of key areas as shown below in Figure 2.1.

**Figure 2.1 Structure and responsibility of the audit team**



## 3. Regulatory regime

### 3.1 Introduction

The role and responsibilities of the SCA are established by the provisions of the *Sydney Water Catchment Management Act 1998* and Regulations. The Act establishes a set of sub-ordinate instruments – the Operating Licence, Memoranda of Understanding (MOUs), Regional Environment Plan (REP), and plans of management – to assist in the operation of the SCA.

Such instruments impose compliance requirements upon the SCA, which are measurable and can therefore be audited.

The regulatory framework, within which the SCA operates, is schematically presented in Figure 1.3 and briefly described below

### 3.2 Sydney Water Catchment Management Act 1998

Under Section 14(1) of the Act, the principal objectives of the SCA are as follows:

- ▶ To ensure that the Catchment Areas and the Catchment Infrastructure Works are managed and protected so as to promote water quality, the protection of public health and public safety and the protection of the environment;
- ▶ To ensure that water supplied by the SCA complies with appropriate standards of quality;
- ▶ Where the SCA's activities affect the environment, to conduct its operation in compliance with the principles of Ecologically Sustainable Development contained in section 6(2) of the *Protection of the Environment Administration Act, 1991*; and
- ▶ To manage the SCA's Catchment Infrastructure Works efficiently and economically and in accordance with sound commercial principles.

In addition, the SCA has special objectives under section 14(2) regarding:

- ▶ Minimising risks to human health; and
- ▶ Preventing the degradation of the environment.

The Act also establishes:

- |  |   |
|--|---|
| ▶ The Sydney Catchment Authority;                      | ▶ The operating audit (this document);        |
| ▶ The functions of the SCA;                            | ▶ The preparation and implementation of MOUs; |
| ▶ The area of operations;                              | ▶ Catchment areas and their management;       |
| ▶ Arrangements with customers, including Sydney Water; | ▶ Management of infrastructure;               |
| ▶ The grant of the Operating Licence;                  | ▶ Offence provisions; and                     |
| ▶ The functions of IPART;                              | ▶ Other miscellaneous matters.                |

### 3.3 Operating Licence

The SCA must conduct its activities in accordance with an Operating Licence issued under Section 25 of the *Sydney Water Catchment Management Act, 1998*. The current Operating Licence has effect from 1 January 2000 until 31 December 2004. The Governor subsequently extended the effect of the Licence until 31 December 2005.

The nature and scope of the Operating Licence and the period over which the Licence is applicable have been presented in Section 1.3. The Operating Licence is reproduced in full in Appendix B.

A summary of the requirements of each Part of the Operating Licence is presented in Section 4 to Section 9 of this report.

### 3.4 SEPP 58 – Protecting Sydney’s Water Supply

The State Environmental Planning Policy (SEPP) 58 – Protecting Sydney’s Water Supply is an instrument under the *Environmental Planning and Assessment Act, 1979* and commenced on 1 February 1999.

The SEPP aims:

- a) To ensure that development in the hydrological catchment from which Sydney draws its drinking water supply does not have a detrimental impact on water quality;
- b) To provide a concurrence or notification role for the Chief Executive of the Sydney Catchment Authority in relation to development in the hydrological catchment that is likely to have an impact on water quality; and
- c) To ensure that there is a consistent approach to the assessment and control of development in the hydrological catchment that is likely to have an impact on water quality.

In relation to any development or activity proposed to be carried out on land to which this Policy applies, the consent authority must consider the following:

- a) Whether the development or activity will have a *neutral or beneficial effect* on the water quality of rivers, streams or groundwater in the hydrological catchment, including during periods of wet weather;
- b) Whether the water quality management practices proposed to be carried out as part of the development or activity are sustainable over the long term; and
- c) Whether the development or activity is compatible with relevant environmental objectives and water quality standards for the hydrological catchment.

For specified land uses that have a significant potential to pollute waterways and streams and endanger the quality of drinking water supplies, development consent is required from the relevant consent authorities. Applications for these land uses are also reviewed by the SCA as part of the assessment process.

Under SEPP 58, the consent authorities are either DIPNR or the local Councils that include: Blue Mountains, Greater Argyle, East Capital City, Campbelltown, Upper Lachlan, Oberon, Wingecarribee, Kiama, Shoalhaven, Wollondilly, Eurobodalla, Lithgow, Sutherland and Wollongong.

### 3.5 Regional Environmental Plan

Under Section 53 of the Act, the Minister for Infrastructure, Planning and Natural Resources must ensure that one or more REPs are made as soon as practicable (under Division 3 of Part 3 of the *Environmental Planning and Assessment Act 1979*) after the presentation of the report on the first catchment audit.

A REP is to make provision for the following:

- a) Imposing controls subject to which State agencies and local authorities (including the local Council) may take action and make decisions concerning development of the land to which the plan applies;
- b) Setting water quality objectives for that land;
- c) Requiring consent authorities to refuse to grant development consent to a development application unless the consent authority is satisfied that the carrying out of the proposed development would have a *neutral or beneficial effect* on the quality of water;
- d) Requiring the development of action plans to rectify any development of the land that does not have a *neutral or beneficial effect* on the quality of water; and
- e) Declaring that the REP prevails over a local environmental plan.

The draft REP has been publicly exhibited, but the REP has not yet been gazetted.

### 3.6 Water Management Licence

Water Management Licences are issued by the Department of Infrastructure, Planning and Natural Resources (previously Department of Land and Water Conservation, DLWC) under Part 9 of the *Water Act 1912*, and cover the SCA's water management activities.

A Water Management Licence was issued to the SCA on 23 April 2001 (subsequently reviewed and amended on 11 February 2003) and was current for the 2004/05 audit period. The Licence outlines objectives for the SCA in relation to access to water resources within its area of operations in accordance with ESD principles. The Licence also establishes the platform for environmental flows to be released from SCA infrastructure.

### 3.7 Memoranda of Understanding

The SCA is required, under Section 36 of the Act and the provisions of the Operating Licence, to enter into Memoranda of Understanding (MOUs) with key regulatory agencies to assist in the formation and development of co-operative relationships between the agencies with a view to furthering the objectives of the Operating Licence and the Act.

In each case, the MOUs are to contain:

- ▶ A framework for achieving a co-operative relationship between the parties;
- ▶ Consultative processes between the agency and the SCA to consider operating, strategic and licensing issues;
- ▶ Agreement to exchange data and information; and
- ▶ Dispute resolution mechanisms.

### 3.7.1 Water Administration Ministerial Corporation

#### Objectives

- ▶ This MOU outlines the basis for the co-operative relationship between the Corporation (WAMC) as the manager of the water resources for the State (whose responsibilities are now incorporated into DIPNR) and the SCA as a manager and protector of the inner catchment area and the outer catchment area (the catchment areas) and the catchment infrastructure works, a supplier of bulk raw water, and a regulator of activities within catchment areas.
- ▶ The Corporation's objectives include ensuring that water and related resources are allocated and used in ways which are consistent with environmental requirements and provide the maximum long-term benefit for the State.

#### Special functions of the MOU

The principles relating to this MOU are largely reflected in Section 9.4 of the Operating Licence. In addition, the MOU provides that the SCA acknowledges that water released from its catchment infrastructure works will be managed as far as reasonably practical to minimise:

- ▶ Adverse riverine impacts;
- ▶ Environmental impacts;
- ▶ Risk to public health and safety; and
- ▶ Damage to property.

Further the SCA and WAMC commit themselves to work co-operatively towards the management and protection of catchment areas in order to enhance water quality.

### 3.7.2 NSW Department of Health

#### Objectives

- ▶ The objective of this MOU is to form the basis for a co-operative relationship between NSW Health and the SCA including agreed areas of study, research and data exchange and to recognise the roles and responsibilities of the parties.
- ▶ NSW Health has responsibilities in relation to the protection of public health under the *Public Health Act 1991* and other relevant legislation. It also has a role in providing advice to Government in relation to drinking water standards.

#### Special functions of the MOU

##### *Responsibilities and Accountabilities*

- ▶ The SCA will ensure that its customers are adequately informed of the quality of the bulk raw water and the appropriateness of any intended uses of such bulk raw water.
- ▶ The SCA will inform NSW Health in relation to changes to its processes and procedures that may result from any variation of the water quality standards referred to in the SCA's Operating Licence.
- ▶ The SCA must develop and implement a water quality monitoring program, in consultation with NSW Health, and prepare reports for NSW Health as required by Clause 6.6 of the SCA's Operating Licence.



- ▶ Either party may give notice to the other of the need for review, amendment or replacement of the water quality monitoring plan. Upon reviewing such notice, the parties will co-operate in determining a timetable for such review, amendment or replacement.

#### *Events of Public Health Significance*

- ▶ The SCA shall, as soon as practicable, report to the NSW Health any events within its catchment infrastructure works or within its area of operations generally, which may have implications for public health.
- ▶ The SCA shall supply such information in relation to such events as is requested by the NSW Health or as is necessary for either party to make appropriate judgements and take appropriate action in relation to protecting the health of the public and exercising its role under this MOU.

#### *Incident Management and Contingency Planning*

- ▶ The SCA must prepare and maintain to the satisfaction of the NSW Health an incident management plan, in accordance with Clauses 6.7.9 to 6.7.12 of the SCA's Operating Licence.
- ▶ The SCA and the NSW Health shall negotiate a twenty four hour incident management contact point for the coordination of responses to any event of public health significance.
- ▶ During incidents that involve a public health risk, both parties will share information and resources as required so as to minimise the severity and consequences and extent of the risk.
- ▶ The SCA and the NSW Health agree that it is desirable for respective officers to undertake training in the situations that simulate public health risks and that such training will be organised to take place at a mutually agreed location and time.

### **3.7.3 NSW Environment Protection Authority**

#### **Objectives**

- ▶ This MOU outlines the basis for the co-operative relationship between the EPA (now part of the Department of Environment and Conservation) as environmental regulator and the SCA as a manager and protector of catchment areas, the catchment infrastructure works, a supplier of bulk raw water (as referred to in the Bulk Water Supply Agreement between Sydney Water Corporation and the SCA) and a regulator of activities within catchment areas within the SCA's area of operation.
- ▶ The EPA has responsibility to protect the environment in New South Wales, taking into account community values, scientific and expert knowledge, best practice environmental regulation and economic considerations. As such, it develops environmental policy and programmes, carries out regulatory functions and provides environmental education.

#### **Special functions of the MOU**

##### *Responsibilities and Accountabilities*

- ▶ The EPA and the SCA will manage their activities in a co-operative and transparent manner to meet their obligations as set out in Section 6(1) of the *Protection of the Environment Administration Act 1991* and Section 14 of the *Sydney Water Catchment Management Act 1998*, respectively.
- ▶ By this MOU, the SCA and the EPA commit to working together to reduce activities causing pollution in the catchment areas of the SCA.

### *Regulatory Framework*

The EPA and the SCA will periodically review and make recommendations to Government on their respective regulatory responsibilities and powers to ensure appropriate actions to prevent or mitigate pollution and ensure appropriate clean up occurs after incidents.

## 4. Memoranda of Understanding

### 4.1 Summary of findings

#### ► Maintain MOUs

The SCA achieved **High compliance** for maintaining Memoranda of Understanding (MOUs) with the Environment Protection Authority (now DEC), the Water Administration Ministerial Corporation (WAMC) and NSW Health, in accordance with the provisions of the SCA's Operating Licence.

The purpose of the MOUs is to help ensure cooperative working relationships between the agencies to further the SCA objectives. The Environment Protection Authority (EPA) is now part of the Department of Environment and Conservation (DEC) whose Director General is also responsible for the SCA and the National Parks and Wildlife Service. The latter has responsibility for large areas of the Inner and Outer Catchments. The Water Administration Ministerial Corporation (WAMC) has delegated functions to the Department of Infrastructure, Planning and Natural Resources (DIPNR). These functions previously resided primarily with the Department of Land and Water Conservation (DLWC).

#### ► MOU with NSW Health

The SCA's performance in implementing the MOU with NSW Health is assessed as **Full compliance**. The MOU provides the structure and processes for cooperative interaction and communication between the SCA and NSW Health and continues to be implemented to a high level as evidenced by the sound cooperative working relationship, the Strategic Issues Work Program and joint initiatives in research and management concerned with risks to public health from the catchments and storages.

The implementation of the provisions of the MOU, to bring the expertise of both agencies to focus on the protection of public health and the minimisation of risk to drinking water from the catchments, is a model that should be aspired to.

#### ► MOU with Water Administration Ministerial Corporation

The SCA's performance in implementing the MOU with the WAMC is assessed as **Low compliance**. DLWC and SCA commenced a review of the MOU in April 2001 that was, initially, to be completed by 21 December 2001. DIPNR took over the WAMC responsibilities in 2003. The review has not been completed and the MOU continues to be an inadequate and out of date document.

The Strategic Liaison Group (SLG) which is required by the MOU as a key body for relationship building and coordination failed to meet during the audit period.

The SCA is maintaining a relationship with DIPNR at CEO level with participation in Water CEOs meetings, Drought Executive Group meetings, Urban Water Management, the Metropolitan Water Plan and other chief executive committees. At officer level, the relationship is maintained through the Drought Executive Group meetings, Water Management Licence Working Group and Metropolitan Water Plan Committee.

The Auditor believes that failure to provide an effective bilateral formal forum for senior officers and managers to develop, implement and monitor programs of strategic importance to both agencies is cause for concern. It is essential that the water and land use planning functions of DIPNR complement the programs of the SCA. Although consultation occurs between officers on specific day-to-day issues, the SLG is a key tool for helping to ensure that there is an effective strategic work program to address areas of mutual responsibility, of which there are many, critically important to protecting Sydney's water supply. The regular forum for Water CEOs and other inter-departmental groups is not a satisfactory replacement for a structured forum for the two agencies to meet together, as envisaged by the Operating Licence.

► **MOU with Environment Protection Authority (EPA)**

The SCA's performance in implementing the MOU with the EPA (DEC) has been assessed as **Full compliance**. The MOU provides mechanisms for interaction on regulatory issues and for the development of strategic approaches to regulation. The strategic work program provides an effective mechanism to address strategic issues of mutual interest. The evidence of a cooperative relationship between the two agencies has continued to increase significantly over the past four audit periods.

## **4.2 Summary of requirements**

The Operating Licence requires the SCA to maintain Memoranda of Understanding (MOU) with specified key agencies.

Common to all three MOUs are provisions relating to: cooperative relationships; consultation processes; data and information exchange arrangements; dispute resolution procedures; and procedures for the review and amendment of the MOU.

Each MOU also contains particular provisions that expand on the relationship between the SCA and the other party that derive from the Act, the Operating Licence and the legislative functions and responsibilities of those other parties.

## 4.3 Details of compliance

**Table 4.1 Part 3: MOU licence conditions – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>3.3</b>	<b>Memoranda of Understanding</b>		
3.3.1	Maintain MOUs for Licence term in accordance with S36 of the Act.	High compliance	<p>Water Administration Ministerial Corporation – executed MOU sighted. Commencement date 23 December 1999. Agreement for the review and amendment of the MOU was reached 27 April 2001, however, the process has not been completed.</p> <p>Director General of NSW Health – executed MOU sighted. Commencement date 28 November 2001, replacing previous MOU dated 30 December 1999.</p> <p>Environment Protection Authority – executed MOU sighted. Commencement date 4 December 2001, replacing previous MOU dated 23 December 1999, as directed by the Minister.</p>
3.3.2	MOU to form the basis for cooperative relationships to further the objectives of this Licence and the Act.		
	NSW Health MOU	Full compliance	MOU with the Director General of NSW Health adequately enhances the cooperative relationship between the two parties and establishes appropriate processes for the management of relevant public health issues. The provisions of the MOU are being implemented to a very high level and the degree of cooperation at all levels between the two organisations is a model for other relationships.

**Table 4.1 Part 3: MOU licence conditions – summary of compliance**

Clause	Requirement	Compliance	Findings
	WAMC MOU	Low compliance	<p>The WAMC MOU provides the basis for a cooperative relationship that needs to be enhanced by completing the 2001 review of the original MOU. There is still no agreement on the content of the amended MOU. The original MOU established water management principles that were to apply prior to the issue of a Water Management Licence to the SCA. A Water Management Licence was issued on 23 April 2001 and subsequently amended on 11 February 2003. Thus, from April 2001 the MOU required amendment to remove obsolete clauses, to add substance and to make commitments to a cooperative relationship between the WAMC and SCA to further the objectives of the Licence and the Act.</p> <p>The MOU established a Strategic Liaison Group to help progress long term strategic issues of interest to both agencies. However during the audit period, the SLG did not meet.</p> <p>Liaison between the two agencies was demonstrated through chief executive inter-departmental committees addressing issues such as the Water CEOs, Drought Executive Committee, and the Metropolitan Water Plan Senior Executives Committee.</p>
	EPA (DEC) MOU	Full compliance	<p>The MOU contains policy statements and structures to facilitate cooperation. The two agencies have developed a Strategic Work Program to address issues of common interest affecting water quality. This Program forms the basis of a strong cooperative working relationship. The relationship has subsequently been strengthened with both agencies now responsible to the same CEO.</p> <p>The MOU provides mechanisms for close interaction on regulatory issues and for the development of strategic approaches to regulation.</p> <p>The further development and implementation of the Strategic Work Program, day-to-day compliance activities and other areas of cooperative action should provide significant benefits to the protection of water quality.</p>
3.3.3	Enter into other MOUs at the Direction of the Minister.	No requirement	No direction was made by the Minister for a new MOU.

#### **4.4 Discussion**

In comparison to the audits of previous years, IPART requested the Auditor to undertake a more strategic approach to this year's audit of the MOU requirements. The Auditor was to focus on the key requirements that established the basis for a cooperative working relationship and common goals. The administrative and more procedural provisions have been reported on in previous years. The tables that present the SCA's compliance with the essential and strategic requirements of the Memoranda of Understanding are presented in Appendix E as follows:

- ▶ Table E.1      MOU with the Environment Protection Authority;
- ▶ Table E.2      MOU with the Water Administration Ministerial Corporation; and
- ▶ Table E.3      MOU with the Director General of NSW Health.

#### **4.5 Other Issues**

##### **4.5.1 Amendments to MOUs**

Whilst agreement was reached with the WAMC to review and amend the MOU in April 2001, no progress has been made during the audit period in updating the current WAMC MOU with DIPNR. The SCA and DIPNR have not effectively maintained the MOU during 2004/05 and have not met on any occasion under the provisions of the MOU. While the two agencies do retain a strategic relationship, the MOU is no longer an adequate document to fulfil the requirements of the Licence and the Act. It is of concern that over four years have passed and a satisfactory MOU could not be agreed to.

#### **4.6 Factors affecting compliance**

The SCA had applied its best endeavours to review and amend the MOU with the WAMC (DIPNR) in previous audit periods. However the inability to agree on an amended MOU, and the fact that the SLG did not meet during the audit period, may be hindering a strong relationship between the agencies. Hence, the recommendations from previous audits and the need to enhance the relationship between the two parties to work cooperatively to achieve sound water management and water quality outcomes in the catchment areas continue to apply.

It is recognised that some audit findings are affected by actions of the other parties with which the SCA maintains a MOU. For example, the review of the MOU with WAMC has continued to be delayed (see Clause 3.3 in the MOU with WAMC). It is recognised that the SCA may not have unilateral control over these matters. The SCA could be regarded to have made reasonable efforts to achieve a review and implement a new MOU.

The critical nature of land use and water planning to the health of the catchments and the quality of drinking water should be reason alone for a stronger formal relationship between these two agencies.

## **4.7 Recommendations**

### **4.7.1 Key recommendations**

That the SCA:

- R4.1 Prepare and implement a new Memorandum of Understanding with the WAMC as required by the provisions of the Operating Licence, by June 2006.

### **4.7.2 Secondary recommendations**

That the SCA:

- R4.2 Report on the specific Strategic Work Programs developed between the SCA and the regulatory agencies in its Annual Report.



## 5. Customer complaints and consultative committees

### 5.1 Summary of findings

#### ► Bulk Water Supply Agreement

SCA received **Full compliance** for clauses relating to the Bulk Water Supply Agreement with Sydney Water. The current Bulk Water Supply Agreement (BWSA) between Sydney Water Corporation (Sydney Water) and Sydney Catchment Authority (SCA) continues to operate until 31 December 2005. Sydney Water and the SCA held regular operational interface meetings to discuss and manage the relationship and the strategic operational issues related to the BWSA. It is evident that the SCA has embarked on a process to engage Sydney Water in the scheduled revision of the agreement. SCA has forwarded to IPART a draft BWSA, agreed to by Sydney Water and the SCA, for review as required by the Act.

#### ► Agreements with other customers

The SCA was assessed as demonstrating **Moderate compliance** for the requirement for agreements with other customers. All regular retail customers have signed agreements. Some customer agreements expired during the year and the SCA has a program of renewing these agreements, as required. However, signed agreements are still outstanding with the two bulk customers, Wingecarribee and Shoalhaven Councils. There also remains a further eight potential customers who had not signed agreements by the end of the audit period because their customer status remained undetermined. While the SCA indicated that progress has been made with all these parties, these matters have remained unresolved for several years and there is no significant evidence of the SCA using its “*best endeavours*” to resolve the situation during the current audit period.

#### ► Customer complaints

The SCA’s performance with the requirements for complaint handling was mixed, with rankings from **Low compliance** to **Full compliance**, as has been the case in previous audit periods.

The complaints handling procedure was not fully compliant with AS4269-1995 and, contrary to Clause 5.3.4, information about the complaint handling procedure was not sent to all customers during the audit period. Furthermore, the Auditor continues to be concerned that not all complaints (as defined by SCA policy) made to the SCA are being recorded, specifically issues dealing with government policy or legal matters.

#### ► Consultative committees

The SCA has been rated from **Low compliance** to **Full compliance** across the requirements for consultative committees. While most requirements in relation to consultative committees have been met by the SCA, a key issue has been the lack of involvement of the relevant stakeholder groups identified in the Licence. Public health experts were originally represented on the Expert Reference Panel. However, this committee was formally dissolved by the Board of the SCA at its meeting on 16 July 2004.

The SCA maintained that public health expertise is represented by NSW Health participating in the Strategic Liaison Group meetings under the MOU requirements. However, this committee is not established and constituted according to Clause 5.4 of the Operating Licence. Therefore, the

public health expertise needs to be appointed to the consultative committee (in a way which is consistent with Clause 5.4 of the Licence).

To fully comply with this section of the Licence the SCA needs to appoint recognised 'experts' in the areas of catchment management and public health as indicated in the previous audit.

## 5.2 Summary of requirements

The objective of Part 5 of the Licence is to ensure that the SCA maintains a focus on the needs of its customers while being mindful of the requirements and expectations of its other stakeholders throughout the community. To meet the requirements of Part 5 of the Licence, the SCA is to:

- ▶ Enter into an agreement with Sydney Water about the supply of bulk water and the associated review process;
- ▶ Use its best endeavours to enter into agreements with 'other customers' about the supply of bulk water;
- ▶ Develop a customer and community complaint handling procedure with appropriate communication and reporting mechanisms including the identification of any problems of a systematic nature; and
- ▶ Develop Consultative Committees to obtain input from the various stakeholder groups relevant to the successful performance of the SCA.



### 5.3 Details of compliance

**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>5.1</b>	<b>Provide water to Sydney Water Corporation under a Bulk Water Supply Agreement</b>		
5.1.1	Acknowledgment that a Bulk Water Supply Agreement (BWSA) exists between Sydney Water Corporation and Sydney Catchment Authority.	Full compliance	<p>The first BWSA commenced on 15 September 1999 with a term expiring on 30 June 2004. Amendments to the BWSA were approved by the Minister on 29 July 2002 and signed on 21 August 2002 by the then Managing Director of Sydney Water and the Chief Executive of the SCA. The terms of this agreement expire on 31 December 2005 and are being reviewed in association with the end of term review of the SCA's Licence. The terms as required under the Licence have been included in the Agreement.</p>
5.1.2	The terms of the agreement must be reviewed.	Full compliance	<p>The SCA has initiated a review process with Sydney Water in a letter from the Managing Director of the SCA to the Managing Director of Sydney Water dated 23 December 2004. A response from Sydney Water was received on 4 March 2005. This series of letters established contact officers in both organisations.</p> <p>The records provided by the SCA indicate that two meetings were held between the SCA and Sydney Water representatives on 25 May and 28 June 2005. No records or minutes from these meetings were provided. The following documentation was provided by the SCA:</p> <ul style="list-style-type: none"><li>Letter dated 19 May 2005 from the SCA to Sydney Water with a revised draft agreement;</li><li>Email dated 22 June 2005 from Sydney Water to SCA including an attachment with Sydney Water's comments on the draft;</li><li>Letter dated 14 July 2005 from the SCA to Sydney Water with a revised draft agreement, which is claimed to address Sydney Water's comments regarding the previous draft; and</li><li>A revised draft agreement dated August 2005.</li></ul> <p>This process is continuing into the 2005/06 audit period.</p>



**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
5.1.3	Following the review the SCA must use its best endeavours to obtain agreement to amendments from Sydney Water Corporation.	Full compliance	<p>It is evident that the SCA has embarked on a process to engage Sydney Water in the revision of the agreement. However, an examination of correspondence between the SCA and Sydney Water indicates that not all of Sydney Water's comments in its 22 June 2005 email appear to have been incorporated into the July version of the draft agreement. There is no correspondence between the SCA and Sydney Water to indicate why all comments were not incorporated.</p> <p>The July 2005 draft agreement was submitted to Sydney Water for review on 14 July 2005. No written correspondence was provided from Sydney Water in reference to this draft. Furthermore, there are differences in the July draft and a subsequent August draft. The reasons for these changes are also unknown. However, IPART has indicated to the Auditor that <i>"the SCA has forwarded IPART a draft BWSA that has been agreed to by Sydney Water and the SCA in order for IPART to review the agreement as required by the Sydney Water Catchment Act 1998"</i>. IPART advised that this <i>"appears to be evidence that Sydney Water and the SCA have reached agreement"</i>. On the basis of this advice from IPART, the Auditor has recorded a Full compliance rating for this clause.</p>
<b>5.2</b>	<b>Agreements with other customers</b>		
5.2.1	The SCA must use its best endeavours to reach agreement with other customers on the supply of bulk water.	Moderate compliance	<p>The SCA has indicated that all retail customers have a Licence Agreement in place, including all renewals. Records provided by the SCA demonstrated agreements with long-term retail customers covering 60 different property numbers. One customer disconnected from the SCA's supply during the audit period and one new customer was added. There were two short-term customers at the end of audit period.</p> <p>Copies of signed agreements were sighted for the four largest users (two of whom renewed during the period), one new customer and four other customers (who were randomly selected – one of these renewed during the period and one was a short term customer). No cover letter from the SCA was attached to the agreements sighted for the new customer, for one of the four biggest customers (Parks and Wildlife Division of DEC) or for one of the four randomly selected companies.</p> <p>The agreements sighted covered the minimum aspects identified in Clause 5.2.1 of the Operating Licence, that is, (a) the standard of the quality of the water supplied; (b) the continuity of the water supplied (this is referred to as 'Quantity of Water' in the SCA's agreements); (c) any other terms agreed to by the parties, and (d) costs to be paid by customers for the supply of</p>



**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>water. In previous years, the SCA's adherence to this standard was tested through an assessment of customer perceptions concerning the awareness and understanding of their agreement with the SCA. This was not undertaken during this audit period and is discussed in greater detail in Section 5.4.1 of this report</p> <p>Areas where the SCA's <i>best endeavours</i> were not evident during this audit period were:</p> <ul style="list-style-type: none"> <li>▶ The two agreements that were outstanding last year remained unsigned at the end of the audit period with the two local Councils - Wingecaribee and Shoalhaven; and</li> <li>▶ The legal status of eight properties identified during previous audits drawing water from the SCA area remained unresolved.</li> </ul> <p>Further discussion of the SCA's efforts in seeking agreements with the two local Councils and the eight other properties is presented in Section 5.4.1 of this report. Given the continuing lack of signed agreements with the parties noted above – as well as a lack of evidence which indicates an increased effort to resolve these cases – the rating for this clause has been downgraded to Moderate compliance.</p>
<b>5.3</b>	<b>Customer complaints</b>		
5.3.1	Establish a complaints handling procedure for receiving complaints from Customers and the community relating to any of its functions.	Full compliance	<p>The sighted complaint handling policy and procedure was last revised in March 2003.</p> <p>The SCA indicated that all new staff received compulsory training in complaints handling during the audit period. It was stated that training sessions were typically 1 to 1.5 hours and that staff were retrained when they received a complaint.</p> <p>The Staff Induction Manual has only a relatively short section on complaints (half page on page 25 of the policy) but it was stated that a more comprehensive presentation on the complaint process formed part of the induction program. The SCA also indicated it had kept an electronic record of staff who had attended training sessions during the 2004/05 audit period.</p>
5.3.2	Procedure to be based upon AS4269 –1995.	Moderate compliance	<p>The SCA was able to provide details from its computer system for each recorded complaint, outlining what was said and the actions taken by the SCA. The system also records the mode of communication between the SCA and complainants, such as by letter or email. The complaints handling procedure was not fully compliant with AS4269-1995 for the following reasons:</p> <ul style="list-style-type: none"> <li>▶ There is a potential for inconsistency in the manner in which the SCA responds to</li> </ul>

**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>complainants;</p> <ul style="list-style-type: none"> <li>There is no objective confirmation of satisfaction from the complainant;</li> <li>There is no automated reporting of KPIs and no objective measure that the SCA has met its KPI;</li> <li>Senior management is not receiving a true indication of the actual number and nature of complaints received by the organisation;</li> <li>There are significant issues in relation to the transparency of the complaints handling procedure;</li> <li>The SCA advised that it does not have complaint procedures in community languages;</li> <li>The SCA was not able to provide evidence to demonstrate it monitors staff's performance against the policy; and</li> <li>There continues to be a concern that not all complaints (as defined by SCA policy) made to the SCA are being recorded, specifically issues dealing with government policy or legal matters which may / may not be recorded through the complaint handling system (this issue is further discussed Clause 5.3.5 of this Table).</li> </ul> <p>The above issues are discussed further in Section 5.4.2 of this report.</p>
5.3.3	Provision of information to the community about the complaint handling procedure.	Full compliance	It was noted that information about the complaint handling process is available on the SCA website and in the Annual Report. SCA staff indicated that the information was also distributed through brochures in public displays.
5.3.4	Provision of information about the complaint handling procedure to customers once per year and posted on the SCA's website.	Moderate compliance	<p>As in previous audits, the Auditor was provided with the pamphlet prepared by the SCA titled, <i>"How to make a complaint or offer a compliment"</i>. SCA staff indicated that this pamphlet was sent with an accompanying letter to new customers in June 2005. A copy of the letter sent to the only new customer, dated 9 June 2005, was provided to the Auditor. This new customer's Licence Agreement indicated that the customer signed the agreement in March 2005, indicating three months had elapsed before the new customer received formal information regarding SCA's complaints handling procedures.</p> <p>The SCA has not provided information to the Auditor which indicates that it has sent this information to all its customers. In order to achieve Full compliance, the Auditor needs this</p>

**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
			information.  The Auditor checked the website and verified that the policies and procedures are publicly available.
5.3.5	Provide details and report about complaints made to the SCA.	Low compliance	<p>The interview with the SCA indicated the following concerns regarding the definition of ‘complaints’:</p> <ul style="list-style-type: none"> <li>▶ The issue of DA / legal complaints was raised. SCA staff asserted that these were not treated as complaints and hence were not reported. When the Auditor noted they appeared in the complaints category schedule on page 18 of the policy document, the SCA responded that action would be taken to “<i>remove them from this schedule for next year</i>” and that “<i>nothing that was a legal matter should be included in the complaints system</i>”.</li> <li>▶ The issue of complaints from the Kangaroo Valley Association was raised. IPART specifically requested that the Auditor “<i>check that correspondence for the 2004/05 period to the SCA from [person’s name] was registered correctly – is there correspondence which expresses dissatisfaction with the SCA that has not been registered as a complaint?</i>”</li> </ul> <p>According to the SCA, the concerns of the Association related to environmental flows, and that senior management had met with the Association on a regular basis. SCA staff stated that the Association’s concerns were related to broader government policy rather than SCA policy and that the SCA was “<i>not in a position to do anything</i>” about the situation. From this discussion, it emerged that the SCA does not classify issues / complaints raised in community forums as complaints. Rather, they are addressed through a “<i>different mechanism</i>”. The SCA stated, “<i>our procedures are for complaints, not issues raised at community meetings</i>”.</p> <p>The SCA forwarded copies of correspondence related to the Kangaroo Valley Association. The documentation included two letters from the Association, five letters from the Managing Director of the SCA to the Association and a copy of the minutes from a meeting between the Kangaroo Valley Association and SCA representatives held on 1 December 2004. Evidence of complaints from the Kangaroo Valley Association appear in item 1 of these minutes:</p> <p><i>“the SCA pumping regime has produced: increasing problems with water quality, potential risks to public health and safety, and degradation of the environment. We believe that the Act’s objectives have not been accorded priority in KV and the Act’s statutory obligations</i></p>



**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p><i>appear to have been breached. SCA has not operated in a transparent manner...It is Government policy for departments to act in a transparent manner and this is unacceptable".</i></p> <p>In summary, the Auditor lacks confidence in whether the SCA records and reports all complaints received. It seems likely that the complainant raising a complaints at a public meeting or about a legal claim or broader government policy under the control of the SCA , would feel they were making a complaint to the SCA despite the SCA not classifying these concerns as complaints.</p>
<b>5.4</b>	<b>Consultative Committees</b>		
5.4.1	Establish and regularly consult with Consultative Committees.	High compliance	<p>The Licence requires that the SCA establish Consultative Committees to enable community involvement in issues relevant to the performance of the Authority's obligations under this Licence. During the previous audit period, the SCA reviewed and restructured its Consultative Committees. After the formal dissolution of the Expert Reference Panel on 16 July 2004, the SCA now operates one Regional Consultative Committee (RCC) and the Local Government Reference Panel (LGRP). Records provided by the SCA indicated that the LGRP met on five occasions during the audit period (2 August 2004, 1 November 2004, 7 February 2005 and 2 May 2005 with a special meeting held on 13 September 2004 to discuss the draft Regional Environmental Plan). The RCC met on three occasions (12 August 2004, 11 November 2004 and 19 May 2005). Agendas and minutes for all of these meetings were sighted.</p> <p>The concerns expressed in last year's audit report regarding the provision of scientific advice and public health expertise have not been addressed in documentation provided by the SCA for the current audit (In last year's audit, the SCA advised that it had strong ties to the external scientific community and that the Board had resolved to access independent scientific advice from a range of sources. In terms of public health issues, the SCA indicated there is extensive consultation as part of the Joint Operational Group and Strategic Liaison Group under the MOU with NSW Health. The SCA also indicated it held ad-hoc consultation with other external bodies on public health issues).</p> <p>While the SCA indicated that it consults with public health experts who are members of the Joint Operational Group and Strategic Liaison Group, no evidence has been provided that these groups comply with the requirements of Clause 5.4.1 of the Operating Licence.</p>





**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
5.4.2	The first Committee to be established within 3 months of the commencement date (19 April 2000).	No requirement	This clause was met during the 2000/01 audit period.
5.4.3	Members to be appointed consistent with the Licence.	High compliance	<p>In documentation provided to the Auditor, the SCA noted the terms of many members continued from the previous period and that there were new members and resignations. It also indicated that it “<i>accepts all nominations for membership</i>” to the Local Government Reference Panel (LGRP).</p> <p>While the majority of membership categories required by the Licence are reflected across the two Consultative Committees, the decision to dissolve the Expert Reference Panel has resulted in the category of public health expert not being represented on the Committees. There is also doubt about “catchment management experts”. While the SCA indicated that it obtains public health advice through other mechanisms (specifically, the regular committee meetings with Sydney Water and NSW Health as part of the MOU), the Licence requires that such expertise needs to be represented on a Consultative Committee.</p> <p>In addition, the membership lists provided by the SCA did not include customer representatives (other than local government) as specified under Clause 5.4.4 (h). It is acknowledged that some of the members may indeed be customers but this has not been identified by the SCA in the membership documentation.</p>
5.4.4	Required groups to be members of the Committee.	Moderate compliance	Comments as above for Clause 5.4.3. The SCA sources health advice through other committees namely those under the MOU with NSW Health. However, these other committees are not structured to comply with Clause 5.4 of the Licence and the SCA has provided no comment or evidence to the Auditor regarding public health expertise on Consultative Committees, which currently do not fully comply with Clause 5.4 of the Licence.
5.4.5	The SCA may direct members to serve on various Consultative Committees.	No requirement	There was no evidence that the clause has been acted on.

**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
5.4.6	Term of Committee membership, 2+2 years.	Low compliance	<p>As noted in last year's audit report, the terms of committee membership is stipulated in the Charter of the Committees and willing members of committees may be reappointed for one further term, although the Licence specifies that no member can be reappointed for more than one consecutive term.</p> <p>The SCA did not provide information about length of membership for the RCC. Letters from 12 RCC members accepting the offer of appointment to the RCC until 31 December 2005 were sighted (one non-acceptance was also provided). However, one of these 12 was not listed on the membership information initially provided by the SCA and it is thus uncertain as to whether this individual is a member of the RCC.</p> <p>In relation to the LGRP, the SCA commented that <i>"the term of some members has technically expired however they have not been terminated by the SCA in recognition of the proposal for a new operating licence which may have different criteria"</i>.</p>
5.4.7	Replacement of Committee member.	Moderate compliance	<p>The SCA provided documentation in relation to changes in representation on the LGRP. The SCA has not indicated that any replacements were made in the membership of the RCC. However, the status of one member (see Clause 5.4.6) requires clarification.</p>
5.4.8	Development of a Consultative Committee Charter.	No requirement	<p>This requirement was met in a previous audit period (2003/04). The SCA indicated no amendments were made during the audit period.</p>
5.4.9	Each Committee must have a Charter.	Full compliance	<p>The Local Government Reference Panel and Regional Consultative Committee both have current Charters / Terms of Reference (dated May 2003 and December 2003).</p>
5.4.10	Provision of information to the Committee by the SCA.	Moderate compliance	<p>In previous years, the SCA's adherence to this requirement was tested through a survey of committee member perceptions. However, the survey was not required by IPART this year.</p> <p>Given that the SCA has not provided information or evidence, apart from committee papers and minutes, to demonstrate the timeliness and effectiveness of information provided, the Auditor recommends that IPART reintroduce the use of committee surveys for the purpose of establishing SCA's performance regarding the requirements of Clause 5.4.10.</p>
5.4.11	A copy of each Charter must be posted on the SCA's website and at offices.	Full compliance	<p>Charters for the Local Government Reference Panel and the Regional Consultative Committee are posted on the website. The SCA has posted the Regional Consultative Committee's Terms of Reference rather than a Charter.</p>



**Table 5.1 Customers – summary of compliance**

Clause	Requirement	Compliance	Findings
5.4.12	Report on the effectiveness of the Committees and compliance with their Charters.	No requirement	<p>This requirement relates to the end of term review and as such there is no requirement on the SCA.</p> <p>While the SCA has undertaken a review of its Consultative Committees, restructured the Community Committees and dissolved the ERP, it would appear worthwhile that, as part of the end of term review, an independent assessment be undertaken to assess the role and value of the consultative framework. This assessment should include how the SCA and its consultative mechanisms will effectively integrate with the consultative mechanisms to be established by the Catchment Management Authorities.</p>

## 5.4 Discussion

### 5.4.1 Agreements with other customers

Two water supply agreements remain outstanding with the two local Councils: Wingecarribee and Shoalhaven. These Councils represent SCA's largest customers outside Sydney Water.

The SCA provided evidence of ongoing negotiation during the audit period in the form of two meetings with Wingecarribee Council and one meeting with Shoalhaven as well as four letters. It was also noted that operational and planning staff meet regularly. More recently, the SCA indicated that "*agreement was reached on all remaining outstanding issues*" at a meeting between the General Manager of Shoalhaven Council and the Executive of the SCA on 23 August 2005. The SCA indicated that a draft agreement was sent to Shoalhaven Council on 27 September 2005. This draft agreement was sighted by the Auditor. Much of the process to reach this agreement occurred outside of the audit period.

While it is acknowledged that Clause 5.2.1 only requires the SCA to use its "*best endeavours*", it is questionable whether the level of negotiation can truly be said to constitute the effort required, especially given the status of these Councils as SCA's largest retail customers. Furthermore, it does not appear that the SCA has demonstrated any increased effort to resolve the impasse, as suggested in previous audit reports. The SCA has commented that much of its increased efforts have been of an "*operational nature*" citing, as an example, assisting Shoalhaven Council to better manage its water supply sourced from the Shoalhaven River.

The Auditor is concerned that after five years the requirement of this clause has not been achieved. The Auditor repeats the recommendation from the previous audit period that, if the matter remains unresolved, it should be raised higher within Government.

At the end of the previous audit period, there were eight properties drawing water from the SCA area whose status was unclear as to whether they were SCA customers or the responsibility of the Department of Infrastructure, Planning and Natural Resources (DIPNR). During previous audits, SCA indicated that agreement with DIPNR was imminent, however, the status of these customers remains unresolved. The SCA provided a series of emails regarding the issue. The first email – referring to a letter from the DIPNR dated 9 July 2004 – was issued from the SCA to DIPNR on 10 November 2004. A reply was received from DIPNR on the same day. There is no record of any reply from the SCA or any other correspondence until an email from the SCA dated 12 April 2005 (that is, a gap of approximately five months). It is questionable whether these efforts to reach agreement with the DIPNR, can be considered "*best endeavours*".

In previous years, the SCA's adherence to the customer requirements was tested through an assessment of customer perceptions concerning their awareness and understanding of their agreement with the SCA. This assessment was undertaken through a random customer survey. The survey was not required by IPART this year. Given that there is no other source of information available to demonstrate the informed agreement of customers, the Auditor recommends the reintroduction of the use of customer surveys in future audits for the purposes of establishing the customer perspective of SCA's performance regarding the requirements. This is especially important given the concerns identified in the previous audit report.

#### 5.4.2 Complaints

AS4269-1995 defines a complaint as “*any expression of dissatisfaction with a product or service offered or provided*” and this is the definition used by the SCA in its policy document.

During the interview with SCA staff, the Auditor made the following observations:

- ▮ The SCA was able to provide details from its computer system for each complaint and actions taken by the SCA. The system also records the mode of communication between the SCA and the complainant (for example, by email or by letter);
- ▮ The complainants were responded to through the medium by which they contacted the SCA. The SCA advised that there is no standard template for written correspondence to complainants due to the small number of complaints. Consequently, there is a potential for inconsistency in the manner in which the SCA responds to complainants;
- ▮ The satisfaction measures recorded for each complaint in the computer system are determined by the actioning officer who can indicate a “yes” or “no” response to the questions “*Customer satisfied with process?*” and “*Customer satisfied with outcome?*”. The actioning officer can further comment on the satisfaction level using the text boxes under each of the questions. The satisfaction measures are recorded by SCA staff and there is no objective confirmation of satisfaction from the complainant;
- ▮ There is no automated reporting of Key Performance Indicators (KPIs). The SCA advised that meeting the KPI is determined by “*reading through the descriptions*”. On this basis, the SCA indicated that KPIs were met for 100% of those complainants who responded. There is no objective measure that the SCA has met its KPI;
- ▮ The SCA advised that only open complaints were reported in monthly reports to the Executive. That is, complaints opened and closed in the month were not communicated to management. If this practice is the case, then the Executive is not receiving a full indication of the actual number and nature of complaints received by the organisation, particularly given the subjective manner in which complaints can be closed;
- ▮ When asked about complaint 4218 (an old complaint still noted in the January 2005 report but not in the March 2005 Report), SCA staff advised that it had been “*cleansed from the system*” meaning that the complaint had been closed from the system, rather than deleted as it was regarded as a legal issue and was therefore not regarded as a complaint. The closure of this complaint was not mentioned in a monthly Executive report. The reporting of this complaint raises issues in relation to the transparency of the complaints handling and reporting system;
- ▮ The SCA advised that it does not provide complaint procedures in community languages, as it believes the number of complaints does not justify the expense. This policy is contrary to Government policy and disadvantages customers from non-English speaking backgrounds;
- ▮ The SCA advised its complaints system works well. However, SCA staff stated there had been no reviews of SCA complaints policy and the SCA was not able to provide evidence to demonstrate it monitors staff’s performance against the policy; and
- ▮ The Auditor continues to be concerned about the way in which complaints about government policy or legal matters may or may not be recorded through the complaint handling system.

The above observations create doubt as to whether the SCA’s procedures are compliant with AS4269-1995, especially the components of data collection, accountability and reviews. In previous years, the

SCA's adherence to this Australian Standard was tested through a survey of complainant perceptions concerning their interaction with the SCA, based on the elements of AS4269-1995. The survey was not required in the 2004/05 audit. The Auditor recommends the reintroduction of complainant surveys in future audits for the purposes of establishing SCA's performance regarding the requirements of Clause 5.3.2.

#### **5.4.3 Consultative Committees**

As mentioned in the previous audit, the formation of the Catchment Management Authorities (CMAs) under the Catchment Management Authorities Act 2003 will require close liaison between authorities to ensure that a whole of government approach is applied to catchment protection and community consultation throughout the catchment and to avoid duplication, particularly through the various community consultation mechanisms. It is recommended that the CMAs within the area of operation of the SCA be represented on a Consultative Committee.

### **5.5 Recommendations**

#### **5.5.1 Key recommendations**

That the SCA:

- R5.1 Finalise and sign contracts with Wingecarribee and Shoalhaven Councils for the supply of bulk water.
- R5.2 Determine the status of the eight "customers" without agreements in association with the NSW Department of Natural Resources and sign contracts with parties identified as customers of the SCA.
- R5.3 Record all complaints made to the organisation as per AS4269-1995.
- R5.4 Conduct an independent survey of customers and key stakeholders to determine the level of satisfaction with the SCA's performance, particularly relating to complaints management.

#### **5.5.2 Secondary recommendations**

That the SCA:

- R5.5 Include public health experts and catchment management experts in Consultative Committees.
- R5.6 Invite the relevant CMAs to form a Consultative Committee to coordinate investment in catchment management activities throughout the catchment.

## 6. Bulk water quality

### 6.1 Summary of findings

#### ▸ Water quality supplied for water treatment

The Sydney Catchment Authority (SCA) has a well established system for managing bulk water quality. The system includes a risk management framework that has been under development for a number of years and is now well developed. SCA was assessed to be in **Full or High compliance** in regard to the quality of the bulk water supplied for water treatment. There is potential for the quality of the bulk water to deteriorate, for example, with falling dam levels or with drought breaking rains.

#### ▸ Water quality supplied for other uses

**High compliance** was assessed for water quality supplied for other (than water treatment) uses.

#### ▸ Catchment and System Management

The SCA is undertaking a large body of work that has the objective of properly managing the catchments and ensuring the quality of the water meets the required standards. This has been brought together in a *Healthy Catchments Program 2003 – 2007*. SCA was assessed as being in **Full compliance** for catchment and system management and for water quality monitoring and reporting.

#### ▸ Water quality monitoring and reporting

The SCA undertakes a program of water quality monitoring, in accordance with an Annual Water Quality Monitoring Program, that has been developed in consultation with Sydney Water and NSW Health and was assessed as **Full compliance**.

The SCA complied with metals and pesticides levels at the inlet to the Water Filtration Plants (WFP) to protect human health.

The SCA undertakes routine monitoring of certain aesthetic water quality characteristics of the bulk water supplied to the Water Filtration Plants. The results indicated that some parameters did not comply with the requirements of the Bulk Water Supply Agreement; the most significant of these were exceedences of the numbers of algae. Sydney Water advised that these exceedences did not cause difficulties with treatment or the quality of its supply to customers. There was an incident of elevated levels of cyanobacteria in the reservoir supplying Wingecarribee Shire Council's WFP, but this was managed in consultation with NSW Health and the Council, with no impact on drinking water quality.

The SCA liaises closely with Sydney Water and NSW Health regarding water quality issues. Sydney Water advised that the bulk water quality was acceptable and the quality of the treated water supplied to customers by Sydney Water was in accordance with requirements.

In addition to routine monitoring, SCA undertakes a program of pathogen monitoring (particularly *Cryptosporidium* and *Giardia*) and other investigative monitoring. SCA has appointed a Project Manager to ensure that the water quality monitoring program requirements are met. An Annual Water Quality Monitoring Program Report was completed and made available on the web. This



Report provides an excellent discussion of water quality in the supplies, relevant issues and measures that SCA has taken to address these issues.

► **Water quality planning – Risk Management Plan**

In meeting the requirement for the development of a five year Risk Management Plan, the SCA has now finalised an excellent Water Quality Risk Management Framework. **Full compliance** was assigned to preparing the Risk Management Plan. The development of the Framework has involved Sydney Water and NSW Health and, together with Sydney Water's systems, provides an integrated multi-barrier approach to minimising risk to public health from the catchment to customers' taps. In the audit period, SCA and Sydney Water worked together to assess the risks associated with poor bulk water quality, such as may arise through heavy rains in the catchment, and together have determined that there are sufficient control measures now in place to reduce the risk associated with such events to a low and acceptable level.

The SCA has prepared an Incident Management Plan in accordance with the requirements of the Licence and in the audit period has continued to improve the Plan following a trial of the Plan.

## 6.2 Summary of requirements

The objective of Part 6 of the Operating Licence is to ensure that the quality of the water supplied by Sydney Catchment Authority meets the requirements for use. Two categories of use apply:

- Bulk water supplied to Sydney Water Corporation, Shoalhaven City Council and Wingecarribee Shire Council for treatment by these organisations and supply to their customers for general purposes including drinking; and
- Bulk water supplied to *other customers*, for uses that have to be agreed with the SCA.

To meet the requirements of Part 6, the SCA is expected to undertake the following tasks:

- Supply bulk water to Sydney Water, Shoalhaven City Council and Wingecarribee Shire Council which meets certain health guideline values for substances which may not be removed in their treatment processes (such as pesticides and certain metals);
- Supply bulk water to Sydney Water that has a quality consistent with the capacity of each water treatment facility to meet the applicable treated water quality standards specified in the Bulk Water Supply Agreement;
- Agree on water quality standards with other customers and advise regarding the need for treatment;
- Manage the catchments in accordance with the requirements of the Australian Drinking Water Guidelines;
- Develop and implement a water quality monitoring program that comprises both routine monitoring and investigative monitoring, and provide the results of the routine monitoring to the customers supplied. The water quality monitoring programs must incorporate effective quality assurance and must be agreed with the relevant stakeholders;
- Develop a database of monitoring results, and prepare a Monitoring Program Report by 30 November each year and place this on the SCA's web site;
- Prepare a 5 year Risk Management Plan that will identify and assess sources of pollution, and reduce or remove the pollution.



In the 2002/03 audit it was noted that the Plan had been well advanced but was still to be completed. Following that audit, the Minister issued a requirement that the SCA finalise the development of the Risk Management Plan by 1 September 2004 and determine the significance of pollution loads with respect to treated water quality and requirements for control. The Plan is to be reviewed every 2 years, following catchment audits;

- ▶ Prepare an Incident Management Plan to minimise the risk to human health from the bulk water supplied by the SCA to customers; and
- ▶ Meet environmental water quality requirements for any discharges or water releases required under licences issued to the SCA by the DEC or the DIPNR.



## 6.3 Details of compliance

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>6.1</b>	<b>Interpretation</b>		
6.1	Definitions: NHMRC/ARMCANZ 1996 Australian Drinking Water Guidelines, health guideline value; water treatment.	No requirement	No requirement for the SCA.
<b>6.2</b>	<b>Water supplied for Water Treatment</b>		
6.2(a)	Meet health guideline values in Schedule 4 (for characteristics which may not be removed by subsequent treatment; these include pesticides, selected metals and radiological parameters).	Full compliance	<p>The SCA carried out monitoring of the water supplied to customers for treatment, as outlined in the Annual Water Quality Monitoring Program, with pesticides being analysed on a monthly basis over the period and metals being analysed quarterly or annually. The pesticides included all of those listed in Schedule 4, plus glyphosate and metasulfuron at Wingecarribee WFP. SCA advised that NSW Health had not requested additional pesticides to be added for monitoring.</p> <p>The results indicated that all of the analyses reported for the health related parameters complied with the health-based targets listed in the Australian Drinking Water Guidelines (ADWG). A full set of results indicated that all of the metals and pesticides listed in Schedule 4 had been tested (at the required frequency) and all results were well below the health guideline values specified in the ADWG for each of the WFPs (11 plants).</p> <p>Schedule 4 also lists Radiological parameters of "Gross alpha" and "Gross beta" and the Water Quality Monitoring Program requires annual reporting. The last results were for June 2004 (results sighted). No radiological testing was undertaken in 2004/05.</p> <p>The SCA advised that it had not had any complaints from customers in the audit period regarding the quality of the water supplied.</p>
6.2(b)	Comply with Bulk Water Supply Agreement (for aesthetic characteristics such as turbidity, colour, hardness, algae).	High compliance	The SCA carried out monitoring of the water supplied to Sydney Water for treatment for the characteristics required under the Bulk Water Supply Agreement (BWSA), with sampling and analysis being carried out monthly. The operators of the water filtration plants separately undertake operational monitoring necessary for the proper operation of their treatment plants. The Bulk Water Supply Agreement does not specify monitoring frequency. The SCA's monitoring program specifies monitoring on a monthly basis and Sydney Water has agreed to this.

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>The 2003/04 audit suggested that the water quality characteristics specified in the BWSA be reviewed. SCA, Sydney Water and NSW Health reviewed the trigger levels for algae in SCA's <i>Bulk Water Quality Incident Response Plan</i> and a revised trigger value for "minor incident" has been agreed. SCA advised that it is expected that the new values will be reflected in the 2005 review of the Bulk Water Supply Agreement and that this review will also consider the values set for hardness, alkalinity and pH.</p> <p>The results of the monitoring indicated that raw water supplied to the Sydney Water's water filtration plants had a similar level of compliance with the requirements of the Bulk Water Supply Agreement (BWSA) to that achieved in the previous year (2003/04). Full compliance was achieved for turbidity, colour, iron and aluminium, with a high level of compliance for algae and a moderate level of compliance for hardness, alkalinity and pH; these latter parameters are related to one another and have a low significance in terms of water treatment. Further information on the results is provided in Section 6.4.2 of this report.</p> <p>The SCA advised that there was an incident of elevated levels of cyanobacteria in Wingecarribee Reservoir (supply to Wingecarribee Shire Council's WFP) but this was managed in consultation with NSW Health and the Council with no impact on drinking water quality.</p> <p>In assigning a compliance grade, the Auditor has adopted a basis consistent with previous audits and assigned High compliance.</p>
6.2(c)	Liaise with customers to which SCA supplies bulk water for treatment, cooperate and agree on strategies for treatment to protect human health.	Full compliance	<p>The SCA liaises with Sydney Water regarding water quality and strategies to protect water quality. SCA and Sydney Water continue to hold Joint Operational Group meetings in conjunction with NSW Health at which wide ranging discussions on water quality issues, activities involving each organisation and requirements for management and improvement of water quality are discussed. The minutes from these meetings indicate excellent liaison between the parties.</p> <p>In addition, SCA and Sydney Water hold regular Strategic Liaison Group meetings that provide a higher-level forum for discussing issues, which include water quality, and for developing appropriate strategies for dealing with these issues (minutes of meeting sighted). SCA and Sydney Water also hold other interface meetings at which specific issues relating to the bulk water quality supplied by SCA to Sydney Water are discussed.</p> <p>The SCA also holds regular meetings with Shoalhaven and Wingecarribee Councils and considers water quality issues in these meetings. Water quality results are sent to these Councils as they become available (refer to Clause 6.6.3). As an example of cooperation between the Councils and SCA, during the Wingecarribee cyanobacteria incident, the Council and SCA agreed jointly that the Council should commence operation of its activated carbon treatment system to address the issue.</p> <p>As noted in previous audits, SCA has been seeking to develop Bulk Water Supply Agreements with WSC</p>



**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>and SCC but has not been able to finalise agreements with these councils. SCA advised that during 2004/05 it continued with this negotiation and that a BWSA with one of the councils (SCC) is now imminent. It was noted that the BWSAs do not specify strategies for treatment.</p> <p>Despite the lack of BWSAs with the Councils, SCA has demonstrated that it has liaised, cooperated and agreed on strategies for treatment with its customers for bulk water, so Full compliance has been assigned.</p>
<b>6.3</b>	<b>Water supplied for other uses</b>		
6.3.1	Best endeavours to reach agreement on water quality standards to apply to water supplied to customers for purposes other than treatment.	High compliance	<p>This clause is associated with Clause 5.2, which specifies the need for the SCA to reach agreement with customers on the supply of bulk water. However, Clause 6.3.1 is more specific in that it relates to the quality of the water supplied. As indicated in the comments for Clause 5.2.1, all retail customers (confirmed as SCA customers) have signed agreements with the SCA. Evidence was also sighted of SCA's efforts to renew licences that have expired during the audit period. Agreements have been sighted and it was noted that these contain a section which describes the "quality of water" supplied.</p> <p>Two agreements with Wingecarribee and Shoalhaven Councils remain unsigned. SCA advised that it is not providing the Councils with water for purposes other than for water treatment and, therefore, this clause does not apply.</p> <p>As is also mentioned in Clause 5.2.1, there were eight other properties that have been drawing water from the SCA area and whose legal status was unclear as to whether they were SCA customers or the responsibility of the Department of Natural Resources (DNR, formerly DIPNR). The status of these customers remained unresolved during the audit period.</p>
6.3.2	Advise customers of the potential uses for bulk water and need for treatment if used for human consumption.	High compliance	<p>As was noted in previous audits, all customers who had signed agreements have been advised about the potential uses for bulk water and the need for treatment if used for human consumption. Approximately 60 agreements have been signed. The SCA was not given a Full compliance rating because of the two other properties whose legal status is unclear and the lack of evidence of "best endeavours" to reach an agreement with these parties.</p> <p>See Clause 6.3.1 above and Section 5.4.1 of this report for further detail.</p>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>6.4</b>	<b>Catchment and System Management</b>		
6.4	Comply with 1996 Guidelines relating to catchment management and system management of public water supplies.	Full compliance	<p>The 1996 Guidelines have the following major requirements regarding catchment management and system management: understand the individual water supply systems and the ways in which water quality can be affected through the system; provide multiple barriers to entry and transmission of contaminants and minimise the risk of contamination to raw water supplies; and monitor to confirm compliance. There are also a number of specific requirements such as controlling particular polluting activities, such as cattle feedlots and other point sources.</p> <p>The SCA has now finalised a <i>Water Quality Risk Management Framework</i> (June 2005). The Framework is a major work that describes the SCA's overall water quality risk management framework and the various programs and actions already in place to minimise the risks to public health. The Framework provides information that shows that SCA is complying with the requirements of the 1996 Guidelines relating to catchment management and system management of public water supplies.</p> <p>Further discussion on the SCA's systems for catchment management is included under Clauses 6.7, 8.1.1 and Section 7 of this report and actions being taken by SCA are reviewed in Section 6.4.5 of this report. It can be seen from the discussion under Section 6.4.5 of this report that the SCA is undertaking a large number of initiatives and that these are advancing and, over time, can be expected to significantly improve water quality and to reduce the risk of occurrences of poor bulk water quality.</p>
<b>6.5</b>	<b>Review of obligations regarding water quality</b>		
6.5	Licence Review Body to review obligations as part of Mid-term review.	No requirement	This has been completed by IPART.



**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>6.6</b>	<b>Water quality monitoring and reporting</b>		
6.6.1	<p>Develop and implement a water quality monitoring program that comprises:</p> <p>(a) routine monitoring for compliance with Clause 6.2; and</p> <p>(b) targeted, investigative and event-based monitoring to better define the occurrence of particular characteristics and contaminants in water.</p>	Full compliance	<p>Details of the water quality monitoring program are included in the SCA document “<i>Water Quality Monitoring Program, July 2002 to December 2004</i>”. This Program has been extended and remained current for the audit period. The extension was approved by NSW Health, DEC, DIPNR and Sydney Water, and letters agreeing to the extension from the various agencies were sighted. SCA is preparing a <i>Water Quality Monitoring Program, October 2005 – 31 December 2009</i>, and a final draft was sighted.</p> <p>The current 2002-2004 Program was reviewed in previous audits and it provides information on water quality standards, monitoring and reporting requirements, routine monitoring programs, targeted monitoring, investigative and event-based monitoring, databases, reporting requirements and assessment of performance. The Program has been reviewed and agreed to by NSW Health. The DEC previously advised the Auditor that it defers to NSW Health with respect to monitoring under this clause and noted that DEC was not aware of any limitations or lack of compliance. DIPNR has previously noted that it provided detailed comments to SCA during the development of the <i>Water Quality Monitoring Program 2002-2004</i> and endorsed the Program in a letter dated 29 May 2002. DIPNR advised that it considered the SCA complied with the requirements of the Licence. Sydney Water advised the Auditor that it is satisfied with SCA’s performance of water quality monitoring and reporting (refer to Appendix D, SWC indicated 92.77% compliance with BWSA parameters and Full compliance with Schedule 4 parameters).</p> <p>The 2002 to 2004 Program included routine monitoring for compliance with Clause 6.2 and targeted, investigative and event-based monitoring to better define the occurrence of particular characteristics and contaminants in water.</p>
6.6.2	<p>Monitoring Plan to include monitoring:</p> <p>(a) against health guideline values;</p> <p>(b) aesthetic characteristics under Clause 6.2(b); and</p> <p>(c) other characteristics nominated by NSW Health</p>	Full compliance	<p>The current <i>Water Quality Monitoring Program 2002 - 2004</i> included monitoring for the nominated parameters for health guidelines and aesthetic characteristics. NSW Health was involved in the development of the Program and had not nominated additional parameters.</p> <p>The SCA compares the results of the monitoring program (outlined in Clause 6.6.1) with:</p> <ul style="list-style-type: none"> <li>▶ Australian Drinking Water Guidelines health related guidelines (in case of Clause 6.2(a)); and</li> <li>▶ Targets related to the aesthetic quality and the performance of WFPs as nominated in Clause 6.2(b).</li> </ul>
6.6.2	(d) with effective QA.		<p>As noted in previous audits, the quality assurance program includes a level of detailed auditing of laboratories that is beyond the practices of other Australian water authorities.</p> <p>The laboratories involved (ALS, Environment Science and Technology Analytical Laboratories)</p>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>maintained their NATA accreditation during the period.</p> <p>The QA Program, including the use of independent experts, was reviewed in detail in the 2002/03 audit and is still current.</p> <p>A series of independent audit reports of the laboratories and the field sampling commissioned by the SCA were sighted. These included audits of: ALS (organic and infrequent compounds laboratory; metals laboratory); SWC (biological laboratory; <i>Cryptosporidium</i> and <i>Giardia</i> laboratory; enteric virus and F-RNS Coliphage laboratory; microbiology laboratory; water chemistry laboratory); and field sampling (various). In addition to the audits, the Project Manager for the Monitoring Program reports quarterly on Key Performance Indicators for the laboratories.</p> <p>The results of these audits were very good and provide evidence that the analytical methods being applied are in accordance with procedures.</p> <p>It has been recommended in previous audits that the Project Manager include a reporting item on the verification of the performance of the laboratories (that is, rather than confirming that procedures are being followed, that the body of information pertaining to performance be brought together and assessed). This recommendation has not yet been acted upon. SCA advised that in the new contract to be established from 1 November 2005, the SCA will specify this requirement as part of auditing and reporting.</p>
6.6.2	Monitoring Plan to include monitoring: (e) representative of bulk water	Full compliance	<p>As in the previous year, the monitoring program for Bulk Water involves monthly and quarterly sampling. This can be expected to provide a reasonably representative characterisation of bulk water in situations where the reservoir is large and well mixed and the measured substance is uniformly distributed throughout the water column (for example, for dissolved substances). Sydney Water advised that the monitoring program meets its requirements.</p> <p>In respect of algae, SCA undertakes frequent inspections during periods when algal blooms are likely and reports to customers on this basis. As noted in previous audits, the SCA also undertakes studies of nutrient loads and advanced investigative studies of algal occurrence in some reservoirs. The Auditor concludes that the algal monitoring program meets the Licence requirement.</p>
6.6.3	Provide results of routine monitoring as soon as practicable to (a) customers under Clause 6.2. (b) NSW Health	Full compliance	<p>The SCA provides the results of routine monitoring for health related parameters and aesthetic parameters to Sydney Water, Shoalhaven City Council, Wingecarribee Shire Council, NSW Health and DIPNR on a monthly basis, and cyanobacteria monitoring on a weekly (summer) or monthly (winter) basis. If there are any exceedences, then the customers are informed. Customers are advised immediately of any detections of pathogens. All results are forwarded to the relevant customers and NSW Health. The Auditor has reviewed the reporting schedule and is satisfied that results are provided as soon</p>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>as practicable to customers and NSW Health.</p> <p>NSW Health has advised that SCA provides the results of routine monitoring to NSW Health in the format and frequency requested by NSW Health.</p> <p>As noted in the previous audit, a comprehensive set of Bulk Water Supply Protocols has been developed by SCA and Sydney Water. These Protocols specify requirements for the transfer of water quality data as it becomes available. SCA has a Project Manager for water quality data acquisition, transfer and reporting, and this includes auditing to ensure that the requirements are being met. SCA has authorised the laboratory to send water quality results electronically, as they become available, to Sydney Water and other relevant customers and stakeholders. In the previous audit, it was confirmed that SCA's procedures will provide rapid transfer of monitoring results. Sydney Water has advised the Auditor that it is satisfied with SCA's water quality reporting.</p>
6.6.4	<p>Provide investigative monitoring under 6.6.1(b):</p> <p>(a) with effective QA to the satisfaction of NSW Health, EPA (now DEC) and former DLWC (now DIPNR).</p> <p>(b) with sampling frequencies and locations that produce information to better define the occurrence and factors contributing to water quality, to the satisfaction of NSW Health, EPA (now DEC) and former DLWC (now DIPNR).</p>	Full compliance	<p>The SCA has developed a significant program of investigative monitoring as noted under Clause 6.6.1(b); this is outlined in the <i>SCA Water Quality Monitoring Program 2002 -2004</i>.</p> <p>A detailed review of the quality assurance (QA) procedures adopted for analysis was undertaken in a previous audit, and it was determined that the laboratory has a well developed QA/QC program. It is concluded that the reported results can be expected to provide an adequate characterisation of bulk water quality for use by SCA's customers. With regard to the sampling frequencies and locations, similar comments apply as for Clause 6.6.2 and NSW Health and DEC have confirmed their agreement with the Program. It is concluded that the sampling frequencies and locations are adequate. DIPNR provided detailed comment to SCA on reporting and suggested improvements in reporting that SCA has now adopted (refer to Clause 6.6.7).</p> <p>The SCA, in conjunction with Sydney Water and NSW Health, has considered the findings of the Expert Panel (April 2003) and SCA advised that the next <i>Water Quality Monitoring Program 2005-2009</i> will include monitoring reflecting the Panel's recommendations.</p> <p>The Expert Panel suggested that the monitoring program could be modified to provide a better balance between the various key water quality characteristics; for example, pathogens, nutrients (as they affect algae), and organics (as they affect disinfectant by products), and that the overall amount of pathogen monitoring could be reduced. A paper was prepared jointly by SCA, Sydney Water and NSW Health and presented to the Strategic Liaison Group in December 2004. SCA has also undertaken a review of its monitoring program; further work is required to finalise and seek approval for the revised program.</p>



**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
6.6.5	Develop and maintain a database of monitoring results.	Full compliance	The SCA stores all of the routine monitoring data obtained in the <i>Water Quality Monitoring Program</i> in a “ <i>Water Quality Database</i> ”. This includes routine, targeted and investigative monitoring results. The laboratory also maintains a primary database of all results.
6.6.6	Prepare Monitoring Program Report by November of each year.	Full compliance	A <i>Water Quality Monitoring Report 2003-2004</i> was prepared and forwarded to the Minister on 28 November 2004 and placed on the SCA website shortly thereafter. SCA advised that it is preparing a <i>Water Quality Monitoring Report</i> for 2004/05 and a draft of this Report was sighted including review comments from the Department of Natural Resources Corporate Licensing Unit.
6.6.7	<p>The Monitoring Program Report must include the results of routine monitoring and:</p> <p>(a) Summary of monitoring information</p> <p>(b) Description of water quality trends and problems</p> <p>(c) Summary of water quality incidents and action taken to resolve, eliminate or mitigate those incidents or their effect;</p> <p>(d) Steps taken to protect human health.</p>	Full compliance	<p>The <i>Water Quality Monitoring Report 2003-2004</i> included an Executive Summary and a section on Monitoring for the Operating Licence. Statistical summaries of the monitoring results are included as Appendices.</p> <p>The <i>Water Quality Monitoring Report</i> is an excellent document and is significantly improved from previous years. It includes:</p> <ul style="list-style-type: none"> <li>Helpful background information on the catchments, monitoring program and water quality standards adopted;</li> <li>Key findings, including results of monitoring and summaries of water quality issues and trends by system and by program (Monitoring for the Operating Licence, Monitoring for the Water Management Licence and Monitoring for Operations and Planning);</li> <li>A comprehensive analysis of trends in water quality; and</li> <li>Information on exceedances of water quality guidelines.</li> </ul> <p>DIPNR provided detailed comment to SCA on the <i>Annual Water Quality Monitoring Report 2000 -2003</i> regarding further improvements that could be made to the report (letter to SCA dated 16 April 2004). These included, for example, improving the sequence and level of information to allow the reader to better understand the requirements for monitoring, the methods adopted and showing in a clear and transparent way the extent of compliance that has been achieved with the specific requirements of the Operating Licence. The <i>Water Quality Monitoring Report 2003-2004</i> has addressed these issues.</p> <p>Although much improved, the <i>Water Quality Monitoring Report 2003-2004</i> does not provide, in a transparent way:</p> <ul style="list-style-type: none"> <li>A summary of water quality incidents and the actions taken to resolve, eliminate or mitigate those incidents or their effect (that is, Clause 6.6.7(c)). For example, cyanobacterial toxins were measured at levels greater than the trigger level for a major incident in December 2003; this incident was not</li> </ul>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>identified or discussed in the Report. Notwithstanding this, the report does provide information on many instances where measurements exceeded guideline values, however, the commentary generally does not make it easy for the reader to judge the significance of these issues.</p> <ul style="list-style-type: none"> <li>• A conclusion as to whether the results can be relied upon. The Report does include a discussion on quality assurance and indicates that there were a number of deficiencies and omissions, but does not reach a conclusion as to how serious these deficiencies were and whether the monitoring results can be relied on.</li> </ul> <p>It is concluded that the Water Quality Monitoring Report overall is an excellent document, although there are still some areas where improvement can be made. Full compliance has been assigned.</p>
6.6.8	Place on SCA's website and made available at its offices free of charge.	Full compliance	The report has been placed on the website and is available at SCA offices, if requested.
<b>6.7</b>	<b>Water Quality Planning – Risk Management Plan</b>		
6.7.1	Use findings of Catchment Audit to prepare five-year Risk Management Plan.	Full compliance	<p>The SCA has finalised a <i>Water Quality Risk Management Framework</i> (June 2005). The Framework is a major work that describes the SCA's overall water quality risk management framework and the various programs and actions already in place to minimise the risks to public health.</p> <p>The Framework draws on the findings of the Catchment Audits; this includes, for example, the use of estimates of pollutant loadings from the Catchment Audit to develop contaminant process maps and to inform the hazard event risk assessment component. An Inter-agency Plan has been prepared for addressing the findings of the Catchment Audit; this Plan will provide input into the Framework in future years.</p>
6.7.2	<p>The Risk Management Plan must:</p> <ul style="list-style-type: none"> <li>(a) identify and assess pollution sources, how these are modified between source and water storage, and evaluate impact of pollution on quality of bulk water (as this information becomes available through the Authority's long term research);</li> <li>(b) identify improvements to operation of catchment infrastructure works;</li> <li>(c) prepare an action plan to improve bulk</li> </ul>	Full compliance	<p>The <i>Water Quality Risk Management Framework</i> incorporates the <i>Pollution Source Risk Management Plan</i> 2000, and draws on a series of source pollution investigations (comprising nine <i>Environmental Assessment of Sites and Infrastructure Reports</i>) and estimates of pollutant loadings from the Catchment Audit to develop contaminant process maps.</p> <p>The previous audit assessed the Framework against the specific requirements of the Operating Licence. The observations from the previous audit are relevant and it is noted:</p> <ul style="list-style-type: none"> <li>• The Framework identifies and assesses, in qualitative terms, the various pollution sources, considers how these are modified between the source and water storage, and a qualitative assessment is undertaken of the impact of the pollution on the quality of the bulk water. <i>Water Quality Hazard Process Maps</i> have been developed that indicate the significance of the various causal factors and control points and the certainty of the various assessments. These maps are now complete and</li> </ul>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
	water quality; and  (d) identify arrangements to address issues outside the power of the SCA.		<p>provide an excellent outline of the issues and control requirements.</p> <ul style="list-style-type: none"> <li> <p>A draft of the Framework identified a total of 176 hazard events across the various water supply systems that were considered to potentially pose a high or very high risk to bulk water quality delivered to the water filtration plants. These events took into account existing SCA controls, but not Sydney Water control measures in place downstream of the inlet to the water filtration plants. The events generally fell into three categories: pollution sources within the catchments; management of the water supply storages or delivery systems that may give rise to or aggravate pollution problems; and incident events such as bush fires, floods or spills.</p> <p>It was a Ministerial requirement, in a previous year, for SCA to consider the extent to which SCA's customers have controls, such as water filtration plants, available to adequately control these events. Workshops have been held in the audit period involving SCA, Sydney Water and NSW Health and it was concluded from this work that all risks are able to be adequately managed (refer to discussion under Ministerial Requirement below). The findings of these workshops have been included in the Framework.</p> </li> <li> <p>The Framework outlines the existing controls for each area of high risk and also outlines the management initiatives and actions that are planned over the period 2002 to 2007. Performance indicators and targets for the various initiatives are outlined. At this time, the detail of some of the action plans is still being defined; for example, Regional Action Plans still need to be developed for the various catchments.</p> </li> <li> <p>The SCA had also undertaken a cost-benefit analysis of the broad strategies: <i>The Costs and Benefits of Action under the Water Quality Risk Management Plan 2004</i>. This analysis was reviewed in the previous audit.</p> </li> </ul>
6.7.3	<p>In developing the Risk Management Plan, the SCA must:</p> <p>(a) apply AS/NZS 4360:1999 to develop risk action plans;</p> <p>(b) consider catchment management principles in the Drinking Water Guidelines; and</p> <p>(c) consider benefits and costs of different management options.</p>	Full compliance	<p>The Framework was reviewed against the requirements of this clause in the previous audit and it was noted that the Framework has:</p> <ul style="list-style-type: none"> <li>Utilised the principles of AS/NZS 4360:1999 in the identification and assessment of risks and in the development of action plans; and</li> <li>Taken into account the catchment management principles in the Drinking Water Guidelines in the development of the action plans.</li> </ul> <p>The benefits and costs of different management options have been considered in the development of the Framework.</p>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
6.7.4	Engage in public consultation in developing the Risk Management Plan, including comment from NSW Health, EPA and DLWC, exhibit draft Plan for public comment. The Plan must be finalised by 1 January 2001.	No requirement	The initial development of the Risk Management Plan (that is, the <i>Pollution Source Risk Management Plan</i> ) prior to 2001 included consultation in accordance with the requirements of the Licence. Refer to comment under Clause 6.7.6.
6.7.5	Review the Risk Management Plan following future catchment audits.	Full compliance	<p>DEC has carried out a catchment audit (<i>Audit of the Sydney Drinking Water Catchment December 2003</i>) and SCA advised that it has considered the findings of this audit in the preparation of the Framework. Estimates of pollutant loadings from the catchment audit were used by SCA in the development of contaminant process maps in the Framework, and to inform the hazard event risk assessment component of the Framework. The Catchment Audit has also provided input into SCA's development of a Catchment Support System to assist the catchment inspection program.</p> <p>An Interagency Response Plan has been prepared in response to the catchment audit and this indicates that the various recommendations of the Catchment Audit are being actioned. The Response Plan nominates a lead agency for each action, a timeframe and a summary of status at March 2005. Actions that are relevant to controlling the risks identified in the Framework related to bulk water quality and for which SCA is the lead agency are:</p> <ul style="list-style-type: none"> <li>Develop a catchment model for estimating nutrient loads based on land use for each sub-catchment;</li> <li>Identify causes of exceedances of the Bulk Water Supply Agreement for pH and algae at Cascade and Greaves Creek Water Filtration Plants;</li> <li>Identify the cause of high incidences and long duration algae blooms in its storages;</li> <li>Further investigate the reason for oocysts of cryptosporidium detected at low levels at the inlet to Prospect Water Filtration Plant; and</li> <li>Investigate the source of <i>Cryptosporidium</i> and <i>Giardia</i> at Gibbergunyah Creek.</li> </ul>
6.7.6	At other times the Risk Management Plan may only be amended following public consultation.	High compliance	The development of the <i>Water Quality Risk Management Framework</i> has involved SCA's customers and NSW Health, DEC, DIPNR and the Catchment Management Authorities. SCA has also provided input into the Regional Consultative Committee (RCC) involving a variety of persons drawn from the local community. Minutes from a RCC meeting and a list of members were sighted. SCA made a presentation to the RCC on the Framework in May 2005. A summary of the list of the results of the consultation and how the issues raised have been addressed was sighted. Because there has not been public consultation involving a release of the revised framework, High rather than Full compliance has been



**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			assigned.
6.7.7	Need for Risk Management Plan to be reviewed at the Mid-term review in 2002.	Full compliance	The Pollution Source Risk Management Plan was reviewed at the Mid-term review and SCA concluded that the Plan (now the Framework) was required as part of its normal operational requirements.
6.7.8	Audit performance against actions the SCA is to undertake under the Risk Management Plan.	High compliance	<p>The extent to which the actions SCA is to complete under the <i>Water Quality Risk Management Framework</i> is reported in SCA Progress Report to June 2005. A review of these actions has been provided in Section 6.4.5, relevant to Clause 6.4 of the Licence.</p> <p>The SCA reporting on these various actions is not in a form that provides a clear understanding of the extent to which performance (that is, the targets for each action) are being met. However, the Report on the Action Plan is a good start on this requirement and will provide an overview of the extent to which the various SCA activities are progressing towards the improvement of bulk water quality and a reduction in the risk associated with poor water quality. Suggestions are made in Section 6.4.5 as to how the reporting of the audit can be improved to better meet the requirements of this clause. It is recommended that SCA improve its reporting of actions under the <i>Water Quality Risk Management Framework</i>, including reporting against performance indicators and targets for each initiative.</p>
6.7.9	Develop an Incident Management Plan by 1 July 2000 in agreement with NSW Health and in consultation with customers.	No requirement	A Bulk Water Quality Incident Response Plan was finalised on 28 June 2000. This Plan was prepared in consultation with customers and was agreed with NSW Health. The SCA has reviewed and revised the Plan with input from NSW Health at various times since its preparation. The date of the last review was November 2004.
6.7.10	Purpose of the Incident Management Plan is to minimise the risk to human health from the bulk water supplied by the SCA to customers.	Full compliance	The stated aim of the Bulk Water Quality Incident Response Plan is to “ <i>minimise the impacts of a bulk water quality event on SCA’s customers, ...</i> ”. The formulation of the Plan includes triggers that are based on the potential for an incident to give rise to impacts on human health of customers.
6.7.11	Incident Management Plan to provide for the coordinated management of water incidents including media and stakeholder liaison and notification of public health advice received from NSW Health to customers.	Full compliance	<p>The Bulk Water Quality Incident Response Plan provides for the coordinated management of water incidents and includes procedures for media and stakeholder liaison. The Plan includes provision to notify NSW Health immediately upon certain triggers being exceeded and to provide water quality monitoring results to NSW Health. If NSW Health assesses a risk to public health, NSW Health is to liaise with the customers and issue a boil water notice, if necessary, and to provide input to advice issued by the SCA for staff, customers, media and the Minister.</p> <p>The Plan has been subject to a full review in the audit period (November 2004) to make the Plan current and to remove ambiguity.</p>

**Table 6.1 Part 6: Bulk water quality – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>The SCA, Sydney Water and NSW Health consult regularly through the Strategic Liaison Group on matters relating to incident management. For example, in 2004/05 this included discussions on:</p> <ul style="list-style-type: none"> <li>• The results of a desktop exercise to address inter-agency outcomes from Exercise Camel;</li> <li>• Revised protocols, including sample media releases and a communications package;</li> <li>• Planning for “Exercise Olive”, as an enhanced version of “Exercise Camel”. This exercise is planned for the first quarter of 2006, or earlier depending on the likelihood of the drought breaking.</li> </ul> <p>The Incident Response Plan was subjected to a desktop exercise during the period. The desktop exercise tested communication protocols used by the agencies for a water quality incident.</p> <p>There were no major incidents during the period that would have provided an additional trial of the Plan.</p> <p>Review of the debrief reports from various incidents in the previous audit period indicated that it is important that staff are trained in the requirements for incident management, as otherwise the, notification and response requirements outlined in the Plan may not be understood or complied with. SCA advises that it has run staff awareness training during the audit period and a training list showing attendees for the period was sighted.</p>
6.7.12	Incident Management Plan to include requirement for the SCA to advise customers if the bulk water it supplies may be a risk to human health.	Full compliance	<p>The Bulk Water Quality Incident Response Plan includes an Initial Action Checklist, which includes the requirement to notify customers of the incident. The Plan also has the requirement, in the event of a minor incident/major incident/emergency, to prepare communications advice for staff, customers, media and the Minister. The Bulk Water Supply Protocols discussed above are also relevant to this clause.</p>
<b>6.8</b>	<b>Environmental water quality</b>		
6.8.1	Meet the environmental water quality requirements for discharges or water releases required under EPA or former DLWC (now DIPNR) licences.	No requirement	<p>The SCA has no licences with the EPA. The Water Management Licence issued by DIPNR has no requirements in relation to water quality, only water quantity.</p>



**Table 6.2 Bulk Water Quality – Ministerial Requirements**

ID	Requirement	Compliance	Findings
M1	Quantify, as far as possible, the variations as far a bulk water quality that may occur under high risk situations identified in the Risk Management Framework. Confirm that SCA's customers are aware of these variations so that they can plan accordingly, to ensure that treated water that they supply in turn to their customers, will comply with the required objectives.	Full compliance	<p>Two workshops were held to reassess the risks identified in the <i>Water Quality Risk Management Framework</i> after considering downstream controls such as water filtration plants. A report to the Minister dated June 2005 on the findings was provided to the Auditor.</p> <p>This report concluded that the highest bulk water quality hazard events related to the following:</p> <ul style="list-style-type: none"> <li>Presence of <i>Cryptosporidium</i> in raw water due to activity in catchments or following events such as drought breaking rain – the controls are adequate and the residual risk is medium. The report considered whether additional controls were needed (such as UV at a cost of \$50 million), but concluded that these were not warranted because Sydney Water currently meets or exceeds all water quality requirements. It was noted that: there is no evidence of infections of <i>Cryptosporidium</i> causing public health problems; a new filter backwash treatment facility has been constructed at Prospect WFP; filter backwash processes have been upgraded at other WFPs; and all WFPs routinely achieve 0.1 NTU on filter outlets which indicates that the filters are effectively removing all fine particles (including <i>Cryptosporidium</i>) and that they are therefore providing an effective barrier against <i>Cryptosporidium</i>.</li> <li>Elevated sediments, nutrients, pesticides and/or heavy metals in the raw water – the controls are adequate and the residual risk is low.</li> <li>Presence of algae in raw water, due to algal blooms in catchments/storages – the controls are adequate and the residual risk is low.</li> <li>Deliberate or accidental contamination of catchments or storages with harmful, chemical, biological or radiological agents – the controls are adequate and the residual risk is low.</li> </ul> <p>The report concluded that the residual risk to public health was acceptably low.</p> <p>The SCA advised that a similar workshop has been arranged for late October 2005 with SCC and WSC.</p>

## **6.4 Discussion**

### **6.4.1 Performance against the requirements of the Operating Licence**

The raw water quality from all storages has been very good with respect to the requirements of the Operating Licence and there was Full compliance with the health-related parameters (Schedule 4) of the Licence.

### **6.4.2 Performance against the Bulk Water Supply Agreement**

In general, the raw water quality from all storages has been good with respect to the requirements of the Bulk Water Supply Agreement. Turbidity and colour levels have been low and SCA advised that there has been sufficient depth in storages to allow selective withdrawal from levels where iron and manganese levels are low. The results of monitoring support this view.

The SCA advised that there were no algal blooms in dams supplying the Sydney, Illawarra and Blue Mountains water supply systems. Wingecarribee Reservoir had elevated levels of toxin-producing cyanobacteria for over two months and during this event SCA liaised with NSW Health, DIPNR (in respect of environmental and transfer releases) and Wingecarribee Shire Council (in respect of treatment for drinking water supply) and there was no impact on public health.

The SCA, monitoring against the requirements of the Bulk Water Supply Agreement (BWSA), demonstrated it attained High compliance for the most important parameters. The results were:

- ▶ Turbidity, colour, iron, manganese, aluminium: 100% compliance for 9 supplies;
- ▶ Hardness: 100% compliance for 5 of 9 supplies, 46-71% compliance for 2 supplies and 0% for 2 supplies;
- ▶ Range of pH: 100% compliance for 3 of 9 supplies, with variable compliance for the remaining supplies (that is, 8, 15, 69, 80, 85, 92%); and
- ▶ Algae: 100% compliance for 7 supplies, 96% and 62% compliance for the other two supplies. SCA has advised that the algae measured were of the filter blocking type and did not represent a risk to human health (refer to further comment below).

In understanding the level of compliance, it can also be noted that there was, averaged across all supplies:

- ▶ 96% compliance (flow weighted average of all parameters); this is similar to 94% in the previous year; and
- ▶ 42% compliance (average of the time any one parameter for a supply was in non-compliance, not flow weighted); this is similar to 49% in the previous year.

In general, the level of compliance is most affected by low compliance for hardness, alkalinity and pH. These parameters relate to the aesthetic quality of the water and its treatability and do not relate to human health. It is not clear as to the causes for this reduced compliance, although it appears to result from natural processes associated with the drought and lower storage levels. The observed extent of non-compliance in these parameters is not expected to give rise to significant issues in terms of treatment or adverse impacts on water quality following treatment.



The SCA advised:

- ▶ It had not received any complaints from Sydney Water regarding the quality of the water supplied; and
- ▶ To its knowledge, the exceedences had not caused difficulties in treatment.

The Auditor confirmed with Sydney Water that the non-compliances did not cause difficulties for the WFPs and did not result in non-compliances with regard to the treated water.

It is concluded that these non-compliances would not be expected to adversely affect the quality of water that Sydney Water supplied to customers.

Of the exceedences, those relating to algae are considered to be the most significant. In this audit period, compliance with the algal target levels was similar to the previous audit period. As the Greaves Creek supply was decommissioned early in the audit period, this has avoided using a supply with relatively poor performance with regard to algal levels.

In terms of the significance of the algal levels, the SCA has advised that the potential problems concerning algae in the supplies to the Sydney Water WFPs are operational (such as filter blocking) rather than the presence of toxins associated with the algae. The SCA advised that it has consulted with Sydney Water and NSW Health and an increased criterion for algae has been agreed. This changed criterion reflects the capability of the WFPs to accept algae. Incidents involving toxic algae are the subject of separate monitoring and reporting under the SCA's Incident Response Plan. The assessment of risk associated with cyanobacteria in the bulk water was assessed jointly by SCA, Sydney Water and NSW Health and this confirmed that the residual risk is low when the controls available are taken into account.

#### **6.4.3 Water quality monitoring and reporting**

The SCA's water quality monitoring program comprises:

- ▶ Routine monitoring of metals and pesticides at the inlets to the WFPs to ensure that toxicant concentrations do not pose a risk to human health, in accordance with Clause 6.2(a);
- ▶ Routine monitoring of physical and chemical water quality parameters at the inlets to WFPs to ensure physical and aesthetic quality of the supply comply with Clause 6.2(b);
- ▶ Routine pathogen monitoring at the inlets to WFPs, dams and other likely dry weather sources to determine pathogen concentrations for operational and planning purposes (this, in particular, includes monitoring for *Cryptosporidium* and *Giardia*); and
- ▶ Targeted and investigative monitoring including, for example, investigation into pesticides in catchments, nutrient release of sediments, specialist analyses for trace organic compounds; and
- ▶ Event-based monitoring (for example, investigations into certain algal events).

The SCA is in the final stages of preparing a *Water Quality Monitoring Report* for the next period (2005-2009), commencing in September 2005. A final draft of the *Report* was sighted. This report will address changes in the *Australian Drinking Water Guidelines*; the requirements for monitoring that flow from actions under the *Water Quality Risk Management Framework* and obtaining a better understanding of the likelihood and implications of these risk events; and the observations of the Expert Panel on Water Quality.

#### **6.4.4 Development of the Water Quality Risk Management Framework**

The *Water Quality Risk Management Framework* is an impressive undertaking. A review of the documentation indicates the following:

- ▶ The Framework identifies and assesses, in qualitative terms, the various pollution sources, considers how these are modified between the source and water storage, and an assessment is undertaken of the impact of the pollution on the quality of the bulk water. SCA has developed a series of *Water Quality Hazard Process Maps* that indicate the significance of the various causal factors and control points and the certainty of the various assessments. These *Maps* provide a good understanding of the various issues and their significance. This is an impressive undertaking in view of the complexity and inter-related nature of the various factors that can affect the quality of the bulk water.
- ▶ The Framework has considered the findings of the 2003 Catchment Audit.
- ▶ The Framework has included an assessment of the results of water quality monitoring to assist in quantifying the risk priority.
- ▶ In developing the Framework, SCA has considered the confidence level of the assessments and the research that has been or is being undertaken to better understand and quantify the issue. This approach will be important in allowing SCA to better direct and prioritise its research and investigations on water quality matters.
- ▶ The Framework identifies a large number of potentially “very high risk” hazard events relating to bulk water quality. These have been reviewed in conjunction with Sydney Water and NSW Health and it was concluded that there are adequate controls in place to deal with these events and that the residual risk is acceptably low. These events, particularly, include issues such as the potential for poor water quality following drought breaking rain, algal blooms, and a variety of contamination events.
- ▶ The Framework outlines the existing controls for each area of high risk and also outlines the management initiatives and actions that are planned over the period 2002-2007. Performance indicators and targets for the various initiatives are outlined and the SCA Divisions responsible for the various initiatives have been nominated. Many of the initiatives outlined are major programs in their own right and the planning documentation associated with these programs provides the detail on these programs. Some of these programs, such as the Accelerated Sewerage Scheme, have been the result of significant investigations and are well developed. Some of the other action plans are still being defined, for example, Regional Action Plans need to be developed for the various catchments.

#### **6.4.5 Implementation of the Actions identified in the Risk Management Framework**

The SCA’s progress report on implementation of the actions identified in the *Water Quality Risk Management Framework* dated June 2005 provides an excellent overview of the range of catchment management activities that SCA is undertaking. A summary of the actions is provided below. Overall, the Auditor considers that this is an impressive body of work and can be expected to lead to improved water quality and a reduced risk of occurrences of poor bulk water quality. This supports the finding of Full compliance under Clause 6.4 of the Operating Licence relating to catchment management for water quality purposes.

Under Clause 6.7.8, SCA is to audit the performance against actions the SCA is to undertake under the *Water Quality Risk Management Framework*. While the activities reported are consistent with the

objectives of the various proposed actions, there are a number of areas of improvement in reporting that should take place to comply with the requirements of this clause. These are indicated in Table 6.3.

It can be seen from Table 6.3 that the reporting on performance often does not address the targets and Key Performance Indicators nominated for each action and thus is not in a form that provides an understanding of the extent to which the targets for each action are being met. However, the Report on the Action Plan is a good start on this reporting requirement and will provide a good overview of the extent to which the various SCA activities are progressing towards the overall improvement of bulk water quality and a reduction in the risk associated with occurrences of poor water quality.

**Table 6.3 Performance in completing actions under the *Water Quality Risk Management Framework***

Action	Action to date	Target and performance against target
Sewage strategy	SCA is assisting Councils to identify where improvement is most needed to minimise impact on water quality through sewage.	Sewage loading methodology – completed Percentage of sewerage schemes upgraded as per agreed program plan – not reported.
Riparian strategy	SCA has completed riparian condition assessment and mapping across catchments; draft Riparian Policy has been prepared to establish the role of SCA in relation to riparian protection, rehabilitation and management and prioritisation of work.	100% riparian zone strategy implementation plan outcomes to be met – not reported.
Urban stormwater strategy	SCA has completed GIS data acquisition and stormwater risk ranking model for the urban area and stormwater catchments; all outstanding stormwater improvement projects from 2000/1 and 2001/2 years have now been completed.	100% improvement works to be completed as per stormwater implementation strategy of Healthy Catchments Program – current status not reported.
Rural lands strategy	SCA is developing models for suspended solids and testing of these in the Wingecarribee catchment has been completed.	100% implementation of rural lands strategy implementation plan – not reported.
Compliance strategy	SCA has implemented the regulatory role under the Environment Protection Regulation and continues regulatory activities. Work continues under the Healthy Catchment Program.	SCA's regulatory role to be developed – complete; Implementation of regulatory posers to be demonstrated by responsible use of powers, and clear outcomes and activity levels – status not clear.
Land management strategy	SCA is redrafting agreements and contracts for funding and management of Special Areas; revision of Bushfire Operational Plan; all bushfire management plans are current.	Bushfire management plans to be current – target met; Fire response plans to be current and implemented – target met.
Development assessment program	SCA is collaborating with DEC regarding major development proposals including STPs and STP upgrades; 768 matters assessed under SEPP 58 and many other concurrence matters and notification matters, with 93% assessed within statutory timeframes.	100% new developments to be complying with neutral or beneficial effect guidelines and 90% development complying with SCA conditions-reporting not clear as to extent these targets have been met although activity appears consistent with achieving targets.
Strategic land and water capability assessments and review of LEPs	Methodology for preparing strategic land and water capability assessments is being developed including pilot assessments; SCA commented on 32 draft local environmental plans and 3 draft development control plans, and submissions made on various planning	100% required assessment to be completed within 5 years of commencement of Regional Plan – reporting not clear as to extent these targets have been met although activity appears consistent with achieving targets.

**Table 6.3 Performance in completing actions under the *Water Quality Risk Management Framework***

Action	Action to date	Target and performance against target
	strategies.	
Rectification Action Plans	SCA has progressed the preparation of these Plans and first 3 RAPs are scheduled for release in 2006.	High priority RAPs to be completed with 2 years and all RAPs completed within 5 years of commencement of Regional Plan – activity consistent with achieving target.
Current recommended management practices	SCA has established a process for endorsing best management practices and this was exhibited.	Current recommended practices to be identified and endorsed – activity is consistent with achieving target.
Grants and incentives program	Grants and incentives program is delivered under the Healthy Catchments Program (reported on separately).  With respect to small community grants, only a small proportion of the overall budget is being used for these grants (\$35,000 paid out during 2003/04 compared with total budget of \$700,000 for grants).	Activity consistent with objectives of this action (refer to HCP reporting under Part 7). This conclusion is also supported by information included in the recently finalised <i>Water Quality Risk Management Framework</i> on activities under the Program.
Education strategy	SCA is well advanced in developing and implementing education strategy.	Activity consistent with objectives of this action.
Work with catchment stakeholders	SCA is actively working with partner agencies (DEC, DIPNR, and DLWC previously).	Activity consistent with objectives of this action.
Water quality research	SCA is undertaking a strong research program in conjunction with the Cooperative Research Centre for Water Quality and Treatment.	Activity consistent with objectives of this action.
Decision model for optimised source and offtake selection	Completed for Warragamba and Nepean systems, now being applied to Blue Mountains dams.	Activity consistent with objectives of this action.
Storage water quality enhancement	SCA has developed limnological models; protocols are in place; destratification processes are in place.	Activity is consistent with objectives of this action.  No action on undertaking investigations to explore the sources and types of organic contaminants present in catchment waterways.
Standard Operating Procedures and incident response plans	SOP development and review process has been prepared based on criticality of operations. Progress on the schedule is being tracked and scored.	Activities are consistent with objectives of this action.
Management of cyanobacteria	SCA's Cyanobacteria Management Strategy has been finalised and programs are to be rolled out.	Activities are consistent with objectives of this action.
Water quality investigations and monitoring	Comprehensive water quality monitoring program.  Investigate sources of organic carbon in storages.	Activities are consistent with objectives of this action.  No action on investigation of sources of organic carbon in storages.

## 6.5 Factors affecting compliance

The SCA has achieved a generally high level of compliance in the field of bulk water quality and the current water quality is good. However, the Bulk Water Supply Agreement sets criteria that are difficult to meet and these are not being achieved at present. Some of the supplies have poor compliance for a number of parameters, with algae being the most significant. To date, this has not caused difficulties to Sydney Water, as its water filtration plants have been able to accept and treat the water. Practically, to achieve full compliance would require the criteria to be changed and this has been noted in previous audits.

Also as noted in previous audits, SCA does not have full control of the factors which can give rise to poor water quality. The practical short term management requirement is to apply “*best endeavours*” to provide the best water quality to its customers, with the longer term objective being improved management of the various sources of pollution and catchment infrastructure.

The SCA has identified a large number of risks to bulk water quality and, if these events should occur, compliance could be affected. For example, two factors that could significantly affect future compliance with respect to achieving the objectives for bulk water quality are drought and a major rain event as outlined below:

- ▮ There has been a drought and this has resulted in generally improved bulk water quality. If the drought should continue, with a continued reduction of the water in reservoirs to very low levels, it can be expected that the quality of the bulk water will deteriorate. The degree of deterioration will depend on the particular characteristics of each storage and may involve, for example, increased turbidity resulting from wind and wave action, increased potential for algal blooms, increased potential for dirty water problems arising from iron and manganese, and a diminished ability to optimise raw water quality by selective withdrawal.
- ▮ The occurrence of major rain events could give rise to a significant decrease in water quality. As noted in Table 6.2, SCA together with Sydney Water and NSW Health has been planning for such events. Collectively these organisations have instituted a range of measures to reduce the potential for adverse water quality to occur and to better deal with these events should they occur.

Because SCA does not have full control over bulk water quality and will not have in the future, the key factors in ensuring that the quality of Sydney’s water supplies is satisfactory lies in the ability of Sydney’s water treatment plants to accept and adequately treat the full range of water quality that can be expected and the joint planning that SCA and Sydney Water have been undertaking.

## 6.6 Recommendations

### 6.6.1 Key Recommendations

It is recommended that SCA:

- R 6.1 Improve its reporting of actions under the *Water Quality Risk Management Framework*, including reporting against performance indicators and targets for each initiative.

## 7. Catchment Management and Protection

### 7.1 Summary of findings

#### ▸ Manage and protect the catchments

The SCA achieved **High compliance** in relation to requirements for catchment management and protection. The SCA applied an integrated framework (that is, its *Healthy Catchments Program*) to target higher risk environmental issues, such as pollution sources. Improved integration of risks to water quality with catchment management priorities and actions was evident in resource allocation, prioritisation and tracking.

**No requirement** applied to many Licence clauses relating to catchment management in 2004/05, as the planning targets had been met in earlier years. **High compliance** was assessed for many of the remaining requirements, including the improvements in making available unpublished water quality data.

There was an increase in regulatory activity in SCA's catchment management and protection programs, under both the *Sydney Water Catchment (Environmental Protection) Regulation, 2001* and the *Sydney Water Catchment Management (General) Regulation, 2000*.

The SCA's "best endeavours" to coordinate and collect data on water quality in the catchment continues at a **Low compliance** level (particularly in regard to data collected by other relevant bodies).

The SCA liaises with Councils (see SEPP 58 details below), however the establishment of a formal link to advise SCA of development commencement, as directed by the Minister in 2000/01, was again assessed as **Low compliance**.

#### ▸ Special Areas Strategic Plan of Management

The SCA simplified its agreement with the Department of Environment and Conservation's (DEC) Parks and Wildlife Division to implement the Special Areas Strategic Plan of Management (SASPoM) with a revised Joint Management Agreement and Services Contract.

During 2004/05, a return to earlier annual expenditure levels was evident for implementing the SASPoM, although an error in financial reporting, the absence of full expenditure (DEC's share of the expenditure was not available) and a lack of expenditure figures for Projects /Components of the Plan remain opportunities for improvement.

#### ▸ Wingecarribee Swamp and Special Area Plan of Management

The SCA's implementation of the Wingecarribee Swamp and Special Area Plan of Management is well organised and reported. The SCA continued to suspend field activities for willow control in the catchment. The SCA applied its resources to the planning, approvals and investigations for a new willow control program. Opportunities remain to meet the Ministerial requirement (2001/02) to "accelerate action" in implementing the Plan and to re-establish expenditure levels.

#### ▸ Regional Environmental Plan

The Regional Environmental Plan, "*Sustaining the Catchments*" is yet to be gazetted. It is anticipated that the REP will be gazetted in the 2005/06 financial year.



► **State Environmental Planning Policy 58**

**High compliance** was assessed for SCA's continued professional approach to its catchment planning role (under SEPP 58).

## **7.2 Summary of requirements**

The objective of Part 7 of the Operating Licence is to enable and require the SCA (including through regulatory powers) to manage and protect the Catchment Area. The inner catchment comprises lands gazetted as Special Areas largely managed by the SCA and the DEC (Parks and Wildlife Division), and the outer catchment comprising a variety of land uses mostly in private ownership.

The requirements of Part 7 may be summarised as follows:

- Manage and protect the Catchment Area to the full extent to which it is empowered;
- Coordinate and collect data available on water quality in the Catchment Area, including data collected through Memoranda of Understanding, as well as by other relevant persons or bodies;
- Make unpublished data on river health available to the public;
- Develop, implement and maintain the currency of the Special Areas Strategic Plan of Management;
- Develop, implement and maintain the currency of the Wingecarribee Swamp and Special Areas Plan of Management;
- Comply with the requirements, and promote the implementation, of the Regional Environmental Plan ("*Sustaining the Catchments*"); and
- Comply with the requirements of SEPP 58, "*Protecting Sydney's Water Supply*".



### 7.3 Details of compliance

**Table 7.1 Part 7: Catchment management and protection – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>7.1</b>	<b>Authority to manage and protect</b>		
7.1.1	Manage and protect the catchment area.	High compliance	<p>SCA has demonstrated <b>High compliance</b> over 2004/05 through the following actions:</p> <ul style="list-style-type: none"> <li>Adopting a whole of catchment approach through its “<i>Healthy Catchments Program</i>” (HCP), which seeks to align SCA resource allocation in accordance with risks to water quality (for example, sewerage and stormwater) and in a manner to mitigate the higher risks. The SCA has further consolidated the implementation of the HCP with its Water Quality Risk Framework. The SCA has also worked with SWC to implement its water quality programs within the risk management framework.</li> <li>Under the HCP, the SCA has delivered a number of projects, including the commencement of construction of the Bowral Sewage Treatment Plant, completion of compliance audits, assessment and display of the condition for riparian areas across the catchment, and educating catchment field officers on stormwater protection.</li> <li>The transparency of the HCP expenditure decreased in 2004/05, as the previous (200/03) Program provided clear directions and the proposed funding breakdown (by 7 strategies). Restoration of this transparency was previously recommended. However the HCP Annual report for 2004/05 does not provide details of expenditure in total or by program. The Auditor was originally advised that this information was “<i>not yet available</i>”. However, subsequent advice was provided by SCA to the Auditor (see Table F7.4 in Appendix F), which indicated that expenditure levels on the HCP in 2004/05 were some \$13.4M (an increase of 10% over 2003/04 expenditure).</li> <li>Implementing an active and well-managed compliance program to provide catchment protection. Actions included: review of the Sydney Water Catchment Management Act to enhance compliance by increased penalties; development of a (human) “<i>Access to Special Areas, Controlled Areas and Water Storages</i>” Policy; training of local Council officers and provision of training to SCA and Parks &amp; Wildlife Division staff in sediment and erosion control; and awareness and promotion in local press of its HCP strategies.</li> <li>The SCA maintained compliance activities to identify and rectify pollution sources, including targeting its resources to high risk proposed development using State Environmental Planning Policy (SEPP) 58 (concurrence or notification) assessments.</li> </ul>





**Table 7.1 Part 7: Catchment management and protection – summary of compliance**

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> <li> <p>The SCA has consolidated, through its Catchment Inspection Plan (CIP), its catchment and pollution source data (namely, the Pollution Source Database, PSD). For example, the PSD includes data drawn from over 1800 potential pollution sources as identified in its Environmental Assessment of Sites and Infrastructure (EASI) projects. Thus, to integrate catchment management activities, the SCA has transferred this information into the Catchment Support System (CSS) to guide catchment operations, standardise data collection and reporting, and set the priority assigned to SCA's inspection program.</p> <p>This approach has allowed the integration of compliance reports and catchment management action and the identification and priorities to be set for catchment improvement works. The CSS operates on an issue-and-task basis where risks are prioritised. Once an officer is assigned to a job, they retain responsibility for ensuring tasks are carried out and the compliance issue has been rectified.</p> <p>The above system has been in use since February 2005. The SCA has reported improved efficiency.</p> </li> <li> <p>The SCA has noted an improvement in its relationship with the Department of Energy Utilities and Sustainability (DEUS) in delivering the Accelerated Sewerage Program. This has been achieved by improving the management procedure, which re-dressed all projects not moving forward according to nominated timelines.</p> </li> <li> <p>The SCA demonstrated enforcement of the <i>Sydney Water Catchment (Environmental Protection) Regulation 2001</i>. Activities completed include: staff training; issued nineteen (compared to eighteen in 2003/04) Clean up Notices, four (4) Penalty Infringement Notices and undertook enforcement programs in Special Areas (targeting pig hunters, illegal fishing, illegal dumping, illegal access road construction and trail bikes). The SCA also issued three (compared to seven in 2003/04) Littering Penalty Notices (valued at \$1,600); and referring 154 (compared to 190 in 2003/04) littering reports to DEC. Copies of Notices and warning letters were sighted.</p> </li> <li> <p>The SCA enforced the <i>Sydney Water Catchment Management (General) Regulation 2000</i>, which enabled: Penalty Infringement Notices to be issued against illegal actions (for example, access, trespass and pollution within the special areas). The SCA issued 114 Penalty Infringement Notices (\$300 each, totalling \$34,200) for illegal activities such as horse riding, driving and motorbike riding in protected areas (such as Lands under Schedule 1 and 2 and Warragamba Special Area). This compares to 79 PINs in 2003/04 (totalling \$23,700) and one (1) court prosecution.</p> </li> <li> <p>The SCA developed a <i>Water Quality Risk Management Framework</i> to recognise where drought is increasing the risk profile, and applied its catchment management resources accordingly. The SCA</p> </li> </ul>

**Table 7.1 Part 7: Catchment management and protection – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>advised that it does not have a separate process in place to identify the risk of “<i>drought breaking rains</i>”, but rather considers the current water quality and catchment management risk assessments to be adequate.</p> <ul style="list-style-type: none"> <li>▶ The SCA implemented SEPP 58 and the Special Areas Plan of Management (see Clauses 7.2 and 7.3), especially through appropriate conditions of consent.</li> </ul> <p>Further improvement is available in the following areas:</p> <ul style="list-style-type: none"> <li>▶ Restore transparency of expenditure by the inclusion within the <i>HCP Annual Report</i> of details of the annual expenditure, in total and by HCP program, as compared to the budgeted expenditure.</li> <li>▶ Improve coordination with local government. Whilst the SCA has programs in place to coordinate some activities with local government, it has not established a formal notification link with Councils to ensure it receives advice on the issuing of development consents and conditions of approval and compliance. (Note: this was a Ministerial Requirement in the 2001/02 audit). Although the SCA is reliant on Councils to provide this information, it has not surveyed or audited the validity of the information supplied.</li> </ul>
7.1.2	Use its best endeavours to coordinate and collect data on water quality in the catchment area including data collected as a result of the MOUs as well as data collected by other relevant persons or bodies.	Low compliance	<p>The SCA has not assigned a priority to this requirement, but rather focuses on its needs, which includes water quality data. The SCA provides water quality monitoring data through its own programs.</p> <p>The SCA does not coordinate or collect data on water quality from <i>other relevant persons or bodies</i>. Rather, the SCA provides data to the DIPNR. The SCA noted that the CMAs do not collect data, thus they also rely on the SCA to provide them with data.</p> <p>SCA has generated an internal Catchment Information System, which is a Geographical Information System (GIS) that can incorporate water quality information such as SCA's Water Quality Database. This is SCA's primary tool for the collection of water quality. This system has the capacity to identify higher water quality risk issues (for example, waters flowing from Kangaroo Valley after heavy rain) and target these issues for assessment and remediation, as required.</p> <p>The Catchment Information System is available internally on the intranet and is networked to regional offices. The SCA is working to ensure the system is complete before expanding its access to external parties.</p> <p>The SCA does not collect data as a result of its MOUs, apart from providing advice on water quality incident matters to other regulators.</p>

**Table 7.1 Part 7: Catchment management and protection – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>The SCA advised that its Annual Water Quality Report is publicly available.</p> <p>Consistent with previous years, the SCA has not:</p> <ul style="list-style-type: none"> <li>Developed or applied a framework to identify, inventory, record or coordinate the collection of data produced by <i>other relevant persons or bodies</i> within its catchment area;</li> <li>Advanced its initiative with Councils to identify water quality data collection and needs, although data for incident events is exchanged; or</li> <li>Demonstrated its “<i>best endeavours</i>” by encouraging or coordinating <i>other relevant persons or bodies</i>, who collect water quality data, to make data available to the SCA or others interested in the catchment area.</li> </ul> <p>Rather, the SCA’s priority for water data rests with meeting its internal and whole of government requirements, and the SCA believes this performance demonstrates its “<i>best endeavours</i>”.</p> <p>Further, the DIPNR (Appendix D) was invited to comment on this requirement and the SCA’s performance in catchment management and protection (Clause 7.1.1). The DIPNR advised it “<i>has no further involvement with these clauses and therefore compliance with the clauses can’t be assessed</i>”.</p>
7.1.3	Make unpublished data in relation to river health publicly available and do so in accord with Government policies about information.	High compliance	<p>SCA’s performance under this clause was assessed as Low compliance over the previous three years. However, the higher compliance in 2004/05 reflects an increased effort to identify and advise the public of the unpublished river health data it holds. The SCA also demonstrated that the information available on the SCA website is current and up-to-date.</p> <p>The SCA is refining its processes for responding to information requests. To date, the SCA has received one request for the river health data from a member of the public. This request initially went to the Freedom of Information Officer but was later correctly re-directed to the appropriate officer for a response.</p> <p>The SCA has approved a framework for responding to information requests, charging for data and releasing data from its register. The SCA provided copies of the Executive Report outlining this process. The SCA website stated that there may be a charge associated with river health data requests. SCA’s charging practices appear to be in line with Government policy.</p>

**Table 7.1 Part 7: Catchment management and protection – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>7.2</b>	<b>Special Areas Strategic Plan of Management</b>		
7.2.1	Definition of Special Areas Strategic Management Plan.	No requirement	
7.2.2	Give effect to the Special Areas Strategic Plan of Management in consultation, and wherever possible, collaboration with NPWS.	Moderate compliance	The Special Areas Strategic Plan of Management (SASPoM) was given Ministerial endorsement on 9 May 2001. SCA and NPWS (now DEC's Parks and Wildlife Division) have applied various models over the years to coordinate the resources within both SCA and NPWS. The model for 2004/05 operated, as with the previous year, under five strategies (see Table F.2 in Appendix F for further detail of plan implementation).

## 7.4 Discussion

### 7.4.1 Management and Protection of the Catchment

Catchment area management and protection is covered by Part 7 of the Licence.

Clause 7.1.1 requires the “*Authority to manage and protect*” the catchment area and is a broad but important Licence condition that underpins water quality. The auditor has relied on indicators to assess the SCA’s compliance in catchment management and protection, “*to the full extent to which it is empowered to do so*”, namely SCA’s reported strategy, program outcomes and expenditure.

A variety of land ownership and land uses gives rise to at least three operational frameworks in which the SCA must discharge its catchment obligations.

#### Operational frameworks

In respect of the Special Areas (or “inner catchment”), two operational frameworks apply. Firstly, the SCA has direct catchment management responsibility for land to which it has title. Secondly, where the Special Area is under the *National Parks and Wildlife Act 1974*, SCA’s responsibility is focussed on matters of water quality and catchment protection.

In the outer catchment, a third operational framework applies where the SCA is monitoring, responding to and regulating a variety of public and private land uses in so far as they may affect water quality and catchment protection.

#### Regulations

SCA’s catchment management powers largely stem from two Regulations. The first, the *Sydney Water Catchment Management (General) Regulation 2000*, enables Penalty Infringement Notices (PINs) to be issued for illegal actions (for example, access, trespass, pollution) within the Special Areas. The procedure for enforcement under this Regulation is familiar to SCA’s authorised officers and is actively implemented.

Secondly, the *Sydney Water Catchment Management (Environmental Protection) Regulation 2001* applies across the entire catchment and gives SCA’s authorised officers powers equivalent to the EPA (DEC) officers under the *Protection of the Environment Operations Act*, but only for activities not licensed by the DEC. Although this regulation came into force on 1 March 2001, SCA’s enforcement commenced in earnest over 2002/03, through expanded programs of training and compliance, such as the issuing of PINs.

Enforcement of the Environment Protection Regulation was the focus of a Ministerial Direction in 2002/03 and the SCA has responded with improved performance, particularly in compliance activity. SCA has demonstrated continuing effort, through a comprehensive compliance strategy and actions, which was evident in 2004/05.

#### Achievements in Catchment Management Protection

SCA’s catchment management and protection activities are driven by its *Healthy Catchments Program*, which comprises specific programs under seven strategies (sewerage, riparian, stormwater, rural lands, compliance, Catchment Information Strategy and Special Areas Strategic Plans of Management). The status of each program, as advised by SCA prior to, and after 2004/05, is set out in Table F.1 in Appendix F, while expenditures are set out in Table F.4 in Appendix F.

### Coordination of water quality data

Clause 7.1.2 requires SCA to use “...its best endeavours to coordinate and collect data on water quality”. Over past years, the SCA has assigned a low priority to this clause, focusing its efforts on its own or “whole of Government” programs. Thus, the need to assign resources, to “coordinate and collect” water quality data by other groups across its catchment area, remains to be addressed.

SCA’s compliance in coordinating water quality data (Clause 7.1.2) has been assessed as Low compliance which is consistent with that assessed over the previous three years. Thus, this clause warrants a review as part of the end of term Licence review to ensure an alignment of Government and SCA priorities.

As in previous years, the requirement remains for the SCA to identify data on water quality and to collect and coordinate data consistent with its “best endeavours”, including data collected by *other relevant persons or bodies*.

The SCA is required to make its unpublished data on river health publicly available (Clause 7.1.3) and had, in previous years, identified a number of programs (such as the Knowledge Audit and Catchment Information System) as the means of identifying such data. A listing of such unpublished data has been prepared. SCA has made these data available during the 2004/05 audit year. Information on the SCA website is regularly updated and there are protocols in place to respond to data requests from the public. These actions have been recognised though an improved compliance rating in 2004/05.

### 7.4.2 Special Areas Strategic Plan of Management.

Section 45 of the Act required the Minister to undertake a review of the Special Areas lands to determine whether the objectives of the SCA would be more effectively attained if the land concerned was vested in the Minister administering the *National Parks and Wildlife Act*. The review of these lands was completed over previous audit years and the SCA has successfully transferred a total of 18,000 hectares of land to the DEC’s Parks and Wildlife Division.

SCA provided Annual Reports on the implementation of the *Special Areas Strategic Plan of Management* and the *Wingecarribee Swamp and Special Area Plan of Management*.

#### Special Areas Strategic Plan of Management (SASPoM).

The SCA in 2001/02 developed a SASPoM Implementation Model to coordinate both the SCA and the DEC’s Parks and Wildlife Division under five SASPoM strategies (that is, *whole of catchment management; ecosystem management; public education and awareness; joint management; and public scrutiny*). SCA reports implementation of the SASPoM against the five key strategies inherent within the Operating Licence in a clear and concise manner.

The 2004/05 *Annual Reports on the Implementation of SASPoM* (see Table F.2 in Appendix F) indicated a number of changes in program priority, including:

- ▶ A number of the “achievements” are more general and reflect the SCA’s broader catchment management program and are not specific to the Special Areas;
- ▶ The report does not include DEC expenditure, rather readers are advised that “NPWS (now part of DEC) financial information will be provided at a later date”;
- ▶ The report does not provide a breakdown of the “Funding Agreement” – normally some 40% of SASPoM expenditure – by strategy or Project / Component; and

- ▶ The report does not provide “*Total Expenditure*” for individual *strategy* or *Project / Components*.

The SCA actioned some outstanding requirements. For example, an External Independent Scientific Body has been substituted by a number of actions and the Minister has been advised of these changes (as required by Clause 7.2.5).

Table F.2 in Appendix F provides a status assessment of SASPoM Key Actions and Performance Indicators over 2004/05.

### **Wingecarribee Swamp and Special Area Plan of Management**

The “*Annual Report on the Implementation of the Wingecarribee Swamp and Special Areas Strategic Plan of Management 2004-2005*” is clear and comprehensive and its format, scope and nature provides an outline of the status of Key Actions and the SCA’s performance. Positive features included clearly stated expenditure on Wingecarribee Swamp programs, and reporting of the SCA’s performance against the timetable endorsed by the Minister’s “Implementation Plan” dated November 2001.

Progress in 2004/05 has continued to plateau, with expenditure on WSSAPoM specific programs continuing its decline (see Table F.6 in Appendix F).

(Note: Ideally, expenditure should be measured against budgeted expenditure, as opposed to comparison with previous years, so as to account for annual variations in program activity. In this regard, IPART requested such information be provided, as far as possible. However, forecast or budgeted expenditure are not reported in the Annual Implementation Plan, although supplementary expenditure on the wider *Healthy Catchments Program* was provided, see Table F 4 in Appendix F).

This year’s expenditure on the Wingecarribee Swamp and Special Areas Plan of Management fell by a further 7% compared to 2003/04. Expenditure has now fallen to 60% of the expenditure reported four years ago in 2001/02. Notably, expenditure on weed control, which had been significant in earlier years reduced significantly, as no field control was evident.

In 2003/04, SCA directed its energies, through the planning and the preparation of a business case, to a significantly expanded willow control program, nominally for 2004/05. In 2004/05, actions to gain internal approval and planning for the program were evident although field implementation was not evident. The SCA indicated that success of the three-year willow control program up to 2002/03 and the time required for juvenile plants to reach sexual maturity has provided the SCA the opportunity to review and redirect this significant program.

As in previous years, opportunities remain for the SCA to increase the rate of implementation and to achieve the Ministerial endorsed timetable.

A Ministerial requirement in 2001/02 was for the SCA to “*accelerate action*” to give effect to the plan. However, the SCA has largely used the last two years to review its strategic direction and undertake programs of planning and approval for weed control. The rate of implementation of the Plan has generally not increased during 2004/05 and expenditure continued to fall.

The SCA undertook the decision, and advised the Minister, that it was not proposing to establish and resource an *external independent scientific body* for all Special Areas, but rather to apply alternate mechanisms to achieve this end (namely, specific external reviews or uses of CRCs). Evidence was not available that alternate mechanisms were applied to externally or independently to assess, for example, the annual achievements (as required by Performance Indicators Two, Three, Four, Five and Seven), of the Plan.



### 7.4.3 Regional Environmental Plan

- ▶ The REP “*Sustaining the Catchments*” remained as a draft document during 2004/05.
- ▶ The REP is scheduled to be gazetted in 2005/06.

### 7.4.4 State Environmental Planning Policy 58

The SCA has continued to apply and implement a comprehensive Development Application Register (DAR), planning assessment and compliance monitoring system. SCA has also continued to develop cooperative programs with Councils to process Development Applications (DA).

A sample of 15 DAR registrations, consisting of Development Applications and Part Five environmental assessments, were reviewed for timeliness, clarity of assessment and whether the Council’s consents were consistent with the concurrence advice provided by SCA (see Table F.7 in Appendix F).

The assessments were comprehensive and to a generally high standard. A high level of inspection was noted as well as completion of the assessment within the statutory processing timetable.

Opportunity for improvement relates to:

- ▶ Ensuring the requirement to obtain final DA conditions of consent from Council is met and such conditions are recorded on the file;
- ▶ Ensuring consistency with SCA requirements is assessed or negotiated with Councils; and
- ▶ Ensuring compliance with SCA’s consent conditions.

The sampled assessments demonstrated that the SCA applied both model (standard) and site specific conditions, as required. It also confirmed the need for SCA to ensure that concurrence conditions are being applied by Council and are implemented. For example, the SCA included conditions to ensure “*neutral or beneficial effects*”, commonly relating to the capacity of onsite effluent treatment plants. Compliance with such requirements are fundamental to the SCA achieving protection of water quality.

Previous audits highlighted the opportunity for a formal notification link with Councils to advise the SCA of development commencement, conditions and compliance. This issue was also the subject of a Ministerial Direction, some three ago in 2001/02. Whilst compliance inspections are targeted to areas of greatest risk, formal notification links with Council are yet to be established. The SCA also advised that there will be no formal auditing of Council procedures under the proposed REP.

## 7.5 Factors affecting compliance

The key management factors affecting compliance in “Catchment Management and Protection” are twofold. The first is whether the SCA is applying its resources in a manner that meets the intent and nominated time lines in its catchment management programs (namely, SCA’s *Healthy Catchments Program*) and Plans of Management. The second factor relates to the participation, priority and resources applied by other government agencies. In the case of the latter, responsibility lies with the DIPNR to complete the REP “*Sustaining the Catchments*”, which remains in draft form. At a lower level, responsibility lies with the DEC’s Parks and Wildlife Division to implement joint programs, such as the Special Areas Strategic Plan of Management, in a timely and accountable manner and with Councils in regard to SEPP 58 notification, consent and compliance with DA conditions.

A number of recommendations have and continue to be made for SCA to encourage other agencies to fulfil these responsibilities. Despite the apparent changes to the decision-making and implementation of



the land management program, DEC has not, for the second year running, provided accountability of its expenditure in a timely or transparent manner. These shortfalls build on similar issues identified in prior audits. It is therefore recommended that SCA consider alternative means of supplying such service through outsourcing or competitive tender, particularly recognising the works and maintenance aspects of many of the land management programs.

## 7.6 Recommendations

### 7.6.1 Key recommendations

That the SCA:

- R7.1 Establish improved financial accountability and transparency of its expenditure in catchment management programs, by including full expenditure (by strategy, program and totals) and yearly trends (current and preceding two years expenditure) in its Annual Implementation Reports.
- R7.2 Consider the outsourcing, competitive tendering or an alternate service agreement with DEC, to ensure cost effective provision of its Land Management Program.
- R7.3 Undertake, as part of the required five yearly review of the Special Areas Strategic Plans of Management, Special Areas Plan of Management, an “*independent, external and expert*” assessment of the SCA’s performance in implementing the Plans and include the assessment findings in a public report (by 1 September 2006). The report should include recommendations into the:
  - Extent and timeliness of the implementation of the Strategies and Key Actions (against the Minister’s approved timetables);
  - Clarity of implementation status and performance and the reporting of expenditure; and
  - Impact of SCA decisions that some Key Actions were now redundant or require amendment.
- R7.4 Utilise its MOU with DEC and the Joint Management Agreement with DEC Parks and Wildlife Division to achieve full and timely expenditure and performance certification of the service by DEC, for inclusion in the *Annual Report on the Implementation of the Special Areas Strategic Plan of Management Special Areas Plan of Management*.

### 7.6.2 Secondary recommendations

That the SCA:

- R 7.5 Separate the reported achievements under the SASPoM into those that relate specifically to the SASPoM *Special Areas* and those that apply across the broader catchments, *whole of government* or national level programs.
- R 7.6 Publish SCA data information and Annual Implementation Reports relating to the Special Areas and Wingecarribee Swamp and on the SCA, Special Areas website and advise the ‘hits’ on this website as required by the SASPoM.
- R 7.6 Ensure all Development Applications under State Environmental Planning Policy 58, are received by the SCA and establish a formal link with Councils so that SCA field officers are advised when such developments have commenced.



## 8. Catchment infrastructure and demand management

### 8.1 Summary of findings

#### ► Catchment Infrastructure - Risk to Human Health

SCA has developed an excellent catchment infrastructure management system for managing bulk water quality. This system has been audited in previous audit periods and remains at **Full compliance**. Further improvements to the system were made during the audit period.

#### ► Security of supply

A compliance rating of **Insufficient information** has been given for the long term standard of service required by Schedule 2 criteria (reliability, security and robustness) for the specified average annual demand of 583,000 ML/yr (Clause 8.1.2).

This rating is based on the lack of relevant information provided in this year's audit combined with information from previous years' audits, which indicates there is significant doubt that the current WATHNET model used to determine compliance against Schedule 2 criteria is sufficiently up to date or accurate to provide a reliable indication of performance.

It is possible that the calculated water supply 'yield' in 2004 is only 580,000 ML/yr or less. This is less than the 583,000 ML/yr requirement of the Operating Licence for 2004. However, the current investigation by Government of new supply options, such as desalination, would increase the 'yield' when implemented.

It is also likely that the Blue Mountains system has inadequate security of supply and is one reason why the Upper Cascade dam raw water pumping station works are necessary.

#### ► Dam safety

The SCA has demonstrated **Full compliance** with the requirements of the Dam Safety Committee (DSC). Whilst there was minor slippage in the program for the production of formal reporting requirements to the DSC and the testing of the Dam Safety Emergency Plans, the DSC has confirmed that these actions are being undertaken within a timeframe acceptable to the DSC.

#### ► Demand management

A compliance rating of **Insufficient information** has been given regarding SCA's activities related to managing water conservation (Clause 8.3.2). SCA outlined a number of activities but did not provide detailed reports or information that enabled the Auditor to verify the extent and technical reasonableness of SCA's work in this area.

A **High compliance** rating was given for SCA's work on considering any additional scope for cost-effective demand management strategies by Sydney Water (Clause 8.3.3). It is noted, however, that no progress was reported on assessing the extent of, and strategies to mitigate, the impact of demand management strategies on possibly reducing the volumes of water saved when severe Stage 4 or 5 restrictions are imposed. Previous preliminary studies suggest that if no additional water savings occur, compared to those achieved under Stage 3 restrictions, then the calculated water supply 'yield' could reduce to as low as 542,000 ML/yr.



## 8.2 Summary of requirements

The conditions of Part 8 of the Operating Licence address the Management of Infrastructure, Dam Safety and Demand Management. The requirements of Part 8 may be summarised as follows:

- ▶ Ensure that catchment infrastructure works such as the dams, pipe work, canals and pumping stations are managed to provide minimum long-term standards of service and minimal risk to human health from bulk water supplies; and
- ▶ Comply with the statutory requirements of NSW Dam Safety Committee (DSC) and the guidelines of the Australian National Committee on Large Dams (ANCOLD).

It is noted that the NSW Dams Safety Committee adopts the ANCOLD guidelines, except for some circumstances where, on a case-by-case basis, the DSC requirements may deviate from the requirements of the ANCOLD guidelines. The DSC is the regulatory authority for large dams in NSW; hence, in those circumstances where its requirements deviate from the requirements of the ANCOLD guidelines, the Auditor has assessed the SCA's compliance on SCA's ability to satisfy the requirements of the DSC.

It is further noted, that ANCOLD produced new Guidelines on Dam Safety Management in August 2003 that were adopted by the DSC in December 2003. These guidelines took account of the new categorisations system adopted for dams and resulted in changes being required to the inspection and monitoring procedures at most SCA dams. These changes were implemented during this audit period and were fully adopted by the SCA on 30 August 2004.

SCA is also required to comply with the statutory requirements under the Water Management Licence (issued under Part 9 of the *Water Act 1912*).

### 8.3 Details of compliance

**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>8.1</b>	<b>Management of Catchment Infrastructure Works</b>		
8.1.1	Manage and operate the Catchment Infrastructure works to minimise risk to human health from the bulk water it supplies.	Full compliance	<p>SCA has developed an excellent catchment infrastructure management system for managing bulk water quality. This system has been reviewed in previous audits and it was determined that there was Full compliance with the requirements of this clause. In the audit period, SCA's catchment infrastructure assets continued to be managed in accordance with SCA's Asset Management Strategy, supported by SCA's System Management Plans and the Operations and Maintenance Manual.</p> <p>Improvements during the period include:</p> <ul style="list-style-type: none"> <li>Development of an overall Asset Management Framework (previously scheduled for completion 30 June 2005, completed August 2005). SCA advised that this will, when complete, improve transparency, incorporate WSAA benchmarking findings, incorporate the outcomes of the <i>Metropolitan Water Plan</i> and meet Treasury template requirements.</li> <li>A schedule for the development, review and training related to Standard Operating Procedures based on criticality for water supply assets. In this respect, Standard Operating Procedures relating to bulk water quality were sighted and it was noted that not all of these had been reviewed within the nominated review frequency. The new schedule should assist in addressing this deficiency.</li> </ul>

**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
8.1.2	<p>Ensure catchment infrastructure works are designed, operated and managed to provide Sydney Water with long-term standards of service according to Schedule 2 of the Operating Licence.</p> <p><u>Schedule 2 criteria:</u></p> <ul style="list-style-type: none"> <li>Reliability of not less than 97%;</li> <li>Robustness of not less than 90%;</li> <li>Security of not less than 5% for more than 0.001% of the time (or 1 month in (99,996 months) 8,333 years);</li> <li>Operate within designated drought conditions; and</li> <li>Sydney Water's Forecast average annual demand of 583,000 ML/year for 2004.</li> </ul>	Insufficient information	<p>The SCA estimates the actual standards of service defined by the Schedule 2 criteria using water supply simulation modelling software called WATHNET. To assess compliance with Schedule 2 criteria, an annual demand figure is set in the model and run against 2000 synthetically generated climate and streamflow sequences each 90 years long. As the annual demand figure is increased, the standard of service deteriorates. That is, storage volumes each year over each the 90 year sequence tend to be lower. The first Schedule 2 criterion not achieved is "reliability" which falls below the Licence requirement of 97% when the annual demand is set at 600,000 ML/yr in the model. This annual demand is quoted as the 'yield' and represents the average annual demand that can be 'safely' supplied from the Sydney Water supply catchment and storage system. This yield figure has been published in the <i>Metropolitan Water Plan</i> (2004).</p> <p>However, for the reasons expanded upon in Section 8.4 of this audit report, the Auditor considers the yield estimate is uncertain and could be lower, at about 580,000 ML/yr. Based on this figure, SCA would not comply with Clause 8.1.2 of the Licence, which requires all Schedule 2 criteria to be achieved when the year 2004 forecast average annual demand figure is 583,000 ML/yr.</p> <p>The lower 'yield' estimate occurs if the monthly demand figures used in WATHNET are adjusted to allow for normal dry and wet year variations. It is also noted that yield values as low as 542,000 ML/yr are possible if there is no additional reduction in demand, when Level 4 or 5 mandatory restrictions are introduced. Lower than expected reduction in demand when severe restrictions are applied, is an increasingly likely effect of Sydney Water's Demand Management program, especially as it begins to focus on savings in outdoor water uses.</p> <p>Also, this yield figure is for the combined water supply systems that are managed by SCA. Of the individual systems it manages, the Blue Mountains system may not achieve all the Schedule 2 criteria. This is discussed further in Section 8.4 of the audit report.</p> <p>In addition, it is noted that Standard Operating Procedures for managing WATHNET and related hydrology data were not made available to the Auditor and are 'draft – not available for use' status. This indicates there continues to be lack of progress on improving the means to track changes to the model and ensure adequate Quality Assurance.</p>

**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>The SCA has created a position, of Senior System Planner who will have responsibilities related to ensuring optimisation of the bulk water supply system in terms of quantity and quality, network configuration and modelling. The Auditor agrees this is an important advance towards improving the current situation but notes that responsibility for WATHNET is not specified in the job description.</p> <p>The SCA has a substantial 5 year capital works program. This includes works defined in the <i>Metropolitan Water Plan</i> to increase the 'yield' of the water supply system including:</p> <ul style="list-style-type: none"> <li>▶ Deep storage access at Warragamba, Avon and Nepean dams;</li> <li>▶ Groundwater investigations; and</li> <li>▶ Upper Cascade raw water pump station.</li> </ul> <p>Also there are investigations lead by State Government on major new supply options such as desalination.</p> <p>Only the business case for the Upper Cascade raw water pump station has been provided to the Auditor and this document does not indicate the increase in 'yield' that is achieved. Similarly, SCA considers it is unable to provide written background reports or other information on where WATHNET was used in developing the <i>Metropolitan Water Plan</i>, as they are still "Cabinet in Confidence".</p> <p>An Insufficient information rating has been assigned as the Auditor cannot confirm that the current WATHNET model is sufficiently up-to-date and validated to show that all Schedule 2 performance criteria are met when the forecast average annual demand is 583,000 ML/yr.</p>
8.1.3	Review performance criteria as part of mid-term review.	No requirement	<p>SCA contributed to this review directly through its submission of 5 April 2002 and by cooperation with IPART in a report, "<i>Review of the Performance Criteria in Sydney Catchment Authority's Operating Licence</i>" (June 2003). As the review was managed by IPART, no compliance rating is relevant to the SCA. IPART provided its report on the outcomes of the mid-term review to the Minister in September 2003.</p>

**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>8.2</b>	<b>Dam Safety</b>		
8.2	Comply with the requirements of the NSW Dams Safety Committee (DSC) and the guidelines of the Australian National Committee On Large Dams (ANCOLD).	Full compliance	<p>The management of dams has demonstrated Full compliance with the requirements of the NSW DSC. The SCA provided a copy of the 2004/05 Annual Report on dam safety. This summarised the management activities and the status of dam safety for all the SCA's dams.</p> <p>Whilst there was minor slippage in the program for the production of formal reporting requirements to the DSC and the testing of the Dam Safety Emergency Plans, the DSC has confirmed that these actions are being undertaken within a timeframe acceptable to the DSC. Further discussions of the findings are presented in Section 8.4 of this report.</p>
<b>8.3</b>	<b>Demand Management</b>		
8.3.1	Manage demand management consistent with the requirements in the Water Management Licence, issued under Part 9 of the <i>Water Act 1912</i> .	No requirement	The Water Management Licence does not have any requirements relating to demand management.
8.3.2	As much as SCA is able, manage water conservation consistent with the demand management requirements in the Sydney Water Operating Licence.	Insufficient information	<p>During this year's audit period, SCA is understood to have participated in the development and adoption of various initiatives that relate to water conservation. This work is summarised in the <i>Metropolitan Water Plan</i> and Drought Executive Committee Outcomes. SCA's participation included continued input to discussions on management of environmental flow releases, works to allow access to a greater proportion of storages (deep storage access projects) and commitment to ground water use investigations. SCA supported the adoption of levelised cost/benefit approach to prioritise options to increase supply from the existing system and also reduce demand from its customers. SCA is understood to have used this approach in business cases for projects such as the deep storage projects. However, SCA has not provided documents that substantiate the details of the levelised cost/benefit work or the content of its participation and discussions outlined above.</p>

**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>SCA has undertaken social research associated with the “End of Term Review of SCA Operating Licence” that looked at household water attitudes, including water restrictions. Acceptance of more frequent restrictions is one way the SCA could increase the ‘yield’ from its sources.</p> <p>SCA is understood to have completed the following works related to environmental flows:</p> <ul style="list-style-type: none"><li>Developed a daily model flow model to more accurately control the release of water and hence reduce losses,</li><li>Proposed a reduced environmental flow plan at the introduction of Stage 3 demand restrictions; and</li><li>Investigated composting toilets at parks to reduce water use.</li></ul> <p>However, documents that explain the extent and details of this work have not been provided.</p> <p>The SCA developed an excellent forecast of storage drawdown to 2014 if various dry period climate conditions continue. It clearly identifies the window of time into the future when current supply deficiency works such as deep storage access need to come into service if these dry conditions continue. However, no details on how this drawdown projection was developed have been provided to assess its reasonableness.</p> <p>Based on the lack of background information and reports that would help validate the extent and reasonableness of work completed by SCA, the Auditor has assigned an Insufficient information rating.</p>



**Table 8.1 Part 8: Management of catchment infrastructure works and demand management – summary of compliance**

Clause	Requirement	Compliance	Findings
8.3.3	In considering augmentation of the Catchment Infrastructure Works, consider any additional scope for cost effective demand management strategies by Sydney Water.	High compliance	<p>During the audit period no relevant major augmentation work was completed by the SCA.</p> <p>The SCA contributed to IPART's consultancy "Review of consumption forecasts NSW Metropolitan Agencies". In this consultancy it was concluded that "it is reasonable for SCA to rely on forecasts prepared by its major customers, however, it (consultant) also believes that SCA should play a more active part in critically reviewing these forecasts, especially in the area of demand management." This view is endorsed by the Auditor who suggests that the SCA needs to assess factors related to demand and demand management strategies that could cause a reduction in 'yield'. These factors include seasonal variation in demand, split of demand between WATHNET model demand centres, restriction (for example, demand hardening effects) and transfer constraints between demand centres in this model.</p> <p>The SCA has provided substantial input into the whole of Government advertising campaign "Water for Life" and website. This has included financial support for the advertising (\$125,000) and mail out reminders to its customers.</p> <p>The SCA, in partnership with Sydney Water, researched community views about sustainable water resources.</p> <p>SCA relocated its retail customers' meters closer to their off-take points from Warragamba pipelines to encourage these customers to minimise leaks in their service lines.</p> <p>A High compliance rating has been awarded. SCA should consider more comprehensively the impacts of demand management activities on current and future 'yield' projections as some demand management activities by Sydney Water may reduce 'yield' and hence may not be cost effective.</p>



## 8.4 Discussion

### 8.4.1 System 'yield' assessment

The 'yield' of the water supply system may be defined as the average annual demand that can be delivered while only just complying with Schedule 2 criteria (reliability, security and robustness).

In most cases, reliability reaches its limiting value of 97% first for the Sydney Water supply system. Currently, this is calculated to occur when the average demand is set at 600,000 ML/yr. However, there is uncertainty as to whether this calculated figure is correct for the reasons outlined in the following sections. It is noted that there is in progress a State Government initiative outlined in the *Metropolitan Water Plan* to develop major new water supply sources, such as desalination.

#### Improvements to WATHNET

Recommendations of previous external reviews of WATHNET in 2003 and 2004 included:

- ▶ Improve the input streamflow data, for example, using more reliable evaporation data and checking the HSPF model is fit for Penrith inflows;
- ▶ The demand used in WATHNET should take into account the impacts of climatic variability, especially during drought periods;
- ▶ Undertake verification runs of WATHNET model using historical operating conditions to show that it provides a good representation of the behaviour of the real water supply system;
- ▶ Undertake structured updating of the model and input data every 3-5 years, for example, it is noted that the split between demand centres and the transfer constraints in WATHNET do not appear to have been reviewed since 1991 and it is unknown whether streamflow data is up to date; and
- ▶ Define a model to establish the current degree of compliance with Schedule 2 criteria for the Blue Mountains supplies.

Only limited documentary evidence has been provided indicating progress by the SCA on these recommendations and other less critical issues detailed in previous audits (for example, the 'anomaly' rectified in 2001/02 that resulted in 'yield' rising from 580,000 ML/yr to 600,000 ML/yr). Further details on some of these issues are outlined below.

The SCA has commenced verification work on WATHNET, is working on improving consistency of input streamflow data and is considering models to account for variation in demand as a result of climatic variation. However, the progress report provided to the Auditor is difficult to interpret and indicates little progress since the previous audit.

#### Historical comparison

The SCA has yet to finalise the work on comparison of actual water supply system behaviour from 1999 to 2004 and that calculated by the WATHNET model. The SCA advised that this was due to the need to complete extensive work using WATHNET for the *Metropolitan Water Plan*.

This comparison work is a fundamental way to validate that the WATHNET model is an accurate representation of the Sydney Water supply system. It was recommended by external reviewers in June 2003.



### **Estimating the 'yield' for each system operated by SCA**

Whether individual parts of the water supply system should have the same or similar level of compliance with Schedule 2 criteria is not a simple issue. The essential objective is, however, that no part of the system should be at a significant risk of running out of water or triggering restrictions (which would be system wide). System wide restrictions can be unnecessarily triggered if one of the reservoirs, that are the only supply to a demand centre, gets too low and transfers between storages cannot recover the situation. The SCA's Draft Bulk Water Supply Plan puts it well:

*"It is important to note that, despite the SCA storages having different levels of drought susceptibility and several demand zones being supplied by only one source, all major parts of the system enjoy a relatively uniform security of supply. This is achieved by the interconnection between various parts of the system and the tailored reservoir operating rules".*

Adoption of this approach is, in the Auditor's view, important as it focuses attention on ensuring that all demand centres are included with the correct split of climate variable demands, the reservoir's drawdown rule curves are realistic, and that all water transfer systems in the WATHNET model are correct for capacity and water loss rates. All these features of the model can influence the calculated 'yield' value.

In addition to concern about the accuracy of demand data, the Auditor notes that the current split up of demand is based on conditions in 1991 and is unlikely to represent current conditions.

### **Rules for Reservoir Drawdown**

Each reservoir in the WATHNET model has a 'rule curve' that aims to optimise the way it is drawn down. It is related to the extent of drawdown of all the reservoirs in the model.

Recently, the SCA added a Decision Support Tool (DST) to support decisions regarding the selection of sources of raw water for supply to the water filtration plants.

These rules are applied when storages are full to minimise the cost of supply and treatment, but as storages deplete, decisions on source selection are based predominantly on quantity issues. It has been tested using the 1996 to 2003 streamflow records.

The SCA advised that this tool is to be applied subsequent to, and independent of, WATHNET. However, when the DST "quality and quantity" rules were compared with current "quantity" only rules in WATHNET for the period 1996 to 2003 (a relatively dry period), there was an increase in cumulative spill (loss of water).

Based on this finding, it can be expected that a reduction in 'yield' would occur when the DST rules are applied to the long-term, synthetically-generated climate and streamflow sequences. The size of any reduction in yield needs to be determined to see if it is significant.

### **Demand hardening**

The concept of demand hardening arises out of demand management activities, which are likely to decrease the "spare" demand that can be saved when more severe restrictions are applied. It is likely that it will become increasingly 'hard' to achieve desired savings in demand, as demand management focuses on outdoor water uses.

A preliminary assessment of possible impacts of demand hardening on 'yield' calculated by WATHNET was completed by the SCA in 2003/04.

To simulate the potential impact of a reduction in 'saved' water when mandatory restrictions are applied, any reduction in demand under level 4 and/or level 5 restrictions was prevented in WATHNET model calculations. Level 3 restrictions assume 20% reduction in demand. Level 4 restrictions assume 30% reduction in demand and level 5 restrictions assume 50% reduction in demand occurs. The outcomes of the simulation work are summarised below.

WATHNET Model Scenario	'Yield' ML/yr	Basis for 'Yield'
Current	600,000	Reliability criterion
Level 5 restrictions have no effect on demand	575,000	Security criterion
Level 4 & 5 restrictions have no effect on demand	542,000	Security criterion

Source: "Further Investigations into Yield estimation (draft), June 2004"; SCA document page 80.

The impact of demand hardening is significant under the scenarios. It is likely that 'yield' would decrease even further if normal seasonal variation in demand for normal dry/wet climate conditions were also included in the WATHNET model. No progress to finalise this work has occurred during the 2004/05 audit year.

#### **Blue Mountains WATHNET Model**

Progress occurred on the development of a daily WATHNET model for the Blue Mountains system. This model has established a good basis for defining the degree of compliance with Schedule 2 criteria. The draft report by the SCA discusses security and reliability but not robustness. It is also unclear whether the operational arrangements used in the model to achieve a 'yield' that matches the current average demand are feasible as it requires alteration to the point in the distribution system where water from the same system can be provided. The balance of the distribution system would be supplied from the Sydney metropolitan area. Also, as demand is growing in this area, it is important to ensure that the current system can supply a projected demand that allows time for augmentation of supply, say from Orchard Hills WFP, to be completed.

It is noted in the business case for the raw water pumping station at Upper Cascade dam that the risk of not proceeding with this project is "low security and reliability of supply to Blue Mountains system".

#### **Quality control for the WATHNET model**

The SCA has not yet provided written details on the anomaly, how it was dealt with and why its rectification resulted in yield rising from 580,000 ML/yr to 600,000 ML/yr in 2001/02. It is also noted that Standard Operating Procedures for hydrological data and for managing WATHNET are not yet finalised.

This outcome indicates that the SCA continues to not have an auditable system for documenting changes to the model. As the WATHNET model is a major driver in decisions regarding the extent of additional capital works to increase yield, the size of the demand management program pursued by Sydney Water; and the environmental flow allowed, it is most important that the WATHNET model has good Quality Assurance procedures for documenting changes to the model.

#### **Programming projects**

An excellent summary of programming of projects by the SCA for capital works is in place showing the current status and expected completion timetable. There is also a well defined reservoir drawdown

projection, assuming current dry climate conditions continue, that clearly shows the target dates when the access to deep storage works need to be completed to avoid running out of water supply.

#### **8.4.2 Dam safety**

The SCA provided a copy of the 2004/05 Annual Report on Dam Safety. This report summarises management activities and the status of dam safety for SCA dams. A summary table of the key requirements and the SCA's performance in relation to the Dams Safety Committee (DSC) and Australian National Committee on Large Dams (ANCOLD) guidelines is presented as Appendix G. A summary of findings is presented below.

##### **Five-yearly surveillance reports**

Five surveillance reports were due during the audit period and four of these reports were completed. Minor slippage from the original due dates, set by the DSC, occurred however the DSC has approved the revised dates for submission. The revised due date for the outstanding surveillance report is provided in Appendix G.

The SCA has prepared programs for the implementation of recommendations from the surveillance reports and the DSC has endorsed the reports for Fitzroy Falls Dam, Glenquarry Cut Control Structure and Upper Cordeaux Dam No. 2 and Bendeela Pondage.

##### **Assessments, inspections, reviews and monitoring**

The SCA reported that all routine inspections and monitoring were undertaken in compliance with the DSC requirements. A review of monitoring records for Woronora Dam for the month of March 2005 confirmed that these have been undertaken in accordance with the inspection program. Fourteen of the twenty-one Annual Inspection and Monitoring Reports for 2004/05 were completed at the time of this audit. The SCA advised that the remaining reports are scheduled for completion by September 2005.

A Risk Assessment Study and an Earthquake Stability Review Study of Wingecarribee Dam were due in the 2002/03 audit period. The studies continued into 2003/04 and an external expert panel reviewed the findings of these studies in September 2003. In order to fully assess the level of risk associated with the dam and the extent of remedial measures, the expert panel recommended additional work be undertaken. The risk assessment process continued during this audit period and was subjected to a Panel Review. The Panel reported its findings in a report entitled "Wingecarribee Dam Risk Assessment, Report of the Review Panel Meeting of 23 February 2005".

On 23 March 2005, the SCA reported to its Board on the status of the safety of Wingecarribee Dam. The SCA reported that the calculated risk of dam failure exceeds some of the risk criteria outlined in the ANCOLD guidelines. The SCA outlined actions necessary to reduce risk.

The Board resolved<sup>1</sup> to:

- ▶ Acknowledge progress in assessing dam safety risks posed by Wingecarribee Dam;
- ▶ Approve finalisation of the risk assessment study for the Board's consideration in August 2005;
- ▶ Approve additional studies, concept designs and assessments for completion by the end of 2005; and

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<sup>1</sup> Resolution 2005/15 from Board Meeting Wednesday 23 March 2005, Agenda Item 10.



- ▶ Approve the preparation of the communications and consultations strategy for downstream residents of Wingecarribee Council area.

An assessment of the safety status of the dam was provided in the last Wingecarribee Dam Surveillance Report that was submitted to the DSC in April 2001. The SCA advised that:

- ▶ A detailed update of the current status of the investigations on the safety of Wingecarribee Dam will be provided to the DSC in the next 5-yearly Surveillance Report due in April 2006;
- ▶ It has regularly updated the DSC of the progress of the safety review and comprehensive risk assessment studies; and
- ▶ The chairman of the DSC is a member of the external review panel that reviews all of the Wingecarribee studies being undertaken and is fully aware of the current status.

Special monitoring of post-tensioned anchors was due in the 2002/03 audit period at Cataract, Nepean and Warragamba Dams but was not undertaken as the monitoring equipment was damaged during the bushfires at Warragamba. Monitoring was deferred until 2003/04 to allow the equipment to be replaced/repared. The SCA experienced problems with the commissioning of the new equipment and monitoring was again rescheduled to 2004/05 for Warragamba and 2005/06 for Cataract and Nepean.

The SCA provided monitoring record sheets indicating that monitoring of post-tensioned anchors for Warragamba Dam was undertaken in May to July 2005.

### **Dam Safety Emergency Plans (DSEP)**

All DSEPs were finalised in 2004/05 incorporating the new external notification protocols introduced by the DSC. Updated plans were issued to all relevant internal staff and external agencies in September and October 2004.

The SCA has undertaken an internal training program related to DSEP familiarisation to provide participants with an overview of the DSEP and the knowledge and attitudes required to implement the plans.

The DSC requires comprehensive testing of DSEPs at least on a five yearly basis, however many of the DSEPs were last tested in 1999. The SCA advised that comprehensive exercises have been programmed for 2005/06 and 2006/07. The comprehensive DSEP exercises are required to be undertaken in collaboration with all the relevant emergency management agencies (for example the SES and DSC). The exercise planning involves development of suitable emergency scenarios in consultation with those agencies and requires significant resources and time.

Owing to the large number of NSW dams that require DSEPs, the DSC and SES give priority for the dams that have been identified as having significant safety deficiencies. Wingecarribee Dam is the only SCA dam that has been identified by the DSC as having a significant safety risk. The Wingecarribee Dam DSEP has been fully tested in 1999 and 2004. The timeframe (2005/06 and 2006/07) for testing the DSEPs is acceptable to the DSC as a reasonable and practical program.

### **Operation and Maintenance Manuals**

The SCA has finalised and issued all Operation and Maintenance (O&M) Manuals for extreme and high consequence category dams and four significant category dams. The remaining O&M Manuals for significant category dams have been re-scheduled for completion by December 2006. DSC has endorsed this timing.

### 8.4.3 Demand management

Table 8.2 summarises the relevant findings of this audit in relation to the SCA's management of water conservation with respect to Clause 8.2.4 of Sydney Water's Operating Licence.

**Table 8.2 SCA demand management with respect to Sydney Water's Operating Licence**

Clause 8.2.4 of Sydney Water Operating Licence (abridged)	Findings in Relation to SCA Management of Water Conservation
(a) Estimate of past, current and projected water use and distinguish between residential, commercial and government use, and projected water uses under these categories.	<p>The SCA has not provided evidence that it has progressed work on:</p> <ul style="list-style-type: none"> <li>Scenarios of how future maximum/minimum demand projections based on forecasts of population; industry, water habits, demand management, etc, might affect reliability, security and robustness of supply over time;</li> <li>The impacts of "demand hardening";</li> <li>Reassessing the split up (current split based on 1991 data) of demand across the 10 demand nodes in the WATHNET model; and</li> <li>The impact on yield of use of the Decision Support System for Water Quality in terms of its practical impact on reservoir rule curves in WATHNET.</li> </ul>
(b) Frequency and magnitude of expected supply deficiencies, including those arising as a result of wastage and loss, drought or emergency.	<ul style="list-style-type: none"> <li>The SCA has completed works that will minimise leakage losses by its customers.</li> <li>The SCA has initiated work to check the accuracy of existing flow meters and need for additional meters. This will help quantify the water losses in its system.</li> </ul>
(c) Conservation measures currently adopted and being produced.	In response to the drought, the SCA continues to notify all its retail customers by letter urging them to look at ways to reduce consumption and water wastage.
(d) Cost and evaluate additional conservation measures. (e) Future plans for water conservation and strategies to alter water use practices, including those relating to the installation of more efficient water appliances and devices by users. (f) Evaluate plans in terms of the cost, and contrast with the cost of alternative water supplies. (g) Prioritise and schedule the implementation of the course of action found to be cost effective. (h) Strategies to reduce unaccounted for water losses.	<ul style="list-style-type: none"> <li>The SCA has adopted a levelised cost/ benefit approach to assessing additional conservation measures and future plans. However, no information on details of SCA's work in this area has been provided to the auditor.</li> </ul>



## **8.5 Recommendations**

The following recommendations focus on improvements to the WATHNET model used by SCA to understand what is the true security, robustness and reliability of the water supply for Sydney.

The reason for this focus is that the 'yield' of the water supply and system projections of possible future scenarios for storage volume that are derived from WATHNET are the benchmarks that largely decide the required level of action by Sydney Water on demand management activities and by SCA on optimising current supply (for example, by access to deep storage) and timing of future supply augmentation works (for example, desalination).

### **8.5.1 Key recommendations**

That the SCA:

- R8.1 Complete upgrade work on the WATHNET model including: updating of its structure (for example, size of demand centres and transfer constraints between them), checking and updating streamflow data, incorporating climatic variability of demand and completing 'degree of fit' runs to recent history (say 1998 to 2005) to verify it is correct and best represents current conditions.

### **8.5.2 Secondary recommendations**

That the SCA:

- R8.2 Finalise the Blue Mountains WATHNET model and estimate compliance with all Schedule 2 criteria and confirm SCA's strategy to ensure compliance as demand grows.
- R8.3 Complete Standard Operating Procedures for managing WATHNET and related hydrology data to achieve 'in use' status.
- R8.4 Complete an evaluation of the calculated water supply 'yield' that occurs if the Decision Support Tool 'quality and quantity' rules are used in WATHNET.
- R8.5 Complete evaluations, using WATHNET, of the effect on 'yield' of future Sydney Water demand management activities that could reduce water savings when more severe restrictions are applied and also of extensive catchment bushfires that could reduce available streamflow.



## 9. Environment

### 9.1 Summary of findings

#### ▸ Environmental reporting

The SCA demonstrated **High to Full compliance** for the annual environmental reporting requirements of the Operating Licence over 2004/05. However, failure to publish the environmental reports within the required timeframe resulted in a **Moderate compliance** for this clause.

The SCA's annual environmental reporting comprises:

- Annual Environmental Report: *ESD and Environmental Indicators Report 2004-2005* (AER); and
- *Environment Plan Progress Report 2004/05* (EPPR).

The AER and EPPR will be available on the SCA web-page or in hard copy by request.

#### ▸ Compliance with the Environment Plan

The SCA demonstrated variable compliance in meeting the strategies and targets of the Environment Plan. Compliance ranged from **Low to Full compliance**. The compliance level has not changed significantly since the previous year. The SCA did not provide significant new evidence to demonstrate movement towards full compliance for the strategies. It is therefore concluded that the SCA has made limited progress towards achieving full compliance with the Environment Plan, over the past year.

#### ▸ Performance against the environmental and ESD indicators

For the majority of indicators, data relevant to the indicator is reported. For some indicators, performance trends have not been defined due to the lack of current and past performance data in the draft AER for 2004/05. The SCA's performance in relation to the previous year could not be assessed for a third of the indicators. The SCA suggested that not all the current indicators can be fully, practically and cost effectively measured. Due to insufficient data, it is not possible to assess whether the environmental indicators are trending towards an overall decline or improvement in environmental performance.

There was a decline in performance for seven (out of 30) environmental indicators and three (out of 18) ESD indicators, predominantly attributable to the impact of the current drought conditions.

#### ▸ Environmental flows

The SCA demonstrated **High compliance** regarding the release of environmental flows from storages in accordance with the Water Management Licence issued by DIPNR.

## **9.2 Summary of requirements**

The objective of Part 9 of the Operating Licence is to ensure that the SCA conducts its operations in an environmentally responsible manner. This includes developing a plan that coordinates the activities of its different business units such that environmental issues are appropriately managed, resourced and reported. Further, the SCA is to ensure that the quality of waters are monitored and measured using environmental and ESD indicators and that the flow of water released from its storages is suitable for maintaining ecological health in receiving waters.

The requirements of Part 9 that apply to this audit period may be summarised as follows:

- ▶ Provide regular and accountable annual reporting that allows year-to-year comparisons and details the performance of the SCA with respect to targets and timetables set, and compliance with environmental and ESD indicators; and
- ▶ Release environmental flows in accordance with the requirements of the Water Management Licence.

Part 9 also includes a requirement to establish a monitoring and reporting system to support the measure of compliance against the Environment Plan and performance against the environmental and ESD indicators. It is noted that the SCA developed the monitoring and reporting systems associated with the Environment Plan and the environmental and ESD indicators in previous audit periods, hence the assessment of the SCA's performance against this requirement does not form part of this audit.

### 9.3 Details of compliance

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
<b>9.1</b>	<b>Environment Plan</b>		
9.1.1 to 9.1.5	Development of an Environment Plan	No requirement	This clause was fully complied with during the 2000/01 audit period.
9.1.6	The Environment Plan is to be readily available on the website, at offices, public libraries and environment centres. Access to the report to be free of charge.	Full compliance	A review of the SCA website confirms that the Environment Plan is available on the website. The Plan is also available from other public offices of the SCA including Penrith.
9.1.7	Amendments to the Environment Plan may only be made following public consultation.	No requirement	No requirement this audit period. SCA advised that there have been no amendments to the plan.
<b>9.2</b>	<b>Environmental and ESD Indicators</b>		
9.2.1 to 9.2.10	Environmental and ESD Indicators	No requirement	These clauses were complied with during the 1999/00 and 2000/01 audit periods.
9.2.11	The environmental indicators are to be reviewed as part of the End of Term review.	No requirement	This requirement is not imposed on the SCA. The environmental indicators were reviewed by IPART - <i>Review of Sydney Catchment Authority's Environmental and ESD Indicators</i> (Final Report). The report was made publicly available on 1 July 2004 (that is, within this audit period).
9.2.12 to 9.2.14	ESD Indicators	No requirement	No requirement this audit period. These clauses were complied with during the 1999/00 and 2000/01 audit periods.
9.2.15	The ESD indicators are to be reviewed as part of the End of Term review.	No requirement	This requirement is not imposed on the SCA. The ESD indicators were reviewed by IPART - <i>Review of Sydney Catchment Authority's Environmental and ESD Indicators</i> (Final Report). The report was made publicly available by IPART on 1 July 2004 (within this audit period).
<b>9.3</b>	<b>Reporting</b>		

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
9.3.1	SCA to report annually on the Environment Plan.  Report to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.	Full compliance	<p>Subsequent to the 2004/05 audit period, the SCA published (on 2 July 2005) the 2003/04 <i>Annual Environment Report Summary</i>, <i>Annual Environmental Report Indicators Report</i> and <i>Environment Plan Progress Report</i>. The Auditor noted that the reports were published some seven months after an independent review was completed. The draft annual reports for the 2004/05 audit period were under development during this audit period.</p> <p>The SCA's annual environmental reporting comprises:</p> <ul style="list-style-type: none"> <li>Annual Environmental Report: <i>ESD and Environmental Indicators Report 2004-2005</i> (AER), which presents performance against the ESD and environmental indicators; and</li> <li><i>Environment Plan Progress Report</i> (EPPR), which presents detailed compliance on the implementation of the Environment Plan.</li> </ul> <p>The SCA provided copies of the draft reports to enable the Licence Regulator to consider and report on the matter as part of the Annual audit. (For this audit period, the reports had not yet been tabled to the Board, undergone an independent verification or been endorsed by the CEO).</p>
9.3.2	Report SCA progress in meeting the Environment Plan. In particular:  a) Compliance with the targets and timetables of Clause 9.1.4	Full compliance	<p>Compliance with the targets and timetables of the Environment Plan is presented in the draft <i>Environment Plan Progress Report</i> (EPPR). The draft EPPR provides detail on outcomes specifically related to the timelines and targets of the objectives and strategies.</p> <p>A number of the Environment Plan targets were satisfied during previous audit periods. The remaining targets in the Environment Plan are generally being achieved although not always within the specified timeframes.</p> <p>The Auditor's review of the draft EPPR is discussed in Section 9.4.1 of this report.</p>

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
	b) Performance in relation to environmental and ESD indicators for the previous 12 months.	High compliance	<p>The draft Annual Environmental Report presents the SCA's performance in relation to most environmental and ESD indicators in the past 12 months. The SCA's performance against a number of environmental and ESD indicators was not reported due to lack of data. Data for 5 out of 6 economic indicators were not available for 2004/05 during the audit period. The SCA advised that it is not viable to collect annual data for some indicators, practically or due to cost, hence performance in relation to these indicators has not been reported.</p> <p>The Auditor's review of the SCA's performance against the environmental and ESD indicators is discussed in Section 9.4.2.</p> <p>For the 2003/04 audit period, an independent verifier was engaged to verify the data and content of the ESD and Environmental Indicators Report and the EPPR. The independent verifier was satisfied with the AER Indicators Report and EPPR and associated systems. The independent verifier did however recommend that some site level data from contractors be checked in 2004/05. SCA advised that: there is provision in the contract this year to allow external data on water quality to be checked for the 2004/05 report; checking also occurs via internal peer review, review by the Executive and normal QA processes. The independent verifier recommend that training to staff in internal verification be conducted and continuing development of the framework established to manage SCA's data collection. This recommendation has not been implemented by SCA.</p> <p>For the 2004/05 audit period, SCA advised that an independent verifier would be engaged to verify the EPPR, data and content of the ESD and environmental indicators report.</p>
9.3.3	<p>The report on environmental and ESD indicators must enable a year-to-year comparison of performance.</p> <p>In particular comparisons are to be made, where possible, using indicators with historical yearly values over at least the previous ten years.</p>	High compliance	<p>SCA's reporting on ESD indicators provides a yearly comparison for most of the indicators, with the exception of indicators for <i>"Extent and condition of native vegetation on SCA-owned and managed lands"</i> and the <i>"extent and type of erosion on SCA-owned land"</i>. For those indicators with a year-to-year comparison, generally five years of data were provided, from 2000/01 to 2004/05. SCA has included additional historical data for discharges of untreated sewage in this year's report.</p> <p>The SCA has also considered 10 years comparable data available from Sydney Water and reported 10 years of data for indicators such as <i>"temperature of water releases, flora and fauna species, level and variability of stream flow, storage volumes and variability, and incidents of algal blooms."</i></p>

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>For a number of indicators (for example, <i>the number of weirs with effective fishways and the number of intersection of transport routes and utility easements with watercourses in the water supply catchment area</i>) qualitative comparisons have been made (that is, “remains unchanged” or “likely increased”) and no data have been provided. Therefore, actual performance for the past 12 months cannot be adequately verified.</p> <p>A number of indicators (for example, <i>the extent and type of erosion in the catchment, community perception with regard to the state of the catchment, and estimated number of unsewered properties in the catchment</i>), were not reported. For some indicators only part of the indicator was reported (for example, the extent, but not the condition, of native vegetation on SCA-owned and managed lands is reported). Not all the current indicators can be fully, practically and cost effectively measured.</p>
9.3.4	Within one month of completion, the report must be made posted on the SCA website for downloading, made available at SCA premises for collection and lodged at libraries and environment centres in the SCA area of operations free of charge.	Moderate compliance	<p><b>2003/04 Annual Report</b></p> <p>Within this audit period, the SCA completed the 2003/04 <i>Annual Environment Report Summary</i>. The report was made available on the website (2 July 2005), at SCA premises and at libraries free of charge. Evidence was supplied of distribution of the AER to local libraries. SCA advised that there were no known environment centres in its area of operations. The AER referenced the 2003/04 <i>Annual Environment Report Indicators Report</i> and the <i>Environment Plan Progress Report</i> (EPPR) and noted that they were available on the SCA website.</p> <p>The reports were available on the SCA web-page and noted that hard copies would be produced for interested parties upon request.</p> <p>The AER was tabled at a SCA Board meeting on 12 October 2004. The report was subject to independent review and verification, with a verification statement issued 16 December 2004. The report must be substantially complete for an independent review to occur. Subsequently, changes of a non-material nature (the changes were reviewed by the Auditor) were made by the Managing Director over six months later. The reports were published seven months after practical completion and the independent review. For this reason, only moderate compliance is given.</p> <p>The SCA <i>Environment Plan 2000-2005</i> indicates that the AER is to be produced within six months of the end of the financial year.</p>

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
			<b>2004/05 Annual Report</b> The SCA advised that the 2004/05 Annual Reports will be available on the website, at SCA premises and at libraries free of charge. SCA advised that the draft reports have been submitted to the Executive for review. The timetable for completion of the draft reports, submission to the Board, approval, independent review, publication and making publicly available/ posting on the website was discussed with SCA. The proposed timetable should enable the reports to be published within 6 months from the end of the financial year, in accordance with SCA Environment Plan Objective 10.
<b>9.4</b>	<b>Environmental Flows</b>		
9.4.1 to 9.4.2	SCA to produce a report on trial environmental flows, including environmental flow information from EIS process for the Hawkesbury - Nepean, Woronora and Shoalhaven Rivers.	No requirement	The SCA fully complied with this requirement in the 1999/00 and 2000/01 audit periods.
9.4.3 to 9.4.7	Independent expert panel on environmental flows may be appointed by the Minister for the Environment.	No requirement	This requirement is not imposed on the SCA.
9.4.8	SCA to cooperate with, and provide reasonable assistance to, the independent expert panel to enable it to perform the tasks assigned to it.	No requirement	The role of the independent expert panel has concluded. The final report of the Hawkesbury Nepean River Management Forum was publicly released on 18 May 2004.
9.4.9	Until such time as the SCA is issued with a Water Management Licence, the SCA must meet the environmental flow requirements specified in its Operating Licence.	No requirement	This clause is not invoked during this audit period. The Water Management Licence (WML) was issued to the SCA on the 23 April 2001, prior to the commencement of this audit period. Environmental flows are addressed in clause 9.4.10.
9.4.10	Implement any environmental flow requirements in the Water Management Licence (WML) issued under Part 9 of the <i>Water Act 1912</i> .	High compliance	The Department of Infrastructure, Planning and Natural Resources (DIPNR) administers the Water Management Licence. An annual assessment of performance against the SCA's WML was undertaken by DIPNR within the audit period: <i>SCA Water Management Licence Annual Site Procedures and Works Inspections - 2004/05</i> , 28 July 2005.

**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>The assessment confirmed that:</p> <ul style="list-style-type: none"> <li>▶ The SCA complied with the requirements of the WML for the 2004/05 period (except for one non-compliance noted below);</li> <li>▶ At the time of the inspections, SCA met or exceeded the required environmental flow releases; and</li> <li>▶ Modified outlet works at three sites checked by DIPNR were releasing the required environmental flows.</li> </ul> <p>The SCA reported (and the DIPNR 28/7/05 report referred to above confirmed) that it had met all the environmental flow requirements of the WML with the exception of the following non-compliance event and exemptions from DIPNR:</p> <ul style="list-style-type: none"> <li>▶ <b>Tallowa Dam:</b> One non-compliance for 21 August 2004 (Clauses S4.1 and S5.2 of the WML). Although the non-compliance was a minor shortfall in environmental flow, it was of concern to DIPNR, as it was the third breach of licence conditions by operator error. The DIPNR assessment report indicated that the rectification actions implemented by SCA following the non-compliance event were an improvement on previous procedures and may prevent a recurrence of such an event.</li> <li>▶ <b>Woronora Dam:</b> DIPNR granted a temporary suspension of Clause S4.3(4) of the WML, which meant that high flow releases from the Dam were not required for the 2004/05 summer season. This suspension was granted by DIPNR on the presumption of a continued decline in total drinking water storage volumes and was consistent with Government initiatives to conserve drinking water supplies in the Sydney region.</li> <li>▶ <b>Tallowa Dam:</b> DIPNR granted a series of temporary suspensions of Clause S5.2 of the WML, related to water releases. This suspension was granted by DIPNR as an interim drought management measure to allow for the SCA and Shoalhaven City Council to cooperatively conserve water in Tallowa Dam.</li> <li>▶ <b>Warragamba Dam:</b> Approval was received from DIPNR to temporarily alter the release point for riparian and environmental flows from Warragamba Dam while works were carried out on the No. 1 Warragamba to Prospect pipeline.</li> </ul>



**Table 9.1 Part 9: The environment – summary of compliance**

Clause	Requirement	Compliance	Findings
			<p>Correspondence between SCA and DIPNR for the non-compliance event and exceptions were sighted by the Auditor.</p> <p>The WML requires the SCA to provide monthly environmental flow data to DIPNR. The assessment report confirmed that monthly reports had been sent.</p> <p>DIPNR and SCA have established a WML Working Group, with one aim being to achieve compliance with the conditions of the WML. Agendas and Minutes of the WML Working Group were reviewed and confirmed that environmental flows are addressed and any concerns are adequately rectified.</p>

## **9.4 Discussion**

### **9.4.1 Compliance with the Environment Plan**

Clause 10.2.1(i) of the Operating Licence requires the auditor to assess compliance of the SCA with the Environment Plan. For this purpose, the SCA provided a draft copy of the 2004/05 Environment Plan Progress Report (EPPR).

This assessment was based on the information provided by the SCA in the draft report. Assessment of compliance with the 5 year Environment Plan, for purposes of this audit, was undertaken by grouping the targets and timelines under the ten environmental objectives of the Environment Plan. This enables an objective assessment of the SCA's progress towards meeting the stated objectives of the Environment Plan.

This review has indicated that the SCA targets for 2004/05 in the Environment Plan are generally being achieved although not always within the specified timeframes. Generally compliance ranged from low to full and has not changed significantly since the previous year. The SCA did not provide significant new evidence to demonstrate movement towards full compliance for the strategies. It is therefore concluded that the SCA has made limited progress towards achieving full compliance with the Environment Plan, during the 2004/05 audit period.

It was noted that a number of targets in the Environment Plan have changed over the last five years and/or been addressed in alternative ways. It was also noted that additional activities are undertaken to meet the intent of the environmental objectives and strategies, but no specific targets have been set, so these activities/actions are not formally reported. The revised Environment Plan 2005-2010 should consider additional or alternate targets.

Achievement of targets under each of the environmental objectives are summarised in Appendix H.

### **9.4.2 Performance in relation to the environmental and ESD indicators**

Environmental indicators have been designed to monitor the direct impact of the SCA's activities on the environment. The ESD indicators have been designed to indicate the degree to which the SCA's activities comply with the principles of Ecologically Sustainable Development.

Measuring performance against these indicators is a task of comparing performance against previous years. This is the fifth year the SCA has collected data against the majority of these indicators and this has allowed comparison from previous years. For the majority of indicators, data relevant to the indicator is reported. For some indicators performance trends have not been defined due to the lack of current and past performance data in the draft AER for 2004/05. The SCA's performance against 16 indicators (nine environmental and seven ESD indicators) compared to the previous year could not be determined. This represents a third of the indicators that could not be assessed. SCA suggested that not all the current indicators can be fully, practically and/or cost effectively measured.

Of the environmental indicators, there was a decline in performance of seven out of thirty indicators. This is predominantly attributable to the impact of current drought conditions, which have caused a continued increase in energy consumption (and greenhouse gas emissions) due to pumping of bulk water from the Shoalhaven, reduction in the volume of water released from the SCA's storages and continued reduction in the volume of bulk water in storage.

For eight environmental indicators there was no change in performance and for nine indicators there was insufficient data available to assess performance against the previous year. For these reasons, it is not possible to assess whether the environmental indicators are trending towards an overall decline or improvement in environmental performance.

The ESD indicators have also been impacted by the drought conditions and the significant reduction in Sydney's water demand, attributable to mandatory water restrictions in place during the audit period. The SCA's performance against three ESD indicators declined over the audit period: volume of water released from storages, amount of energy used and greenhouse gas emissions (these are also environmental indicators discussed above). Performance improvements were noted for the volume of waste sent to landfill, staff training, SCA website hits and reliability in meeting Sydney Water's water requirements. At the time of the audit, data on performance against five economic indicators were not available.

The SCA attempts to interpret the individual environmental and ESD indicators in the draft AER by indicating whether there is a move away from or towards sustainability. It is the Auditor's opinion that the definitions and associated graphics are confusing.

There is a wide range of indicators, ranging from those with minor impacts to significant impacts. There has been no attempt by SCA to weight the indicators and provide an overall assessment of performance. It is important that a considered assessment of the SCA's overall performance against the environmental and ESD indicators is reported by the SCA in future years.

A summary of performance against each indicator is presented in Appendix I.

## **9.5 Recommendations**

### **9.5.1 Key recommendations**

That the SCA:

- R9.1 Report on its assessment of overall performance against the Environmental and ESD Indicators, as part of its Annual Environmental Report.
- R9.2 Produce, and make publicly available, annual environmental reports in a timely manner.

### **9.5.2 Secondary recommendations**

That the SCA:

- R9.2 Consider additional or alternate targets in the Environment Plan 2005-2010 that can be practically and cost-effectively measured.
- R9.3 Consider changing the definitions and graphics for reporting sustainability performance to make them easier to understand.



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## Appendix A

# Audit brief



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

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**I N V I T A T I O N   T O   T E N D E R**

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**THE SYDNEY CATCHMENT AUTHORITY**  
**2004/05 OPERATIONAL AUDIT**

**1 BACKGROUND**

The Independent Pricing and Regulatory Tribunal of New South Wales (the Tribunal) is seeking suitably qualified auditors to conduct an audit of the Sydney Catchment Authority's (SCA's) performance against its Operating Licence.

The SCA was established to manage water supply and protect catchments, supply bulk water and regulate activities within the catchments to improve water quality, protect public health and protect the environment. It has primary responsibility for Sydney's bulk water supply, which is drawn from the catchments of four major river systems – the Warragamba, Upper Nepean, Woronora and Shoalhaven. These catchments extend over 16,000 square kilometres and surround the Greater Sydney Metropolitan Region.

In accordance with Sections 25 and 26 of the *Sydney Water Catchment Management Act 1998*, the NSW Government has granted an Operating Licence to the SCA. A requirement of the Operating Licence is that the Tribunal conduct an annual Operational Audit of the Authority's performance against its licence obligations for the period 1 July 2004 to 30 June 2005.<sup>1</sup> A copy of the Operating Licence can be found at [www.sca.nsw.gov.au](http://www.sca.nsw.gov.au).

Information gathered as part of the Audit is used to report on the SCA's performance and make recommendations to the Minister for the Environment on:

- a) the granting, amendment or cancellation of the Operating Licence;
- b) the imposition, amendment or cancellation of conditions in relation to the Operating Licence;
- c) action to be taken, and sanctions to be applied, in respect of a contravention of the Operating Licence; and
- d) remedial action that may be warranted as a result of a contravention of the Operating Licence.<sup>2</sup>

The Department of Environment and Conservation, Department of Infrastructure, Planning and Natural Resources and NSW Health continue to regulate the SCA's activities concerning the environment, use of the water resource and public health respectively.

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<sup>1</sup> Section 31 (1) (a) *Sydney Water Catchment Management Act 1998*.

<sup>2</sup> Section 30A *Sydney Water Catchment Management Act 1998*.

## **2 OBJECTIVES OF CONSULTANCY**

The objective of the consultancy is to assess SCA's performance against its Operating Licence for the period from 1 July 2004 to 30 June 2005. In undertaking this task the auditor must:

1. conduct a detailed examination of those activities of SCA that are regulated by the Operating Licence;
2. assess the level of compliance achieved by the Authority against each of the requirements of the Operating Licence providing detailed supporting evidence for this assessment and reporting compliance according to the Tribunal's established compliance scoring methodology;
3. assess and report on progress by the Authority in addressing the comments made by the Minister (Attachment 1), providing supporting evidence for these assessments;
4. for each section of the Operating Licence, identify factors (if any) that have affected SCA's performance for the period from 1 July 2004 to 30 June 2005 and make recommendations to the Tribunal on how SCA can improve its performance in the future, based upon the audit assessment;
5. provide a formal briefing to the Tribunal or the Tribunal's Secretariat comprising an overview of the Authority's overall performance against the requirements of the Operating Licence and the key findings of this assignment; and
6. prepare a full report on the findings of the assignment, including a summary of the Authority's overall performance against the requirements of the Operating Licence and detail of its compliance with each requirement of the Operating Licence and any requirements of the Minister in Attachment 1.

The auditor will be responsible for assessing and interpreting the audit requirements in the Operating Licence and the Act and ensuring that the audit process satisfies all statutory requirements. Notwithstanding this, the audit report should reflect the emphasis of the *Sydney Water Catchment Management Act 1998* and the Operating Licence on water quality, and environmental issues.

As well as these requirements, the Tribunal has identified the following key issues for the 2004/2005 audit:

- Actual catchment management expenditure compared to budget (in relation to the SCA's obligations under Part 7 of the Licence);
- Transparency of public reporting (in relation to the SCA's obligations under Part 7 of the Licence) ; and
- Risk management in the catchment (in relation to the SCA's obligations under clause 6.7 of the Licence).

The Tribunal will advertise this audit process and seek submissions from the public. The audit process should take account of any public submissions received and other stakeholders including environment and public interest groups.

### **2.1 Outputs**

The main outputs from this consultancy are:

1. two draft reports and a final written report addressing the objectives of the consultancy;
2. discussions and meetings with the Tribunal and/or the Secretariat; and
3. presentations to the Tribunal which outline the major issues and findings.

The draft reports should be provided in one bound copy, a loose-leaf copy and an electronic copy in MS Word. The final written report should be provided in two bound copies and one loose-leaf copy, as well as in two electronic forms (MS Word, and PDF format suitable for web publication).

The auditor should note that the final report will be tabled in the NSW Parliament and publicly released. The report should be clearly and logically set out and written in plain English. On completion of the audit, the auditor's reports, working papers and advice provided to the Tribunal will become the property of the Tribunal.

## Format of the Final Report

The Tribunal has a preferred format for the final report that includes:

- a summary of compliance with the requirements of the Operating Licence and Ministerial Requirements and a summary of key recommendations.
- a summary of the key audit findings providing a performance overview in the context of the SCA organisation, its legislated objectives, and its regulatory environment.
- for each section of the Licence and for any Ministerial Requirements:
  - a summary of requirements,
  - a summary of findings,
  - details of compliance,
  - a discussion of any relevant factors affecting compliance, any opportunities for improvement, and other relevant issues.

Further details of the Tribunal's preferred format will be provided to the successful tenderer.

## 3 CONDITIONS OF TENDER

### 3.1 Timing

The successful tenderer must be able to meet the following work schedule.

Contract Program		
Month	Date	Activity
July	Fri 29	Start of Contract
September	Fri 2	Delivery of first draft Audit Report
	Wed 7	Discussion of first draft with Tribunal Secretariat
	Fri 30	Delivery of second draft Audit Report
October	Wed 5	Discussion of second draft with Tribunal and/or Secretariat
November	Wed 16	Discussion of final Audit Report with Tribunal and/or Secretariat

The dates in the table for discussion of drafts and the final report will be subject to negotiation between the Tribunal Secretariat and auditor. Weekly, written progress updates should be provided to the Secretariat. Progress meetings in addition to those in the above table are expected. The detailed consultancy work plan should reflect these.

### **3.2 Fee**

The fee quoted is to be inclusive of all costs including Goods and Services Tax, incidental expenses and disbursements. Payments will be due within 28 days of receiving an invoice as per an agreed payment schedule. The auditor may wish to outline a draft payment schedule.

A detailed breakdown of the consultancy costs is required with the proposal. The proposal should include estimates of the time required for the project, auditors to be involved in the project, their rates, and a total fee estimate. Staff costs should be clearly reconciled to the detailed work plan. Costs should allow for presentation to the Tribunal, discussion and meetings with staff of the Tribunal, and stakeholder meetings as required.

### **3.3 Proposal**

The consultancy proposal should demonstrate an appreciation for the task as well as describe the intended approach for carrying it out. The personnel to be involved, including resumes detailing their experience should be listed. A detailed work plan is also required. Details of previous clients who can be contacted are also desirable.

### **3.4 Presentation**

Shortlisted tenderers may be required to make a presentation on their proposal as part of the tender evaluation process.

### **3.5 Criteria for selection**

In selecting the successful consultant the Tribunal will consider the following matters:

- in-depth understanding and expertise in the areas encompassed in the Operating Licence (ie. bulk water supply, bulk water quality, catchment management, environmental regulation and customer service)
- extent of knowledge about bulk water supply management and environmental regulation
- experience in similar auditing projects
- understanding of the SCA's regulatory framework
- proposed consultancy fee
- adequate resourcing and ability to provide results within the stated time frame
- proposed audit and quality assurance procedures
- guaranteed availability of key staff



- demonstrated ability to enlist the agencies' cooperation whilst engendering a sense of acceptance of the relevant outcomes.

The successful tenderer will be able to put together an audit team with specific experience in each of the core auditable areas (bulk water supply, bulk water quality, catchment management, environmental regulation and customer service) and will include in its consultancy proposal details of the audit team structure having regard to these categories. Tenderers may form a consortium with other firms or consultants to achieve the required set of skills in the areas of water science, engineering, environment and customer and consumer service issues.

### **3.6 Acceptance of Tender**

The Tribunal reserves the right to:

- accept no tender at all;
- postpone indefinitely the acceptance of a tender;
- call for new tenders;
- appoint one or more tenderers to undertake the review; or
- approve or reject any sub-contractors the tenderer may wish to appoint.

### **3.7 Disclosure of information on Government Contracts**

Potential tenderers should note that Government contracting guidelines may require the routine disclosure of the following information:

- details of contract (description of project to be completed or goods/services to be provided or property to be transferred; commencement date of the contract; the period of the contract);
- the full identity of the successful tenderer including details of cross ownership of relevant companies;
- the price payable by the agency and the basis for future changes in this price;
- the significant evaluation criteria and the weighting used in tender assessment; and
- provisions for re-negotiation (where applicable).

### **3.8 Consultancy Contract**

The successful tenderer will be obliged to enter into a contract with the Tribunal prior to commencing the Audit.

The Tribunal has a consultancy contract that covers issues including, but not limited to:

- consultancy information and documentation;
- ownership of intellectual property;
- conflicts of interest;
- confidentiality; and

- insurance.

The Tribunal reserves the right to modify contract terms for the final contract as it considers appropriate. A copy of the Tribunal's draft contract is available on request.

## **4 PARTIES TO THE AUDIT**

The party managing and commissioning the Audit is the Independent Pricing and Regulatory Tribunal of New South Wales. The primary contact is:

Michael Sedwell	tel:	61-2-9290-8478
	e-mail:	michael_sedwell@ipart.nsw.gov.au

## **5 LODGEMENT OF TENDER**

3 bound copies and 1 loose-leaf copy of the tender should be lodged in a sealed envelope marked

### **2004/05 Sydney Catchment Authority Operational Audit**

addressed to:

Ms Meryl McCracken  
General Manager, Support Services  
Independent Pricing and Regulatory Tribunal of NSW

at, PO Box Q290  
QVB POST OFFICE NSW 1230

or, Level 2  
44 Market Street  
SYDNEY NSW 2000

so that it is received by no later than 5.00 pm Sydney time, on Wednesday 29 June, 2005.

**ATTACHMENT 1 SUMMARY OF THE MINISTER'S COMMENTS ON THE  
2003/04 OPERATIONAL AUDIT**

Issue	Comment
Bulk Water Quality	<p>The Minister endorsed the auditor's recommendation requiring the Authority to:</p> <p><i>"Quantify, as far as possible, the variations in bulk water quality that may occur under the high risk situations identified in the Risk Management Framework. Confirm that SCA's customers are aware of these variations so that they can plan accordingly, to ensure that treated water that they supply in turn to their customers, will comply with the required objectives."</i></p>



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## Appendix B

# Operating Licence

Sydney Catchment Authority

# **Operating Licence**

under the  
*Sydney Water Catchment Management Act 1998*



NEW SOUTH WALES



SYDNEY WATER CATCHMENT MANAGEMENT ACT 1998

OPERATING LICENCE AMENDED UNDER SECTION 27 OF THE  
SYDNEY WATER CATCHMENT MANAGEMENT ACT 1998

With the advice of the Executive Council, I, the Honourable Gordon Samuels AC, CVO, Governor of New South Wales, hereby amend the operating licence of Sydney Catchment Authority under section 27 of the Sydney Water Catchment Management Act 1998 in the manner set out below.

A handwritten signature in cursive script, reading "Gordon Samuels".

Governor of New South Wales

Signed at Sydney, this 19<sup>th</sup> day of April 2000.

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# Introduction

## Introduction

- A. The operating licence granted to the Sydney Catchment Authority on 2 July 1999, under section 25 of the *Sydney Water Catchment Management Act 1998*, was renewed on 22 December 1999 for the period from 1 January 2000 until 31 December 2004.
- B. The operating licence renewed under paragraph A is amended with effect from 19 April 2000 (“**Commencement Date**”) by deleting the existing provisions in their entirety and substituting the following:



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## Definitions and Interpretation

### 1.1 Definitions

In this Licence:

**Act** means the *Sydney Water Catchment Management Act 1998* and any regulations in force under it.

**Annual audit** means the annual operational audit of the Authority as defined in clause 10.1.1.

**Area of Operations** means the area of operations specified in Schedule 1, which is set out in accordance with section 20 of the Act.

**ARMCANZ** means the Agriculture and Resource Management Council of Australia and New Zealand.

**Authority** means the Sydney Catchment Authority constituted under the Act.

**Bulk Water** means water supplied by the Authority to Sydney Water Corporation under the Bulk Water Supply Agreement and by the Authority to customers other than Sydney Water Corporation.

**Bulk Water Supply Agreement** means the Bulk Water Supply Agreement between the Sydney Catchment Authority and Sydney Water Corporation signed on 15 September 1999 and any amendment or replacement of that Agreement.

**Catchment Area** means Land for the time being declared under the Act to be or be part of the inner catchment area or the outer catchment area.

**Catchment Infrastructure Works** means the Authority's:

- (a) Water Storages, water mains, or connected or associated works, or
- (b) monitoring devices in, under, over or near any works referred to in paragraph (a), or
- (c) any works ancillary or antecedent to any works referred to paragraph (a) or (b),

and includes anything prescribed by the regulations as being within the definition of "Catchment Infrastructure Works" under the Act, but excludes anything prescribed by the

regulations as being outside the definition under the Act.

**Commencement Date** means the date specified in paragraph B of the Introduction.

**Consultative Committee** means a committee referred to in Part 5.4 of this Licence.

**County Council** means a county council under the *Local Government Act 1993*.

**Customer** means any person who is supplied water by the Authority, that is,

- (i) Sydney Water Corporation,
- (ii) water supply authorities, prescribed Local Councils or prescribed County Councils, or
- (iii) other persons and bodies, but under terms and conditions that prevent the person or body concerned from supplying the water for consumption by others within the State unless the person or body is authorised to do so under an Act.

**Environmental flow** means a release of water from storage so as to provide a flow of water in a river, stream, or other natural waterway that:

- (a) mimics natural seasonal flows, and
- (b) restores and maintains the ecology of the waterway concerned.

**End of term review** means the end of term review of this Licence under clause 2.4.1.

[Note: The End of term review is to commence on or about 1 January 2004].

**EPA** means the Environment Protection Authority constituted by the *Protection of the Environment Administration Act 1991*.

**ESD indicators** means indicators of ecologically sustainable development practices and principles.

**Function** includes a power, authority or duty.

**Hawkesbury Nepean River Management Forum** means the body established to make recommendations to the Minister for Land and Water Conservation and the Minister for the Environment on Environmental flow provisions for inclusion in the Authority's Water management licence.

**Healthy Rivers Commission** means the Commission established under section 23 of the *Pollution Control Act 1970* to conduct public inquiries and to publish its findings into the health of those NSW river systems referred by the NSW Government.

**IPART** means the Independent Pricing and Regulatory Tribunal of New South Wales constituted by the *Independent Pricing and Regulatory Tribunal Act 1992*.

**Land** includes the following:

- (a) the sea or an arm of the sea,
- (b) a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or non-tidal,
- (c) a river, stream or water course, whether tidal or non-tidal,
- (d) a building erected on the land.

**Licence** means this operating licence granted under section 25 of the Act to the Authority or any renewal or amendment of it, and as in force for the time being.

**Licence Regulator** means the Sydney Water Corporation Licence Regulator constituted by section 30 of the *Sydney Water Act 1994*.

**Licence Review Body** means IPART or, if the Minister administering the *Independent Pricing and Regulatory Tribunal Act 1992* directs that IPART is not to undertake the Mid term review or the End of term review (as applicable) following receipt of advice from IPART concerning its workload, a person (other than the Licence Regulator or the Authority) who, in the opinion of the Minister, has suitable qualifications and experience for undertaking a Mid-term review or an End of term review.

**Local Council** means a council within the meaning of the *Local Government Act 1993*.

**Mid term review** means the mid-term review of this Licence under clause 2.3.1.

[Note: The mid-term review is to occur on or about 1 January 2002.]

**Minister** means the Minister responsible for administering those provisions of the Act relating to this Licence.

**NHMRC** means National Health and Medical Research Council.

**NSW Government Energy Management Policy** means the energy management policy of the NSW Government released by the NSW Department of Energy (now the Ministry of Energy and Utilities) in 1998 and updated from time to time.

**NSW Health** means the NSW Department of Health.

**Raw water** has the same meaning as Bulk water.

**Regional Environmental Plan** means the plan or plans referred to in section 53 of the Act.

**SEDA** means the Sustainable Energy Development Authority constituted by the *Sustainable Energy Development Act 1995*.

**State Environmental Planning Policy 58 (SEPP 58)** means the SEPP entitled “Protecting Sydney’s Water Supply” issued under the *Environmental Planning and Assessment Act 1979* as gazetted on 14 December 1998 and as amended, supplemented or replaced from time to time.

**Sydney Water Corporation** means Sydney Water Corporation constituted as a corporation under the *Sydney Water Act 1994*.

**Water Storages** means the Authority’s dam walls, pumps and other works used for or with respect to the extraction, and storage, of:

- (a) water in rivers and lakes;
- (b) water occurring naturally on the surface of the ground; and
- (c) sub-surface waters.

**Water management committee** means a committee established by the Minister for Land and Water Conservation that includes representatives of the community, State and Local government agencies, for purposes including the provision of advice to Government on the management of surface water and groundwater supplies.

**Water management licence** means a water management licence granted under Part 9 of the *Water Act 1912*.

## 1.2 Interpretation

1.2.1 In this Licence, unless the contrary intention appears:

- (a) the word person includes an individual, a body corporate, an unincorporated body or other entity and one or more of each of them;
- (b) a reference to a law includes legislation (including the Act) and regulations made under legislation;
- (c) a reference to regulations includes ordinances, codes, licences, orders, permits and directions;
- (d) a reference to a law, regulations, guidelines, any Memorandum of understanding, plans, policies or other strategy, standards, or list of indicators includes consolidations, amendments, variations, re-enactments, or replacements of any of them;
- (e) a reference to a function of the Authority includes a function which is conferred or imposed on the Authority by or under the Act or any other Act or law;
- (f) a reference to a person includes a reference to the person's executors, administrators, successors, substitutes (including, but not limited to, persons taking by novation) and assigns;
- (g) a reference to a year means a calendar year that ends on 31 December. "Yearly" has a corresponding meaning; and
- (h) a reference to a clause or Schedule is to a clause of or Schedule to this Licence.

1.2.2 If this Licence requires that something undergo public consultation, it requires as a minimum that:

- (a) notice of that thing and the nature and timing of the consultation be:
  - (i) advertised in a major daily newspaper circulating in the Area of Operations;
  - (ii) communicated to persons to whom it would reasonably be expected notice should be given; and
  - (iii) given to the Licence Regulator; and
- (b) submissions be sought from the public and that these submissions be considered by the person conducting the review.

1.2.3 If any part of this Licence is prohibited, void, voidable, illegal or unenforceable, then that part is severed from the Licence but without affecting the continued operation of the remainder of the Licence.

1.2.4 A reference in this Licence to any organisation, association, society, group, or body shall, in the event of it ceasing to exist or being reconstituted, renamed or replaced or if its powers or functions are transferred to any other entity, body or group, refer respectively to any such entity, body or group, established or constituted in lieu thereof or succeeding to similar powers and functions.

1.2.5 If there is disagreement between the Authority and the Licence Regulator as to the proper interpretation of any term of this Licence, the matter must be referred to the Minister for resolution by the Minister or a person appointed by the Minister.

1.2.6 The italicised explanatory notes in this Licence do not form part of this Licence.



- 1.2.7 Where the Licence Regulator requires some act or thing to be done under this Licence, the Authority must provide reasonable assistance to the Licence Regulator, or other person nominated by the Licence Regulator, with the intent of enabling that act or thing to be done.
- 1.2.8 If there is any inconsistency between this Licence and a Memorandum of understanding (including any interpretation of any provision), or between this Licence and the Bulk Water Supply Agreement (including any interpretation of any provision), this Licence will prevail to the extent of the inconsistency.

# Part 2

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## Information about this Licence

### 2.1 Objectives of this Licence

- 2.1.1 The objectives of this Licence are to enable and require the Authority to:
- (a) manage and protect the Catchment Area and Catchment Infrastructure Works;
  - (b) supply Bulk water; and
  - (c) regulate certain activities within the Catchment Area.
- 2.1.2 Consistent with the objectives in clause 2.1.1, this Licence requires the Authority to:
- (a) meet the objectives and other requirements imposed on it in the Act;
  - (b) comply with the quality and performance standards in this Licence; and
  - (c) be subject to the Annual audit of compliance with this Licence.

### 2.2 Duration of Licence

- 2.2.1 This Licence is for a term that will expire on 31 December 2004.
- 2.2.2 The Governor may renew this Licence in accordance with the Act.

[Note: Section 28 of the Act allows the Governor to renew the licence for a maximum of 5 years at a time.]

### 2.3 Mid term licence review

- 2.3.1 On or about 1 January 2002, a Mid term review must be undertaken:
- (a) to determine whether this Licence is fulfilling its objectives; and
  - (b) in relation to any matter required to be reviewed by this Licence.
- 2.3.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.3.3 The Licence Review Body must engage in public consultation as part of the review.
- 2.3.4 The Licence Review Body is to report to the Minister within six months of commencing the review on the following:
- (a) the findings of the review;
  - (b) any recommendations for amendment to this Licence; and

- (c) any recommendations for amendment to any law that adversely impacts on this Licence.
- 2.3.5 The Licence Review Body's report must be made available to the public by the Authority at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be placed on the Authority's website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.
- 2.3.6 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.3.7 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 27 of the Act.
- 2.3.8 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.

## **2.4 End of term licence review**

- 2.4.1 An End of term review for the purpose of determining the terms of any renewal of this Licence is to commence on or about 1 January 2004.
- 2.4.2 The review is to be undertaken by a Licence Review Body appointed by the Minister.
- 2.4.3 The Licence Review Body is to engage in public consultation as part of the review.
- 2.4.4 The Licence Review Body is to report to the Minister within 12 months of commencing the review on the following:
  - (a) the findings of the review;
  - (b) any recommendations for amendment to this Licence, including any additional terms to be included in any renewal of this Licence; and
  - (c) any recommendations for amendment to any law that adversely impacts on this Licence.
- 2.4.5 The Licence Review Body's report must be made available to the public by the Authority at the direction of the Minister (which direction must be given within 2 months after the Minister receives the report). Copies are to be placed on the Authority's website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.
- 2.4.6 The Minister may accept or reject any recommendation made by the Licence Review Body.
- 2.4.7 If any recommendation made by the Licence Review Body and accepted by the Minister requires an amendment to this Licence, the recommendation is of no force or effect unless this Licence is relevantly amended in accordance with section 27 of the Act.
- 2.4.8 Any recommendation made by the Licence Review Body that is not accepted by the Minister is of no force or effect.

## **2.5 Licence amendment**

2.5.1 This Licence may be amended by the Governor in accordance with the Act.

*[Note: Section 27 of the Act provides that the Governor may amend the operating Licence.]*

## **2.6 Contravention of Licence**

The Authority acknowledges that, if the Minister is of the opinion that the Authority has contravened this Licence, the Minister may take action against the Authority under section 29 of the Act.

*[Note: Section 29 of the Act provides that, where the Minister is of the opinion that the Authority contravenes this Licence, the Minister may serve a notice on the Authority requiring it to rectify the contravention; or, the Governor may direct that the Authority is to pay a monetary penalty in an amount determined by the Governor.]*

## **2.7 Cancellation of Licence**

This Licence may be cancelled by the Governor in the circumstances described in section 30 of the Act.

*[Note: Section 30 sets out the circumstances in which the Governor may cancel the licence. These are where the Authority ceases, otherwise than as authorised by the operating licence, to carry out its responsibilities in accordance with the licence or any of them in the area of operations of the Authority for any reason; or where the Authority, in the Minister's opinion, is in material default in compliance with the Licence and has not rectified such default or shown cause why the Licence should not be cancelled; or where the Authority is convicted on more than three occasions within a twelve month period of criminal offences punishable by at least a \$10,000 fine or twelve months' penal servitude or imprisonment if the Authority were a natural person.]*

# Part 3

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## Sydney Catchment Authority's Responsibilities

### 3.1 Responsibilities of the Authority under this Licence and other laws

The Authority must comply with this Licence and all applicable laws.

[Note: The Authority has obligations under a number of laws including:

- *Protection of the Environment Operations Act 1997;*
- *Public Health Act 1991;*
- *Water Act 1912;*
- *Water Administration Act 1986;*
- *Environmental Planning and Assessment Act 1979;*
- *Independent Pricing and Regulatory Tribunal Act 1992;* and
- *Dams Safety Act 1978.*]

### 3.2 Responsibility of the Authority under the Sydney Water Catchment Management Act

3.2.1 The Authority acknowledges that its principal objectives under section 14(1) of the Act are:

- (a) to ensure that the Catchment Area and the Catchment Infrastructure Works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment;
- (b) to ensure that water supplied by it complies with appropriate standards of quality;
- (c) where its activities affect the environment, to conduct its operation 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 manage the Authority's Catchment Infrastructure Works efficiently and economically and in accordance with sound commercial principles.

3.2.2 The Authority acknowledges that its special objectives under section 14(2) of the Act are:

- (a) to minimise risks to human health, and
- (b) to prevent the degradation of the environment.

### **3.3 Memorandum of understanding**

3.3.1 In accordance with section 36 of the Act, the Authority must maintain a Memorandum of understanding with each of the Water Administration Ministerial Corporation, Director-General of NSW Health, and EPA for the term of this Licence.

*[Note: Section 36 of the Act requires the Authority enter into separate memoranda of understanding with certain regulatory agencies, being the Director-General of NSW Health, the Water Administration Ministerial Corporation, and EPA. If the Authority and those regulatory agencies are not able to enter into, or agree on a term of, a memorandum of understanding, the memorandum is to be entered into in accordance with procedures determined by the Premier or is taken to be entered into in such terms as are determined by the Premier. A memorandum of understanding entered into by the Authority under section 36 is to be reviewed, and amended or replaced, at such times and in such circumstances as are agreed upon between the Authority, the agency concerned, or as are determined by the Minister. Section 38 deals with public exhibition of memoranda of understanding.]*

3.3.2 The purpose of a Memorandum of understanding is to form the basis for cooperative relationships between the parties to the Memorandum with a view to furthering the objectives of this Licence and the Act.

3.3.3 The Authority acknowledges that it may be required by direction of the Minister to enter into a Memorandum of understanding with a person, body or agency under section 37 of the Act.

*[Note: Section 37 of the Act provides that the Minister may direct the Authority to enter into memoranda of understanding with the Director-General of National Parks & Wildlife, the Director-General of the Department of Agriculture, local councils, county councils, or any persons, bodies or agencies nominated by Ministerial order communicated to the Authority. The Minister may specify the matters to be dealt with in a memorandum of understanding and the period (within 6 months of the direction) within which the memorandum is to be entered into. Where the Authority and the relevant body are unable to agree, the Premier may determine the terms of the memorandum. Section 38 deals with public exhibition of memoranda of understanding.]*

3.3.4 The Authority must consult with the Minister in the six months following the Commencement Date, with a view to the Minister considering exercising his powers under section 37(1) of the Act to direct the Authority to enter into Memoranda of understanding with regulatory agencies referred to in section 35(b) of the Act.

*[Note: The regulatory agencies in section 35(b) of the Act are the Director-General of National Parks and Wildlife, the Director-General of the Department of Agriculture, local councils, county councils, and any persons, or bodies or agencies for the time being nominated by order of the Minister communicated to the Authority.]*

3.3.5 The Licence Regulator must consider and report on the Authority's implementation of the Memoranda of understanding referred to in clause 3.3 and any other requirements in clause 3.3.

3.3.6 As part of the Mid term review, the Licence Review Body must advise the Minister on whether any obligations in the Memoranda of understanding referred to in clause 3.3 should be incorporated into this Licence.

# Part 4

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## Licence Authorisation and Area of Operations

### 4.1 What the Licence authorises and regulates

- 4.1.1 For the purpose of section 15(1) of the Act, this Licence enables the Authority to exercise any function conferred or imposed on it by or under the Act or any other Act, regardless of whether any such function is conferred or imposed on the Authority by or under the Act or any other Act before or after the Commencement Date.
- 4.1.2 This Licence enables and requires the Authority to provide, construct, operate, manage and maintain efficient and coordinated viable systems and services for supplying Bulk water.
- 4.1.3 The Authority must ensure that the Catchment Infrastructure Works comply with the quality and performance standards required in this Licence or required to be developed under this Licence.

### 4.2 Powers not limited

This Licence does not restrict the Authority's power to carry out any functions conferred or imposed under any applicable law.

### 4.3 Area of Operations

- 4.3.1 This Licence enables the Authority to exercise its functions in or in respect of an area in or outside the Area of Operations.
- 4.3.2 The Area of Operations may only be varied in accordance with section 20 of the Act.

*[Note: The Area of Operations for the Authority is listed in Schedule 1 of this Licence. Section 20 of the Act states that subject to certain requirements the Governor may vary the Area of Operations by order published in the NSW Government Gazette.]*

### 4.4 Non-Exclusive Licence

The Licence does not prohibit a person (the "Supplier") from supplying water (whether Bulk water or otherwise) to a person (including a person that is a Customer) in the Area of Operations, if the Supplier is lawfully entitled to do so.

# Part 5

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## Customers

### 5.1 Customer - Sydney Water Corporation

5.1.1 The Authority acknowledges that it has entered into a Bulk Water Supply Agreement with Sydney Water Corporation in compliance with its obligations under section 22 of the Act to enter into an arrangement with Sydney Water Corporation. The terms of the Agreement are as provided for in the Act and include:

- (a) the standard of the quality of the water supplied;
- (b) the continuity of water supply;
- (c) the maintenance of adequate reserves of water by the Authority; and
- (d) the cost to be paid by Sydney Water Corporation for the supply of water to it.

*[Note: Division 4 of Part 3 (sections 22 to 24) of the Act specify the arrangements which are to be made with Sydney Water Corporation.]*

5.1.2 The Authority must review the terms of the Bulk Water Supply Agreement from time to time in consultation with Sydney Water Corporation to determine its compliance and consistency with:

- (a) the Act;
- (b) this Licence; and
- (c) the operating licence for Sydney Water Corporation.

5.1.3 Following the review in clause 5.1.2, but subject to sections 22(4), 22(5), and 22(8) of the Act, the Authority must use its best endeavours to procure Sydney Water Corporation's agreement to amendments to the Bulk Water Supply Agreement that are necessary to address identified areas of non-compliance or inconsistency with:

- (a) the Act;
- (b) this Licence; and
- (c) the operating licence for Sydney Water Corporation.

*[Note: The public consultation requirements set out in section 22(8) of the Act apply to any amendment of the Bulk Water Supply Agreement.]*



## **5.2 Customers - other than Sydney Water Corporation**

- 5.2.1 The Authority must use its best endeavours to reach agreement with its other Customers, on the arrangements to apply in relation to Bulk water that the Authority supplies to those Customers. The terms of the arrangements must at minimum include:
- (a) the standard of the quality of the water supplied;
  - (b) the continuity of water supplied;
  - (c) any other terms agreed by the parties; and
  - (d) the costs to be paid by Customers for the supply of water to them.

## **5.3 Customer complaints**

- 5.3.1 The Authority must establish internal complaints handling procedures for receiving, responding to and resolving complaints it receives from Customers and the community, relating to any of its functions.
- 5.3.2 The internal complaints handling procedures of the Authority must be based on the Australian Standard *AS4269-1995 Complaint Handling*.
- 5.3.3 The Authority must make available to Customers and the community information concerning its internal complaints handling procedures which explains how to make a complaint and how the complaints handling procedure works.
- 5.3.4 The Authority must provide information of the nature described in clause 5.3.3 to Customers at least once each year. The Authority must also post this information on its website on the internet for downloading free of charge.
- 5.3.5 The Authority must report each year to the Licence Regulator as part of the Annual audit on the following details concerning complaints made against the Authority which are handled by its internal complaints handling procedures:
- (a) the number and types of complaints received classified into one or more of the following categories:
    - (i) water quality, including health and aesthetic characteristics;
    - (ii) continuity of water supply;
    - (iii) water pressure; and
    - (iv) billing.
  - (b) the number and type of complaints resolved or not resolved in sufficient detail and using sufficient classifications to enable the Licence Regulator to gain a reasonable understanding of how and how well those complaints were resolved or why complaints were not resolved, as the case may be;
  - (c) any problems of a systematic nature arising from the complaints.

## **5.4 Consultative Committees**

- 5.4.1 The Authority must establish and regularly consult with one or more Consultative Committees to enable community involvement in issues relevant to the performance of the Authority's obligations under this Licence.
- 5.4.2 The first Consultative Committee under this Licence in respect of the period after the Commencement Date must be established within three months of the Commencement Date.

- 5.4.3 The Authority must appoint the members of a Consultative Committee, consistent with this Licence.
- 5.4.4 At all times, the membership of one or more Consultative Committees must between them include a representative from at least each of the following:
- (a) local environment groups;
  - (b) peak environment groups;
  - (c) catchment management experts;
  - (d) public health experts;
  - (e) business groups;
  - (f) farming interests;
  - (g) local government; and
  - (h) Customers.
- 5.4.5 The Authority may require a representative under clause 5.4.4 to serve on so many Consultative Committees as it considers it appropriate to best discharge the tasks assigned to him or her.
- 5.4.6 The term of a member of a Consultative Committee will expire two years after his or her appointment. A member will be eligible for re-appointment for one further consecutive term.
- 5.4.7 If a member's place becomes vacant before the expiration of his or her term, the Authority may appoint a suitable replacement for the remainder of that member's term.
- 5.4.8 Within three months of establishing Consultative Committee(s), the Authority must develop in consultation with members of the Consultative Committee(s) a Consultative Committee Charter that addresses the following issues:
- (a) the role of the Consultative Committees;
  - (b) selection criteria on how members will be drawn from the community;
  - (c) information on how the Consultative Committee will operate;
  - (d) a description of the type of matters that will be referred to the Consultative Committee;
  - (e) procedures for the conduct of Consultative Committee meetings, including the appointment of a chairperson;
  - (f) communicating the outcome of the Consultative Committee's work to the Authority;
  - (g) procedures for tracking issues raised and ensuring appropriate follow-up of those issues; and
  - (h) funding and resourcing of the Consultative Committee by the Authority.
- 5.4.9 There must be a Consultative Committee Charter for each Consultative Committee. However, a single Consultative Committee Charter may be expressed to apply to more than one Consultative Committee.
- 5.4.10 The Authority must provide a Consultative Committee with information within its possession or under its control necessary to enable the Consultative Committee to discharge the tasks assigned to it, other than information or documents over which the Authority or another person claims confidentiality or privilege.

- 5.4.11 A copy of each Consultative Committee Charter must be posted on the Authority's website on the internet for downloading free of charge and made available at its offices for access or collection by any member of the public, also free of charge.
- 5.4.12 As part of the End of term review, the Licence Review Body must evaluate and report on the effectiveness of Consultative Committees and compliance with the Consultative Committee Charter.

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## Bulk Water Quality

### 6.1 Interpretation

In this Part:

**Drinking Water Guidelines** means the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 and any amendment, update and supplement of these guidelines from time to time.

**health guideline value** means the concentration or measure of a physical characteristic of water quality (a physical, biological or radionuclide property) that, based on present knowledge, does not result in any significant risk to the health of a person over a lifetime of consumption.

**Water Treatment** means treating water by substantially removing or reducing certain contaminants and characteristics prior to the water being used or supplied for use by business and household consumers for human consumption.

### 6.2 Water supplied for Water Treatment

The following provisions apply to Bulk water supplied by the Authority to Customers for Water Treatment:

*[Note: Customers to whom the Authority supplies water for Water Treatment include: Sydney Water Corporation, Shoalhaven City Council and Wingecarribee Shire Council.]*

- (a) the Authority must meet the health guideline values in the Drinking Water Guidelines for those characteristics of water that are set out in Schedule 4;

*[Note: The characteristics of water that are listed in Schedule 4 are those that may not be substantially removed or reduced through water treatment processes used by the Authority's Customers at the Commencement Date.]*

- (b) the Authority must comply with the site specific standards for Bulk water in the Bulk Water Supply Agreement; and

*[Note: The site specific standards in the Bulk Water Supply Agreement relate only to the aesthetic characteristics of water, such as turbidity, colour, hardness and alkalinity.]*

- (c) the Authority must liaise with Customers to whom it supplies Bulk water for Water Treatment, to cooperate and where possible agree on cost-effective strategies (and the timing of their implementation) to ensure treated water consumed by humans is not harmful to human health.

### **6.3 Water supplied for other uses**

- 6.3.1 The Authority must use its best endeavours to reach agreement with Customers and other persons as to the water quality standards that are to apply to the Bulk water that the Authority supplies to those Customers, or other persons, for purposes other than Water Treatment.

*[Note: See clause 5.2.1 of this Licence.]*

- 6.3.2 The Authority must advise Customers of the potential uses for the Bulk water it supplies and of the need for Water Treatment if the water is to be used for human consumption.

### **6.4 Catchment and system management**

The Authority must comply with the Drinking Water Guidelines relating to catchment management and system management of public water supplies.

*[Note: The Drinking Water Guidelines include catchment and system management practices to minimise the risk of contamination to raw water supplies, for example, the catchment management practices required to minimise the risk of contamination by Cryptosporidium and Giardia.]*

### **6.5 Review of obligations regarding water quality**

As part of the Mid term review, the Licence Review Body must review the obligations imposed on the Authority under clause 6.2 and make recommendations as to whether those obligations should be amended and if so the nature of the amendments.

### **6.6 Water quality monitoring and reporting**

- 6.6.1 The Authority must develop and implement a water quality monitoring program (the “Monitoring Program”) that comprises:
  - (a) routine monitoring of the quality of Bulk water supplied to Customers for Water Treatment and the Authority’s compliance with clause 6.2; and
  - (b) targeted, investigative and event based monitoring of the water in the Catchment Area, to better define the occurrence of particular characteristics and contaminants in water.
- 6.6.2 The Monitoring Program must include at least the following in relation to the routine monitoring required by clause 6.6.1(a):
  - (a) monitoring against health guideline values for characteristics of water as required by clause 6.2(a);
  - (b) monitoring for the site specific standards as required by clause 6.2(b);
  - (c) monitoring for any other characteristics of water nominated by NSW Health;
  - (d) an effective system of quality assurance in the monitoring, sampling, testing and reporting processes it employs, which must be to the satisfaction of NSW Health; and
  - (e) sampling frequencies and locations that produce results which are representative of the quality of Bulk water supplied to Customers for Water Treatment.

6.6.3 The Authority must provide:

- (a) the results of the routine monitoring required by clauses 6.6.2(a), 6.6.2(b) and 6.6.2(c) to the Customers that it supplies Bulk water for Water Treatment, as soon as practicable, in order that these Customers may adjust their Water Treatment processes to manage incoming pollutants; and
- (b) the results of the routine monitoring required by clauses 6.6.2(a) and 6.6.2(c) to NSW Health, as soon as practicable.

6.6.4 The Monitoring Program must include at least the following in relation to the targeted, investigative and event based monitoring required under clause 6.6.1(b):

- (a) an effective system of quality assurance in the monitoring, sampling, testing and reporting processes, which must be to the satisfaction of NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation; and
- (b) sampling frequencies and locations that produce information to better define the occurrence and factors contributing to the presence of the characteristics in the water, which must be to the satisfaction of NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation.

6.6.5 The Authority must develop and maintain a database(s) of monitoring results for the routine, targeted, investigative and event based monitoring.

6.6.6 The nature, features and results of the Monitoring Program must be reflected in a report to be prepared by the Authority by 30 November of each year of this Licence (the “Monitoring Program Report”).

6.6.7 The Monitoring Program Report must (in addition to the information required under clause 6.6.3) also contain the following information:

- (a) a summary of the monitoring information of the Authority;
- (b) a description of water quality trends and problems identified as part of the Monitoring Program;
- (c) a summary of water quality incidents identified since the previous Monitoring Program Report and action taken to resolve, eliminate or mitigate those incidents or their effect; and
- (d) steps taken by the Authority to protect public health.

6.6.8 The Monitoring Program Report must be placed on the Authority’s website on the internet for downloading by the public free of charge and also made available at its offices for access or collection by any person, also free of charge.

6.6.9 The Licence Regulator must consider and report on the Monitoring Program and the Monitoring Program Report as part of the Annual audit.

## **6.7 Water quality planning**

### ***Risk Management Plan***

6.7.1 After completion of the first catchment audit referred to in Part 5 of the Act, the Authority must use the findings of the audit to prepare a five-year Risk Management Plan.

*[Note: Section 42(2) of the Act requires catchment audits at intervals of no more than two years.]*

6.7.2 The purpose of the Risk Management Plan is to identify and assess sources of pollution in the Catchment Area and to reduce or remove the pollution so as to improve the quality of Bulk water supplied to Customers. To achieve this purpose the Plan must:

- (a) identify and assess pollution sources in the Catchment Area, how pollutants are modified between source and water storage, and evaluate the impact of pollution on the quality of Bulk water supplied to Customers (as this information becomes available through the Authority's long term research);
- (b) identify opportunities to improve the operation of Catchment Infrastructure Works;
- (c) set out actions within the Authority's power to improve the quality of Bulk water supplied to Customers. These actions must be developed as part of the risk action plans in clause 6.7.3(a) and have clear timeframes; and
- (d) identify where the Authority needs to enter into arrangements with agencies to address those problems outside its powers.

*[Note: Ideally the Risk Management Plan should form part of a Government catchment planning process. The requirement to produce the Risk Management Plan may be satisfied by plans developed under the Regional Environmental Plan to the extent they incorporate the requirements in clauses 6.7.2 and 6.7.3.]*

6.7.3 In developing the Risk Management Plan, the Authority must:

- (a) apply Australian Standard Risk Management: AS/NZS4360:1999 to the quality of Bulk water supplied by the Authority to its Customers. In particular, the Authority must apply this Australian Standard to develop risk action plans referred to above at clause 6.7.2(c);
- (b) have regard to the catchment management principles in the Drinking Water Guidelines; and
- (c) consider the benefits and costs of different management options.

*[Note: The Australian Standard on Risk Management provides the generic framework for establishing the context, identification, analysis, evaluation, treatment, monitoring and communication of risk. As the framework in the standard is generic it can be applied to the quality of Bulk water supplied by the Authority to its Customers.]*

6.7.4 The Authority must engage in public consultation in developing the Risk Management Plan, and must specifically seek comments from NSW Health, the Environment Protection Authority and the Department of Land and Water Conservation. A draft plan must be exhibited for public comment, with finalisation by 1 January 2001.

6.7.5 On completion of future catchment audits, the Authority must review its five-year Risk Management Plan and make amendments following public consultation.

6.7.6 At other times, the Risk Management Plan may only be amended following public consultation.

6.7.7 The need for this Risk Management Plan must be reviewed at the Mid term review in light of the requirements under the Regional Environmental Plan.

6.7.8 As part of the Annual audit, the Licence Regulator is to audit the Authority's performance against the actions that the Authority is to undertake under the Risk Management Plan.

## ***Incident Management Plan***

- 6.7.9 The Authority must prepare, to the satisfaction of NSW Health, an Incident Management Plan, by 1 July 2000 which must remain in place until any new plan is developed in agreement with NSW Health. The Authority must consult with Customers to whom it supplies Bulk water for Water Treatment in relation to the development of the Incident Management Plan.
- 6.7.10 The purpose of the Incident Management Plan is to minimise the risk to human health from the Bulk water supplied by the Authority to Customers.
- 6.7.11 The Incident Management Plan must contain, or incorporate by reference, procedures and protocols for the coordinated management of water incidents including media and stakeholder liaison and any notification of public health advice received from NSW Health to Customers.
- 6.7.12 The Incident Management Plan must include a requirement for the Authority to advise Customers to whom it supplies Bulk water for Water Treatment and NSW Health, if the Bulk water it supplies may be a risk to human health.

## **6.8 Environmental water quality**

- 6.8.1 The Authority must meet the environmental water quality requirements for any discharges or water releases required under licences issued to the Authority by the EPA or the Department of Land and Water Conservation.



# Part 7

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## Catchment Management and Protection

### 7.1 Authority to Manage and Protect

- 7.1.1 The Authority must manage and protect the Catchment Area to the full extent to which it is empowered to do so.
- 7.1.2 The Authority must use its best endeavours to coordinate the collection of data on water quality in the Catchment Area, including data collected as a result of the Memoranda of understanding referred to in Part 3.3 of this Licence between the Authority and each of EPA, Director-General of NSW Health and the Water Administration Ministerial Corporation as well as data collected by other relevant persons or bodies.
- 7.1.3 The Authority must make its unpublished data in relation to river health publicly available, in accordance with Government policies about access to information. The Authority may charge for value adding and the processing and servicing of information requests.

### Plans of Management for Water Storage Catchments

### 7.2 Special Areas Strategic Plan of Management

- 7.2.1 In this clause:

***Special Areas Strategic Plan of Management** means the Special Areas Strategic Plan of Management as adopted by the Minister from time to time in accordance with section 49 of the Act.*

[Note: The Authority exhibited the Special Areas Strategic Plan of Management and supporting background document in September 1999.]

- 7.2.2 The Authority must give effect to the Special Areas Strategic Plan of Management. In doing so, the Authority must consult, and where possible, collaborate with the National Parks and Wildlife Service.
- 7.2.3 By no later than 1 September each year, the Authority must report to the Licence Regulator on its compliance with the Special Areas Strategic Plan of Management for the previous twelve months, to enable the Licence Regulator to consider and

report on the matter as part of the Annual audit.

- 7.2.4 The Authority must review the Special Areas Strategic Plan of Management with National Parks and Wildlife Service every five years.
- 7.2.5 Where the Authority or National Parks and Wildlife Service considers that an amendment, alteration, or substitution of the Special Areas Strategic Plan of Management may be warranted, the Authority must bring the matter to the Minister's attention and request that the Minister consider amending, altering or substituting the Special Areas Strategic Plan of Management in accordance with section 49 of the Act.

*[Note: Section 49(7) and (8) of the Act provide that the relevant Ministers may amend, alter or cancel the Special Areas Strategic Plan of Management, or substitute a new plan, at any time. Before so doing, the relevant Ministers may consult with any person or body that the Ministers think fit.]*

*Section 49(2) to (4) apply to plans of management as well as amendments and alterations to plans of management. In relation to amendments, the joint sponsors must give notice of any proposed amendment or alteration in a newspaper circulating throughout NSW specifying the address of the place of which copies of the plan of management may be inspected, and any proposed amendments, and the address to which representations may be forwarded. Any person may, within 30 days or such longer period as may be specified in the notice, make representations to the joint sponsors concerning the proposed amendment, alteration or substitute plans. The joint sponsors must, on the expiration of that period and before submitting the amendments, alterations or substitution to the relevant Ministers, consider any representations made under that section.]*

### **7.3 Wingecarribee Swamp Plan of Management**

- 7.3.1 In this clause:

**Wingecarribee Swamp Plan of Management** means the plan of management for the area known as Wingecarribee Swamp, developed by Sydney Water Corporation and National Parks and Wildlife Service.

- 7.3.2 The Authority must review the current Wingecarribee Swamp Plan of Management, and must use its best endeavours to develop a new or amended Plan with National Parks and Wildlife Service by 1 December 2000.
- 7.3.3 The new or amended Wingecarribee Swamp Plan of Management must consider rehabilitation and restoration of the swamp. The objectives and strategies in the new or amended Wingecarribee Swamp Plan of Management must be consistent with objectives and strategies in the Special Areas Strategic Plan of Management referred to in clause 7.2.
- 7.3.4 The Authority must give effect to the new or amended Wingecarribee Swamp Plan of Management and where reasonably possible, in conjunction with other appropriate persons.
- 7.3.5 By no later than 1 September each year, the Authority must report to the Licence Regulator on its compliance with the Wingecarribee Swamp Plan of Management for the previous twelve months, to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 7.3.6 The Authority must review the new or amended Wingecarribee Swamp Plan of Management in consultation with National Parks and Wildlife every five years for the purpose of advising the Minister whether any amendments are required to the Plan.

- 7.3.7 After such review, where the Authority or National Parks and Wildlife Service considers that an amendment, alteration, or substitution of the Wingecarribee Swamp Plan of Management may be warranted, the Authority must bring the matter to the Minister's attention and request that the Minister consider amending, altering or substituting the Wingecarribee Plan of Management in accordance with section 49 of the Act.

[Note: See the Note under clause 7.2.5.]

## ***Catchment Planning Instruments***

### **7.4 Regional Environmental Plan**

- 7.4.1 The Authority must comply with any obligations on it under the Regional Environmental Plan consistent with its functions under the Act and this Licence.
- 7.4.2 The Authority must promote implementation and awareness of the Regional Environmental Plan including education of public authorities and other relevant parties in the Catchment Area.
- 7.4.3 The Licence Regulator must consider and report on the matters in clause 7.4 as part of the Annual audit.

### **7.5 State Environmental Planning Policy**

- 7.5.1 The Authority must comply with State Environmental Planning Policy 58, (or if that Policy is supplemented or replaced, that Policy as supplemented or replaced) consistent with its functions under the Act.
- 7.5.2 The Licence Regulator must consider and report on the matters in clause 7.5 as part of the Annual audit.

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## Management of Catchment Infrastructure Works and Demand Management

### 8.1 Management of Catchment Infrastructure Works

- 8.1.1 The Authority must manage and operate the Catchment Infrastructure Works to minimise risk to human health from the Bulk water it supplies.
- 8.1.2 The Authority must ensure that Catchment Infrastructure Works are designed, operated and managed to provide Sydney Water Corporation with a long-term standard of services which accords with the performance criteria set out in Schedule 2.
- 8.1.3 The performance criteria set out in Schedule 2 are to be reviewed as part of the Mid term review.

### 8.2 Dam Safety

The Authority must comply with the guidelines of the Australian National Committee on Large Dams and the NSW Dams Safety Committee.

### 8.3 Demand Management

- 8.3.1 The Authority must manage demand management consistent with the requirements in the Water management licence issued to the Authority under Part 9 of the Water Act 1912.
- 8.3.2 To the extent which the Authority is able, it must manage water conservation consistent with the demand management requirements in Sydney Water Corporation's operating licence.
- 8.3.3 In considering any augmentation of the Catchment Infrastructure Works, the Authority must consider as a priority, whether there exists any additional scope for cost-effective demand management strategies by Sydney Water Corporation.

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## The Environment

### 9.1 Environment Plan

- 9.1.1 The Authority must prepare a draft five-year Environment Plan by 31 December 2000, and a final five-year Environment Plan by 30 June 2001. After that, the Authority must produce further five-year Environment Plans every five years.
- 9.1.2 The Authority must engage in public consultation in developing both the draft and final Environment Plan referred to in clause 9.1.1. The final Environment Plan must be submitted to the Minister for approval.
- 9.1.3 The Environment Plan must:
- (a) contain details of the Authority's strategies relating to the Catchment Area and the Catchment Infrastructure Works as well as the environmental aspects of its other activities such as heritage;
  - (b) comply with principles of ecologically sustainable development; and
  - (c) be recognised in the Authority's business plans.

*[Note: One of the principal objectives of the Authority in the Act is 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.]*

- 9.1.4 The Environment Plan must set targets and timetables for compliance by the Authority with those targets over the term of the Environment Plan. These targets must utilise the environmental and ESD indicators in clause 9.2.
- 9.1.5 The Environment Plan must:
- (a) include a policy of the management of energy used within the Authority for the performance of its functions in accordance with this Licence;
  - (b) apply the following targets in accordance with the NSW Government Energy Management Policy for energy consumption of buildings:
    - (i) 15% reduction from the 1995 level by 2001;
    - (ii) 25% reduction from the 1995 level by 2005; and
    - (iii) any subsequent targets set by Energy Management Policy; and

(c) include environmental and ESD indicators.

9.1.6 The Environment Plan must be posted on the Authority's website on the internet for downloading free of charge, made available at its premises for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.

9.1.7 Amendments may only be made to the Environment Plan following public consultation and the approval of the Minister.

## **9.2 Environmental and ESD indicators**

9.2.1 The Authority must prepare:

(a) a draft list of environmental indicators by 1 July 2000; and

(b) a draft list of ESD indicators by 1 October 2000.

9.2.2 The environmental indicators must allow the Authority to monitor the direct impact of its activities on the environment, whether such activities are carried out by or on behalf of the Authority.

9.2.3 The ESD indicators must indicate the degree to which the Authority's activities comply with the principles of ecologically sustainable development.

9.2.4 The Authority must present final lists of the environmental and ESD indicators to the Minister by 1 January 2001 for the Minister's approval, and if approved, for publication in the NSW Government Gazette.

### ***Environmental indicators***

9.2.5 The draft list of environmental indicators must:

(a) include any environmental indicators, from the current list of indicators developed by Sydney Water Corporation, that are relevant to the Authority's functions;

(b) address the ecological health of the Catchment Area (with particular reference to the vegetation cover, riparian zones and water quality) and the impact of the Authority's activities (including polluting activities) on the Catchment Area, in accordance with section 26(1)(c) of the Act;

(c) have regard to physical, biological, chemical and ecological factors, as appropriate, and may include: nutrients; toxic chemicals including heavy metals and organochlorines and flora and fauna species diversity.

9.2.6 The Authority must ensure that its environmental indicators are consistent with any other environmental indicators being prepared for the Catchment Area, for example, indicators to evaluate the outcomes of the Special Areas Strategic Plan of Management.

9.2.7 In preparing the draft list of indicators, the Authority must give consideration to any environmental indicators recommended by the person nominated to conduct catchment audits under s.42 of the Act.

9.2.8 The draft list of environmental indicators developed by the Authority must undergo public consultation where the public has at least 40 days to provide its comments. Specific comments must also be invited from EPA, National Parks and Wildlife Service, Department of Land and Water Conservation, NSW Fisheries, NSW Health, the person nominated to conduct catchment audits under s.42 of the Act, and peak environment non-government organisations.

- 9.2.9 The Authority must commence monitoring and compiling data on the environmental indicators in clause 9.2.4 from 1 March 2001.
- 9.2.10 The Authority must continue monitoring and compiling data from the current list of environmental indicators developed by Sydney Water Corporation, that are relevant to the Authority's functions, until such time as the Authority commences monitoring and compiling data under clause 9.2.9.
- 9.2.11 The environmental indicators developed under clause 9.2.4 are to be reviewed as part of the End of term review.

### **ESD indicators**

- 9.2.12 The draft list of ESD indicators must have regard to:
- (a) corporate management (including corporate policy and planning, and corporate asset management);
  - (b) management of the Catchment Infrastructure Works; and
  - (c) the planning, design and construction of:
    - (i) new Catchment Infrastructure Works;
    - (ii) the upgrading of existing Catchment Infrastructure Works; and
    - (iii) depots.
- 9.2.13 The draft list of ESD indicators developed by the Authority must undergo public consultation where the public has at least 40 days to provide its comments. Specific comments must also be invited from EPA, National Parks and Wildlife Service, Department of Land and Water Conservation, NSW Fisheries, NSW Health, SEDA, the person nominated to conduct catchment audits under s.42 of the Act, and peak environment non-government organisations.
- 9.2.14 The Authority must commence monitoring and compiling data on the ESD indicators from 1 March 2001.
- 9.2.15 The ESD indicators developed under clause 9.2.4 are to be reviewed as part of the End of term review.

### **9.3 Reporting**

- 9.3.1 The Authority must report annually on the Environment Plan to enable the Licence Regulator to consider and report on the matter as part of the Annual audit.
- 9.3.2 The report must detail the Authority's progress in meeting the Environment Plan. In particular, how the Authority:
- (a) has complied with the targets and timetables in clause 9.1.4; and
  - (b) has performed in relation to the environmental and ESD indicators compiled under clause 9.2.4 for the previous twelve months.
- 9.3.3 The report in clause 9.3.2(b) on the environmental and ESD indicators must provide information which enables a year to year comparison in relation to the Authority's performance in this area. In particular, the Authority is to use the indicators with historical yearly values over at least the previous ten years where comparable data permits such a compilation.
- 9.3.4 Within one month of its completion, the report must be posted on the Authority's website on the internet for downloading free of charge, made available at its premises

for access or collection by any member of the public and lodged with environmental centres and public libraries in the Area of Operations, in each case also free of charge.

## **9.4 Environmental flows**

9.4.1 The Authority must produce a draft report on trial Environmental flows within one month from the Commencement Date. The Authority must produce a final report on trial Environmental flows within six months from the Commencement Date. The final report must be placed on the Authority's website on the internet for downloading by the public, free of charge and made available at its offices for access or collection by any person, also free of charge.

9.4.2 The report is to include information from the environmental impact statement process regarding Environmental flows for the Hawkesbury-Nepean, Woronora and Shoalhaven rivers and any other information on any other trial Environmental flows in respect of those rivers.

*[Note: The Authority is involved in trial releases of water from dams on the Hawkesbury-Nepean River and the monitoring and assessing of the effects of these releases. The results from the trial water release program are due in early 2000.]*

9.4.3 An independent expert panel on Environmental flows may be appointed by the Minister for the Environment in consultation with among other persons, the:

- (a) Minister responsible for the Department of Land and Water Conservation; and
- (b) Healthy Rivers Commission.

9.4.4 The independent panel may include experts from relevant fields including, but not limited to aquatic ecology, resource economics, socio-economic assessment, geomorphology and hydrology. The panel may be convened by an independent chair appointed by the Minister for the Environment in consultation with the Minister for Land and Water Conservation. Executive support for the independent expert panel is to be provided by the Department of Land and Water Conservation.

9.4.5 The Minister for the Environment may continue the independent expert panel until such time as Environmental flows are incorporated into the Water management licence issued to the Authority under the *Water Act 1912*, or until such other time that the Minister determines.

9.4.6 The Minister for the Environment may require that the independent expert panel on Environmental flows review the trial monitoring data and the report in clause 9.4.2 and recommend on future trial Environmental flows to the Hawkesbury-Nepean River Management Forum and any Water Management Committee conducting flow trials in the Catchment Area.

9.4.7 If requested by the Minister for the Environment, the independent expert panel must include a socio-economic impact assessment of its environmental flow options in any report.

9.4.8 The Authority must cooperate with and provide reasonable assistance to the independent expert panel to enable it to perform the tasks assigned to it.

9.4.9 Until such time as the Authority is issued a Water management licence, the Authority must:

- (a) operate its Water Storages with the aim of ensuring the flow for riparian purposes of 50 megalitres per day over Penrith Weir;



- (b) release sufficient water from the Tallowa Dam storage to enable the Shoalhaven City Council to meet its actual requirements for water at Burrier, or the amount that would be available if Tallowa Dam did not exist, whichever is the lesser;
- (c) release five thirds (5/3) of the inflow to Wildes Meadow Creek from the Fitzroy Falls Reservoir; and
- (d) release one megalitre per day from the Wingecarribee Reservoir to the Wingecarribee River.

**9.4.10 The Authority must implement any Environmental flow requirements in the Water management licence issued to the Authority under Part 9 of the *Water Act 1912*.**

*[Note: The recommendations of the independent expert panel will be considered by the Hawkesbury Nepean River Management Forum and any Water management committees that are responsible for conducting environmental flow trials in the Catchment area.]*

*Environmental flow requirements are implemented by their incorporation into the Authority's Water management licence, which is issued by the Water Administration Ministerial Corporation under the Water Act 1912. The Minister for Land and Water Conservation will seek the views of the Minister for the Environment prior to the Water Administration Ministerial Corporation issuing the Water management licence.]*

# Part 10

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## Annual Audit of this Licence

### 10.1 Commission of audits

10.1.1 The Licence Regulator must initiate an operational audit of the Authority as soon as practicable after 30 June each year covering the preceding 12 months, as required by this Part (the “Annual audit”).

*[Note: The Licence Regulator is to arrange for the conduct of the Annual audit covering the year to 30 June 2000.]*

10.1.2 The Annual audit must be conducted by the Licence Regulator or by a person, other than the Authority, that the Licence Regulator considers is suitably qualified to perform the Annual audit.

10.1.3 As part of the Annual audit, the Licence Regulator must invite members of the public to make submissions to it. The Licence Regulator may also undertake any other public consultation it considers appropriate.

### 10.2 What the audit is to report on

10.2.1 The Licence Regulator or the person undertaking the Annual audit must investigate and prepare a report on the following:

- (a) the Authority’s performance of its obligations under Memoranda of Understanding, with each of the Water Administration Ministerial Corporation, NSW Health and EPA;
- (b) the effectiveness of the Authority’s complaint resolution scheme under clause 5.3;
- (c) compliance by the Authority with its obligations under clause 5.4 on Consultative Committees;
- (d) compliance by the Authority with its obligations under Part 6 of this Licence; including the preparation of the Risk Management Plan and the Incident Management Plan;
- (e) compliance by the Authority with its obligations under Part 7, including obligations in clauses 7.2 and 7.3 relating to plans of management for water storage catchments;

- (f) compliance by the Authority with the provisions of any Regional Environmental Plan, and of SEPP 58 “Protecting Sydney’s Water Supply” under clauses 7.4 and 7.5;
- (g) compliance by other public authorities with the provisions of any Regional Environmental Plan;
- (h) compliance by the Authority with its obligations under Part 8;
- (i) compliance by the Authority with the Environment Plan under clause 9.1 and reporting obligations under clause 9.3;
- (j) the Authority’s performance in relation to the environmental indicators and ESD indicators compiled under clause 9.2;
- (k) compliance by the Authority with obligations in relation to Environmental flows under clause 9.4;
- (l) any other matter required by this Licence or the Act to be assessed or considered as part of the Annual audit.

10.2.2 Despite clause 10.2.1, neither the Licence Regulator nor the persons undertaking the annual audit may investigate a matter under clause 10.2.1 if the investigation of that matter is ordinarily within the regulatory activities of the EPA, NSW Health or the Department of Land and Water Conservation and the relevant agency has undertaken an investigation of the matter. However, the Licence Regulator may, as part of the Annual audit:

- (a) report on the Authority’s implementation of any Memorandum of Understanding referred to in clause 3.3.1;
- (b) satisfy the requirement in clause 10.2.1 to investigate and report on a matter under clause 10.2.1 by including in its report consideration of the findings, the situation at the end of the licence audit period and the Authority’s response, of any investigation of the matter by the EPA, NSW Health or the Department of Land and Water Conservation; and
- (c) request the Authority to provide information relating to an investigation of a matter by the EPA, NSW Health or the Department of Land and Water Conservation which is ordinarily within their regulatory activities, in accordance with clause 10.5.

10.2.3 The Licence Regulator must ensure that, subject to clause 10.2.2, the report of the Annual audit addresses the matters in clause 10.2.1 and advises the Minister on the following matters:

- (a) any failure of the Authority to meet operational standards or any other requirements imposed on the Authority under this Licence;
- (b) areas in which the Authority’s performance under this Licence may be improved;
- (c) any changes to the Licence that the Licence Regulator considers necessary;
- (d) any penalties or remedial action required as a result of the Authority’s performance under the Licence;
- (e) whether the Minister should recommend that the Authority’s Licence be cancelled by the Governor under section 30 of the Act for reasons identified in the Annual audit report; and

- (f) any other matter relating to the Annual audit or the Licence Regulator's functions that it considers appropriate.

### **10.3 Reporting of audit**

- 10.3.1 The Licence Regulator must ensure that the report of the Annual audit is presented to the Minister within 1 month after its receipt of the audit under section 32 of the Act.
- 10.3.2 If the Annual audit report has identified areas of non-compliance with this Licence, in addition to whatever other action is taken or required to be taken, the Authority must comply with any requirement that may be imposed on the Authority by the Minister to do the following:
  - (a) advertise publicly and notify Customers of the areas in which its performance has not complied;
  - (b) provide reasons for the non-compliance; and
  - (c) identify the measures that will be taken by the Authority to address the non-compliance.

### **10.4 Additional audits**

- 10.4.1 The Licence Regulator must initiate additional audits of the Authority if required by the Minister.
- 10.4.2 An additional audit may address one or more of the matters in clause 10.2.1 or any other matter required by the Minister.
- 10.4.3 The provisions of this Part applying to the Annual audit will apply equally to additional audits under clause 10.4.1 (all necessary changes having been made), to the extent that those provisions are relevant.

### **10.5 Provision of Information**

- 10.5.1 The Authority must provide the Licence Regulator and the person appointed by the Licence Regulator under clause 10.1.2 with all information within its possession or under its control (subject to clause 10.5.5) necessary to the conduct of the Annual audit or an additional audit, including whatever information is requested by the Licence Regulator or the person appointed by the Licence Regulator.
- 10.5.2 The information sought under clause 10.5.1 must be made available within a reasonable time of it being requested.
- 10.5.3 For the purposes of the audit, the Authority must, within a reasonable time of being required by the Licence Regulator or a person appointed by the Licence Regulator, permit the Licence Regulator or the person appointed:
  - (a) to have access to any works, premises or offices occupied by the Authority;
  - (b) to carry out inspections, measurements and tests on, or in relation to, any such works, premises or offices;
  - (c) to take on to or into any such premises, works or offices any other persons or equipment as necessary for the purposes of performing the audit;
  - (d) to inspect and make copies of, and take extracts from, any books and records of the Authority that are maintained in relation to the performance of the Authority's obligations in accordance with this Licence; and

- (e) to discuss matters relevant to the audit with the Authority's employees.
- 10.5.4 If required by the Licence Regulator for the purpose of an audit, the Authority must provide the Licence Regulator with information of any person who performs one or more functions on behalf of the Authority (the third party) under clause 10.5.6, to the extent that the agreement between the Authority and that third party (read together with clause 10.5.5) so permits.
- 10.5.5 The information to be provided by the Authority under clauses 10.5.1, 10.5.3 and 10.5.4 will include information over which the Authority or a third party claims confidentiality or privilege. The Licence Regulator, or the person appointed by the Licence Regulator, must enter into reasonable arrangements with the Authority or such third party to ensure that:
- (a) the confidential information is kept confidential; and
  - (b) the privilege attaching to the information is not waived or prejudiced, or not waived or prejudiced without the prior consent of the person who has the benefit of that privilege.
- 10.5.6 If the Authority is lawfully entitled to have one or more of its functions performed by another person and the Authority chooses to have one or more of its functions so performed by another person (the third party), the Authority must use its best endeavours to ensure that:
- (a) it is able to obtain information from the third party for provision to the Licence Regulator under clause 10.5.4; and
  - (b) the third party does the things specified in this Part that extend to the Authority as if that third party were the Authority.

# Part 11

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## Pricing

### 11.1 Sydney Water Corporation

The Authority must set the level of fees, charges, and other amounts payable by Sydney Water Corporation for the Authority's provision of water subject to:

- (a) the Act and any other applicable law;
- (b) this Licence;
- (c) any pricing arrangements in the Bulk Water Supply Agreement; and
- (d) any maximum prices and methodologies for the Authority's supply of water determined from time to time by IPART.

### 11.2 Other Customers

The Authority must use its best endeavours to reach agreement with its Customers (other than Sydney Water Corporation, because of the application of clause 11.1), as to any pricing arrangements that are to apply in relation to water that the Authority supplies to those Customers. Any such pricing arrangements are subject to:

- (a) the Act and any other applicable law;
- (b) this Licence; and
- (c) any maximum prices and methodologies for the Authority's supply of water determined from time to time by IPART.

# Part 12

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## Liability Issues

### **12.1 Performance of Functions by Person other than Authority**

If the Authority is lawfully entitled to have some of its functions performed by another person, the Authority continues to be liable for the performance of those functions by that person, as if those functions were performed by the Authority itself, insofar as the performance of those functions is the subject of this Licence.

### **12.2 Damage And Compensation to Persons**

The Authority is required by section 58 of the Act to do as little damage as practicable in exercising its functions under Part 6 of the Act, and in circumstances specified in that provision, to compensate persons who suffer damage by the exercise of those functions.

# Part 13

## **Notices**

Any notice or other communication given under this Licence is to be made in writing addressed to the intended recipient at the address shown in Schedule 3, or the last address notified by the recipient.





## Area of Operations

The Area of Operations of the Sydney Catchment Authority is the inner catchment area and the outer catchment area, as declared by the Governor in accordance with section 41 of the Act.

*[Note: On 30 June 1999, the Governor declared that:*

*The inner catchment area of the Sydney Catchment Authority is:*

- (i) The area of land within all the special areas of the Sydney Catchment Authority except the area of land within the Richmond, Windsor, Penrith, O'Hares Creek and Devines Weir special areas; and*
- (ii) the hydrological catchment of the Prospect Reservoir.*

*The outer catchment area of the Sydney Catchment Authority is the area of land within the hydrological catchments of:*

- (i) the Warragamba River and its tributaries which drain to Lake Burragorang;*
- (ii) the Shoalhaven River and its tributaries which drain to Lake Yarrunga; and*
- (iii) Greaves, Whipcord, Woodford and Cascades Creeks;*

*but excluding the inner catchment area described above.*

(NSW Government Gazette No. 76, p. 4649)

## Special Area

*The term Special Area first appeared in the Water Board Act 1987. That Act defined a "Special Area" as land declared under section 21 to be a Special Area.*

*Section 21(2) of the Water Board Act 1987 provided that "A Proclamation" of a catchment area in force immediately before the commencement of this Act shall be deemed to be an order in force under this section declaring the area to be a "Special Area".*

*Prior to the enactment of the Water Board Act 1987, the Metropolitan Water Sewerage and Drainage Act 1924 provided a mechanism under section 55 and section 56A for the establishment of inner catchments and outer catchments respectively. Catchment areas, following the enactment of the*

*Water Board Act 1987 became known as Special Areas. Catchment areas proclaimed under the Metropolitan Water Sewerage and Drainage Board Act were:*

- *Warragamba (Inner and Outer Catchments);*
- *Metropolitan (Cataract, Cordeaux, Avon and Nepean storages);*
- *Woronora;*
- *O'Hares Creek;*
- *Shoalhaven;*
- *Wingecarribee;*
- *Fitzroy Falls;*
- *Devines Weir;*
- *Penrith;*
- *Richmond; and*
- *Windsor.*

*It is understood only three Special Areas have been proclaimed under the Water Board Act 1987. These Special Areas were:*

- *Blackheath;*
- *Katoomba; and*
- *Woodford Special Areas.]*

## **Catchment Infrastructure Works performance criteria**

- (a) Reliability is to be not less than 97%, and is defined as the percentage of months, on average, that the Authority will meet in full Sydney Water Corporation's Forecast Average Annual Demand requirements referred to in paragraph (f) below. This means it is estimated that, on average, restrictions will not need to be applied more often than 30 months in 1,000 months. ("Reliability")
- (b) Robustness is to be not less than 90%, and is defined as the percentage of years, on average, that the Authority will not require a reduction in Sydney Water Corporation's Forecast Average Annual Demand for Bulk Raw Water referred to in paragraph (f) below. This means it is estimated that, on average, not more than 10 years in 100 years will be affected by restrictions. For the purposes of this clause, a "year" is each period of 12 months commencing on 1 July and a year will have been affected by restrictions if in any day of that year a restriction has been applied. ("Robustness")
- (c) Security is to be not less than 5%, and is defined as the level of the Authority's operating storage below which actual storage is not to fall, on average, more often than 0.001% of the time. This means it is estimated that, on average, the level of operating storage will not fall below 5% more often than one month in 100,000 months. ("Security")  
(Reliability, Robustness and Security together comprise the "System Criteria")
- (d) During drought the System Criteria assume that, contingent upon the Authority giving Sydney Water Corporation reasonable prior written notice of the need to do so, Sydney Water Corporation will reduce its demand for water from the Authority in accordance with the following restriction levels:-
  - Level I. at least a 7% demand reduction, not more than 3% of time;
  - Level II. at least a 12% demand reduction, not more than 1% of time;
  - Level III. at least a 20% demand reduction, not more than 0.5% of time;
  - Level IV. at least a 30% demand reduction, not more than 0.3% of time;
  - Level V. at least a 50% demand reduction, not more than 0.05% of time.("Drought Restrictions")

- (e) Subject to the Authority giving Sydney Water Corporation the reasonable prior written notice referred to above in paragraph (d) the System Criteria may vary to the extent that the variation is caused or contributed to by Sydney Water Corporation not reducing its demands for water from the Authority, during a period of drought, in accordance with the above Drought Restrictions.
- (f) Based on population projections and projected trends in per capita consumption, Sydney Water Corporation’s current Forecast Average Annual Demand is estimated to be:-

	Year				
	2000	2001	2002	2003	2004
Forecast Average Annual Demand ('000 ML/yr)	595	588	586	584	583

# Schedule 3

## **Address for Notices**

### **Sydney Catchment Authority**

Chief Executive  
Level 2, 311 High Street,  
Penrith NSW 2750

### **Licence Regulator**

The Licence Regulator  
Level 6, 29-57 Christie Street,  
St Leonards NSW 2065

# Schedule 4

## Health related water quality standards

### Pesticides

Aldrin	DDT	Lindane
Amitrole	Dieldrin	Molinate
Atrazine	Diquat	Paraquat
Chlordane	Diuron	Picloram
Chlorpyrifos	Endosulfan	Propiconazole
Clopyralid	Heptachlor	Temephos
2,4-D	Hexazinone	Triclopyr

### Chemical

Arsenic	Iodide	Selenium
Barium	Mercury	Silver
Boron	Molybdenum	

### Radiological

Gross alpha	Gross beta
-------------	------------

[Note: This list has been derived from the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 (Drinking Water Guidelines). This list represents characteristics that the Drinking Water Guidelines indicate can be monitored in raw water, but are representative of water quality at the consumer's tap. They are characteristics that may not be substantially removed or reduced through water treatment processes used by the Authority's Customers at the Commencement Date.

The pesticides listed are those which the Drinking Water Guidelines indicate have either been detected on occasions in Australian drinking water, or their likely use would indicate that they may be occasionally detected.

Other pesticides identified as being used in the Catchment area may also be required to be added to the routine monitoring program by NSW Health under clause 6.6.2(c).

The radiological quality of drinking water should be assessed by screening for gross alpha and gross beta activity concentrations. If either of these activity concentrations is exceeded, specific radionuclides should be identified and their activity concentrations determined in accordance with the Drinking Water Guidelines.]



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## Appendix C

# Ministerial requirements





NEW SOUTH WALES

## MINISTER FOR THE ENVIRONMENT

Mr John Whitehouse  
Chairman  
Sydney Catchment Authority  
PO Box 323  
PENRITH BUSINESS CENTRE NSW 2751

8 MAR 2005

Dear Mr Whitehouse

I am writing to you in relation to the Operational Audit of Sydney Catchment Authority (SCA) for the period 1 July 2003 to 30 June 2004. As the Minister responsible for overseeing the Sydney Catchment Authority's performance against the requirements of the Operating Licence, I have considered the advice provided by the Independent Pricing and Regulatory Tribunal on the audit findings.

I will table the audit report and a copy of the Tribunal's letter in Parliament.

I am pleased that the independent auditor found that the SCA achieved high or full compliance with most of the requirements of the Operating Licence. I also note the auditor's comments that:

*The Sydney Catchment Authority (SCA) has continued to demonstrate a strong commitment to its charter to protect water quality in the catchment areas that provide Sydney, the Blue Mountains and the Illawarra with bulk water. The SCA's staff is developing a culture of continual improvement and this is evident across the organisation.*

On the basis of the audit report and advice from the Tribunal, I have decided that no penalties will be imposed on the SCA.

However, I note that the auditor and Tribunal have made recommendations to further strengthen the SCA's performance against its core obligations. These recommendations are in areas where the SCA has consistently shown a high level of performance. As such, these recommendations can be characterised as 'opportunities for improvement' to further build upon the SCA's already strong performance.

**Bulk water quality**

The auditor has commented on the SCA's continuing sound performance with respect to its bulk water quality obligations, with the SCA having fully complied with all health related water quality obligations.

TOTAL P.03

The auditor assessed the draft *Water Quality Risk Management Framework* as being impressive. The draft framework identifies potential hazard events which could arise from pollution sources within the catchments, or incidents such as floods or bush fires.

An important element in the multi-barrier approach to ensuring the quality of Sydney's water supplies lies in the ability of Sydney's water treatment plants to accept and adequately treat the full range of water qualities that can be expected. Therefore, it will be important for SCA to be able to predict the extremes of water quality that may arise under various risk scenarios, so that Sydney Water and SCA's other customers can plan appropriate treatment options. As a means of further improving the Authority's contingency planning, the auditors and Tribunal have recommended that the SCA should:

*Quantify, as far as possible, the variations in bulk water quality that may occur under the high risk situations identified in the Risk Management Framework. Confirm that SCA's customers are aware of these variations so that they can plan accordingly, to ensure that the treated water that they supply in turn to their customers, will comply with the required objectives.*

I support this recommendation and require the SCA to implement it as soon as possible.

#### **Catchment management and protection**

The auditors have commented that there has been a decline in the transparency of reporting for the SCA's catchment management activities, particularly in relation to the Special Areas and Wingecarribee Plans of Management.

I note that the SCA disagrees with some of the Audit findings in relation to this issue. I also appreciate the difficulties faced by the SCA in publicly reporting on the effectiveness of its catchment management activities, given the size of the hydrological catchment and the complex inter-relationship between water quality and the SCA's on ground management activities.

The Tribunal has recommended that the nature and effectiveness of the SCA's obligations should be considered further in the context of both the forthcoming end of term licence review and the review of the *Sydney Water Catchment Management Act 1998*.

I believe this is an appropriate way forward and I look forward to the findings arising from these reviews.

Please pass on my appreciation to your staff for their efforts over the past year.

Yours sincerely

  
Bob Debus



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## Appendix D

# Comments from Government authorities





Department of  
**Infrastructure, Planning and Natural Resources**

Contact: Salim Vhora  
Phone: (02) 4722 1116  
Fax: (02) 4722 6463  
Email: [Salim.Vhora@dipnr.nsw.gov.au](mailto:Salim.Vhora@dipnr.nsw.gov.au)

Sue Trahair  
Lead Auditor - 2004/05 SCA Operational Audit  
GHD Pty Ltd  
Locked Bag 2727  
ST LEONARDS NSW 1590

Our ref: DGC 05/1677 (SCAL 56/04)  
Your ref: 21/13989/2004\_05 DIPNR  
File: Letter to GHD re 2004\_05 SCa  
op lic audit DIPNR comments.doc

DGC 05/1677

29 August 2005

Dear Ms Trahair

**Subject: SCA Operational Licence Audit 2004/05 - DIPNR Comments**

I refer to your letter of 9 August 2005 requesting comments from the Department of Infrastructure, Planning and Natural Resources (DIPNR) in relation to Sydney Catchment Authority's (SCA) auditable obligations.

DIPNR's comments are provided in the report accompanying this letter (Tag A).

Please contact Mr Salim Vhora of the Department's Penrith Office on (02) 4722 1116 to for any further enquiries with regard to the Department's submission.

Yours sincerely

Marion Bennett  
Director  
Metropolitan Water Directorate

## **SCA Operating Licence Audit 2004-2005 – DIPNR Comments**

### Clauses 3.3.1 and 3.3.2

**SCA must maintain a MOU with the Water Administration Ministerial Corporation for the term of the Operating Licence; and**

**The MOU is to form the basis for a cooperative relationship between the parties with the view to furthering the objectives of the Operating Licence and the Sydney Water Catchment Management Act 1998.**

### **Compliance with requirements**

This is a redundant licence condition, which was complied with during 2000/01.

### **Progress to meeting requirements**

SCA is required to provide relevant data/information under provisions of its Water Management Licence. During the last year the SCA has worked cooperatively with DIPNR to achieve the successful transfer of information to DIPNR in a timely manner.

Active consultation with SCA has continued through other whole-of-Government forum's such as Water CEO's and in the development of the Greater Metropolitan Water Sharing Plan. Regular meetings of the Strategic Liaison Group to discuss issues related to the water management licence between DIPNR and SCA have also occurred.

### **Adequacy of actions being taken**

Satisfactory

### **Adequacy of the requirements of the Licence and MoU**

Adequate

---

Clauses 6.6.1 (a) and (b) and 6.6.4 (a) and (b)

**SCA to design (sampling frequency and locations) the monitoring program to the satisfaction of the Department; and**

**SCA to include an effective system of quality assurance in the monitoring, sampling, testing, data management and reporting processes to the satisfaction of the Department.**

The SCA is currently operating under the Annual Water Quality Monitoring Program 2002-2004, which has been extended until October 2005. DIPNR has recently received a draft copy of the October 2005 – December 2009 for comment.

**Compliance with requirements**

Complied with the requirement to develop and implement a water quality monitoring program, although the Operating Licence requirements should also reflect the ongoing assessment of the reports produced by the monitoring program. The department intends to provide comments on the proposed Annual Water Quality Monitoring Program 2005-2009.

**Progress to meeting requirements**

Satisfactory

**Adequacy of actions being taken**

Adequate

**Adequacy of the requirements of the Licence and MoU**

Inadequate. This is a one-off licence condition only. There is no requirement for ongoing involvement of this and other departments to verify proper implementation of the monitoring program through assessment of the SCA's Annual Monitoring Program.

---

## Clause 6.8

**SCA must meet the environmental water quality requirements for any discharges or water releases required under the Water Management Licence.**

The Water Management Licence issued to the Authority by the Water Administration Ministerial Corporation does not identify specific water quality requirements. However, Clause S6:1(1) of the Water Management Licence does require the Authority to provide to DIPNR all water quality monitoring data as detailed within the "Sydney Catchment Authority Water Quality Monitoring Program July 2002 to December 2004", or any other subsequent monitoring programs developed in accordance with the requirements of its Operating Licence.

### **Compliance with requirements**

Complied

### **Progress to meeting requirements**

Satisfactory

### **Adequacy of actions being taken**

Adequate

### **Adequacy of the requirements of the licence and MoU**

Adequate – DIPNR will consider inclusion of water quality requirements for the environmental flow purposes into Water Management Licence at the time of converting existing licence into access licence and approval under the Water Management Act 2000, following commencement of the Greater Metropolitan Water Sharing Plan.

---

## Clause 7.1.1 & 7.1.2

**Catchment Management and Protection – SCA must manage and protect the Catchment Area to the full extent to which it is empowered to do so; and**

**SCA must use its best endeavours to coordinate the collection of data on water quality in the Catchment Area with other Govt agencies.**

*Note - The Catchment Protection Scheme aims to contribute to the maintenance and improvement of the quality of waters yielded from the water storage catchments of the Sydney, Illawarra and Blue Mountains regions. The Scheme is now a result of a Partnership Agreement between the Sydney Catchment Authority (SCA), the Hawkesbury Nepean Catchment Management Authority (HNCMA) and landholders. DIPNR has no further involvement in this program and therefore compliance with the clause can't be assessed by DIPNR.*

### **Compliance with requirements**

N/A

### **Progress to meeting requirements**

N/A

---

### **Adequacy of actions being taken**

N/A

### **Adequacy of the requirements of the licence and MoU**

N/A

---



### Clause 8.3

**The SCA must manage demand management consistent with the requirement in the Water Management Licence (WML) issued under Part 9 of the Water Act 1912.**

#### **Compliance with requirements**

This question is not applicable under the current regulatory arrangements as the Water Management Licence for the SCA does not specifically address demand management. Demand management is presently regulated via the Operating Licence issued to Sydney Water Corporation.

#### **Progress to meeting requirements**

N/A

#### **Adequacy of actions being taken**

N/A

#### **Adequacy of the requirements of the licence and MoU**

The governance aspects of Demand Management and Sydney's Water supply in general are being considered as part of The Metropolitan Water Plan.

---

#### Clause 9.4.10

##### **SCA to implement any Environmental flow requirements in the Water Management Licence issued under Part 9 of the Water Act 1912**

Delivery of environmental flows is a requirement under the Water Management Licence and DIPNR has a regulatory role in respect to the management of the Water Management Licence. A copy of the DIPNR's Annual Site Inspection Report from 2004/2005 is enclosed (TAG B).

##### **Compliance with requirements**

SCA has complied with all water release requirements in the Water Management Licence for the 2004-2005 time period.

##### **Progress to meeting requirements**

Satisfactory

##### **Adequacy of actions being taken**

Adequate

##### **Adequacy of the requirements of the licence and MoU**

---

Adequate

---

## **SCA Water Management Licence Annual Site Procedures and Works Inspections - 2004/2005**

### **BACKGROUND**

The Sydney Catchment Authority's (SCA) Water Management Licence (licence) contains several operational conditions for water supply releases, transfers and environmental flow releases, as well as monitoring and reporting requirements. The SCA regularly provide results of water quality and quantity monitoring to the Department of Infrastructure, Planning and Natural Resources (the department) as required under the licence, which is reviewed by the department upon receipt. However, further assessment of the information provided needs to be carried out by the department to ensure accuracy and validity of the data.

The purpose of the annual Site Procedures and Works Inspection is to verify the relevant water inflow, outflow (releases, storage transfers and environmental flow) and extraction data provided to the department from 1<sup>st</sup> July 2003 onwards and assess the SCA's compliance with the licence.

Specifically the inspections comprised:

- 
- site verification of the relevant data provided by the SCA under the licence;
  - assessment of relevant data against established tolerance and error limits for water releases as appropriate;
  - sighting of selected works used by the SCA for water releases, especially those altered since the last inspection;
  - familiarisation with methods used by the SCA in the implementation of licence conditions;
  - three river flow gaugings; and
  - exploration of opportunities to improve licence implementation.

### **SITE INSPECTIONS - 2004/2005**

The 2004/05 annual site inspection of the SCA's activities under its licence was carried out on the 15<sup>th</sup> and 16<sup>th</sup> of June 2005. A schedule of site inspection was agreed between DIPNR and the SCA prior to the inspections (Table 1).

The site inspections were carried out by DIPNR staff and accompanied by SCA staff to provide information in relation to the works being inspected. On Wednesday 16<sup>th</sup> June, the department commenced the first of the site inspections of SCA works at Burrawang Pumping Station. The staff then proceeded to Nepean Dam and inspected the site proposed for the new deep water offtake works. Thursday 17<sup>th</sup> June staff met at the Warragamba Dam site office, and proceeded to inspect the interim release point into the Nepean River from Warragamba Pipeline No. 2. A departmental hydrometrics team remained on site to conduct gaugings up and downstream of the release to ensure that the environmental flow requirement was being met. The inspections team then returned to Warragamba Dam site office. That afternoon departmental staff went to Woronora dam.

---

DIPNR staff viewed the release works at each identified site and recorded flow release data from diaries or data sheets on the following days. Valve opening records were noted for 3 of those days for Tallowa Dam (noted with an asterisk)

- 27 July 2004;
- 6 August 2004;
- 16 September 2004;
- 20 October 2004\*;
- 10 November 2004;
- 13 December 2004;
- 18 January 2005\*;
- 15 February 2005
- 11 March 2005; and
- 19 April 2005\*.

The values were assessed against those provided in the Monthly data reports provided by the SCA under clause S6:2(2) of the licence.

**Table 1. Inspection locations and schedule for June / July 2005.**

Works	Date	Time	DIPNR staff	SCA Staff	Location
Tallowa Dam	15 June 05	9am	HK, SV	RyC, CB, StG	Office
Nepean Dam	15 June 05	pm	HK, SV	RyC,	Site
Warragamba Pipeline temporary release	15 June 05	Am	HK, SV	RyC	Site
Warragamba Dam	16 June 05	9am	HK, ST	RyC, ED	Office
Woronora Dam	16 June 05	2pm	HK, ST	RyC,	Site & Office
The Needles Gauge	16 June 05	pm	HK, ST	Not required	Site
Pheasants Nest Weir	8 July 05	10am	HK, ST, SB	Not required	Site
Broughtons Pass Weir	8 July 05	pm	HK, ST, SB	Not required	Site

DIPNR Staff: SV – Salim Vhora, HK – Helen Keenan, ST – Scott Tinsley, SB – Scott Butler  
SCA staff: RyC – Ryan Carr, StG – Steve Greal, CB – Carl Brookman, ED – Eric Dzenis

## RESULTS

### Environmental Flows, Transfers and Other Releases

The inspections on 15<sup>th</sup> and 16<sup>th</sup> of June 2005 involved observation of site works and checking site records for the relevant storage levels, valve opening or orifice plate specifications. This information was then used to estimate flow releases using rating tables or charts in the SCA document "Details of SCA's Measurement of Water Releases" available to DIPNR.

The estimated flow releases based on the site information and the rating tables/charts demonstrated that the flow releases met or exceeded the corresponding licence requirements on all days reviewed.

### Extractions

The flow data were verified through review of the Daily Returns System data provided by the SCA. The review identified no discrepancies.

## Gaugings

With the continuation of the current drought and the announcement of Level 3 water restrictions for Sydney's residents, the Government made a decision to temporarily halve environmental and riparian flow requirements from Hawkesbury-Nepean storages. At approximately the same time, work at Warragamba Dam for the Deep Storage Offtake required the temporary closing of the release into Megarrity's Creek. An alternative site for flow releases was identified on Warragamba Pipeline No 2. An existing scour valve on the pipeline was modified to release the required (reduced) flows into the Nepean River at this point. The SCA also installed new orifice plates at Pheasant's Nest and Broughton's Pass Weirs to reduce the flows being released from these two structures.

The Corporate Licensing Unit requested that the flows be measured by the DIPNR's South Coast Hydrometric Team to ensure that the required releases were being met. Gaugings were conducted on 16 June (downstream of Wallacia Weir) and 8 July (downstream of Pheasant's Nest and Broughton's Pass Weirs). A summary of the results is provided in Table 2, with the details presented in Attachment 1.

**Table 2. Gauging locations, dates and measured flows.**

Site	Date gauging	of Required releases	Measured releases	Compliance
Nepean River d/s of Wallacia Weir	16 June 2005	22 ML/d	26.3 ML/d	Complied
Broughton's Pass Weir d/s	8 July 2005	0.85 ML/d	1.235 ML/d	Complied
Pheasant's Nest Weir d/s	8 July 2005	5.25 ML/d	7.24 ML/d	Complied

d/s = downstream

All required flows were being released through both the weirs and from the temporary release point on Warragamba-Prospect Pipeline No 2 on the days that they were gauged.

### Reported Non-Compliance Event

During 2004-2005, the SCA reported one non-compliance event at Tallowa Dam. One of the actions taken by the SCA was to modify the Standard Operating Procedure (SOP). This SOP was sighted during the inspection, and a copy of the monthly daily records sheet, with improvements, has been supplied to DIPNR. Improvements on the previous SOP and daily records sheet were noted.

## Overall Findings

Random verification of the data provided to DIPNR with the on-site data suggest that the SCA has fully complied with the requirements of the Water Management Licence for the year 2004/2005.

The site procedures and works inspections conducted by DIPNR found no non-compliance events other than the one reported by the SCA in August 2004 in relation to releases from Tallowa Dam. Improvements in Tallowa Dam's SOP following the non-compliance event of August 2004 were examined, and appeared to be an improvement on previous operating procedures employed at this site.

Additionally, the river flow gaugings downstream of the new outlet works from Warragamba-Prospect Pipeline no 2, and the modified orifice plates immediately downstream of Broughton's Pass and Pheasant's Nest Weirs confirmed that the required minimum flows were being released at these points.

Two documents were identified during the inspections that are important for DIPNR to sight, to understand better the operating procedures. These are listed below. DIPNR has already received a copy of the release procedures for Shoalhaven City Council, but request a copy of the SOP for changing the orifice plate for the Warragamba releases when inflows to the Dam are low.

Warragamba Dam - Standard Operating Procedure for changing the orifice plate at the temporary release point, when inflows to Warragamba Dam are less than 40 ML/d. (To be provided.)

Tallowa Dam - Procedures for Shoalhaven County Council (SCC) that are followed when SCC request that water be released from storage, when SCC are under Level 2 water restrictions and inflows to Tallowa Dam are less than 90 ML/d. (Already provided.)

## Summary of Site Procedures and Works Inspections for 2004 / 2005

Structure	Flow Release Device	Flow Works Checked	Flow Measurement Device	Measure Device Checked	Licence	Total Flows Required	Flow Compliance	Comments
<b>Shoalhaven Scheme</b>								
Tallowa Dam	Two manually operated regulating gates	* dam not visited	Rating table and curve. Flow gauge downstream of release	* *	S4:1(1) S5:2	Variable, up to 180 ML/d	✓	FLOWS MET Riparian valve opening checked. Daily records sheet sighted, data checked against DRS data.
Wingecarribee Reservoir	450 mm fixed cone disperser valve	* dam not visited	Valve opening and indicator rating table V-notch weir downstream of release	* *	S4:1(1) S5:3  Temp. amend.	4.0 ML/d	✓	FLOWS MET Releases checked against DRS information.
<b>Warragamba Scheme</b>								
Warragamba Dam	Temporary release valve on Warragamba Pipeline No 2 into the Nepean River downstream of Wallacia Weir.	✓	Percentage opening indicator and rating table  Orifice plate	✓  ✓	S4:1(1) S5:1  Temp. amend.	43.3 ML/d  22 ML/day (env + rip)	✓  ✓	FLOWS MET Physical gauging by DIPNR staff on 16 <sup>th</sup> June identified that adequate flows were being released from Warragamba Dam (approx. 26.3 ML/d).
<b>Upper Nepean Scheme</b>								
Nepean Dam	90 mm orifice plate on scour outlet Two 900 mm fixed cone dispersion valves	*	Discharge equation – rating table Discharge rating tables used to estimate flow released from each valve	* *	S4:1(1)	4.4 ML/d halved to 2.2 ML/d	-	Diary / DRS not examined.  Proposed site for deep storage access works examined.

Structure	Flow Release Device	Flow Works Checked	Flow Measurement Device	Measure Device Checked	Licence	Total Flows Required	Flow Compliance	Comments
Pheasants Nest Weir	190 mm orifice plate on scour outlet	✓	Discharge equation	✓	S4:1(1)	10.7 ML/d, halved to 5.25 ML/d	✓	FLows MET Fixed orifice plate releasing 7.24 ML/d on the day of inspection.
Broughtons Pass Weir	75 mm orifice plate on scour outlet	✓	Discharge equation	✓	S4:1(1)	1.7 ML/d halved to 0.85 ML/d	✓	FLows MET Fixed orifice plate releasing 1.235 ML/d.
<b>Woronora Dam</b>								
Woronora Dam	375mm vertical discharge valve.	✓	Rating table	✓	S4:3	Dependant on inflows, from inflow to 30 ML/d	✓	FLows MET SCADA system examined. Diary checked.
	1000mm vertical discharge valve.	✓		✓				
	1100mm vertical discharge valve.	✓		✓				



Ms Sue Trahair  
GHD Pty Ltd  
Locked Bag 2727  
ST LEONARDS NSW 1590

Dear Ms Trahair

I refer to your letter to the Director-General regarding the audit of the Sydney Catchment Authority (SCA) Operating Licence.

The NSW Department of Health acknowledges that the SCA has met its obligations under the Operating Licence and Memorandum of Understanding (MoU). The Department is also satisfied that the requirements of the Operating Licence and MoU are adequate and provide a sound basis for a cooperative relationship between the organisations.


The Department regularly meets with the SCA at officer and strategic levels in accordance with the MoU. These regular meetings provide opportunity to discuss matters of mutual concern and ensure the provisions of the Operating Licence and MoU are met.

The Department has recently reviewed the revised SCA Water Quality Monitoring Program to ensure it meets the requirements of the Operating Licence and the MoU. This year SCA and the Department have collaborated to review specific requirements to be included in the revised program, such as the *Cryptosporidium* and *Giardia* monitoring. The Department has recommended that monitoring be refocused to support risk-based management within the catchment, to expand knowledge, prediction capability, and drive improvements.

The SCA and the Department have also worked with the Sydney Water Corporation to organise the reporting of SCA water quality incidents through the Sydney Water online reporting system. The Department is continuing to work with the SCA to improve management and response to algal contamination in Sydney's drinking water storages.

Thank you for the opportunity to provide input to the audit process. If you have any enquires please contact Leslie Brodlo at the Department's Water Unit on 9816 0521.

Yours sincerely

 7/9/05

Michael Staff  
Director Environmental Health



Department of  
Environment and Conservation (NSW)

Your reference : 21/13989/ 2004\_05 DEC  
Our reference : SR704: EXF30666  
Contact : Michael Crowley ☎ 9995 6804

Ms S Trahair  
Lead Auditor 2004-05 Operational Audit  
GHD Pty Ltd  
Locked Bag 2727  
ST LEONARDS NSW 1590

Dear Ms Trahair

**RE: SYDNEY CATCHMENT AUTHORITY  
AUDIT OF OPERATING LICENCE 1 JULY 2004 to 30 JUNE 2005**

I refer to your letter dated 10 August 2005 regarding the audit of the Sydney Catchment Authority (SCA) Operating Licence. I apologise for the delay in replying.

The Department of Environment and Conservation (DEC) has considered your request for comments on the SCA's auditable obligations to the former EPA and NPWS, including those which may affect compliance with the SCA's Operating Licence (the Licence), against the four headings specified in your letter, namely:

1. Compliance with requirements;
2. Progress to meeting requirements;
3. Adequacy of actions being taken; and
4. Adequacy of the requirements of the licence and MoU in light of recent experience.

These comments are included as Attachment 1.

I trust that you find the information provided helpful in response to your request for information. DEC officers would be happy to meet with you to clarify or expand on any of the matters covered in this letter. If you require any further information about this matter please contact Michael Crowley, Manager Metropolitan Infrastructure on 9995 6804.

Yours sincerely

  
**ROSS CARTER**  
Director Metropolitan  
Environment Protection and Regulation Division

3/11/05

## ATTACHMENT 1

### Section 3.3 Memorandum of Understanding (MoU)

As previously advised, the MoU between the former EPA and SCA was reviewed during 2001 and placed on public exhibition in accordance with the requirements of section 38 of the *Sydney Water Catchment Management Act*. The DEC believes that the MoU fulfils its purpose in forming the basis for a cooperative relationship to assist in furthering the objectives of the Licence and the Act. The DEC believes that the MoU, together with the collaborative actions arising from the MoU, including those actions agreed by the EPA/SCA Strategic Liaison Group, provide a sound basis for achieving the aims of the Licence and the Act and both Agencies have a philosophy of making continuing progress to improve catchment protection. The DEC believes that the work of the SCA and the collaborative arrangements outlined above, indicate that the MoU is fulfilling its purpose to assist in the protection of catchment areas, water quality, public health and the environment.

The DEC's comments on the four headings specified in your letter are bolded below for Section 3.3 - Memorandum of Understanding.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **N/A**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

### Part 6 Bulk Water Quality

#### Part 6.6 Water Quality Monitoring and Reporting

As advised in previous correspondence in respect of this Part, NSW Health is better placed to provide expert comment on this aspect, as we believe the primary purpose of Part 6.6 of the Licence is for the protection of public health. Notwithstanding this, and to the extent of DEC's role, there are environmental health considerations in respect of aspects of SCA's water quality monitoring activities. The DEC has identified to the SCA a number of improvements for the SCA Water Quality Monitoring Program 2005-2009, which have been addressed by SCA, and will be reported in future operating licence audits.

The DEC's comments on the four headings specified in your letter are bolded below for Part 6.6 - Bulk Water Quality.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **Satisfactory**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

#### Part 6.8 Environmental water quality

The SCA does not hold any licences issued by the EPA to discharge pollutants to the environment. The SCA does, however, routinely notify, and seek comment from, the DEC of its intention to undertake works or activities which have the potential to adversely impact the environment, for example, dewatering of pipelines, repairs to water storage structures, and various planning matters.

The DEC's comments on the four headings specified in your letter are bolded below for Part 6.8 - Environmental Water Quality.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **Satisfactory**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

## **Part 7 Catchment Management and Protection**

### **Part 7.1 Authority to Manage and Protect**

The SCA conducts environmental assessments of selected pollution sources in its area of operation to prioritise these risks. The DEC provides information on licensed activities within the catchment to assist with these assessments. In addition, the DEC continues collaboration with SCA on a number of issues relating to catchment health including work on ecological health of waterways using macro invertebrates. The DEC is currently conducting an audit of the drinking water catchment. The audit covers actions and projects of all agencies in the catchment, including the SCA. The results of the drinking water catchment audit will be available for future operating licence audits.

The DEC's comments on the four headings specified in your letter are bolded below for Part 7.1 - Authority to Manage and Protect.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **Satisfactory**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

### **Part 7.2 Special Areas Strategic Plan of Management**

The Special Areas Strategic Plan of Management (SASPoM) has been effected and successfully implemented from a DEC perspective. Substantial progress continues to be made towards establishing comprehensive baseline ecological data against which change in ecological condition can be measured while strategic operational plans for the management of weeds, pests and fire continue to be developed and implemented effectively.

The systematic fauna surveys of the Special Areas were completed during 2004-2005 with results to be published during 2005-2006. The *Pest and Weed Operational Plan for Warragamba and Blue Mountains Special Areas 2004-09* was completed during the year and progressively implemented, in accordance with resource priorities.

Work has continued on understanding the impacts of fire on biodiversity values and of understanding the linkages between biodiversity and catchment integrity.

Regular consultation between the DEC and SCA occurs via Special Areas Senior Management (SASM) meetings and other ad hoc meetings between joint agency staff. SASM continues to oversight the implementation of SASPoM and associated funding arrangements between the agencies. The Land Management, Research and Data, Policy and Government Relations, Joint Management and Public Scrutiny, and Public Education and Awareness program groups advise SASM. These groups are sub-groups of SASM, and operate to co-ordinate the joint management of the reserves, bring forward major research and survey projects relevant to the Special Areas, co-ordinate the Agencies efforts in public education and to streamline the Agencies environmental impact assessment processes and policies.

A revised Joint Management Agreement and a new service contract between DEC and the SCA detailing arrangements for joint implementation of the SASPoM were developed via SASM during 2004-2005 and will come into effect during 2005-2006.

In relation to Clause 7.2.3, the DEC reviewed and made contributions to the 2004-2005 SASPoM annual report that is prepared jointly with the SCA.

Clauses 7.2.4 and 7.2.5 will be applicable to the 2005-2006 Audit.

The DEC's comments on the four headings specified in your letter are bolded below for Part 7.2 - Special Areas Strategic Plan of Management.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **Satisfactory**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

### **7.3 Wingecarribee Swamp Plan of Management**

The principal interest in the Wingecarribee Swamp and Special Area Strategic Plan of Management (WASSPoM) relates to threatened species. The WASSPoM provides for DEC involvement via a multi-species threatened species taskforce, which gives technical advice to the Authority on the management of threatened species. DEC also provided technical advice in relation to possible listing of Wingecarribee Swamp under the Wetlands (Ramsar) Convention.

In respect to Clause 7.3.5, the DEC reviewed and contributed to the 2004-2005 WASSPoM annual report.

Clauses 7.3.6 and 7.3.7 will be applicable to the 2005-2006 Audit.

The DEC's comments on the four headings specified in your letter are bolded below for Part 7.3 - Wingecarribee Swamp Plan of Management.

1. Compliance with requirements: **Satisfactory**
2. Progress to meeting requirements: **Satisfactory**
3. Adequacy of actions being taken: **Satisfactory**
4. Adequacy of the requirements of the licence and MoU in light of recent experience: **Satisfactory**

Greg Reynolds  
Sydney Water  
115-123 Bathurst Street  
Sydney 2000

Sue Trahair  
Lead Auditor  
GHD Pty Ltd  
Locked Bag 2727  
St Leonards NSW 1590

6 October 2005

Dear Sue

**Subject: Sydney Catchment Authority Operational Audit 2004/05**

I refer to your letter of 9 August 2005, requesting comments in relation to the Sydney Catchment Authority Operating Licence audit. I offer minor comments only, due to the maturity of the Sydney Catchment Authority Operating Licence.

In relation to Section 6.2 of the Sydney Catchment Authority's Operating Licence - Water Supplied for Water Treatment, I note that for the year 2004/05, compliance with the requirements for water quality parameters specified in the Bulk Water Supply Agreement reached 92.77%. Water supplied from Metro Dams failed in alkalinity and pH and water supplied from Warragamba Dam failed in total hardness. However, the requirements of the schedule 4 of the Operating Licence, mainly health parameters, were complied fully.

The relationship between Sydney Water and the Sydney Catchment Authority during the audit period continued to be cooperative and constructive, noting that much of the focus of interaction was towards drought management and participation in the development of the Metropolitan Water Plan. Sydney Water intends to continue its strong engagement with the Sydney Catchment Authority in 2005/06, particularly for the review by IPART of the Sydney Catchment Authority Operating Licence, and the joint review of the Bulk Water Supply Agreement.

Please let me know if you require clarification of any of the points raised in this letter.

Yours sincerely



Greg Reynolds  
Corporate Compliance Manager

18 August, 2005

Lead Auditor – 2004-05 Operational Audit  
GHD Pty Ltd  
Locked Bag 2727  
St Leonards NSW 1590  
Ms Sue Trahair

Our ref: 10.132.302

Your ref: 21/13989/2004\_05 DSC

Dear Madam,

**Re: Sydney Catchment Authority Operational Licence Audit 2004-05**

The Committee wishes to thank GHD Pty Ltd for its letter dated 9<sup>th</sup> August 2005 requesting the NSW Dams Safety Committee's comments in regard to the Sydney Catchment Authority's performance with respect to dam safety obligations.

The Committee advises that the Sydney Catchment Authority (SCA) has fulfilled its obligations under the Dams Safety Act in the following areas, as requested:

- Compliance with requirements – The inspection and monitoring of SCA dams meets the requirements of the ANCOLD "Guidelines on Dam Safety Management, 2003", as adopted by the Committee
- Progress to meeting requirements – Surveillance reporting meets the Committee's requirements
- Adequacy of actions being taken – The safety improvement process is well documented, and is approved.

I trust this satisfactorily addresses GHD's assessment process.

Yours faithfully,

  
for N. J. Himsley  
Executive Engineer





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## Appendix E

# MOU compliance tables



**Table E.1 Appendix E - Environment Protection Authority (EPA) MOU (now Department of Environment & Conservation)**

**Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
3.1	Purpose of the MOU is to facilitate effective interaction and cooperative arrangements to achieve sound environmental and water quality outcomes.	High compliance	<p>The MOU provides a foundation, albeit somewhat limited in specific detail, for a cooperative relationship to achieve sound environmental and water quality outcomes.</p> <p>In September 2003, the Director General of the Department of Environment and Conservation (DEC) was also made Chief Executive of the SCA. This has helped ensure further strengthening of the cooperative relationship between the SCA, the former EPA and the former National Parks and Wildlife Service.</p>
5.1 5	Commit to work together to reduce activities causing pollution in the catchment areas.	Full compliance	<p>Examples of cooperative work to reduce pollution in the catchment areas include:</p> <ul style="list-style-type: none"> <li>• A joint program to inspect 15 mine and quarry 'hot spots' is continuing;</li> <li>• SCA provided comments on the process for the review of EPA licences;</li> <li>• SCA, DEC and DIPNR attended meetings as part of the process for further refining guidelines on the neutral or beneficial effect test (REP);</li> <li>• SCA liaised as necessary with the DEC (formerly the EPA) regarding application of the Penalty Infringement Notices powers for illegal dumping;</li> <li>• The SCA was active on the NSW Environmental Education Coordinating Network (chaired by the EPA) established to support the implementation of the NSW Environment Education Plan 2002-2005. The SCA is the Chair of NSW Environment Education Coordinating Network Water Sub Group, with the EPA and key water agencies (for example, SWC and DIPNR) to provide whole of government focus on water education programs, which was identified by the NSW Council on Environmental Education as its top priority issue;</li> <li>• The SCA continued to support as required the EPA's implementation of the NSW Governments "Our Environment It's a Living Thing Program";</li> <li>• The SCA/EPA continued to collaborate on the assessment of major development proposals in the catchments including a number relating to major Sewerage Treatment Plant upgrades;</li> </ul>



**Table E.1 Appendix E - Environment Protection Authority (EPA) MOU (now Department of Environment & Conservation)**

**Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> <li>• The SCA liaised with the EPA on the program of chemical collections, including agriculture and household hazardous waste; and</li> <li>• A Strategic Work Program has been developed that identifies strategic issues to be considered in a structured program.</li> </ul>
6.2.1	Strategic Liaison Group to be maintained.	Full compliance	The SLG was maintained and minutes were sighted from the three meetings held over the audit period. Meetings were held on 19 August 2004, 22 November 2004 and 12 May 2005.
6.2.2	Strategic Liaison Group to consider long term strategic issues and policies and innovative regulatory solutions to pollution; to identify cooperative research ventures; to explore avenues for cooperation in area's including but not limited to: environmental education, enforcement, training, data acquisition, monitoring and policy development.	Full compliance	<p>The strategic issues considered by the SLG include: mining impacts, enforcement compliance, legislative environment, water quality management, research, land use planning, diffuse source pollution, education, relationships with local government and the catchment audit.</p> <p>Other issues considered by the SLG included:</p> <ul style="list-style-type: none"> <li>• The SCA Water Quality Risk Management Plan;</li> <li>• Mining updates including the implementation of 'hot spots' joint inspections and rehabilitation of derelict mines;</li> <li>• The SCA's Healthy Catchments Program,</li> <li>• Wingecarribee Sewage Strategy;</li> <li>• Progress on the draft Regional Environmental Plan;</li> <li>• Compliance update and protocols,</li> <li>• Strategic local government issues;</li> <li>• Links with the new Catchment Management Authorities; and</li> <li>• Rectification Action Plans.</li> </ul>
7.1	Parties agree to share or supply data and information to protect water quality in the	Full compliance	Data and information were shared between the agencies. The extent and frequency of information exchange has increased as a result of operational requirements. Information is exchanged through document transfer, SLG meetings, presentations and through joint projects.



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**Table E.1     Appendix E - Environment Protection Authority (EPA) MOU (now Department of Environment & Conservation)**

**Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
	catchments.		<p>Operational information and event reporting are regularly communicated to DEC, with ensuing action from both parties.</p> <p>Examples include: water quality test results, mining developments; enforcement and prosecutions; incidents; joint management of the Special Areas and overflows from sewage treatment plants in power outages.</p>



**Table E.2 Appendix E - The Water Administration Ministerial Corporation [WAMC] MOU (administered by DIPNR)**

<b>Strategic Assessment of Compliance</b>			
<b>Clause</b>	<b>Requirement</b>	<b>Compliance</b>	<b>Findings</b>
2.1	Purpose of the MOU is to facilitate and encourage effective interaction and processes and cooperative arrangements to achieve sound water quality and management.	Moderate compliance	<p>The MOU, when originally developed, established the basis for cooperative relationships and the requirements for certain water management regimes including flows and water use. The Water Management Licence incorporated these latter matters into its provisions. The MOU no longer provides a mechanism for the effective interaction and cooperative arrangement to manage water quality to the extent it could.</p> <p>The review and amendment of the MOU should better reflect the cooperative relationship between the agencies and enhance their ability to manage the strategic issues in relation to the catchments and water quality. Recommendations to achieve this end were made in the 1999/00 audit, but remain to be realised. Also, the development of a Strategic Work Plan would enable efficient use of resources to prioritise and address strategic issues shared by the agencies.</p>
3.2	Either party may give notice to review, amend or replace the MOU.	Full compliance	Agreement for the review and amendment of the MOU was reached in an earlier audit period on 27 April 2001. It was again agreed on 21 October 2003 that the MOU required review. On 22 December 2003 the SCA provided DIPNR with a draft MOU and a timetable for its establishment by August 2004.
3.3	Review of the MOU must be undertaken to an agreed timetable agreed at the commencement of the process.	Non compliance	<p>SCA and DLWC agreed to a timeframe for the review: public exhibition to commence 29 September 2001 and implementation to commence 21 December 2001.</p> <p>SCA prepared a draft MOU and submitted it to DLWC for review on 8 June 2001. DLWC presented a revised draft on 23 October 2001, with considerable changes, and provided another draft on the 15 February 2002, following discussion with the SCA.</p> <p>In July 2002, the SCA and DLWC agreed to postpone further work until completion of the Mid Term Review of the Operating Licence (30 September 2002). The Review did not recommend any changes to the MOU. As a result of the restructuring of DLWC, slow progress occurred until the Chief Executive of the SCA wrote to the newly formed Department of Infrastructure, Planning and Natural Resources on 17 June 2003 to revitalise the process and appoint a new SLG.</p>



**Table E.2 Appendix E - The Water Administration Ministerial Corporation [WAMC] MOU (administered by DIPNR)**

**Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
			<p>It was agreed at the SLG meeting on 21 October 2003 to recommence negotiations for a new MOU. SCA wrote to DIPNR on 22 December 2003 providing a draft MOU and timetable for DIPNR consideration. In a letter dated 31 December 2003 the SCA reinforced its concerns about the delay in finalising the MOU.</p> <p>The MOU was not reviewed during the 2004/05 audit period and remains unchanged. DIPNR advised the auditor that it considered the requirements of the current MOU as adequate.</p>
4.2.1	Parties commit to cooperative work to manage and protect the catchments in order to enhance water quality.	Moderate compliance	<p>Cooperative work to manage and protect the catchments appears related primarily to committees of executive members. Examples of cooperative work at other levels of the organisations were not available. Examples of cooperative work to protect the catchments were few.</p> <p>Cooperative work is undertaken as evidenced by:</p> <ul style="list-style-type: none"> <li>Representation on various committees including the Drought Executive Committee, Water Chief Executive Officers Group (Water CEOs), Interagency Modelling Working Group;</li> <li>Consultation on the SCA's Water Quality Risk Management Framework; and</li> <li>Joint work on the development of new environmental flow regimes for the Shoalhaven and Avon Rivers. The SCA and DIPNR are represented on the Shoalhaven Approvals and Environmental Flows Working Group and Scientific Advisory Panel.</li> </ul>
5.2.2	Strategic Liaison Group must consider long-term strategic issues and policies with regard to water management and allocation, catchment areas management, licensing issues, and identify cooperative research ventures and joint initiatives.	Non compliance	<p>The SLG did not meet in the current audit period; the previous meeting was on 21 October 2003.</p> <p>The lack of a properly functioning SLG is not a healthy sign that there is a cooperative relationship between the officers of the two agencies. It is vital that the water and land use planning functions of DIPNR complement the programs of the SCA. Although consultation occurs between officers on specific day-to-day issues, the SLG is a useful and effective tool for helping to ensure that there is an effective strategic work program addressing areas of mutual interest, of which there are many of critical importance to protecting Sydney's water supply. The</p>



**Table E.2 Appendix E - The Water Administration Ministerial Corporation [WAMC] MOU (administered by DIPNR)**

**Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
			<p>regular forums for CEOs are not a replacement for a structured forum for other managers, as envisaged by the Operating Licence.</p> <p>The membership of the SLG should be confirmed and a regular schedule of meetings established so that a Strategic Work Program to address priority issues of common responsibility in the catchments can be progressed.</p>
6.1	Parties must share or supply and update relevant data and information.	Full compliance	<p>Information sharing and/or supply has occurred throughout the audit period through joint involvement on projects and/or direct information requests. Examples include:</p> <ul style="list-style-type: none"> <li>• Coordination of a whole of government response to the findings of the 2003 Catchment Audit;</li> <li>• Information provided in relation to environmental monitoring undertaken for environmental flow releases and Shoalhaven transfers;</li> <li>• Data issues were considered in relation to the SCA Strategic Plan for Science 2005-2008;</li> <li>• Preparing a joint submission to Cabinet on reducing environmental and riparian releases into the Hawkesbury-Nepean River from June 2005;</li> <li>• Exchange of information and data required for matters considered at the Water CEOs and Drought Executive Committee;</li> <li>• Continued cooperation on the Hawkesbury Nepean Integrated Data Management System;</li> <li>• Providing monthly, quarterly and annual water quality data as required by the Water Management Licence;</li> <li>• Cooperation to update catchment land use change (the study was completed by DIPNR in June 2004) to 2004/05 data;</li> <li>• Mapping of erosion and salinity in the SCA area of operations by DIPNR;</li> <li>• Providing wetland information for a joint DEC/ DIPNR project to produce a vegetation map for the SCA area of operations in 2004; and</li> <li>• Requests for spatial data continue to met by both parties.</li> </ul>

**Table E.2 Appendix E - The Water Administration Ministerial Corporation [WAMC] MOU (administered by DIPNR)****Strategic Assessment of Compliance**

Clause	Requirement	Compliance	Findings
7.1	Joint programs, initiatives and research to be undertaken.	Full compliance	Examples of collaborative programs and research include: <ul style="list-style-type: none"><li>• Cyanobacterial skin irritation project undertaken by the Australian Water Quality Centre jointly funded;</li><li>• A collaborative project with Cooperative Research Centre for Freshwater Ecology on connectivity;</li><li>• SCA has assisted in the development of the software for the DIPNR Land Use Options Simulator;</li><li>• Joint work on managing the high level of cyanobacteria in Wingecarribee Reservoir in April 2005;</li><li>• Joint work on the implementation of the Metropolitan Water Plan; and</li><li>• The SCA is the Chair of NSW Environmental Education Coordinating Network Sub Group with DIPNR and other key water agencies to provide a whole of Government focus on water education programs.</li></ul>



**Table E.3 Appendix E - NSW Health MOU**

<b>Strategic Assessment of Compliance</b>			
<b>Clause</b>	<b>Requirement</b>	<b>Compliance</b>	<b>Findings</b>
4.1	The purpose of the MOU is to facilitate effective interaction and set out effective processes and cooperative arrangements in relation to the protection of public health.	Full compliance	The MOU provides the structure and processes for interaction and communication between the SCA and the NSW Health. Formal interaction is achieved through the SLG and JOG meetings and informally through cooperative arrangements coordinated in these forums. The implementation of the Strategic Work Plan further demonstrates sound cooperation to address issues related to public health.
7.1	SCA to report to NSW Health any events within its works or area of operations with public health implications.	Full compliance	<p>The Bulk Water Quality Incident Response Plan identifies trigger levels, includes a provision to notify NSW Health immediately when triggers are exceeded and requires water quality monitoring results be provided to NSW Health.</p> <p>A comprehensive review of the Plan was conducted during the 2003/04 audit period and the revised Plan was approved on 17 December 2004.</p> <p>The Bulk Water Incident Notification Register summary for 2004/05 was provided. The incidents reported to NSW Health were:</p> <ul style="list-style-type: none"> <li>• Bendeela Pondage, Shoalhaven Council's water supply, 21 December 2004, very high <i>E Coli</i> numbers. NSW Health was notified and remedial actions implemented;</li> <li>• Wingecarribee Reservoir and Bendeela Pondage, 15 March 2005 to May 2005, toxin producing cells (<i>Cyanobacteria</i>) within major incident level; toxicity testing demonstrated low levels; public health impact minimised by taking appropriate actions;</li> <li>• Wingecarribee Water Filtration Plant, 11 April 2005, detection of low level Glyphosate in raw water supplied to the Wingecarribee Water Filtration Plant as a result of spraying in the Swamp; and</li> <li>• Wingecarribee Reservoir, 22 June 2005; detection of one DAPI positive <i>Cryptosporidium</i> oocyst in a 10 litre sample taken near the dam wall.</li> </ul> <p>To facilitate the process of notification, from December 2004 the SCA commenced logging onto the Sydney Water data system to create an incident notification. The system then automatically</p>



**Table E.3 Appendix E - NSW Health MOU**

Strategic Assessment of Compliance			
Clause	Requirement	Compliance	Findings
			<p>sends an e-mail to relevant staff in Sydney Water and NSW Health. This system also allows for updates on status to be entered.</p> <p>SCA provides Sydney Water with an annual Monitoring Program Report, inclusive of water quality incidents, issues and the steps being taken to address issues as discussed in Section 6 of this report, Table 6.1, Clause 6.6.7.</p>
7.3	SCA to supply such information in relation to such events as is requested by NSW Health or as is necessary for either party to make appropriate judgements; and take appropriate action in relation to protecting the health of the public and exercising its role under this MOU.	Full compliance	<p>There were no specific information requests from NSW Health beyond those during incidents.</p> <p>The Bulk Water Quality Incident Response Plan includes procedures for media and stakeholder liaison. The Plan includes provision to notify NSW Health immediately upon certain triggers being exceeded and to provide water quality monitoring results to NSW Health. If NSW Health assesses a risk to public health, NSW Health is to liaise with the customers and issue a 'boil water' notice, if necessary, and to provide input to communications issued by the SCA for staff, customers, media and the Minister. Refer to audit findings in Table 6.1, Clauses 6.7.11 and 6.7.12.</p> <p>The SCA has developed a significant program of investigative monitoring as noted under Clause 6.6.1(b) which is outlined in the SCA 'Water Quality Monitoring Program'.</p> <p>The SCA has regularly informed NSW Health of results of blue green algae monitoring in storages and NSW Health has approved the Annual Water Quality Monitoring Plan and Pathogen Monitoring Plan.</p> <p>Sydney Water endorses the SCA incidence response and contingency plans in response to any incidents that could affect the quality of water supplied to Sydney Water.</p>
9.1.1	SCA and NSW Health will maintain a Strategic Liaison Group (SLG).	Full compliance	The SCA maintained a tripartite SLG with Sydney Water and NSW Health. There were four SLG meetings in the audit period on 25 August 2004, 6 December 2004, 21 February 2005 and 1 June 2005. The meeting minutes were sighted.
9.1.2	SLG to consist of senior officers nominated by their respective Director General or Chief Executive. SLG to meet regularly to discuss	Full compliance	SLG members consist of senior officers as evidenced in the minutes. SLG has developed a Strategic Issues Agenda under the following heads – public health implications of alternative servicing solutions; risk management; longer term planning; research agenda for water quality;



**Table E.3 Appendix E - NSW Health MOU**

Strategic Assessment of Compliance			
Clause	Requirement	Compliance	Findings
	relevant and long term strategic issues and policies. SLG will define and implement processes for the exchange of strategic information.		<p>monitoring programs; water quality management; wastewater management; communication; and refining the regulatory environment. The SLG considered long term strategic issues, such as:</p> <ul style="list-style-type: none"> <li>Health risks of rainwater tanks;</li> <li>Water quality incident scenarios and lessons learnt;</li> <li>Verifying the Water Quality Risk Management Framework;</li> <li>CBRN preparedness;</li> <li>Implementation of the <i>Metropolitan Water Plan</i>;</li> <li>Pathogen research and information gaps; and</li> <li>Helping ensure sound public health regulation in relation to water.</li> </ul> <p>The SLG strategic work program was maintained and actioned throughout 2004/05. The SLG endorsed the Strategic Issues Agenda at the 6 December 2004 SLG meeting.</p>
9.2.1	SCA and NSW Health will maintain a Joint Operational Group (JOG).	Full compliance	SCA maintained a tripartite JOG with Sydney Water and NSW Health. There were four JOG meetings in the year on 26 July 2004, 18 October 2004, 31 January 2005 and 2 May 2005. Minutes of the meetings were sighted.
9.2.2	Role of Joint Operational Group (JOG) is to consider those issues determined by the SLG to be relevant but must include strategic and operational issues. The JOG is also responsible for developing data and information sharing programs and proposing collaborative initiatives including research and community education.	Full compliance	<p>The JOG considered strategic and operational issues that included:</p> <ul style="list-style-type: none"> <li>Water quality monitoring, pathogen and pesticides monitoring and related quality assurance;</li> <li>Changes in Cryptosporidium testing;</li> <li>Development of a common framework for managing the water quality gap analysis tool;</li> <li>Cyanobacterial Risk Management Strategy;</li> </ul>

**Table E.3 Appendix E - NSW Health MOU**

Strategic Assessment of Compliance			
Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> <li>Development of a joint interagency protocol for managing threats to the water supply system;</li> <li>Pesticide use at Wingecarribee Swamp;</li> <li>SLG Strategic Issues Agenda/Work Plan;</li> <li>Collaborative research and development; and</li> <li>A range of operational issues.</li> </ul> <p>Data and information were shared and collaborative initiatives discussed.</p> <p>Emerging issues in water quality and public health are also investigated and are an ongoing item on the agenda.</p>
10.1	Parties must share or supply the data and information referred to in 10.2 and 10.3.	Full compliance	See Clauses 10.2 and 10.3.
10.2	Data and information is to be exchanged relating to raw water quality and public health arising from the Operating Licence; Incident Management Plan; DoH public health information and as agreed.	Full compliance	<p>Data and information are provided regularly through the SLG and JOG and routinely between officers on an 'as needed' basis. Procedures are set out in the Incident Management Plan for information transfer during an incident. A Strategic Work Program has been developed to look at strategic issues over the longer term that will allow for further information sharing – see Clause 9.1.2 above for an overview. Examples of information sharing have been described above and further examples include:</p> <ul style="list-style-type: none"> <li>SCA provides NSW Health with monthly routine water quality monitoring results on a quarterly basis;</li> <li>Progress of actions arising from the International Expert Panel on Water Quality Report Action Plan;</li> <li>Results of blue green algae monitoring in storages;</li> </ul>

**Table E.3 Appendix E - NSW Health MOU**

Strategic Assessment of Compliance			
Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> <li>Progress of <i>Metropolitan Water Plan</i> projects;</li> <li>Discussions on the review of the pathogen monitoring and status of NSW Health Expert Panel report;</li> <li>Comprehensive review of the Bulk Water Quality Incident Response Plan;</li> <li>Progress of actions arising the Drinking Water Quality Education Action Plan – collaborative project, amalgamation of water quality information and education activities; action plan and agreed suite of water quality messages;</li> <li>Progress report on the review of the routine Cryptosporidium and Giardia monitoring program and the NSW Health Review Report recommendations;</li> <li>Progress report by NSW Health on status of revised Australian Drinking Water Guidelines;</li> <li>Briefing paper on SCA's Cyanobacterial Risk Management Strategy;</li> <li>Progress of Cryptosporidium and Giardia viability; and</li> <li>Recreational use of catchments and storages.</li> </ul>
10.3	Data to be exchanged cooperatively by the parties.	Full compliance	As for Clause 10.2.
10.4	SCA shall participate in appropriate research and development on emerging public health issues related to drinking water.	Full compliance	<p>SCA and NSW Health work closely on research programs with respect to potential public health impact from the catchments. The SLG requested that the three agencies develop a collaborative research program with measurable outcomes to address key risks and priority areas in water quality and public health. The key priority research areas include:</p> <ul style="list-style-type: none"> <li>Emerging microbial agents in source waters;</li> <li>Minimising the risk and impact of algal blooms;</li> </ul>



**Table E.3 Appendix E - NSW Health MOU**

Strategic Assessment of Compliance			
Clause	Requirement	Compliance	Findings
			<ul style="list-style-type: none"> <li>• The impact of water treatment chemicals on removal of pathogens;</li> <li>• Risk from disinfection by-products in drinking water; and</li> <li>• Exposure assessments for people using recycled water.</li> </ul> <p>The SCA also has an extensive collaborative research program with other agencies such as universities and CSIRO. These projects include:</p> <ul style="list-style-type: none"> <li>• Methods for tracing faecal pathogens in the catchments;</li> <li>• Source quantification project - to estimate and model human and animal sources of pathogens and their fate in the catchments;</li> <li>• Climate forecasting which will allow for forecasting of multiple sites in monthly scales to allow forecasts in the form of monthly streamflow sequence over 12 months;</li> <li>• Impact of recreational activities on water quality in drinking water catchments;</li> <li>• Assessment of on-site sewage treatment;</li> <li>• Impact on water quality by post-wildfire erosion and nutrient release;</li> <li>• Nutrient sources and budgets; and</li> <li>• Sediment budgeting in metropolitan catchments.</li> </ul> <p>The SCA has developed a Strategic Plan for Science 2005-2008 that outlines the science themes and programs and ways to incorporate science into the outcomes of the SCA.</p>



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## Appendix F

# Healthy Catchments Program Deliverables

**Table F.1 Appendix F - Healthy Catchments Program Deliverables**

Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
Sewage	Development of "Review of Current Status" of Sewage Management, involving internal & external consultation.	Review of current status completed. Consultation was not required.	Review of current status completed. Consultation was not required.
	Completion of Accelerated Sewerage Program (ASP) to schedule – Currently 1 STP completed, 11 remaining.	<p>The ASP only includes 8 STPs (Bowral, Bundanoon, Robertson, Taralga, Kangaroo Valley, Lithgow, Wallerawang and Goulburn). At end 2003/04 no plant was in construction.</p> <p>Previous agreement allowed for payment of up-front grant each year, provided previous year's funds had been expended.</p>	<p>Bowral STP in construction. Tenders closed and letters seeking funds from DEUS completed for Goulburn and Lithgow (Stage 1). SEE in draft for Wallerawang. EIS in preparation for balance of plants.</p> <p>Funding agreement between DEUS and SCA re-negotiated to provide funds on achievement of milestones.</p>
	Combined regulatory / incentives / education program developed with Councils to address management of on-site systems.	Trial programs with Wollondilly and Blue Mountains Councils commenced.	<p>Trial program with Blue Mountains successfully concluded. Completion report available. Trial Program with Wollondilly Council extended for 4 months.</p> <p>On-site assistance program approved and advertised. Round one of assistance program closes 1/9/05.</p>
	Gauging and modelling works completed for priority Councils.	Gauging and modelling report completed by Goulburn	<p>Gauging and modelling (G&amp;M) agreements in place for all significant sewage reticulation systems in the drinking water catchment. All programs scheduled for completion by 30/6/06.</p> <p>G&amp;M programs completed for Goulburn, Moss Vale, Berrima and Bundanoon as at 30/6/05. Works programs identified.</p>



Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
	Refurbishment of priority degraded sewerage infrastructure (as identified through gauging and modelling).	Three year program for refurbishment initiated (\$800K).	Refurbishment program continued for Goulburn (2187m of sewer refurbished for \$150K SCA contribution). Proposal for 4400m at \$250K contribution in 2005/06. All other works on hold pending review of G&M reports and SCA policy on sewer refurbishment.
	Audit Compliance Inspections completed.	Compliance audits - see compliance section.	Compliance audits - see compliance section
Riparian	Establish management principles & riparian goal conditions.	20%. Initial concepts and goals.	100%. (Ongoing refinement with new research and data). Management principles & goal conditions approved by the SCA Executive within SCA Riparian priorities document.
	Assessment & display of catchment wide riparian condition.	15%. Planning and scope of project, purchase of data required.	100% coverage of Riparian Zone Index (RZI) – standing vegetation coverage in riparian buffer areas of all streams, creeks and rivers. RZI assisted prioritisation of drainage units.
	Riparian priority action plans for each sub-catchment.	0%. Data not available.	40%. (Approx. 60% of sub-catchments are not priority). Priority sub-catchments have been targeted with riparian incentives. A plan is conceived for rolling out incentives in each priority sub-catchment.
	Assets, degraded assets & threatening processes – each sub-catchment.	15%. Landuse and landcover mapping available – broad.	100%. RZI and detailed landuse mapping provide the most useful data to indicate assets, degraded assets and threatening processes. Through GIS and new reporting structures, these attributes will be highlighted in more detail.





Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
	Annual delivery of collaborative projects for protection and rehabilitation of riparian areas.	Some projects were being delivered in collaboration with landowners, and the SR & HN Catchment Management Authorities. No systematic delivery in priority areas.	50%. The Catchment Protection Scheme continues to deliver outcomes in riparian areas every year. By 30 June 2005 a focussed riparian incentive program had been developed. The program is now advertised with many landowners also mailed directly. This is a systematic program to deliver riparian outcomes in collaboration with landowners. Other projects are also being done with Southern Rivers and Hawkesbury Nepean CMA.
Stormwater	Stormwater based risk assessment criteria.	Completed.	Completed. Stormwater model and risk map available.
	A flexible risk assessment methodology to apply to catchment operational and local government SMP issues and priorities.	On hold. Other strategies identified as higher priority as per WQRMF.	On hold. Other strategies identified as higher priority as per WQRMF.
	Sub-catchment wide stormwater actions list.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF
	Risk rating of actions list fore prioritisation.	On hold. Other strategies identified as higher priority as per WQRMF.	On hold. Other strategies identified as higher priority as per WQRMF.
	Guidelines, criteria and contractual framework to launch incentives and support program.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF
	Project proposals for provision of support and incentives through appropriate assessment process.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF



Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
	Periodic status monitoring reports with respect to program implementation.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF
	Community stormwater education tool kit.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF
	Stormwater education training for catchment field officers.	Drain stencilling program completed.	Blue book training offered to Councils and State government agency staff.
	Clear educational objectives related to behavioural change.	On hold. Other strategies identified as higher priority as per WQRMF	On hold. Other strategies identified as higher priority as per WQRMF
Compliance	Industry compliance audit program undertaken.  Capacity building program implemented.  Joint Programs implemented.	Ongoing, refer to supporting info in Compliance folders.	Ongoing, refer to supporting info in Compliance folders.
Rural Lands	GIS data layer completed and mapped.	Nil.	100% DIPNR land use layer complete.
	EASI project completed and information applied to implementation programs.	Information assessed 03/04	
	11 Dairy Industry sites completed.	7 farms completed.	In-situ effluent disposal system at 11 sites completed: SCA dairy shed waste monitoring program established.
	Compliance program developed and implemented.	See compliance strategy.	See compliance strategy.
	Pilot study conducted.	Pilot study not commenced.	Pilot study not commenced.



Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
	Gully and stream bank erosion survey completed.		This is part of RAPs – Program in preparation.
	Erosion events prioritised		Part of RAPs.
	Catchment Protection Scheme implemented.		\$620K expended – ongoing. Incorporating CPS Review and CPS Annual Report.
	Rectification works identified and implemented.		Awaiting delivery of RAPs.
	Derelict mines program developed and implemented.	Initial meeting held with DPI.	<p>Student appointed to review seven priority mines and prepare a rehabilitation plan for one (due December 2005).</p> <p>Additionally: SCA Chemical collections – ongoing. In 2004/05, collections accounted for 18,531.5 kg of unwanted chemicals. These results are an increase of 66.1% and 72.7% respectively compared to previous year. The most common type of waste surrendered was waste oil (27.7%). Chemicals collected at Braidwood included 6 drums (819.5 kg) of contaminated soil containing organochlorine pesticides such as Chlordane, Heptachlor, and Nonachlor (33 ppm) all chemicals that have been phased out of use in Australia due to their deleterious impact to health and the biophysical environment.</p> <p>Comment: Rural Lands Coordinator not appointed until May 2005, that is, late in the financial year. Significant progress on Rural Lands not expected until 2006.</p>
Special Areas Strategic Plan of Management	Funding Agreement/s established.	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	The original 2002-2005 Funding Agreement was in place over the Audit period however a new service agreement was drafted over the year and in a final draft form at 30 June 2005. This draft is in the form



Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
			of a Service Contract for the provision of Special Areas Land Management and CRAFT services. The Service Contract is the mechanism for delivery of the newly revised Joint Management Agreement between DEC and SCA, which delineates agency responsibilities for the various aspects of Special Areas management.
	Annual Reports prepared.	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	Annual Reports prepared. 100%. Annual Reports 2004 for SASPoM and WSSAPoM were delivered to meet 1 September 2004 deadlines.
	Future SASPoM Programs developed.	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	Future SASPoM Programs. Ongoing. Process and budget for five year review of SASPoM developed, with DEC informed and requested to nominate key staff. Land management priorities for water quality protection in Special Areas have been identified for future financial year work program development. Asset transfer and inventory projects have commenced to improve asset management.
	Executive Support to SASM provided.	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	Executive Support to SASM. Ongoing. SASM operated until late 2004, when it was replaced in the DEC-SCA Joint Management Agreement by an Executive Steering Group made up of the SCA's GM Catchment Operations and Major Projects and DEC's Director Central Branch. The Executive Steering Group (ESG) met regularly to discuss issues of relevance to both agencies and devise strategies for response. The ESG has been extremely successful in working to resolve interagency issues and develop work programs and strategies.



Program	Deliverables	Status (percentage completed prior to 04/05 period)	Status (percentage completed by June 30 2005)
	SCA contribution to SASPoM Programs coordinated and reviewed.	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	SCA contribution to SASPoM Programs Coordinated and Reviewed. Ongoing. An SCA Lands Management Program Coordinator was employed starting in March 2005 to coordinate SCA contribution to SASPoM Programs. Prior to this, coordination was undertaken by a number of officers including GM COMP, Manager Programs and executive assistance COMP. SCA contribution to SASPoM Programs is reviewed on an annual basis through preparation of the Annual Report, plus through review of works programs and ongoing feedback from operations staff regarding emerging issues.
	Annual Sub-programs delivered (including \$400k salaries for pest control team).	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	Annual Sub-programs delivered. 80% completed. Annual sub-programs were implemented through work of operations staff and employment of contractors. Programs implemented include Compliance, Fire Management, Road and Trail Maintenance, Pest and Weed Management, etc.
	Upgrade Catchment Roads program delivered (Capital funded).	Refer to Clause 7.2.2 and 2004/05 Annual Reports on Implementation of SASPoM and WSSAPoM.	Upgrade Catchment Roads program delivered. The SCA has an agreement with the RTA for maintenance and capital works upgrades to roads within the catchments and around the dams and other facilities. Major road works commenced on the Pheasants Nest Weir road, upgrade to the Avon Dam access road, and planning for the upgrade of Woronora Dam access road. Under the arrangements with the RTA, safety audits of roads and associated infrastructure, as well as programmed maintenance schedules, have been developed.

A further indicator of SCA's performance is the actual compared to proposed expenditure level on HCP programs see Table F.4

**Table F.2 Appendix F: Performance in Implementing the Special Areas Strategic Plan of Management, by Strategy and Key Actions as at 2004/05**

Key Action	Description	SASPoM Timetable	SCA's 2003/04 Status	SCA's 2004/05 Status
<b>Strategy One: A 'whole-of-catchment' Management Approach (Refer to 2004-05 Annual Report on SASPoM Implementation)</b>				
1.1	Assist implement REP (Note: DIPNR responsible for REP)	Dec 2001	Remains a draft.	Remains a draft.
1.2	Secure agreements with Department of Lands, DIPNR, Councils, etc	June 2001	MOUs in place or progressing.	MOUs in place.
1.3	Seek Agreements with Agriculture Organisations etc.	June 2002	Negotiations envisaged to continue.	Negotiations envisaged to continue.
1.4	Undertake Education Programs	Commence Annual Program 2002	Conducting programs; ongoing.	Conducting programs; ongoing.
1.5	Commitment to specific initiatives	October 2001	SCA cites REP and DA Programs.	SCA cites DEUS/Local Council sewerage service.
1.6	SCA and DEC (Parks and Wildlife division) jointly resource programs to reduce threat to water quality.	Implement in 2001	Active SCA program with utility agencies.	Continuing.
1.7	Seek regulatory changes	July 2001 and ongoing	Regulations established: ongoing.	Review SWCM Act.
1.8	Jointly promote applications of water quality objectives (with NPWS / Healthy Rivers Commission)	Promote from 2001	Link to draft REP: ongoing.	Adopt NRC's Standards and Targets.
1.9	Ensure outer catchment management	June 2001; amend by Dec 2001	Status of review / amendment unclear. Ongoing catchment management programs.	Cooperative JMA developed & new PoMs for National Parks & Reserves development in consultation with SCA.
<b>Strategy Two: An Ecosystem Management Approach</b>				
2.1	Jointly implement access control etc	2001	Strict control; ongoing.	Strict control; ongoing.



Key Action	Description	SASPoM Timetable	SCA's 2003/04 Status	SCA's 2004/05 Status
2.2	Jointly implement threat abatement	Commence 2001	One plan approved (2003). Many commenced but not finalised. Active pest control.	As per 2003/04, numerous surveys of pest weeds.
2.3	Action consistent with ETS health	Commence 2001	SCA reviewed environmental impacts. NPWS' actions not reported.	Extensive monitoring; ongoing.
2.4	Water Quality monitoring by SCA	Available 2001	Extensive monitoring; ongoing.	Extensive monitoring; ongoing.
2.5	SCA/NPWS develop special database	October 2001	Establishment progressing.	Establishment progressing.
2.6	SCA/NPWS ecological data modelling	October 2001	Not developed.	Not developed.
2.7	SCA/NPWS accelerate research under independent expert scientific body	Commence 2001	Scientific body not established nor programmed.	SCA Board adopted an alternate approach, Minister advised.
2.8	SCA/NPWS resource external long term independent research	2001	Not neither established nor resourced.	Neither established nor resourced.
2.9	SCA/NPWS 'whole of government' approach to development approval	August 2001	REP not gazetted.	REP not gazetted.
2.10	SCA/NPWS review threatening activities eg. Mines	2001	Control (SEPP58) and a mining working group established.	Control (SEPP 58) and a mining and utilities working group established.
2.11	Examine abandoned mines / rehabilitation programs	October 2001	Rehabilitation ongoing.	Mine inspection conducted.
2.12	Less significant impacting actions	2001	Ongoing risk approach.	Ongoing risk approach.
2.13	Grant lease only if have neutral / beneficial effect	2001	Criteria developed; ongoing assessment.	Centralised database created.



Key Action	Description	SASPoM Timetable	SCA's 2003/04 Status	SCA's 2004/05 Status
2.14	SCA/NPWS update fire management	2001	Updated following 2001/02 and 2002/03 bushfires.	3 long term R&D projects underway.
2.15	SCA/NPWS protect spiritual / cultural sites	2001	Manage via conservative plans; ongoing.	Indigenous land use agreement being established.
<b>Strategy Three: Public Education and Awareness Campaign</b>				
3.1	SCA/NPWS implement info program	September 2001	Numerous programs; ongoing.	Regulate public access. SASPoM website established.
3.2	SCA/NPWS coordinate briefing to elected decision makers	Annually	Briefing to local Government staff; unclear if to elected decision makers.	Briefing to local Government staff; unclear if to elected decision makers.
3.3	SCA/NPWS: K –12 education on Water Quality	September 2001 and ongoing	Active program demonstrated.	Warragamba Education Centre.
3.4	SCA/NPWS: report in respective Annual Reports	2001	Report in NPWS/SCA Annual Report not evident.	R&D and results of specific studies not evident in NPWS or SCA Annual Report, though reference to joint management and SASPoM delivery contained.
3.5	SCA/NPWS: report results publicly available	2001 then update quarterly	SASPoM website established.	SASPoM made available.
3.6	SCA/NPWS research public awareness	July 2001 then biannually	SCA contribute to national research but does not appear to relate to special areas.	No, though input to drought awareness.





Key Action	Description	SASPoM Timetable	SCA's 2003/04 Status	SCA's 2004/05 Status
<b>Strategy Four: Effective Joint Management Process</b>				
4.1	SCA/NPWS: implement Joint Management Agreement (JMA)	May 2001	Active JMA in previous years. Reviewed in 2003/04.	New JMA drafted over 2004/05.
4.2	SCA/NPWS: conduct staff education session	2001	Awaiting revised JMA.	Negotiations commenced and staff training commenced throughout 2004/05.
4.3	SCA/NPWS advise Licence Regulator	2001	Annual reports provided.	Annul Report provided, though without NPWS funding.
<b>Strategy Five: Public Scrutiny (to demonstrate transparency)</b>				
5.1	SCA/NPWS establish Charter of Public Disclosure	June 2001	Charter approved 2003/04.	No change since 2003/04.
5.2	Establish and resource External Independent Scientific Body (EISB)	May 2001	Not established as at 2003/04, and no EISB annual report.	Not established as SCA Board endorsed an alternate approach and thus no EISB in Annual Report.
5.3	SCA/NPWS: Place SASPoM on website	May 2001	SASPoM website being prepared over 2003/04.	Website established.
5.4	SCA and NPWS publish annual statements	September 2001	Completed annually.	Completed.

Performance Indicators		SCA's 2003/04 Status	SCA's 2004/05 Status
PI 1	Implement Key Actions consistent with Plan of Management timeframe	Whilst SCA indicates " <i>Completion of Key Actions... For all 37 Key Actions</i> ", numerous actions are yet to be completed or have delayed timetables.	Whilst SCA indicates " <i>Completion of Key Actions .... For all but one of 37 Key Actions</i> ", numerous actions had delayed timetables.
PI 2	Water Quality at Strategic Sites as advised by External Independent Scientific Body (EISB)	Water Quality is measured but not in accord with EISB	Water Quality is measured but not in accord with EISB (See also Key Action 2.7).
PI 3	Water Quality upstream of Special Areas as advised by EISB	Water Quality is measured but not in accord with EISB	Water Quality is measured but not in accord with EISB (See also Key Action 2.7).
PI 4	Flora and Fauna data as advised by EISB	Vegetation report in 2002/03 but not in accord with EISB. Fauna survey yet to be undertaken	Vegetation report in 2002/03 but not in accord with EISB. Some fauna surveys undertaken (see also Key Action 2.7).
PI 5	Ecosystem degradation. Indices as advised by EISB	Vegetation in report in SCA's Annual Environment Plan but not in accord with EISB	Increase in fauna surveys evident though not as advised by EISB (See also Key Action 2.7)
PI 6	Measure use of Special Area website	Special Areas website not established (proposed late 2004)	Use of Special Area Website not advised. Total hits on SCA website advised.
PI 7	Assess research by EISB	Not assessed by EISB, though some research peer-reviewed	Not assessed by EISB, though some research reviewed by a research panel (See also Key Action 2.7).
PI 8	Public Awareness	Broad national survey support but not for Special Areas	No biennial surveys of community awareness of key issues to Special Areas catchments. SCA advise participation in drought awareness.

**Table F.3 Appendix F - SCA's Performance against Strategic Priorities for 2003-2007 for Wingecarribee Swamp Special Areas Plan of Management.**

Strategic priority	SCA's nominated targets for 2004/05 (as per 2002/03 Annual Report: 'Performance indicator')	SCA's performance over (or nomination in) 2004/05 (as reported in 2004/05 Annual Report on implementation)
Maintain and maximise the effectiveness of the weed control program with specific focus on <i>Salix cinerea</i> (Willow) and <i>Rubus spp.</i> (Blackberry). Write and tender a new contract based on the planning outlined within the Pest and Weed Management Plan for Wingecarribee Swamp.	Tender completed and contractor(s) engaged by January 2004.  Weed infestation controlled and reduced in priority areas.	Engagement originally targeted (in 2002/2003) for January 2004 and then January 2005. The SCA did not achieve the January 2005 engagement because approval was delayed. Indicator for 2005/06: Commence in October 2006  Again no weed control was undertaken in 2004/05, that is, SCA approval and licences, etc were undertaken. New 2005/06 target sustainable management of agreed areas by June 2006.
Complete the Wingecarribee Swamp Weed and Pest Management Plan by:  Undertaking research trials on chronic toxicity of aquatic organisms to trichlopyr.  Completion of stakeholder consultation.	Research trials completed by March 2004.  Stakeholder consultation completed by end March 2004.	2002/03 Plan required research results to be completed by October 2004 (some 7 months late) and Threatened Species protocol to be incorporated in the priority areas: SCA advise toxicity testing no longer required and no threatened species protocols have been established: Protocols yet to be completed. SCA wrote to DEC on the need to progress this action .  Stakeholder consultation not completed: SCA advised this would be programmed as needed.
Use the completed Wingecarribee Swamp Weed and Pest Management Plan with an application to Australian Pesticides and Veterinary Medicine Authority (AP and VMA) to acquire approval of an off-label permit to use Garlon as the preferred chemical for Willow seedling control.	Original (2002/03) target was approval acquired by end September 2004.	Approval now required by end of June 2005 (9 months late). SCA advised alternate chemical has been sourced and a successful application obtained for importation.
Undertake a research program of Wingecarribee Swamp and Special Area with major emphasis on understanding, and potentially modelling the hydrology/hydrogeology associated with its catchment area.	Field mapping and geophysical survey completed by February 2004.  Initial boreholes drilled, piezometers installed, and hydraulic testing completed by end June 2004.	Approval of Stage 2 of Hydro Geological Investigation of Swamp (Submission D2004/11360 sighted) acquired by June 2005: Approval not acquired by June 2005.  Program now to "commence in late 2005". SCA advised that anticipated to acquire approval by November 2005.

Strategic priority	SCA's nominated targets for 2004/05 (as per 2002/03 Annual Report: 'Performance indicator')	SCA's performance over (or nomination in) 2004/05 (as reported in 2004/05 Annual Report on implementation)
Complete a feasibility study for the establishment of a Regional Field Study Centre for Wingecarribee Swamp and Special Area.	Complete by August 2003.	Study completed in October 2003. Comments in 2003/04 and again in 2004/05 were that SCA was considering the report (Key Action 3.3).
Ensure Wingecarribee Swamp and Special Area is included in the terms of reference for an Expert Independent Scientific Body established under SASPoM.	SASPoM will establish in 2003/04. WSSAPoM included with terms of reference.	SCA did not establish an Expert Independent Scientific Body but used a scientific peer review when required.
Participate in the finalisation of the REP and implement actions as they relate to the Authority.	REP gazetted and actions underway.	The REP is the responsibility of DIPNR, however it was not gazetted in the 2004/05 year.
Continue with the water quality-monitoring program for Wingecarribee Swamp and Special Area.	Data collected included with SCA Water Quality monitoring database.	Planning was undertaken to monitor the impact of the proposed weed control, however the routine water monitoring program was not recommenced in 2004/05.
Continue development of the SCA Geographic Information System (GIS).	Field mapping completed to validate satellite imagery of Wingecarribee Swamp by end June 2004.	Timing is now end of June 2005 (that is, 12 months late). SCA continued development of its Catchment Information System. Field validation was completed in 2004/05.
Ensure WSSAPoM is included with the Public Charter for the SASPoM.	Implement by December 2003.	The Wingecarribee Swamp has been included in the Special Areas Strategic Plan of Management Charter of Public Disclosure established on the SCA Website. Priority Action has been completed.
Seek access agreement with a neighbouring property owner in an attempt to acquire access to the south-eastern section of Wingecarribee Swamp.	Access Agreement signed by November 2004.	Annual Report 2003/04 indicates that under key action 1.2, the status was completed for private landowners to allow SCA access to the Swamp. However, the 2003/04 Implementation Plan (page 7) indicates that one of the formal agreements was terminated. The 2004/05 Report indicated that three access licence agreements were negotiated. SCA advised (October 2005) that all three access agreements were in place by September 2005.
Maintain and maximise effective joint management working relationships between NPWS and the Authority.	Meetings held. Steering Committee forum maintained.	SCA is dependent upon DEC's Parks and Wildlife Division for overall performance in this regard. It is noted that DEC's Parks and Wildlife Division's involvement in Wingecarribee includes:

Strategic priority	SCA's nominated targets for 2004/05 (as per 2002/03 Annual Report: 'Performance indicator')	SCA's performance over (or nomination in) 2004/05 (as reported in 2004/05 Annual Report on implementation)
		<p>No meetings were held for the Wingecarribee Swamp Threatened Species Taskforce over 2004/05.</p> <p>Rate of progress in the development of threatened species recovery plans; appears slow and SCA has sought advice from Parks and Wildlife Division in this regard.</p>
Maintain and maximise public education and awareness of Wingecarribee Swamp and Special Area.	<p>Attend three regional public events on environment.</p> <p>Complete two public media documents related to Wingecarribee Swamp and Special Area.</p>	SCA advised that the WSSAPoM publications (Key Action 3.5) were approved to be placed on the Special Areas webpage/website. Evidence was not provided to demonstrate if the reports were placed on the website over 2004/05.
Develop signage for Wingecarribee Swamp and Special Area based on the recently completed SCA Corporate Signage Manual.	Signs completed and installed by June 2004.	2003/04 plan targeted: June 2005, (12 months later): sites were identified and inspected, though no signs provided in 2004/05. SCA advised that it is not currently pursuing further signage at the swamp.
Seek extension of the Wingecarribee Special Area to cover the full extent of SCA's freehold ownership of the swamp.	Note: Under the 2001 Management Plan the timetable assigned for this was "already underway".	2004/05 report (Key Action 1.5) indicates a status of "Completed ". However, text indicates, "to cover the full extent... has not occurred". The Auditor sought clarification and was advised (SCA October 2005): "This process is underway and a process for its further progression is described in the 04/05 Annual Report. The clarification the auditor requests is provided in the Master Table – the issue can be clarified by a slight adjustment to the Annual Report format".
Seek scientific advice on all WSASPoM performance indicators.	The original 2001 Plan of Management required "all these performance indicators would be subject to periodic independent review." It is noted that the "independent" component is no longer contained within SCA's performance indicator 8 (page 32).	The target (2003/04) of Scientific Review of relevant WSSAPoM performance indicators achieved by 30 June 2005 was not achieved. SCA advised of a changed process for scientific review (as approved by SCA Board) and that the proposed review of the actions contained within the WSSAPoM. No specific review of the Performance Indicators has been undertaken.

Strategic priority	SCA's nominated targets for 2004/05 (as per 2002/03 Annual Report: 'Performance indicator')	SCA's performance over (or nomination in) 2004/05 (as reported in 2004/05 Annual Report on implementation)
Undertake research program of WSSA with major emphasis on understanding and modelling the hydrology/hydrogeology associated with its catchment.		In accordance with the timeframes within the contract, boreholes drilled, piezometers installed, and hydraulic testing completed by end June 2006.
Undertake a detailed review and approval process for the revised WSSAPoM.		A revised plan is available to the Minister by May 2006.

**Table F.4 Appendix F: Healthy Catchments Program Expenditure**

Program	2002/03		2003/04		2004/05	
	<i>"Indicative \$,000 K"</i>	<i>"Expenditure \$,000 K"</i>	<i>"Indicative \$,000 K"</i>	<i>"Past Expenditure \$,000 K"</i>	<i>"Indicative \$,000 K"</i>	<i>"Past Expenditure (2)\$,000 K"</i>
Sewage	4,110	4,110	4,489	4,487	4,691	4,249
Riparian	840	840	398	398	750	382
Urban Stormwater	530	530	200	200	630	9
Rural Lands	1,518	1,518	1,066	1,066	1,500	705
Compliance	-	-	400	400	500	79
Special Areas and Strategic Plan of Management	4,426	4,426	5,343	5,343	5,450	4,274#
Catchment Information	205	205	240	240	650	294
Annual Totals	11,629	11,629	12,136	12,134	13,571	9,992
SCA Revised Advice(#) for Special Areas and Strategic Plan of Management in 2004/05						7,686 (Not \$4,274K as previously advised)#
Amended Annual Totals	11,629	11, 629	12,136	12,134	13,571	13.404

- \*Source: SCA (2005) *"Healthy Catchments Program"* Annual Report 2004/05, or subsequent SCA advice to the Auditor.
- *"Indicative"* – Interactive forward projections and costing subject to annual review and priority setting for the planning period 2003-2007.
- *"Past Expenditure"* from SCA (\*2004) *Healthy Catchments Program 2002-2007 – Sydney Catchment Authority (Version 4.0 080404) Penrith: "Schedule of Programs and Deliverables (cost Scenario"*, where \$ represent *"Post expenditure"* current budget and applicable forward projections for the planning period 2003-2004.

1. Subject to renegotiation with MECU

2. Unaudited expenditure on 2004/05 HCP (as advised by SCA) totals to some \$13,404K. SCA also advised a further \$5,986K was expended by its Environment and Planning Division, although this was not allocated across SASPoM strategies. It appears some \$2,578K may apply to SASPoM expenditure and if so, the total 2004/05 expenditure under the HCP is some (\$2,578K + \$9,992K =) \$12,570K compared at an Indicative of \$14,171K
- #: SCA: Advised (7 October 2005) that the expenditure for SASPoM previously advised (\$4,274K) was incorrect and the actual figure was \$7,686K. (Note: The \$7,686K figure agrees with the amended figure advised by SCA for the total (originally \$6,952K corrected to \$7,686k) contained in the *Financial Report of the Annual Report on the Implementation of the Special Areas Strategic Plan of Management 2004-2005*).

In response to an IPART's request, SCA provided the following information to compare budgeted and actual expenditure for catchment management. However, it is noted that the categories of expenditure differ from those contained within the *Healthy Catchments Program Annual Report* (set out in Table F.4) .

***Expenditure on Healthy Catchments Program as advised by SCA (October 2005):***

*The SCA prepared its Business Plan in 2001/02 to cover the 2002-2007 period. It forms the basis of SCA's budgeting process. In formulating the budget the SCA identifies contaminants that are the greatest risk to water quality and allocates budgets to programs that address the contaminants of concern as guided by the Water Quality Risk Management Framework.*

*This includes allocating budgets to the Healthy Catchments Program strategies (that is, sewerage, land management, stormwater, riparian, catchment information, rural lands and compliance). Budgeting has been based on activity rather than at a sub-program (for example, SASPoM) level. It is intended that when the SASPoM is reviewed there will be program budgeting information available for the PoM.*

*Below is a table showing the last three years budget and expenditure for catchment protection in the two divisions with primary responsibilities for catchment management. The second table is total SCA-wide expenditure for catchment management over the past 5 years.*





**Catchment expenditure by account:**

	Budget 2003/04 (\$K)	Actual 2003/04 (\$K)	Budget 2004/05 (\$K)	Actual 2004/05 (\$K)	Budget 2005/06 (\$K)
Employee related	7,523	6,481	7,888	6,840	10,183
Administration	2,791	2,329	2,511	2,470	2,787
Consultancies	260	11			
Contractors	5,543	4,930	4,667	7,316	11,743
Information management	855	632	695	553	684
Property	543	377	297	288	518
Grants	3,920	3,509	7,871	3,929	1,375
Materials	20	68	95	84	100
Transport	409	749	627	675	667
Maintenance assets & equipment	48	185	125	-13	97
<b>Total</b>	<b>21,912</b>	<b>19,271</b>	<b>24,776</b>	<b>22,142</b>	<b>28,154</b>

**Total SCA catchment management expenditure:**

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Actual expenditure	\$13,509,320	\$17,585,591	\$24,348,276	\$22,091,707	\$19,693,217	\$22, 278,838

**Table F.5 Appendix F: Financial Statements on implementation of the Special Areas Strategic Plan of Management over the last four years**

Strategy	Project description	Expenditure 2000/01 (\$K)	Expenditure 2001/02 (\$K)	Expenditure 2002/03 (\$K)	Expenditure 2003/04 (\$K)	Expenditure 2004/05 (\$K) (2)
Strategy One: "Whole of Catchment"						
	Preparation of REP	231	}	364	386	395
	Salary and Vehicles			1,402	203	292
Strategy Two: "Ecosystem Management"						
	Fire Management	1,567	789	1,267	188	153
	Water Quality	435	425	100	100	100
	Pest and Weed Management	1,092	511	117	26	528
	Soil Conservation	593	170	153	325	1057
	Unauthorised Access Management	692	237	269	240	359
	Ecological Assessments	246	456	12	0	0
	Cultural Heritage Management	490	169	33	173	210
	Geographic Information System	205	125	50	177	431
	Rehabilitation	-	235	70	91	35
	Research	587	373	1,234	426	751
	Miscellaneous	168	326	9	185	314
	Salaries and Vehicles	1,092	1,482	2,632	690	734



Strategy	Project description	Expenditure 2000/01 (\$K)	Expenditure 2001/02 (\$K)	Expenditure 2002/03 (\$K)	Expenditure 2003/04 (\$K)	Expenditure 2004/05 (\$K) (2)
<b>Strategy Three: "Public Education"</b>						
	Education and Awareness Projects	62	101	65	177	317
	Salary and Vehicles		126	50	282	260
<b>Strategy Four: "Joint Management"</b>						
	SASM Secretariat	64	112	387	0	0
	Management Overheads		115		38	40
<b>Strategy Five: "Public Scrutiny"</b>						
	Public Disclosure		10	12	18	10
	Web Site	75	5	9	9	10
	Annual Report		5	42	5	6
Total		7,851	7,523	7,125	3,837 <sup>(a)</sup>	7,686(b)

a. Expenditure excludes NPWS (now part of DEC) contribution or "Funding Agreement" of \$2.888 million.

b. Note: SCA has confirmed the *Financial Report* contained the *Annual Report on the Implementation of the Special Areas Strategic Plan of Management 2004-2005*, was in error with the Total Expenditure being \$7,686K and not \$6,952K, as shown. SCA subsequently provided the Auditor with the updated expenditure; however, the Annual Report on the implementation of SASPoM still reflects the figure of \$6,952K.



**Table F.6 Appendix F: Expenditure on Wingecarribee Swamp and Wingecarribee Catchment 2000/2001 to 2004/05**

Strategy	2000/2001		2001/02		2002/03		2003/04		2004/05(1)	
	Expenditure on Swamp only	Expenditure on Planning and REP	Expenditure on Swamp only	Expenditure on Planning and REP throughout Wingecarribee Catchment	Expenditure on Swamp only	Expenditure on Planning and REP throughout Wingecarribee Catchment	WSSAPo M Specific	Catchment Collective	WSSAPoM Specific	Catchment Collective (4)
1. Whole of Catchment Management Approach	-	SCA Labour cost	-	\$1,160,060 + SCA Labour costs	-	\$75,000	\$100,000 (Robertson Sewerage Treatment )	Regional Plan \$636,216	\$50,000	Regional Plan \$505,000 Robertson Sewerage Treatment Plant \$158,000
2. Ecosystem Management Approach	\$565,000	-	\$572,087	-	\$456,174	-	\$278,592	LGA Willow Control \$81,552	\$276,824	\$377,000
3. Public Education and Awareness Campaign	-	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-	-	\$327,950 + SCA Labour Cost		SCA Labour Costs (\$516,000)
4. Effective Joint Management Processes	\$20,000	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-	SCA NPWS Labour Costs	-	\$27,090 Plus DEC Labour Costs	



Strategy	2000/2001		2001/02		2002/03		2003/04		2004/05(1)	
5. Public Scrutiny	-	SCA Labour costs	SCA Labour costs	-	SCA Labour costs	-		SCA Labour Cost		SCA Labour Costs (\$20,000)
TOTAL	\$585,000	SCA Labour costs	\$572,087	\$1,732,147	\$456,174	\$75,000	\$378,592	\$1,045,718	\$353,914	SCA Labour Costs (\$1,465,000)

- (1) DEC has provided no financial assistance to the implementation of WSSAPoM; although it has contributed in-kind support to issues such as fire management, threatened species recovery and the Ramsar nomination.
- (2) Source: 2000/2001 to 2002/03 Expenditure - Copy of Reconciled Details to Reflect Actual Costs for Wingecarribee Swamp" (source: SCA – October 2003
- (3) Source: 2003/04 expenditure - Wingecarribee Swamp Special Areas Strategic Plan of Management Report, 2004/05 Annual Report
- (4) Supplementary advice to Auditor (Document 7/180 received after 1 September 2005)



**Table F.7 Appendix F: Audit Sample of SCA Development Application Processing (via its Development Application Register) 2004/05**

DAR Number	Subject		Application Type	Compliance within Statutory Processing Time of 40 Days (Actual Processing Days, excluding "stop the clock" days)	Consent consistent with SCA Advice	Neutral Beneficial effect confirmed	Inspected	Copy of Council's Consent
04025	Subdivision Goulburn	7/129	Concurrence	Yes ( 0 )	No	Yes	Yes	Evident but not on DAR summary
04125	Subdivision Middle Arm	7/130	Concurrence	No (91 days)	No	Yes	Yes	Unsigned copy evident
04237	Tourist Development Canyonleigh	7/131	Concurrence	Yes (40 days)	Yes	Yes	Yes	Evident
04250	Subdivision Tourang	7/132	Notification	Yes (7 days)	Not advised	Yes	Yes	Not Evident
04270 (05270)	Dwelling, Kangaloon	7/123	"Other" (concurrence request)	Yes (21 days)	Yes	Yes	Yes	Not evident
04275	DA 04/1981 Radiata Rd Kangaroo Valley	7/133	Concurrent	Yes (24 days)	Yes	Yes	Yes	Evident
04300	Ready Reckoner checklist slash north spilling	7/125	N/A	NA	NA	NA		-
04301	Subdivision Jena Rd Bungonia	7/134	Notification	No (52 days)	No	Yes	Yes	Not Evident



DAR Number	Subject		Application Type	Compliance within Statutory Processing Time of 40 Days (Actual Processing Days, excluding "stop the clock" days)	Consent consistent with SCA Advice	Neutral Beneficial effect confirmed	Inspected	Copy of Council's Consent
04350	Ready reckoner checklist – Grounds maintenance	7/124	NA	NA	NA	NA		–
04400	B & B use	7/121	Concurrence	Yes (6 days)	Not advised	Yes	No	Not evident
04734	Subdivision Goulburn Mulwaree	7/122	Notification	No (28 days)	No	Yes (conditional)	Yes	Not evident
04351	Subdivision, Lake Bathurst	7/120	Concurrence	No (49 days)	Not Advised	Yes	Yes	Not evident
04770	Raw Water Pumping Station	7/119	"Other"	NA	Working to this objective	Working to this objective	NA	File demonstrated rigour applied by SCA Assessments
2002/03316	Mainoa Rd Upgrade, Nowra	7/113 7/116	"Other" Part 5 RTA	N/A	Evidence for DIPNR's	NA	NA	Demonstrates rigour of SCA's assessment of external (RTA) Part V Assessment
005/00570	Remediation Waratah	7/113	"Other" Part 5	NA	Basis of Assessment	NA	Yes	Assess compliance with consent conditions



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## Appendix G

# Dam Safety Committee and Australian National Committee on Large Dams – Guideline Summary





**Table G.1 Appendix G - DSC and ANCOLD Guideline Summary**

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report	Submissions to DSC Year 2004/05			Issued Internally & Externally	Desk Top Exercise	Comprehensive Exercise	
Avon Dam	09/00	09/05		Completed July 2005	Daily	09/04	03/98 11/98	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)
Bendeela Pondage	12/04	12/09	03/05	Completed Feb 2005	Tri weekly	09/04	11/98	5/99 Due for year 06/07	06/03 (C)
Broughtons Pass Weir	02/00	10/05 <sup>1</sup>		Completed Feb 2005	Tri weekly	09/04		Due for year 04/05. Rescheduled for 05/06	Draft for Upper Canal (includes the weir) prepared. Finalisation by Dec 06 <sup>2</sup> .
Cascade Dam 1 (Middle)	11/02	11/07		Completed June 2005	Weekly	09/04		Due for year 05/06	Draft prepared. Finalisation by Dec 06 <sup>2</sup> .
Cascade Dam 2 (Lower)	11/02	11/07		Completed June 2005	Weekly	Modified DSEP prepared in 2002/03		Due for year 05/06	Draft prepared. Finalisation by Dec 06 <sup>2</sup> .
Cascade Dam 3 (Upper)	11/02	11/07		Completed June 2005	Weekly	09/04		Due for year 05/06	Draft prepared. Finalisation by Dec 06 <sup>2</sup> .
Cataract Dam	09/01	09/06		To be completed Sept 2005	Daily	09/04	11/98	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)
Cordeaux dam	09/01	09/06		To be completed Sept 2005	Daily	09/04	03/98 11/98	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)



**Table G.1 Appendix G - DSC and ANCOLD Guideline Summary**

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report	Submissions to DSC Year 2004/05			Issued Internally & Externally	Desk Top Exercise	Comprehensive Exercise	
Fitzroy Falls Dam	07/04	07/09	07/04	To be completed Sept 2005	Tri weekly	09/04	03/98 11/98	5/99 Due for year 06/07	Issued June 2003 (C)
Glenquarry Cut Cont: Str:	07/04	07/09	07/04	To be completed Sept 2005	Weekly	09/04			Issued June 2003 (C)
Greaves Creek Dam	07/03	07/08		Completed June 2005	Weekly	09/04		Due for year 05/06	Draft prepared. Finalisation by Dec 06 <sup>2</sup> .
Kangaroo P/L Cont: Str:	04/01	07/09		Completed June 2005	Weekly	09/04		Due for year 06/07	Issued June 2003 (C)
Lake Medlow Dam	07/03	07/08		Completed June 2005	Monthly	Modified DSEP prepared in 2002/03		Not required	Scheduled for 2003 Rescheduled for 2005/06.
Nepean Dam	02/00	09/05		To be completed Sept 2005	Daily	09/04	11/98	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)
Prospect Dam	03/03	03/08		Completed Apr 2005	Daily	09/04	Not recorded on file	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)
Tallowa Dam	01/04	01/09		Completed Mar 2005	Tri weekly	09/04	11/98	5/99 Due for year 06/07	31 July 02 (C)

**Table G.1 Appendix G - DSC and ANCOLD Guideline Summary**

Dam	5-yearly Surveillance Report			Annual Inspection Report	Routine Inspections	Dam Safety Emergency Plan			O&M Manual
	Date of Last Report	Due Date for Next Report	Submissions to DSC Year 2004/05			Issued Internally & Externally	Desk Top Exercise	Comprehensive Exercise	
Upper Cordeaux Dam No.2	12/04	12/09	03/05	Completed Oct 2005	Monthly	Modified DSEP prepared in 2002/03 DSC waits copy		Not required	Scheduled for 2003 Rescheduled for 2005/06.
Warragamba Dam	06/02	06/07		To be completed Sept 2005	Daily	09/04	11/98	5/99 Due for year 04/05 Rescheduled for 05/06	06/99 (C) Updated by the contractor in 2002/03
Wingecarribee Dam	04/01	04/06		To be completed Sept 2005	Daily	09/04	11/98	5/99 Exercise Camel in 05/04	Issued June 2003 (C)
Woodford Creek Dam	07/03	07/08		Completed June 2005	Weekly	Modified DSEP prepared in 2002/03		Due for year 05/06	Scheduled for 2003 Rescheduled for 2005/06
Woronora Dam	10/02	10/07		To be completed Sept 2005	Daily	09/04	03/98 11/98	5/99 Due for year 04/05 Rescheduled for 05/06	31 July 02 (C)

Note 1: Extension endorsed by DSC by email dated 16 August 2005.

Note 2: Extension endorsed by DSC by email dated 2 September 2005.

C = Complete

D = Draft



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## Appendix H

# Environment Plan compliance table



**Table H.1 Appendix H - Environment Plan Compliance Table 2004/05**

Environmental Objective	Compliance with targets and timeframes	Finding
1. The SCA will provide strong and effective leadership on catchment protection and assist community understanding of this issue.	High compliance —	<p>The SCA achieved the majority of the targets set for this environmental objective including continuation of interactive education programs and school programs, ongoing media strategies, participation in consultative committees, research on attitudes to water restrictions and demand management.</p> <p>The SCA approved a total of \$25,556 in the Catchment Protection Improvements grant budget.</p>
2. The SCA will involve the community in its strategic decision making.	High compliance ▲	<p>The majority of targets for this environmental objective were satisfied during previous audit periods.</p> <p>During this audit period, the SCA continued to consult PENGOS on matters of joint interest and continued public consultation on the draft Regional Environmental Plan, the <i>Metropolitan Water Plan</i>, Warragamba Dam deep waters project and Shoalhaven transfers project. A Community Relations Manager has been appointed.</p> <p>Draft SCA Community Consultation Policy and Procedures were produced in July 2001 but never finalised. Instead, the SCA advised that it has adopted and implemented best practices established by DIPNR.</p>
3. The SCA will encourage and support the culture and practice of environmental responsibility within its staff and pursue greater environmental standards and performance from its contractors and suppliers.	Moderate compliance —	<p>The majority of targets for this environmental objective were satisfied during previous audit periods.</p> <p>During this audit period, environmental training on stormwater management, statutory powers and aquatic weeds was conducted. In addition, environmental training is given at induction for new staff. The SCA has not reported on the following targets, which are key to the satisfactory achievement of this objective:</p> <ul style="list-style-type: none"> <li>▶ The percentage of SCA staff whom have undertaken environmental awareness training (target is <i>all</i> staff); and</li> <li>▶ The percentage of induction training to contractors (target is training to be provided to <i>all</i> construction contractors).</li> </ul>
4. The SCA will optimise the use of its existing water resources and infrastructure to achieve an ecologically sustainable bulk water supply that meets current and future needs.	Full compliance —	<p>A number of targets for this environmental objective were satisfied during previous audit periods.</p> <p>The SCA has met water supply requirements for Sydney Water, Wingecarribee Shire Council and Shoalhaven Council and achieved environmental flows as designated by its Water Management Licence (WML).</p> <p>The SCA developed an Energy Management Policy previously and continued to implement it in 2004/05.</p> <p>A number of improvements with respect to the Asset Management Strategy were made in 2004/05, as reported in the EPPR.</p>
5. The SCA will manage its infrastructure, Special Areas and other land holdings for the provision of high quality raw water and for the conservation and enhancement of ecological health and	High compliance —	<p>During this audit period, the SCA continued to demonstrate:</p> <ul style="list-style-type: none"> <li>▶ Review of environmental policies commenced;</li> <li>▶ Maintenance of ecological integrity of SCA-owned or management lands;</li> <li>▶ Implementation of the Wingecarribee Swamp and Special Area Plan of Management and the Special Areas Strategic Plan of Management;</li> </ul>

**Table H.1 Appendix H - Environment Plan Compliance Table 2004/05**

Environmental Objective	Compliance with targets and timeframes	Finding
natural cultural values.		<ul style="list-style-type: none"> <li>Compliance with health guidelines in relation to raw water quality;</li> <li>Ongoing implementation of the Healthy Catchments Program;</li> <li>Compliance with the environmental flow requirements of its WML;</li> <li>The condition of the State Heritage items remains stable; and</li> <li>Aquatic ecosystem health indicators have been recommended but not yet endorsed by the SCA (original due date - January 2003).</li> </ul>
6. SCA will minimise any adverse environmental impacts from infrastructure operation, maintenance and construction.	Moderate compliance ▼	<p>During this audit period, the SCA:</p> <ul style="list-style-type: none"> <li>Conducted environmental audits on 10% of projects (12 projects). Audits were desk top studies only, no site visits were conducted. Note, however, that site visits are conducted by compliance officers, statutory planners, environmental planners and catchment officers – the number of inspections is not captured under this target;</li> <li>Of the capital works projects audited, 100% had been subject to environmental assessments.</li> </ul> <p>Due to the limited number of audits, the SCA has not reported on the percentage of capital works projects that underwent environmental assessment for 2004/05.</p>
7. SCA will reduce consumption of resources and minimise the generation of waste and pollution.	Low compliance —	<p>The SCA reported the following statistics on energy, waste management and resource consumption during the audit period, compared to the previous year:</p> <ul style="list-style-type: none"> <li><i>5.3% reduction</i> in the energy used by SCA buildings since 2003/04. (However, compliance with the target of 25% reduction from baseline levels by 2005 was not reported);</li> <li>Purchase of Green Power above GEMP requirements (excluding Shoalhaven transfers);</li> <li><i>Significant increase</i> in greenhouse emissions (attributable to the increase in greenhouse emissions of pumping water from the Shoalhaven system to the Warragamba and Nepean storages);</li> <li><i>Reduction</i> in waste (kg/employee/yr) sent to landfill; and</li> <li><i>High level</i> of recycled content in office paper purchased.</li> </ul> <p>The SCA developed a Remediation Action Plan for Warragamba Dam depot, however, the plan has not yet been initiated.</p> <p>Overall, SCA demonstrated improved performance for energy use in buildings, purchase of green power, waste generation and recycled paper content but significantly reduced performance for greenhouse gas emissions, compared to the previous year.</p>



**Table H.1 Appendix H - Environment Plan Compliance Table 2004/05**

Environmental Objective	Compliance with targets and timeframes	Finding
8. The SCA will improve its scientific knowledge of catchment protection, water quality and environmental management and utilise this knowledge to enhance its operational and environmental decision making.	High compliance —	<p>In 2004/05, research was undertaken on pathogens, nutrients, sediment, fire and catastrophic events, climate and flow variability and best management practices.</p> <p>A total of \$3.5M has been allocated over three years (from 2002/03) and the SCA has developed cooperative research agreements with other parties.</p> <p>The SCA advised that an assessment of the impact of recreational access on ecology and water quality continued during the 2004/05 year with a national workshop held, scoping of the next stage of the project and completion of a draft research report. The project was originally due to be completed by 2002. The SCA advised the project should be completed by 2005/06.</p>
9. The SCA will achieve water quality protection through environmental planning, land use management and planning control in the catchment.	No requirement —	<p>► Targets related to the Regional Environmental Plan have not been triggered, as the Regional Environmental Plan has not been gazetted.</p>
10. The SCA will monitor and report on its environmental performance, as part of a policy of continuous improvement.	High compliance —	<p>This review has indicated that the targets in the Environment Plan are generally being achieved although not always within the specified timeframes. Achievement of targets under each of the environmental objectives are summarised in this table.</p> <p>A verifier independently reviewed the 2003/04 AER and EPPR. The independent verifier was generally satisfied with the reports and associated systems.</p> <p>Generally compliance ranges from low to full and has not changed significantly since the previous year. The SCA did not provide significant new evidence to demonstrate movement towards full compliance for the strategies. It is therefore concluded that the SCA has made limited progress towards achieving full compliance with the Environment Plan during the 2004/05 audit period.</p> <p>It was noted that a number of targets in the Environment Plan have changed over the last five years and/or been addressed in alternative ways. It was also noted that activities are undertaken to meet the environmental objective and strategies, but no specific targets have been set so these activities/actions are not formally reported (for example, refer to Objective 6). The revised Environment Plan 2005-2010 should consider additional or alternate targets.</p>
<b>Key:</b> ▲ Improvement on previous year's performance — No change from previous year's performance ▼ Deterioration on previous year's performance		



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## Appendix I

# Performance against environmental and ESD indicators



**Table I.1 Appendix I - Performance against environmental indicators**

Environmental Indicator	SCA performance against the indicator in relation to previous year	Comment
<b>OPERATIONAL PERFORMANCE INDICATORS (FOR SCA ACTIVITIES)</b>		
<b>Impacts on Waterways</b>		
▶ Volume of water released from the SCA's major storages.	▼	See Table I.2 for comments.
▶ Temperature of water released from the SCA's major storages as compared to the temperature of receiving water or inflow waters.	—	Overall trends in temperature of water released compared to inflow waters have been similar for the past 10 years.
▶ Effluent management systems owned by the SCA performing to specification.	—	The facilities at the 7 camps performed to specification. Upgrading of other effluent management systems is under consideration.
<b>Impacts on Land</b>		
▶ Extent and intensity of hazard reduction burns on SCA-owned and managed lands.	▲	Intensity could not be determined. The extent of hazard reduction burns in 2004/05 was more than double that for 2003/04.
▶ Extent and condition of native vegetation on SCA-owned and managed lands.	Not determined	Extent identified, condition not reported, year-to-year comparison not reported.
▶ Extent of feral pigs on SCA-owned and managed lands.	Not determined <sup>#</sup>	Management activities (number of feral pigs culled) reported but extent of feral pigs was not reported.
▶ Extent of serrated tussock, willow and blackberry on SCA-owned and managed lands.	Not determined <sup>#</sup>	Management activities (areas treated for each weed type) reported but extent of weeds was not reported.
<b>Energy and Resources</b>		
▶ Amount of energy (kWh) used by the SCA per megalitre (ML) of bulk water supplied.	▼	See Table I.2 for comments.
▶ Annual greenhouse gas emissions related to electricity consumption by the SCA.	▼	See Table I.2 for comments.
▶ Estimated volume and type of waste annually sent to landfill from SCA activities.	▲	See Table I.2 for comments.
<b>ENVIRONMENTAL CONDITION INDICATORS</b>		
<b>Streams (inflows into the SCA's storages)</b>		
▶ Level and variability of streamflow	▲	Annual total flow to each of the 3 catchments showed marginal improvements in 2004/05 compared with 2003/04. Variability in streamflow was in proportion with rainfall.
▶ Physico-chemical measures of water quality.	—	Dry weather water quality was similar to 2003/04.



Environmental Indicator	SCA performance against the indicator in relation to previous year	Comment
Occurrences of <i>Cryptosporidium</i> and <i>Giardia</i> .	—	Occurrences have remained relatively unchanged.
The number of discharges of untreated sewage from licensed sewage treatment plants.	Not applicable, as SCA is not the regulator for this indicator	The number of discharges increased from 2 in 2003/04 to 10 in 2004/05. 9 years of historical data have been included for the first time.
The number of weirs with effective fishways.	—	There has been improved verification of the number and location of weirs. However, none have effective fishways.
Extent and condition of wetlands on SCA-owned and managed lands.	▲	The known extent of wetlands has increased by 2.3% from the NSW Native Vegetation Mapping Program. The condition of the wetlands could not be determined.
Status of macroinvertebrate populations to family level.	—	The SCA did not compare results to previous years, so it is difficult to assess whether there have been any improvements.
<b>Storages</b>		
Storage volumes and variability of the SCA's major storages.	▼	Storage volumes continued to decrease in 2004/05 due to drought conditions.
Physico-chemical measures of water quality from the SCA's major storages.	▲	Results indicated an improvement in water quality for the Warragamba system and similar performance for the Upper Nepean/ Woronora and Shoalhaven systems.
Occurrences of <i>Cryptosporidium</i> and <i>Giardia</i> within the SCA's major storages	—	Long term trend showing improvement since 1998/99. Occurrences have remained relatively unchanged from 2003/04.
Incidence of freshwater algal blooms in the SCA's major storages.	▼	Increased levels of algal blooms were recorded for Wingecarribee and Lake Yarrunga. The SCA indicated this was due to increased sampling compared to previous years.
<b>Lands</b>		
Extent and type of land use in the water supply catchment area	Not determined <sup>#</sup>	Minimal information presented in draft report.
Estimated number of unsewered properties in the water supply catchment area.	—	No new reliable data on this indicator has been obtained.
Extent and condition of native vegetation in the water supply catchment area.	Not determined	Improved mapping of the extent of native vegetation, but no numerical data or commentary on comparison with previous years.
Extent and condition of riparian vegetation in the water supply catchment area.	▲	Improved development of the Riparian Zone Index, improved scale for mapping to allow for yearly comparisons, case study on extent and condition of riparian vegetation.
Extent and type of erosion in the water supply catchment area.	Not determined	There is a lack of comparable data to allow for year to year comparison.

Environmental Indicator	SCA performance against the indicator in relation to previous year	Comment
▶ Intersection of transport routes and utility easements with watercourses in the water supply catchment area.	Not determined <sup>#</sup>	The SCA notes that the number is likely to have increased, but no data are provided.
▶ Area of the water supply catchment affected by salinity.	Not determined <sup>#</sup>	DIPNR's surface salinity mapping project is due for completion in 2005.
▶ Flora and fauna species of conservation significance in the water supply catchment area.	Not determined <sup>#</sup>	Data have been included for the past 11 years. Data does not reflect the total number of species, rather the level of surveys/ sightings undertaken.
▶ Total area burnt by wildfire in the water supply catchment area.	▼	Data for the last 5 years is included. There was an increase in wildfires since 2003/04, but these are not significant compared to wildfires that occurred in 2001-2003.

**Key:**

- ▲ Improvement on previous year's performance
- No change from previous year's performance
- ▼ Deterioration on previous year's performance
- # Data on this indicator is not collected by the SCA

**Table I.2 Appendix I - Performance against ESD indicators**

ESD Indicator	Performance towards sustainability in relation to previous year*	Comments	Extent of year to year comparison
<b>ENVIRONMENTAL</b>			
Volume of water released from SCA's major storages.	▼	There is no discussion in the report as to the levels of riparian and environmental releases deemed to be 'sustainable' for the river systems based on findings of the Hawkesbury Nepean River Forum.	Comparison provided with releases since 2000/01.  Total riparian and environmental releases have reduced compared to previous years although total volumes released to rivers have increased as the SCA continued transfers of water from the Shoalhaven system.
Extent and condition of native vegetation on SCA-owned and managed lands.	—	The report discusses improved mapping, recovery after wildfire and the extent of species and sites.	Changes to the extent and condition of native vegetation in areas that were affected by wildfires are discussed briefly.
Extent and type of erosion on SCA-owned lands.	Not determined	No new information is presented in the 2004/05 AER.	There is no indication whether there has been a change in the extent and type of erosion.



ESD Indicator	Performance towards sustainability in relation to previous year*	Comments	Extent of year to year comparison
Water quality performance in the SCA's major storages in comparison with ANZECC and NHMRC Guidelines.	—	Generally good water quality within the eight major storages.	General comment on results being comparable to 2003/04. Comparisons of results with the previous year were made for each system.
Amount of energy (kWh) used by the SCA per megalitre of bulk water supplied.	▼	There has been a significant increase in energy consumption due to the pumping of water from the Shoalhaven system to the Warragamba and Nepean Storages.	Comparison provided with energy consumption since 2000/01.
Annual greenhouse gas emissions related to electricity consumption by the SCA.	▼	See above	Comparison provided with greenhouse gas emissions since 2000/01.
Estimated volume and type of waste annually sent to landfill by the SCA.	▲	There has been a significant reduction in waste sent to landfill (kg waste/ employee/ year) , particularly for paper waste.	Graphical comparison provided with waste annually sent to landfill since 2000/01.
<b>SOCIAL</b>			
Percentage annual staff retention.	—	SCA reported continued high staff retention rates of 89%.	Comparison provided with percentage annual staff retention since 1999/2000.
Community perception with regard to the state of the catchment.	Not determined	SCA did not undertake wide-ranging survey work this year.	No comparison with community perceptions from previous years.
Number of hits per annum on the SCA's website.	▲	The number of hits has more than doubled.	Comparison with hits since 2000/01.
Total number of hours spent by staff in environmental training.	▲	Hours spent on training increased significantly since 2002/03 and 2003/04.	Comparison with hours spent by staff in environmental training since 2000/01.
Condition of State heritage items owned by the SCA.	—	No change in conditions since 2003/04 reported for historic buildings, engineering heritage or landscape items.	Comparison on condition of State heritage items since 2000/01.
<b>ECONOMIC</b>			
Reliability in meeting Sydney Water Corporations' Forecast Average Annual water requirements.	▲	Due to mandatory water restrictions, Sydney's water demand fell significantly during this audit period. The SCA was able to meet the demand.	Comparison data since 2000/01.



ESD Indicator	Performance towards sustainability in relation to previous year*	Comments	Extent of year to year comparison
Operating costs per megalitre of bulk water supplied.	Not determined	Operating costs per ML/water were not available for 2004/05 during the audit period. This indicator has increased each year since 2000/01.	Comparison data since 2000/01.
Percentage of capital improvement projects on schedule and within budget.	Not determined	Budget figures were not available for 2004/05 during the audit period.	Comparison data for capital improvements and budget provided since 2000/01, although <i>budget</i> for 2004/05 was not available.
Asset value per megalitre of bulk water supplied.	Not determined	Asset value data were not available for 2004/05 during the audit period.	Comparison of asset value per megalitre of bulk water supplied since 2000/01.
Percentage of operating budget assigned to research and scientific catchment monitoring.	Not determined	Data were not available for 2004/05 during the audit period.	No comparison of percentage of operating budget was provided for the previous years in the draft report.
Percentage of operating budget assigned for skills development of staff.	Not determined	Data were not available for 2004/05 during the audit period.	Comparison of percentage of operating budget assigned for skills development of staff since 2000/01.

**Key:**

- ▲ Improvement on previous year's performance
- No change from previous year's performance
- ▼ Deterioration on previous year's performance
- # Data on the indicator is not collected by the SCA

**Note:** \* The SCA attempts to interpret the individual environmental and ESD indicators in the AER by indicating whether there is a move away from or towards sustainability. In its Sustainability Performance Summary, the SCA indicates for some indicators there has been "no change from the move away from sustainability". This implies that previously performance was poor and it continues to be poor. It is the Auditor's opinion that the definitions and associated graphics are confusing. It may be simpler to report on performance as indicated in the tables above: improved, deteriorated or no change to performance.