



Independent Pricing and Regulatory Tribunal

NSW water utilities performance 2011/12

Water — Performance Report
February 2013



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The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Mr James Cox PSM, Chief Executive Officer and Full Time Member

Mr Simon Draper, Part Time Member

Inquiries regarding this document should be directed to a staff member:

Gary Drysdale (02) 9290 8477

Jessica Hanna (02) 9113 7715

Justin Robinson (02) 9290 8427

Independent Pricing and Regulatory Tribunal of New South Wales

PO Box Q290, QVB Post Office NSW 1230

Level 8, 1 Market Street, Sydney NSW 2000

T (02) 9290 8400 F (02) 9290 2061

www.ipart.nsw.gov.au

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Executive Summary

The Independent Pricing and Regulatory Tribunal of NSW (IPART) monitors and reports annually on the performance of the NSW metropolitan and bulk water utilities. For the 2011/12 report we have presented selected performance indicators of 4 metropolitan/retail water utilities, 2 bulk water utilities and 1 water manager. The utilities reported in the performance report are:

- ▼ the 2 major metropolitan retail utilities regulated by IPART – Sydney Water Corporation (Sydney Water) and Hunter Water Corporation (Hunter Water)
- ▼ the 2 local councils retailing water and sewage to their local government areas for which IPART only regulates prices – Gosford City Council (Gosford Council) and Wyong Shire Council (Wyong Council)
- ▼ the 2 bulk water utilities in NSW regulated by IPART – the Sydney Catchment Authority (SCA) and State Water Corporation (State Water)
- ▼ The NSW Office of Water (NOW) for which IPART only regulates prices.

The indicators we present in the report are:

- ▼ the IPART performance standards in the areas of water quality, service standards and other requirements set out in the operating licences of Sydney Water and Hunter Water
- ▼ selected National Water Initiative (NWI) Indicators for Sydney Water, Hunter Water, Gosford Council and Wyong Council
- ▼ new indicators designed to describe customer ‘hardship’
- ▼ the actual expenditure, sales and revenue performance of all the water utilities (4 retail and 2 bulk water suppliers)
- ▼ the actual performance against output measures and capital expenditure programs by the 4 retail utilities and SCA and the NSW Office of Water.

This is the first time that the NSW Office of Water has been included in this report.

This report does not cover the performance or compliance of the Water Industry Competition Act licensees. The compliance of these entities is reported annually to the Minister and is tabled in Parliament¹.

The purpose of this report is to make our findings available to all stakeholders, and to strengthen the utilities' accountability and incentives to maintain and improve their performance over time. We consider the report provide a useful insight into the utilities' operations, service standards and reliability. However, we also emphasise that the data presented needs to be interpreted with care. There are several reasons for this:

- ▼ Firstly, we do not always consider it appropriate to draw conclusions of performance based on comparisons of indicators. We have not adjusted the findings to take account of differences between their operating environments. We have only noted, where possible when these differences are likely to account for some or all of the difference in performance.
- ▼ Secondly, while we have made considerable progress in standardising the performance measures, measurement systems and interpretations still differ between utilities.
- ▼ Finally, in looking at an individual utility's performance, it is more important to focus on the trends over time, rather than its performance in any year.

Structure of the report

The structure of the report is unchanged from previous years. The remainder of this section of the report summarises the key findings regarding performance of the utilities this year as well as outlining the public water utility projects and reviews undertaken this year. Chapter 1 outlines the context for this review of performance indicators and introduces the utilities, indicators and methodology we adopted to conduct the review.

The following chapters present a detailed discussion of the performance of the retail water utilities with respect to drinking water quality, continuity and reliability of water supply and sewerage services, environmental outcomes, water recycling and customer issues and complaints handling. For the first time we have included hardship indicators.

Chapter 6 discusses the performance of each utility compared to IPART's determinations.

The final chapter presents our findings on the performance of the bulk water utilities in relation to their forecast and actual expenditure, sales and revenue, and their progress in implementing projects.

¹ The latest report is *Licence Compliance under the Water Industry Competition Act 2006 – Annual Report 2011/12*.

Key findings

The 2011/12 report provides information on the utilities' performance by presenting the performance indicator data in the areas of water quality, water and sewerage system continuity and reliability, environment and customers. Performance fluctuates from year to year and small changes in performance from previous years (both positive and negative) are expected. The 4 metropolitan water utilities recorded improved or steady performance on most indicators this year. For a small number of indicators, performance has declined this year. Overall, the utilities continue to provide customers with high quality water and sewerage services and are working to minimise the impact of their operations on the environment.

The utilities performed well in terms of microbiological and chemical water quality. One utility reported a short term chemical water quality exceedance in one zone as discussed in section 2.1.

With respect to system continuity and reliability, all utilities recorded improved performance in the general area of unplanned water interruptions. Utilities recorded decreases in either the frequency or duration of unplanned water interruptions (or both). Level of main breaks and real losses generally declined for the utilities this year also.

In the area of environmental performance the utilities all sourced and supplied less water this financial year compared to the previous year. They also collected more sewerage. The utilities uniformly reported this trend as influenced by the wetter climactic conditions that they all experienced this financial year. Energy consumption and greenhouse gas emissions generally reduced (for those utilities that reported these indicators). The compliance of treated sewerage with Environmental Protection Licences also remained high, although 1 utility reported a small deviation from 100% compliance as discussed in section 4.2.2.

Level of customer complaints remains stable but complaints to the Energy and Water Ombudsman of NSW (EWON) have increased. For the first year we have also attempted to describe the level of hardship in the community by including 'hardship indicators'. In future years we hope to develop these indicators further.

Most of the utilities incurred operating expenditure of around 10% more than we allowed in our respective determinations, with the exception of Wyong Council (6%) and State Water (4%). Apart from Gosford Council, all of the utilities have incurred less capital expenditure than we allowed over the last 5 years. As noted above all utilities supplied less water this financial year, as a result all utilities have lower revenue than we forecast in our respective determinations.

Most of the utilities are on track to achieve the majority of their capital expenditure programs by the end of their respective determinations.

We are pleased to include NOW's first output report and note the areas of service improvement reported.

IPART reviews and projects for 2011/12

IPART has completed a number of reviews and projects of the public water utilities this year. These included the licensing projects:

- ▼ Operating licence compliance audits and reports for the 2010/11 audit year of:
 - Sydney Water Corporation
 - State Water Corporation
 - Sydney Catchment Authority
 - Hunter Water Corporation.
- ▼ End of term review and recommended revised more streamlined, systems orientated licences to the Minister for Hunter Water Corporation and Sydney Catchment Authority.
- ▼ Reviewed audit guideline for public water utilities' operational audit.
- ▼ Review of performance indicators to remove redundant and duplicative reporting requirements.

The pricing projects and reviews completed this year included:

- ▼ Maximum price determinations for
 - Sydney Desalination Plant from 1 July 2012
 - Sydney Water from 1 July 2012
 - Sydney Catchment Authority from 1 July 2012.
- ▼ Reviewed price structures for metropolitan water utilities.
- ▼ Developed a methodology paper efficiency and energy adjustment mechanisms for Sydney Desalination Plant.
- ▼ Released issues papers for the review of:
 - Hunter Water Corporation prices from 1 July 2013
 - Gosford City Council prices from 1 July 2013
 - Wyong Shire Council prices from 1 July 2013
 - Developer charges for Gosford City Council and Wyong Shire Council from 1 July 2013.
- ▼ Commenced review of rural water charging arrangements under section 9 of the Independent Pricing and Regulatory Tribunal Act (completed in August 2012).

1 Approach and context for this report

This review examines the performance of the 4 metropolitan retail water utilities in NSW – Sydney Water, Hunter Water, Gosford Council and Wyong Council – and (to a limited extent) the bulk water utilities, the SCA and State Water and The Water Manager, NOW. This chapter explains the approach we used to conduct this review, including the data we relied on, and provide some important contextual information on the utilities we reviewed.

1.1 Our approach and data sources

IPART is responsible for administering the operating licences of Sydney Water, Hunter Water, Sydney Catchment Authority and State Water. As part of this role, we conduct regular audits of their performance against the range of water quality, service standards, demand management and environmental performance requirements set out in their licences. We also collect data on their performance against the National Water Initiative (NWI) indicators and indicators developed by IPART, and have used this data and the results of our audits to review their performance.

We do not currently audit the operating performance of Gosford Council and Wyong Council.² However, these councils are in the process of establishing the Central Coast Water Corporation, which will eventually hold an operating licence that will be regulated by IPART. In the interim, we have used data on their performance against the NWI indicators.

We are responsible for regulating the prices that the 4 retail water utilities and 2 bulk water utilities can charge their customers. To make our price determinations, we forecast their expenditures, revenues and sales over the determination period. We also establish the output measures the utilities are expected to meet over the determination period, given the amount of capital expenditure we allowed for in setting prices. We have compared the utility's actual performance against its forecasts and output measures.

² Although IPART regulates pricing for these utilities, the other activities of these water utilities are currently regulated by the NSW Office of Water (NOW).

In general, we have not compared the performance of the bulk water suppliers with that of the retail water utilities because the nature of their business operations is too different from that of the retail utilities for such comparisons to be valid. Instead, we have compared their performance against their own past performance over a 5-year period.

Due to limitations in the Annual Information Return data received from the NSW Office of Water, we have not reported on their actual operating expenditure, capital expenditure, water sales or revenue. However, we have received a more detailed report from the NSW Office of Water on its performance against the program set out in their determination that underpinned the calculation of prices. This report is included.

1.2 The utilities we reviewed

While we consider our findings in this report provide useful insights into the performance of a utility, there are significant differences in their operating environments, services and size.

As noted above, the bulk water utilities' differences are so significant it is not possible to compare their performance to that of the retail water utilities. Regarding the 4 retail utilities' performance, while we have presented them together, the reader should understand that:

- ▼ We have not adjusted the findings to take account of differences in their operating environments.³
- ▼ While considerable progress has been made in standardising the definitions of the performance measures, there are still some differences in measurement systems and interpretations used.
- ▼ In looking at an individual utility's performance, it is more appropriate to focus on the trends over time than its performance in any year.

The following sections provide a brief overview of each utility and its operating environment, and Tables 2.1 and 2.2 highlight some of the key differences in the services the 6 utilities provide, and their operating environments.

³ For example, when comparing the energy used by Sydney Water and Hunter Water, we have included the energy used by Hunter Water's bulk water operations, even though Sydney Water does not use energy for this purpose as it purchases most of its bulk water from the Sydney Catchment Authority.

1.2.1 Sydney Water and Hunter Water

Sydney Water is a State Owned Corporation, wholly owned by the NSW Government. Its primary role is to provide drinking water and sewage treatment to protect public health and the environment for the benefit of residents in Sydney and surrounding urban areas. These roles and responsibilities are derived from the *Sydney Water Act 1994* and the operating licence issued to Sydney Water pursuant to Part 5 of the Act.

Sydney Water is the largest water utility in NSW and it provides services to a population of more than 4 million people in Sydney, the Illawarra and the Blue Mountains.⁴

Sydney Water purchases the majority of its bulk water from the Sydney Catchment Authority while around 12% in 2011/12 came from the Sydney Desalination Plant.^{5,6} As a consequence, Sydney Water did not have the operating costs, capital expenditure, energy use and environmental obligations related to bulk water supply sources as the other 3 retail utilities. This factor needs to be taken into consideration when comparing the operating costs, capital expenditures, energy consumptions and greenhouse gas emissions data presented in this report.

Hunter Water is a State Owned Corporation, wholly owned by the NSW Government. Its primary role and responsibilities include providing water and sewerage services to the Newcastle, Lake Macquarie, Maitland, Cessnock, Dungog and Port Stephens areas, and bulk water services to parts of the Singleton and Great Lakes areas and the Central Coast. These roles are derived from the *Hunter Water Act 1991* and the operating licence issued to Hunter Water pursuant to Section 12 of the Act.

Unlike Sydney Water, Hunter Water is a fully vertically integrated utility operating the entire system from catchment to end use. Hunter Water's bulk water supply activities need to be considered when comparing some indicators in this report. For example, its energy use and greenhouse gas emissions are higher due to the amount of energy used to pump river water into off-river storage and to extract groundwater.

⁴ See <http://www.sydneywater.com.au/WhoWeAre/>

⁵ Sydney Desalination plant (which can supply up to 15% of Sydney Water's bulk water supplies) commenced operation in January 2010.

⁶ See Figure 5.1 and Table A.8 in Appendix A.

1.2.2 Gosford Council and Wyong Council

Currently, both Gosford Council and Wyong Council are designated as Water Supply Authorities under the *Water Management Act 2000*. Both councils operate separate water retail and waste water services and have a long-standing agreement to construct, operate, maintain and share the cost of the head works system components⁷ serving each council's water distribution system.

The Central Coast Water Corporation has been established under an agreement between the councils and the NSW Government where councils are the shareholders of the Corporation. In accordance with the agreement, the councils are currently investigating the scope of services to be performed by the Corporation. After the councils transfer their water utility functions to the new the Corporation⁸, IPART will then regulate this combined utility via a new operating licence.

1.2.3 The Sydney Catchment Authority and State Water Corporation

The Sydney Catchment Authority's primary role is to manage and protect the catchment areas and infrastructure and to supply bulk water services. These roles and responsibilities are defined under the *Sydney Water Catchment Management Act 1998* and the utility's operating licence.

The Sydney Catchment Authority primarily provides water to Sydney and surrounding areas, with Sydney Water purchasing 99% of the water that the Sydney Catchment Authority supplies.⁹ Sydney Catchment Authority also supplies 3 local councils and a small number of retail customers.

State Water is a statutory corporation wholly owned by the NSW Government. It operates in rural NSW under the *State Water Corporation Act 2004* and its operating licence. It provides bulk water services to around 6,300 customers including irrigation corporations, country town water supply authorities, farms, mines and electricity generators.¹⁰ State Water meets community needs by providing water for stock and domestic users. It is also responsible for delivering environmental flows on regulated rivers.

State Water operates around 20 dams and over 280 weirs and associated assets on regulated rivers. Its area of operations includes 11 river valleys, the Fish River Water Supply Scheme, and includes area managed by the Murray Darling Basin Authority and Border Rivers Commission.¹¹

⁷ Dams, weirs and water treatment plants.

⁸ Currently anticipated to commence from 1 July 2017.

⁹ IPART, *Review of the operating licence and review of prices for the Sydney Catchment Authority from 1 July 2012 – Issues Paper*, June 2011, p 18.

¹⁰ <http://www.statewater.com.au/>.

¹¹ IPART, *Fact Sheet – Review of bulk water charges for State Water Corporation – June 2010*, June 2010, p 1.

1.2.4 The New South Wales Office of Water

The NSW Office of Water is responsible for the management of NSW's surface water and ground water resources. The NSW Office of Water performs planning, management and licensing roles.

Table 1.1 Services provided by each utility included in this review

Services	Retail Water Utilities				Bulk Water Suppliers		Water Manager NOW
	Sydney Water	Hunter Water	Gosford Council	Wyong Council	Sydney Catchment Authority	State Water	
Bulk water storage and supply	x	✓	Joint water supply arrangements between councils		✓	✓	x
Water treatment	✓	✓	✓	✓	x	x	x
Water distribution	✓	✓	✓	✓	x	x	x
Water retail	✓	✓	✓	✓	x	x	x
Sewerage retail	✓	✓	✓	✓	x	x	x
Sewerage collection	✓	✓	✓	✓	x	x	x
Sewerage treatment and disposal	✓	✓	✓	✓	x	x	x
Recycling	✓	✓	✓	✓	x	x	x
Stormwater services	Defined areas only		✓	✓	x	x	x
Water planning and management	x	x	x	x	x	x	✓

Table 1.2 Size of each retail utility's operations and customer base as at 30 June 2012

	Sydney Water	Hunter Water	Gosford Council	Wyong Council
Total population receiving water supply services	4,626,000	540,000	163,200	145,400
Total connected properties – water supply	1,812,000	230,347	70,600	60,600
Length of water mains, (km)*	21,680	4930	980	1208
Total urban water supplied, (ML)	527,858	65,060	13,238	13,229
Average annual residential water supplied, (kL/property)	193	163	145	151
Total population receiving sewerage services	4,491,000	517,000	159,300	143,100
Total connected properties – sewerage	1,763,000	219,000	68,800	59,600
Length of sewerage mains and channels, (km)**	24,768	4792	1313	1252
Total sewage collected, (ML)	588,097	80,777	16,607	17423
Average annual sewage collected, (kL/property)	334	369	242	292

Source: NWI indicators C1; C4, A2; W11; W12, C5, C8; A5; and W18, W19. * Includes recycled water mains.

**Includes stormwater channels.

2 Drinking water quality

Drinking water quality is arguably the most important measure of a water utility's performance. The public expect a water utility to provide drinking water that is; safe, (free of microbial, chemical, radiological and physical contaminants) *and* aesthetically pleasing (in terms of colour, turbidity, taste and odour). Accordingly, water utilities direct significant resources and effort towards the management of water quality to meet community expectations.

All 4 metropolitan water utilities manage water quality according to the risk based management framework outlined in the *Australian Drinking Water Guidelines*, 2011 (ADWG, see Box 2.1).

Box 2.1 Australian Drinking Water Guidelines 2011

The Australian Drinking Water Guidelines provide a comprehensive framework for good management of drinking water supplies that, if implemented, will assure safety at point of use. The framework includes 12 elements considered good practice for system management of drinking water supplies. The guidelines (among other things) also include 2 different types of water characteristics values:

- ▼ a health-related guideline value, which is the concentration of a water quality characteristic that, based on present knowledge, does not result in any significant risk to the health of the consumer over a lifetime of consumption
- ▼ an aesthetic guideline value, which is the concentration of a water quality characteristic that is associated with acceptability of water to the consumer, eg, appearance, taste and odour.

The microbial and chemical requirements referred to in this chapter are *health*-related guideline values.

Source: Australian Government, *Australian Drinking Water Guidelines* 6, 2011, only available online at <http://www.nhmrc.gov.au/guidelines/publications/eh52>

We can measure performance in the area of drinking water quality in a number of ways. No single measure can completely describe water quality. Water that is highly coloured, turbid or tastes unpleasant to the consumer, may be safe to drink from a health point of view. Conversely, many disease causing contaminants do not leave any detectable taste, odour or colour components in the water. The ADWG provides health and aesthetic guideline values and water utilities should aim to meet both types of criteria.

One measure is compliance with the utility's chosen water quality management guidelines (ADWG, 2011). Another measure is the level of customer complaints the utility received relating to water quality. These have been presented below.

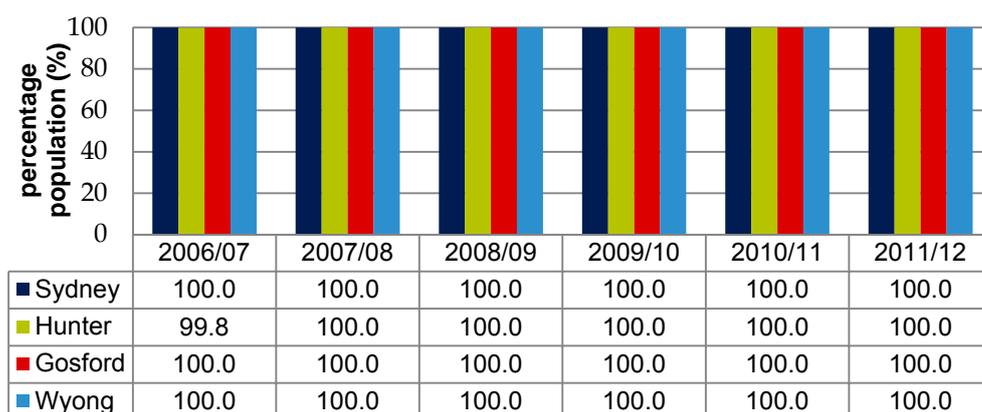
2.1 Level of compliance with Australian Drinking Water Guidelines

The indicators presented here consider how the utility performed in achieving compliance with the 'health related' water quality characteristics.

The first measure is the percentage of the population, receiving water that was compliant with the *microbiological requirements* of the ADWG. The ADWG 2011 states in its guiding principles that "The greatest risk to consumers of drinking water are pathogenic microorganisms"¹². Contamination of drinking water with pathogenic microorganisms is typically associated with acute outbreaks of waterborne diseases (sudden large numbers of people experiencing diarrhoea).

Sydney Water, Hunter Water, Gosford and Wyong Councils all achieved microbial compliance with the requirements of the ADWG for 100% of the population (Figure 2.1). We have observed this stable result for all of the utilities for the last 5 years. There are, rarely, circumstances that have seen the result fall below 100%. However, we would normally expect high results for this indicator and deviations from full compliance to be relatively small (less than 1 percentage point).

Figure 2.1 Microbiological compliance



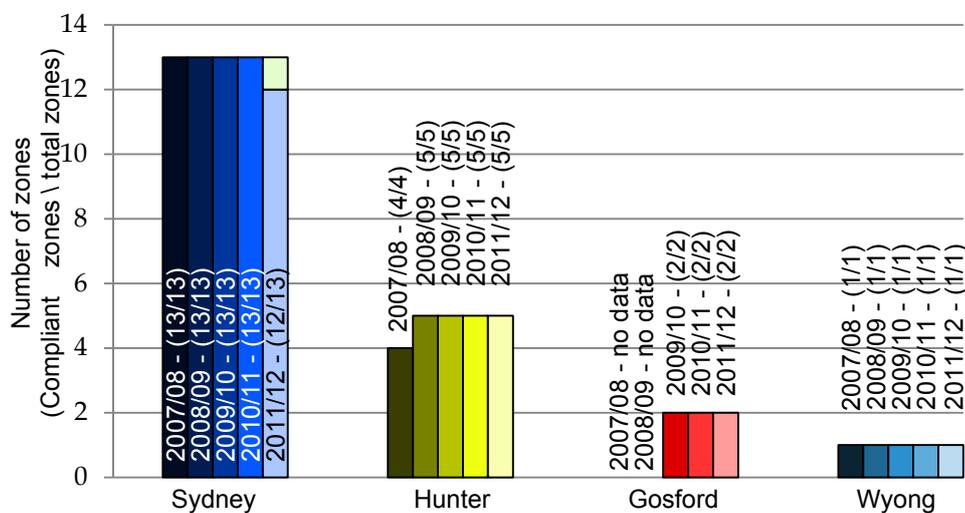
Data source: NWI Indicator H3.

¹² Australian Drinking Water Guidelines, 2011, NHMRC p 1-1.

The second 'health related' water quality measure we presented is the number of zones, in which, the utility achieved chemical compliance with the ADWG. Chemical contamination of drinking water usually results in risks to human health with long term exposure (drinking the water for a number of years).

In the 2011/12 year, 3 utilities reported chemical compliance in all drinking water supply zones¹³. One utility reported chemical compliance was achieved in all but one zone (Figure 2.2).

Figure 2.2 Zones achieving chemical compliance



Data source: NWI Indicator H4.

Sydney Water has acknowledged that one system within their water supply network failed to meet chemical compliance. They report that this is due to the level of trihalomethanes (THM) exceeding the health guideline limit set out in the ADWG. Sydney Water reported that in 4 samples collected between April and May 2012 in the Nepean Delivery System 4 THM exceptions were recorded. Trihalomethanes are a by-product of disinfection. They form when chlorine used for disinfection reacts with naturally occurring organic matter in the water. The ADWG states that short term consumption of water with concentrations of THM higher than the guideline values was unlikely to pose a health risk¹⁴.

¹³ Water supply zones' are defined differently by utilities. The "2011-12 National Performance Framework: Urban performance reporting indicators and definitions handbook" provides guidance for defining zones. (pp 101-102) http://archive.nwc.gov.au/_data/assets/pdf_file/0018/22860/National-Performance-Framework-2011-12-urban-performance-reporting-indicators-and-definitions-handbook.pdf

¹⁴ Australian Drinking Water Guidelines 2011, NHMRC, pp 1089 - 1091, http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/eh52_aust_drinking_water_guidelines_update_120710_0.pdf

Sydney Water reported wet weather events increased the level of organic matter in the raw water leading to the higher levels of THM. Sydney Water managed the incident in accordance with the recommendations of the ADWG and in addition they note that the exceedance occurred for a short time, and reference the ADWG in stating it was unlikely to pose a significant health risk. The incident was reported to NSW Health and no further action was required. Over the 5-year period this is the first year that any utility has reported any zones not achieving chemical compliance. Performance has historically been at high levels, and is likely to return to these levels again in future years.

2.2 Number of customer complaints about water quality

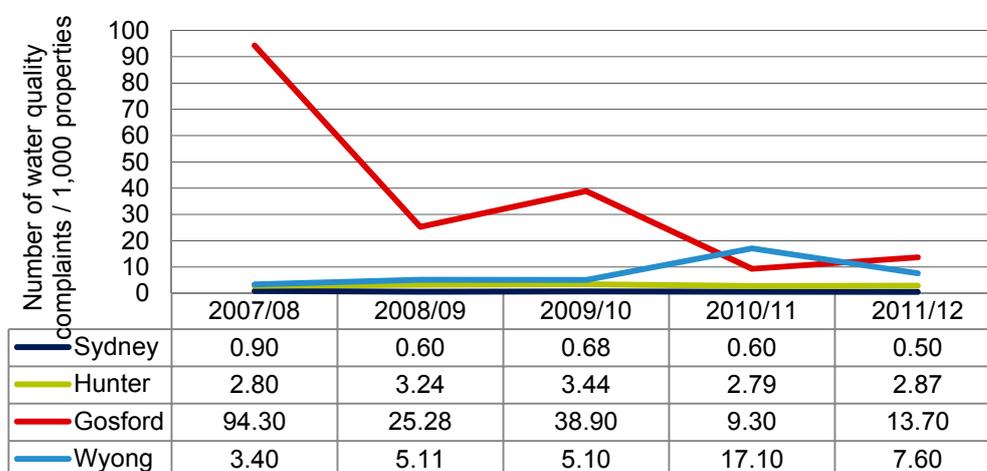
Customer complaints about water quality are another measure of water quality. However, we should note that water that is safe for drinking may still result in complaints because a characteristic of the water is unpleasing to the customer or perceived as unsafe. The results of this indicator are presented in Figure 2.3.

This measure relates mainly (although not always) to the aesthetic quality of water and whether it meets the community's expectations. This indicator includes complaints relating to:

- ▼ discolouration
- ▼ taste & odour
- ▼ stained washing
- ▼ illness
- ▼ cloudy water

and similar.

Figure 2.3 Water quality complaints



Data source: NWI Indicator C9.

The data presented in Figure 2.3 has been presented as a number per 1000 properties, to account in part for the large population differences between the utilities. Despite this, the larger utilities seem to exhibit relatively stable figures over the 5-year period to 2011/12 and lower rates of customer complaints. The councils (particularly Gosford Council), in contrast, have experienced a large variability in the customer complaints they received from their customers over the same period and at a higher rate.

It is not always easy to determine the motivations that cause a customer to complain or not complain. Further, different communities will have different expectations of their drinking water quality. However, this indicator is still a useful measure of whether the water has met the communities' expectations. The 2011/12 results indicate that water quality complaints were lodged by residents living in between 0.05% and 1.4% of properties being supplied throughout the year.

Hunter Water has over reported their number of complaints as they count all dealings with customers regarding water quality as a complaint. The number of contacts that are not complaints is not known so the degree of over reporting cannot be estimated.

Gosford Council's level of Water Quality complaints has historically been high. In the past, Gosford Council has had issues with water quality (this is mainly an aesthetic issue involving the supply of discoloured water). This was due to reduced flow in its water system as a result of water restrictions and the reduction in mains flushing programs over a 5-year drought period, which led to higher concentrations of iron and manganese in the pipes, discolouring the water.

Gosford Council is now well-advanced in addressing this problem and has implemented a program of flushing with the easing of water restrictions. It has also improved treatment processes to remove iron and manganese from the water before distribution.¹⁵

Gosford Council has advised that the increase in the number of complaints during 2011/12 can be attributed to the "Aggressive mains flushing program" changing from a quarterly to a 6-monthly interval. Council's change of the schedule was aimed at achieving lower levels of wasted water, reduce costs and cause less interruption to residents. The resulting increase in water quality complaints has caused Gosford Council to revise the schedule back to quarterly intervals. Council continues to work on using alternative technologies in their mains cleaning program.

¹⁵ Discussed in a meeting with Gosford Council, 14 - 15 November 2011.

3 Water and sewerage service continuity and reliability

The continuity and reliability of a utility's services is also of key concern to its customers. Customers require certainty about the minimum level of service being provided. When utilities provide essential services like water supply and sewerage services, events such as unplanned interruptions, pressure failures and sewer overflows can have health, economic and inconvenience implications for customers.

System performance standards are written into the operating licences of the major water utilities (Sydney and Hunter Water). The 3 system performance standards contained in the licences are the:

- ▼ water pressure standard
- ▼ water continuity standard
- ▼ sewage overflow standard.

The licences impose limits on how many properties may experience a failure of one of these standards, in a financial year. In July 2010, these standards and definitions were amended for both Sydney Water and Hunter Water and this is the second year of reporting against them.

In addition, all 4 retail utilities report against a range of NWI indicators related to the performance of the infrastructure they use to provide these services – including:

- ▼ the frequency and duration of unplanned water supply interruptions
- ▼ the number of water main breaks per 100km of water main
- ▼ real water losses due to leakages from the water supply system
- ▼ the number of sewer main breaks and chokes per 100km of sewer mains, and
- ▼ the duration of sewerage service interruptions.

The sections below summarise our findings on the utilities' performance against these standards and indicators, then discusses the findings in more detail.

3.1 Water Continuity

3.1.1 Licence requirements

Water continuity standards are written into the Sydney and Hunter Water operating licences. They measure system performance by considering unplanned water interruptions¹⁶.

Sydney Water's licence states "Sydney Water must ensure that:

1. no more than 40,000 properties experience an unplanned water interruption exceeding five hours in a financial year (see Figure 3.1) and
2. no more than 14,000 properties experience three or more unplanned water interruptions of more than one hour duration in a financial year (see Figure 3.2),

in its drinking water supply system"¹⁷

Hunter Water's licence states "Hunter Water must ensure that:

- a) no more than 10,000 Properties in a financial year experience an Unplanned Water Interruption exceeding 5 hours (see Figure 3.3); and
- b) no more than 5,000 Properties experience 3 or more Unplanned Water Interruptions of more than 1 hour duration in a financial year (see Figure 3.4),

in its drinking water supply system."¹⁸

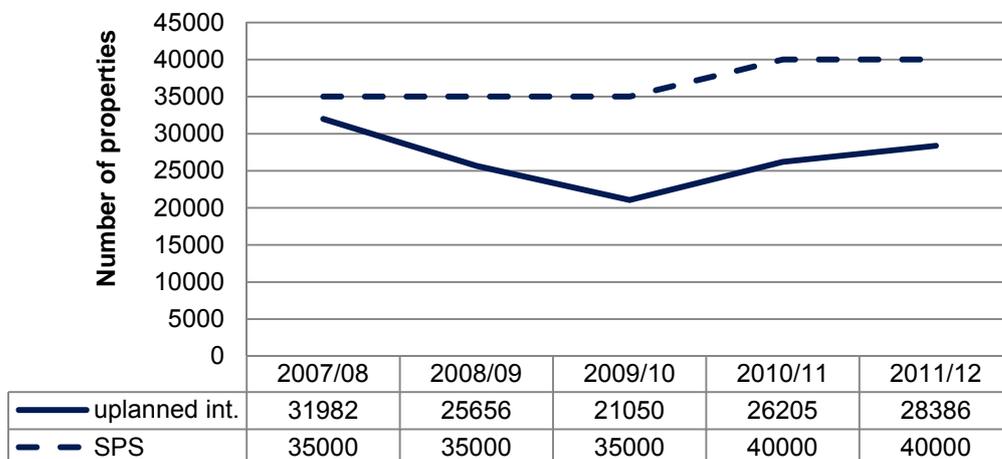
Sydney and Hunter Water's water continuity standard were substantially modified in the 2010/11 reporting year. Performance against the new definition is presented in Figure 3.1 - Figure 3.4 below. With only 2 years of data, trends are difficult to judge so we will not provide any comment on them apart to say that the utilities have not exceeded the system performance standards.

¹⁶ "Unplanned water interruptions" are defined within the operating licences.

¹⁷ Sydney Water Operating Licence 2010 - 2015, clause 3.3.2.

¹⁸ Hunter Water Operating Licence 2007 - 2012, clause 4.2.1.

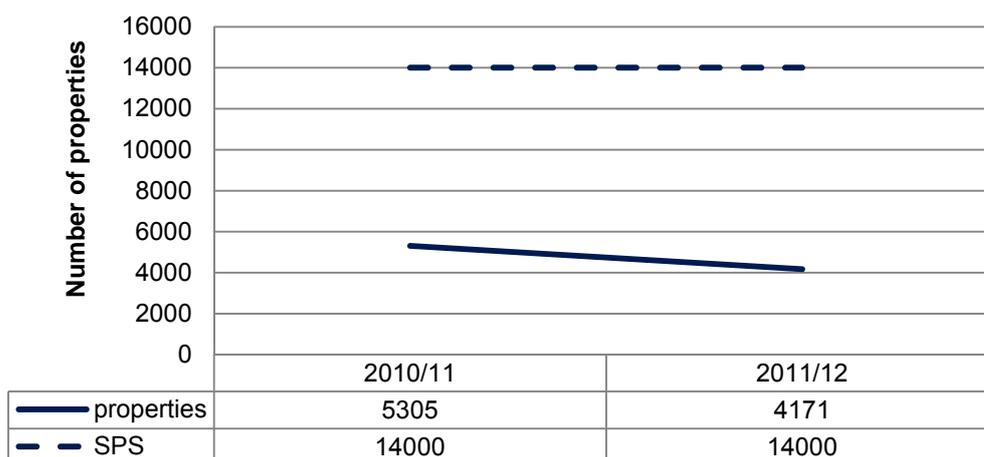
Figure 3.1 Sydney Water - water continuity system performance standard (unplanned water interruptions exceeding 5 hours)



Note: The System Performance Standard changed from 35,000 to 40,000 in 2010/11 with the new operating licence.

Data source: Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating licence 2010 – 2015 Compliance Report System Performance Standards Report 2011 – 12*, 31 August 2012, p 6. Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating Licence 2010 -2015 Compliance Report System Performance Standards Report 2010 – 11*, 31 August 2011, p 6; Sydney Water Corporation, *Folio of Progress - Water Continuity Standard*, 2 September 2010, p 4.

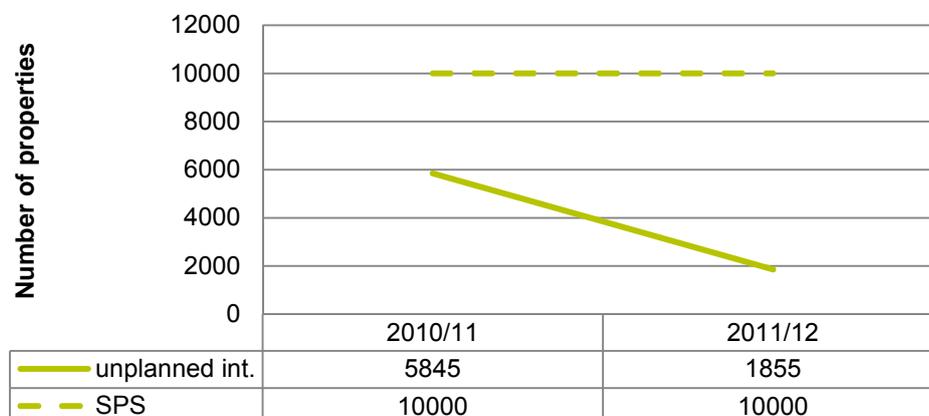
Figure 3.2 Sydney Water - water continuity system performance standard (multiple unplanned water interruptions exceeding 1 hour)



Note: This system performance standard is a new requirement of the 2010 – 2015 operating licence. No data has been recorded prior to this date.

Data source: Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating licence 2010 – 2015 Compliance Report System Performance Standards Report 2011 – 12*, 31 August 2012, p 6. Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating Licence 2010 -2015 Compliance Report System Performance Standards Report 2010 – 11*, 31 August 2011, p 6.

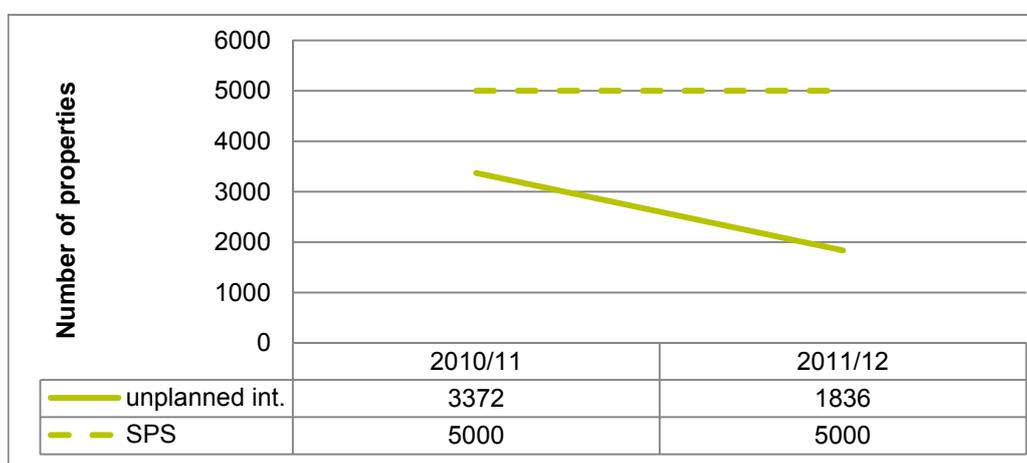
Figure 3.3 Hunter Water - water continuity system performance standard (unplanned water interruptions exceeding 5 hours)



Note: In 2010/11 the system performance standards, were amended. Here we have only presented data since the change as the definitions prior to this date were substantially different and not comparable. Multiple unplanned water interruptions refers to properties experiencing 3 or more unplanned water interruptions exceeding 1 hour duration as per the operating licence.

Data source: Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2011 -12*, August 2012 pp 2 & 25. Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2010 -11*, 31 August 2011, pp 2 & 26.

Figure 3.4 Hunter Water - water continuity system performance standard (multiple unplanned water interruptions exceeding 1 hour)



Note: This system performance standard is a new requirement since the 2010/11 reporting period. No data has been recorded prior to this date. Multiple unplanned water interruptions refers to properties experiencing 3 or more unplanned water interruptions exceeding 1 hour duration as per the operating licence.

Data source: Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2011 -12*, August 2012 pp 3 & 25. Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2010 -11*, 31 August 2011 p 11.

3.1.2 Other water continuity indicators

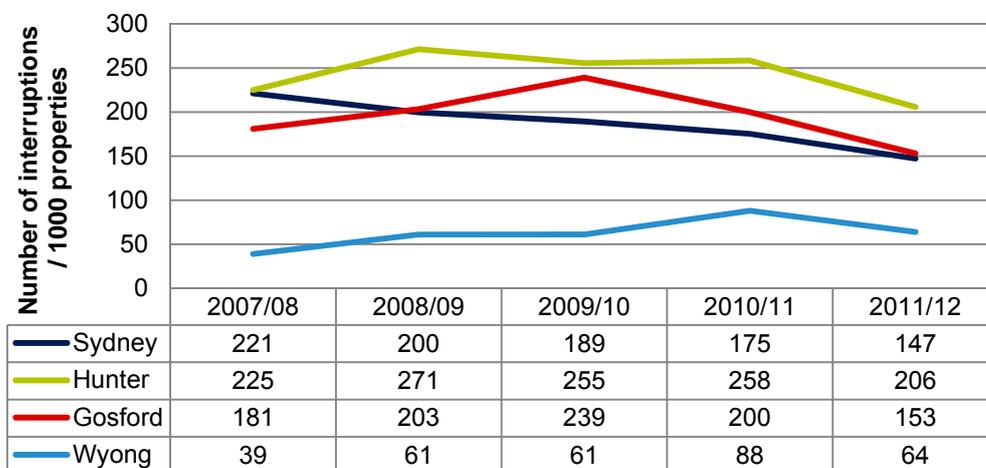
The NWI data includes other useful indicators relating to the frequency and average duration of unplanned interruptions to water supply services.

Presented in Figure 3.5 is the comparison between the utilities, of the frequency of unplanned water interruption (per 1000 customers). This number is the frequency at which customers of that utility will generally experience an unplanned water interruption (ie, when customers don't have access to the potable water supply service¹⁹). The total number of a utility's unplanned water interruptions, normalised by the number of properties, for comparison between small and large networks.

Figure 3.6 presents the average duration of unplanned interruptions, (how long the water will on average be off when an unplanned interruption occurs.

Both of these indicators give information about the condition and management of the networks and customer service. For example, Wyong has a relatively new network when compared to the other utilities and as a result has a lower level of unplanned water interruptions.

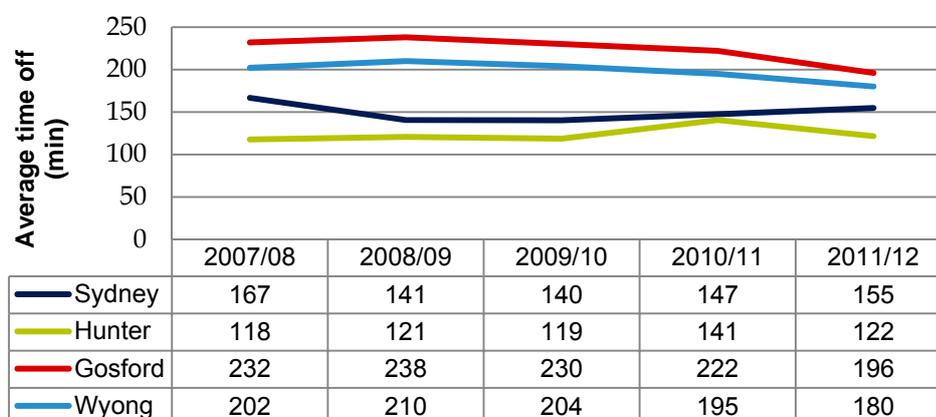
Figure 3.5 Frequency of unplanned water interruptions



Data source: NWI Indicator C17.

Sydney Water Corporation, September 1 Report to IPART Schedule C – Performance Indicators Report 2011 – 12, p 12 NWI C17.

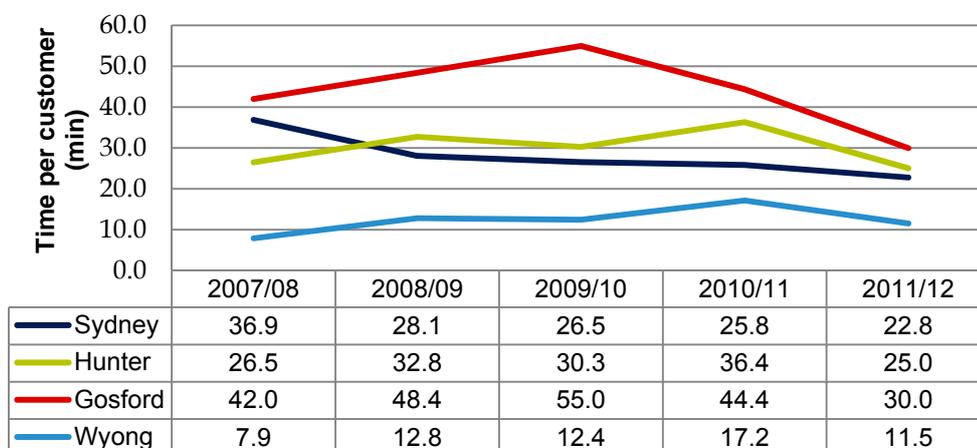
¹⁹ 2011 – 12 National Performance Framework: Urban performance reporting indicators and definitions handbook.

Figure 3.6 Average duration of unplanned water interruptions per property

Data source: NWI Indicator C15.

It is interesting to consider these two indicators together, as we notice that they are not strongly related. For example, of all the utilities Hunter Water experiences the highest frequency of unplanned interruptions, but the shortest durations. Conversely, Wyong Council experienced the lowest frequency but the second longest duration of unplanned water interruptions.

One way of looking at the relationship between these 2 sets of results might be to compare the results of the product of both indicators. Multiplying these indicators by each other gives the theoretical equivalent of minutes off for each of the utility's customers. In other words, if the minutes of unplanned water interruptions were divided by every customer, this would indicate the number of minutes each customer in the utility would experience over the year.

Figure 3.7 Unplanned water interruptions product of frequency and duration

Note: This is a theoretical number and not a measured indicator. It is determined by the product of NWI indicators C15 and C17.

Data source: NWI Indicators C15 and C17.

What Figure 3.7 demonstrates is that the level of unplanned water interruptions experienced by the utilities in 2011/12 is equivalent to on average each customer experiencing between 11.5 – 30 minutes of unplanned water interruptions over the year.

Performance of the utilities in the general area of unplanned interruptions has improved in 2011/12. In the 2011/12 reporting year both the frequency and duration of unplanned water interruptions have generally reduced from the year before (with the exception Sydney Water where the duration of interruption has increased by approximately 5%). The combined indicator, shows the results for 2011/12 are the lowest for the 5-year period for 3 of the 4 utilities.

3.2 Water Reliability

Water reliability can be defined in this context as the capacity of a water supply system to supply the demand, at the pressure reasonably expected by the customer, with interruptions within the duration and frequency reasonably expected by the customer.²⁰ We have already considered interruption duration and frequency in section 3.1 Water Continuity. Here we will consider other aspects of reliability like water pressure failures, main breaks and water losses.

3.2.1 Water pressure Licence requirements

Sydney and Hunter Water each have a water pressure standard written into their licences. Sydney Water's water pressure standard states:

Sydney Water must ensure that no more than 6,000 properties experience a water pressure failure in a financial year in its drinking water supply system.²¹

The Licence then defines a **water pressure failure** as:

A situation in which a property experiences a pressure of less than 15 metres for a continuous period of 15 minutes or more measured at the point of connection of the property to Sydney Water's supply system, usually at the point of connection known as the 'main tap'.²²

Hunter Water's water pressure standard states:

Hunter Water must ensure that no more than 4,800 Properties in a financial year experience a Water Pressure Failure.²³

²⁰ Van Winden, Marco, *Discussion Paper – Water Security – Is the infrastructure between the source and the demand adequately secure, reliable and resilient?* 2012 p 1. Available at: <http://www.awa.asn.au/uploadedFiles/Reliability%20Discussion%20Paper%2020120211.pdf>

²¹ Sydney Water Operating Licence 2010 – 2015, clause 3.3.1.

²² Sydney Water Operating Licence 2010 – 2015, p 49.

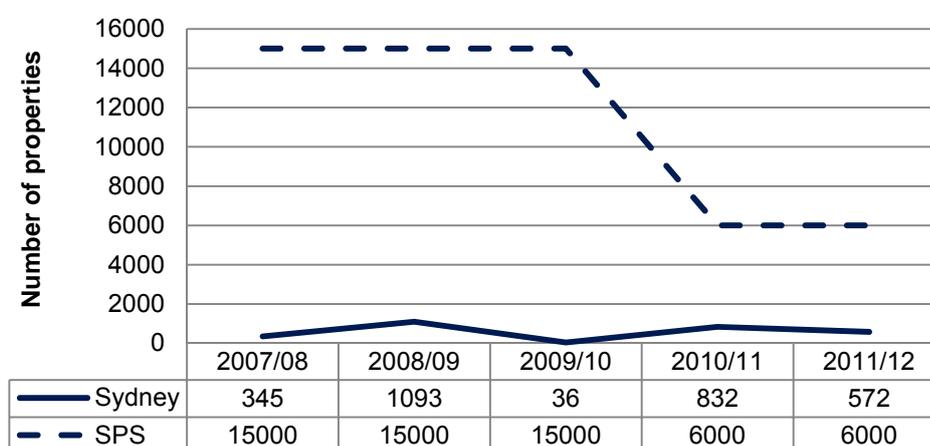
²³ Hunter Water Operating Licence 2007 – 2012, clause 4.1.1.

The Licence then defines a **water pressure failure** as:

A Property experiences a water pressure failure (Water Pressure Failure) if the Property experiences a pressure of less than 20 metres head for a continuous period of 30 minutes or more measured at the point of connection of the Property to the Water Supply System, usually at the point of connection known as the “main tap”.²⁴

As well as the standards being different between the utilities, the definitions also differ substantially between the utilities and therefore it is not considered appropriate to directly compare the utilities’ performance. The performance of the utilities with *their own* pressure standards is displayed in Figure 3.8 and Figure 3.9 below.

Figure 3.8 Sydney Water – Water pressure failures

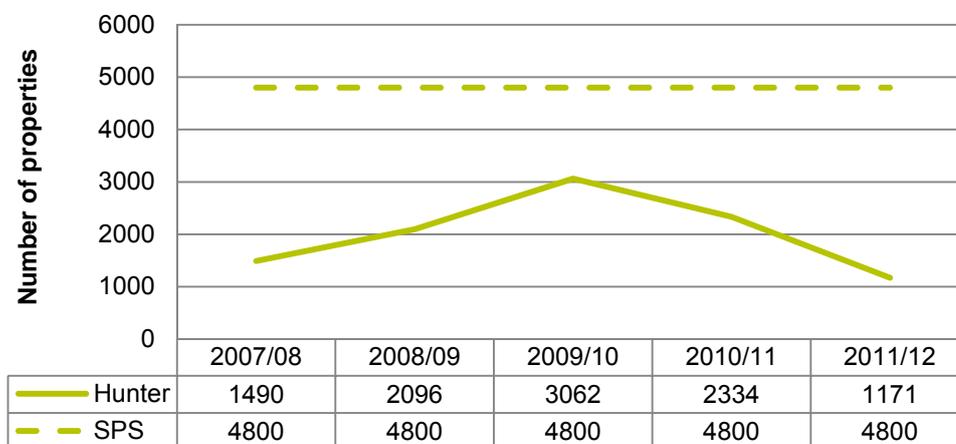


Note: The Sydney Water Pressure standard changed from 15000 to 6000 properties in the 2010 – 2015 licence.

Data source: Sydney Water Corporation, 1 September Report to IPART Schedule B - *Operating licence 2010 – 2015 Compliance Report System Performance Standards Report 2011 – 12*, 31 August 2012, p 4. Sydney Water Corporation September 1 Report to IPART Schedule B – *Operating Licence 2010 -2015 Compliance Report System Performance Standards Report 2010 – 11*, 31 August 2011, p 4; Sydney Water Corporation Folio of Progress - Water Pressure Standard, 2 September 2010, p 5.

²⁴ Hunter Water Operating Licence 2007 – 2012, clause 4.1.2.

Figure 3.9 Hunter Water – Water pressure failures

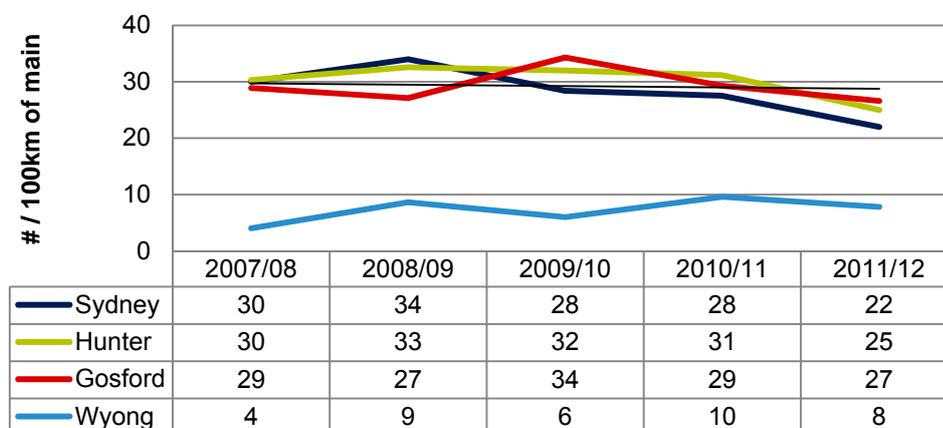


Data source: Hunter Water Corporation, 1 September Report to IPART – *Service Quality and System Performance Report 2011 -12*, August 2012 pp 1 & p 25. Hunter Water Corporation, 1 September Report to IPART – *Service Quality and System Performance Report 2010 -11*, 31 August 2011, pp 1 & p 26. Attachment to Email 13 December 2012, C.R. Small to J. Hanna.

Performance with the water pressure indicator has fluctuated over the 5-year period for both utilities. Demands on the water supply system such as days of particularly high demand (eg, during hot weather) or water main breaks may result in a water pressure failure, if the water utility isn't able to immediately respond to the demand. Despite the fluctuations in performance neither of the water utilities have come close to exceeding their respective water pressure standards.

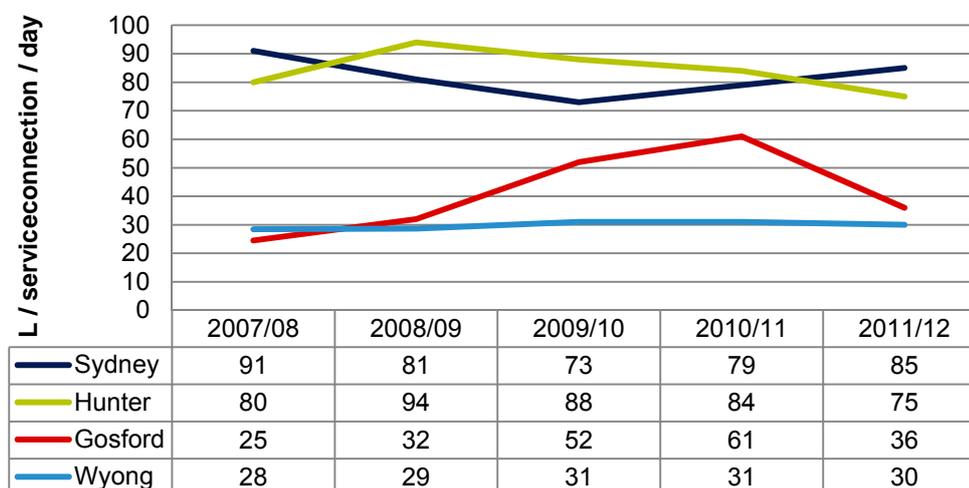
3.2.2 Other water reliability indicators

The level of main breaks and leakages in a water supply system are other indicators of water system reliability. Losses (including those incurred as a result of main breaks) impose additional demand on the water supply system and can contribute to unplanned water interruptions and pressure failures. Main breaks are strongly related to unplanned water interruptions. Compared in Figure 3.10 and Figure 3.11 are this year's results for the utilities' performance in level of main breaks (expressed per 100km) and real losses (expressed in L per connection per day).

Figure 3.10 Level of main breaks (number per 100km)

Data source: NWI Indicator A8.

Three of the utilities (Sydney, Hunter and Gosford) show a stable and similar level of main breaks. Wyong's performance on this indicator is also stable but significantly lower than the other utilities. The factors to which Wyong Council attribute their performance include lower average operating pressures, and newer pipe infrastructure than the other utilities.²⁵

Figure 3.11 Level of real losses (L per connection per day)

Data source: NWI Indicator A10.

²⁵ Email attachment email from I. Johnson to J. Hanna, 22 January 2013.

The level of real losses of the utilities is much more variable both within and between utilities (again with the exception of Wyong which has experienced a very stable level of losses throughout the 5-year period). This shows that while main breaks are certainly contribute to the levels of losses a utility incurs, there are other factors that vary between the utilities that also contribute to losses. It also shows that not all main breaks result in the same volume of losses.

3.3 Sewerage System Performance

Sewerage services are a large part of the water utilities' operations, and for this reason a number of system performance standards and indicators have been included to assess performance of the utilities' sewerage functions.

An efficient and well maintained sewerage system protects the health of the community and the environment. Performance standards and indicators relate to overflows and system disruption times.

There are two types of sewer overflow, they are typically classified as 'dry' and 'wet' weather overflows. These can occur on private or public property. A sewerage system should be designed and operated to minimise the 'dry' weather overflows in normal conditions. Common causes of sewer overflows include:

- ▼ Blockages (can be caused by broken pipes, soil and tree root intrusion).
- ▼ Pumping station failures.
- ▼ Infiltration and inflow of rainwater into leaky sewers.
- ▼ Over development / system growth.
- ▼ Major industrial discharges.²⁶

3.3.1 Licence requirements

The sewage overflow standards are written into the operating licences of Sydney and Hunter Water. The standards measure a utility's performance in terms of occurrences of 'dry weather' overflows.

²⁶ Natural Resource Management Ministerial Council (NRMMC), *Guidelines for Sewerage Systems Sewerage System Overflows*. November 2004, <http://www.environment.gov.au/water/publications/quality/pubs/sewerage-systems-overflows-paper15.pdf>

The Sydney Water operating licence states:

Sydney Water must ensure that:

- a) no more than 14,000 properties (other than public properties) experience an uncontrolled sewage overflow in dry weather in a financial year and
- b) no more than 175 properties (other than public properties) experience three or more uncontrolled sewage overflows in dry weather in a financial year.²⁷

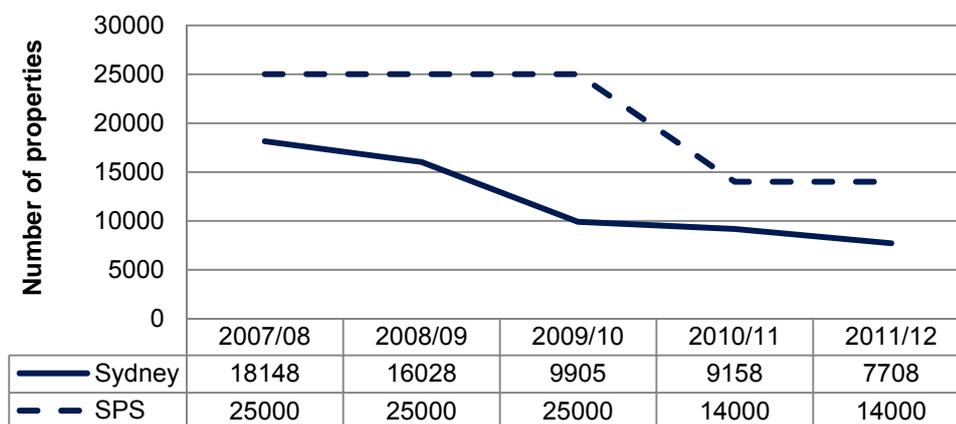
The Hunter Water operating licence states that:

Hunter Water must ensure that:

- a) no more than 5,000 Properties (other than Public Properties) experience an uncontrolled sewage overflows in dry weather in a financial year, and
- b) no more than 45 Properties other than Public Properties) experience 3 or more uncontrolled sewage overflows in dry weather in a financial year.²⁸

The definition of what constitutes an 'uncontrolled sewage overflow is outlined further in each of the licences. Prior to 2010/11, the sewage overflow standard was substantially different for Hunter Water. Sydney Water's sewer overflow standard also changed slightly in the 2010 – 2015 licence. To avoid confusion between old and new standards, we have decided to only present 2 years' worth of data for this standard for Hunter Water.

Figure 3.12 Sydney Water number of properties experiencing uncontrolled dry weather overflows



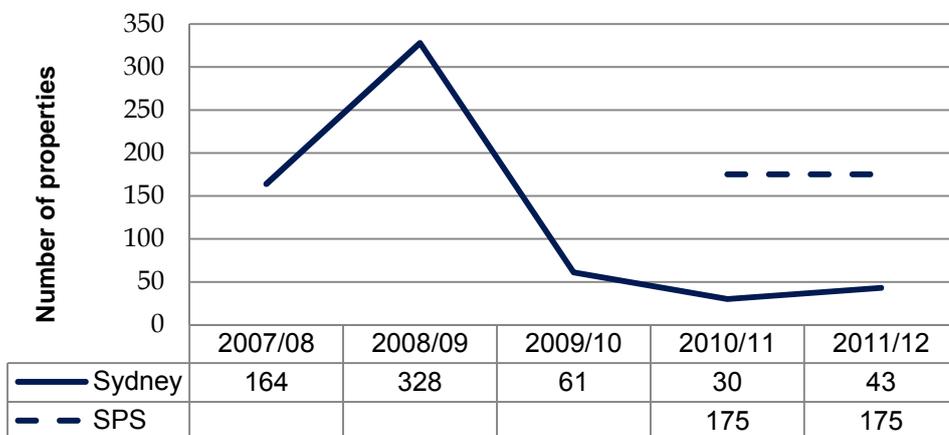
Note: The sewage overflow standard reduced from 25,000 properties to 14,000 properties in the 2010 – 2015 operating licence.

Data source: Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating licence 2010 – 2015 Compliance Report System Performance Standards Report 2011 – 12*, 31 August 2012, p 11. Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating Licence 2010 -2015 Compliance Report System Performance Standards Report 2010 – 11*, 31 August 2011, p 10-11. Sydney Water Corporation, *Folio of Progress - Water Sewage Overflow Standard*, 2 September 2010, p 10.

²⁷ Sydney Water Operating Licence 2010 – 2015, clause 3.3.3.

²⁸ Hunter Water Operating Licence 2007 – 2012, clause 4.3.1.

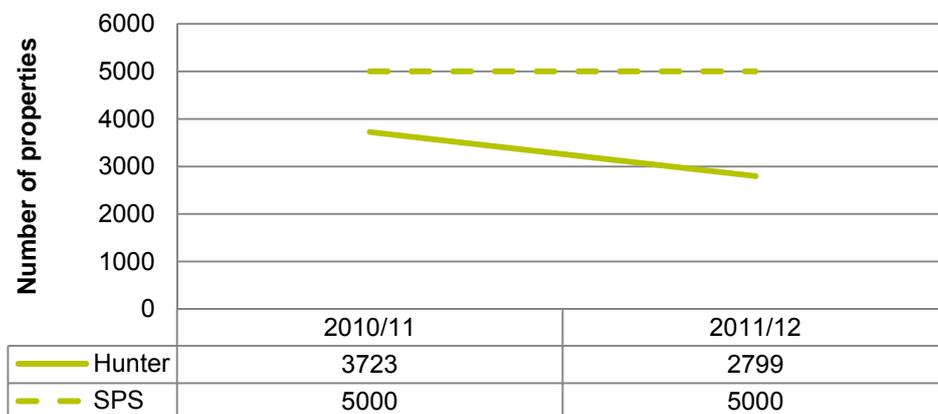
Figure 3.13 Sydney Water Properties experiencing 3 or more uncontrolled dry weather sewage overflows within a financial year



Note: Multiple sewage overflows became part of the sewage overflow standard in 2010/11. Prior to this no standard or limit was imposed on this indicator.

Data source: Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating licence 2010 – 2015 Compliance Report System Performance Standards Report 2011 – 12*, 31 August 2012, p 11. Sydney Water Corporation, September 1 Report to IPART Schedule B – *Operating Licence 2010 -2015 Compliance Report System Performance Standards Report 2010 – 11*, 31 August 2011, p 10. Sydney Water Corporation, *Folio of Progress - Water Sewage Overflow Standard*, 2 September 2010, p 11.

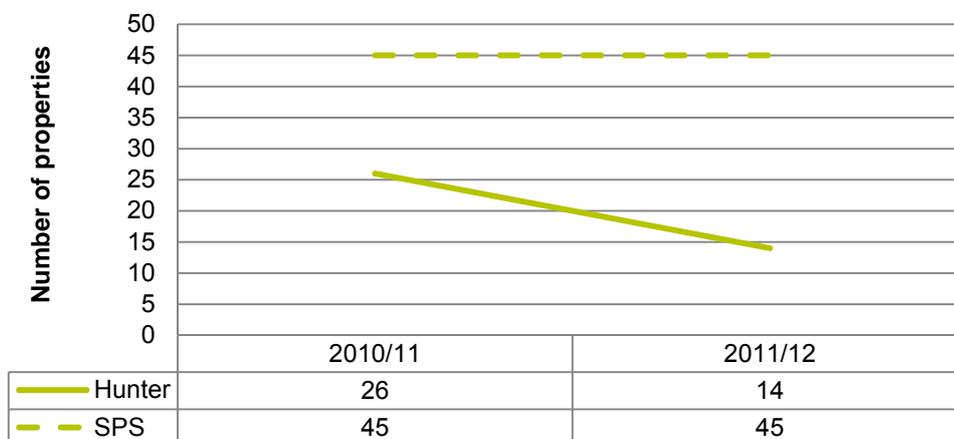
Figure 3.14 Hunter Water number of properties experiencing uncontrolled dry weather overflows



Note: Prior to 2010/11 Hunter Water’s sewage overflow standard combined ‘wet’ and ‘dry’ wether overflows. The data is not comparable with the new standard so only 2 years of data have been presented here.

Data source: Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2011 -12*, August 2012, pp 5 & 26. Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2010 -11*, 31 August 2011, p 5.

Figure 3.15 Hunter Water Properties experiencing 3 or more uncontrolled dry weather sewage overflows within a financial year



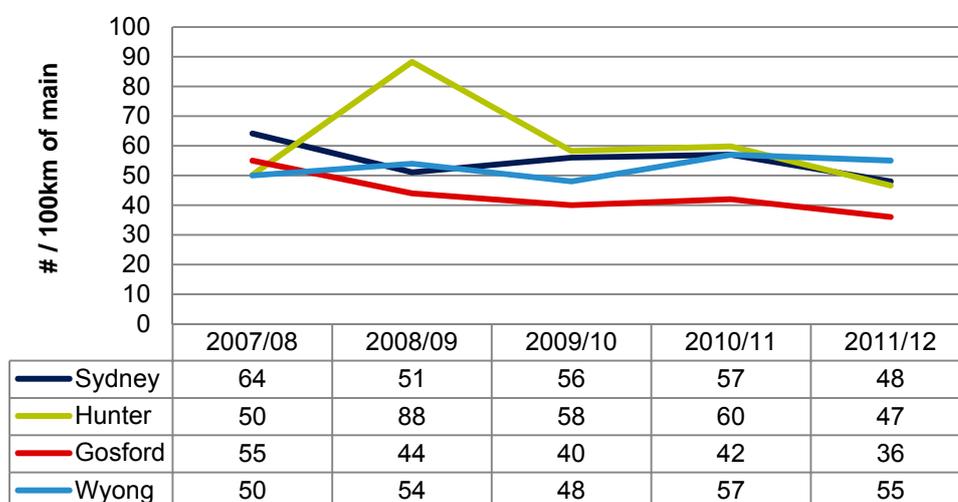
Note: This is a new system performance standard since 2010/11.

Data source: Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2011 -12*, August 2012, pp 6 & 26. Hunter Water Corporation, September 1 Report to IPART - *Service Quality and System Performance Report 2010 -11*, 31 August 2011, p 6.

Both utilities are managing their dry weather overflows within the standards of their respective operating licenses. The utilities' performance this year has shown that the level of dry weather overflows is in general 40 percentage points or more, below the level required by standards.

3.4 Sewer main breaks and chokes

The condition of the sewerage network and the impact on customers is considered in another NWI indicator that counts the sewerage mains breaks and chokes (per 100km of sewer main). These breaks and chokes may or may not result in an overflow. As noted in the National Performance Framework definitions handbook, sewage breaks and chokes are caused or influenced by a number of factors many of which are out of the utilities' control, such as climate, soil composition and tree planting. However, the age of the infrastructure is also a major contributor to this indicator, as are sewer material and size and the level of investment in maintenance and replacement programs.

Figure 3.16 Sewerage main breaks and chokes

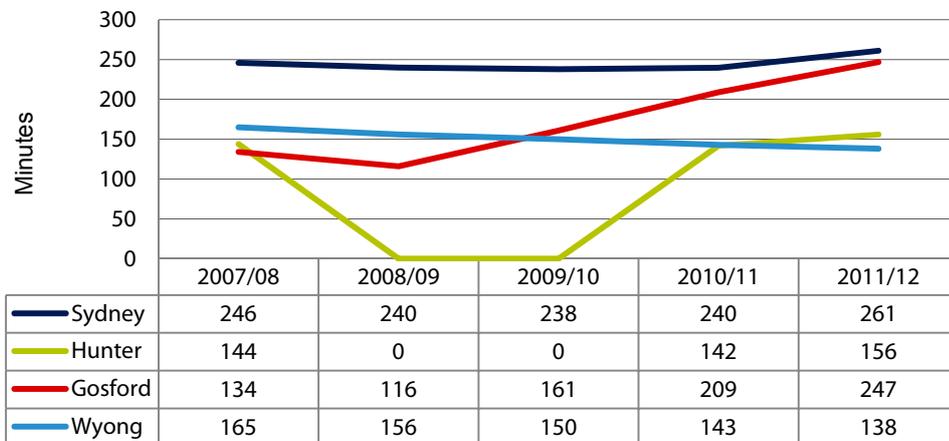
Data source: NWI Indicator A14.

Over the 5-year period the level of sewerage main breaks and chokes have generally reduced. It is interesting to note that Sydney and Hunter Water, the 2 large utilities, have had a very similar level of performance on this indicator for the last 3 years.

3.5 Average duration of sewerage service interruptions

NWI Indicator C16 presents the average sewerage interruption time when an unplanned interruption occurs to the sewerage service. When looking at this indicator the reader should be aware that this is only an average interruption time only, and does not provide information about the frequency of these interruptions. Three of the utilities have shown stable performance with this indicator. Gosford Council which had the lowest interruption time in 2007/08, has had a sharp increase in interruption times over the past 4 years, to have the second highest sewerage interruption time for the 2011/12 year. Gosford Council has reported that revised reporting requirements for sewer discharges to environment are impacting the time to respond to these incidents as well as improved staff job reporting. Hunter Water has reported that the indicator is calculated differently this year due to better data capture and reporting procedures which allow the time to be calculated from the time Hunter Water is notified of the event.

Sydney Water attributes the increase to normal year to year variation. This can be confirmed in future years.

Figure 3.17 Average sewerage interruption time

Note: For 2008/09 through 2009/10 Hunter Water reported zero due to definitional interpretation and no customers being inconvenienced. From 2010/11 the interpretation of the definition was reconsidered with IPART to bring it in line with the interpretation of other utilities and therefore any increase from these years was observed.

Data source: NWI Indicator C16.

Sydney Water Corporation, September 1 Report to IPART Schedule C – *Operating Licence 2010-2015 Performance Indicators Report 2011-12*, 31 August 2012, p 12, NWI C16.

4 Environmental Impact

The activities of water utilities can impact the environment. Using water and electricity efficiently, minimising waste products and avoiding sewer overflows and other emissions and discharges are all actions that minimise impact on the local environment. Water utilities should aim to provide the essential water and sewerage services to the community while minimising the environmental impact of their operations.

The 4 major metropolitan water utilities are required to report annually on a range of National Water Initiative indicators related to the environmental impact of their operations. These include:

- ▼ the total quantity of water they supplied from all sources
- ▼ recycled water as a percentage of the treated sewage discharged and the purposes for which the recycled water was used
- ▼ the percentage of the treated sewage they discharged that met the requirements of their environmental licence
- ▼ percentage of biosolids they reused, and
- ▼ their total net greenhouse gas emissions.

Sydney Water and Hunter Water are also required to report on some additional indicators as a condition of their operating licences. These include:

- ▼ the number of sewage odour complaints they received
- ▼ the kilowatt hours (kWh) of electricity consumed by their water and sewerage assets per megalitre (ML) of water supplied or sewage treated, and
- ▼ the percentage of electricity consumed that was from renewable sources.

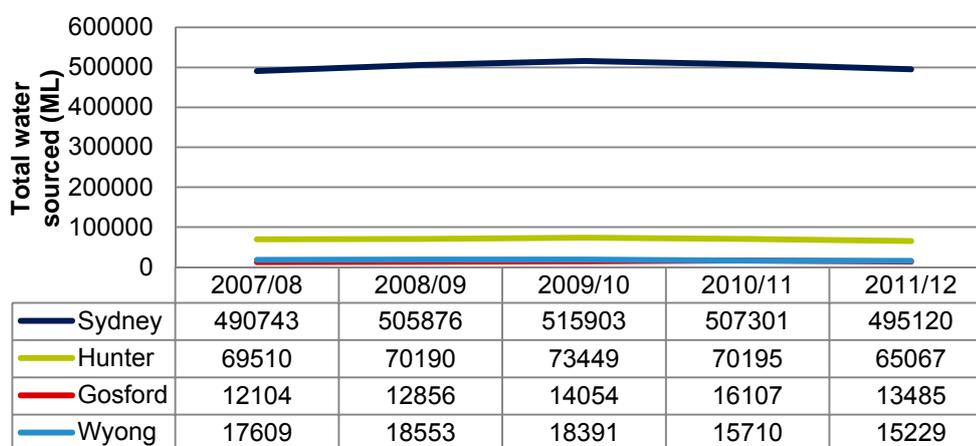
We compared each utility's performance against these indicators in 2011/12 with its performance in previous years.

4.1 Water sourced and supplied

4.1.1 Water sourced

The total water sourced by the utilities is presented in Figure 4.1 below. The large difference in the volume of water sourced is a good indicator of the size difference between utilities.

Figure 4.1 Total water sourced (all utilities)



Data source: NWI Indicator W7.

Utilities all sourced less water this year than in the previous financial year. As discussed in the next section this corresponds to a reduction in water supplied. Utilities have attributed the reduced demand to increased rainfall in the year²⁹.

Each utility has a mix of water sources such as surface water, ground water, desalination, water recycling and bulk water supplies on which it relies.

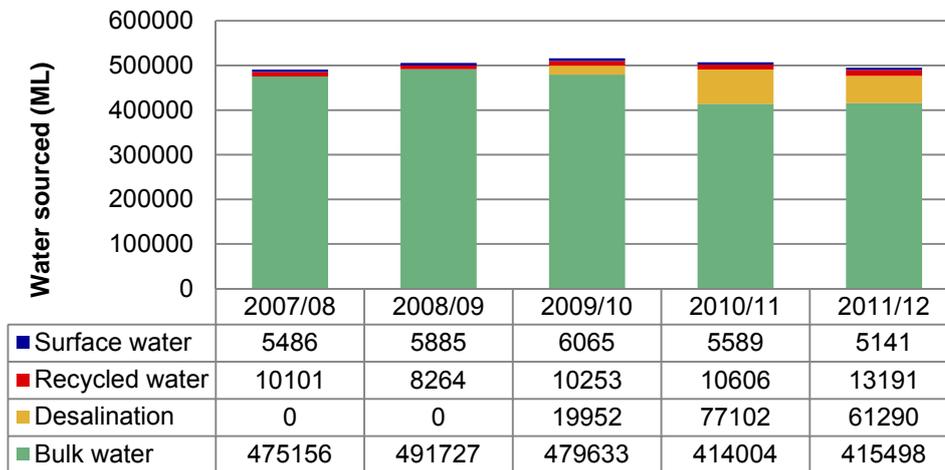
The percentage of water taken from each source varies year to year according to the conditions and operational decisions of the utility. Notable changes this year include:

- ▼ Sydney Water sourced less water from desalination in 2011/12 compared to the previous year. Sydney Water decided to reduce operation of the desalination plant in December 2011 when dam levels in Sydney reached 80%. The reduced operation continued for the remainder of the year (except when full capacity operation was required for proving requirements). It should be noted that the 2-year proving period has now elapsed, and operation of the plant will be governed by the roles of the Metropolitan Water Plan.

²⁹ Bureau of Meteorology data confirms that all four utilities experienced wetter conditions in the 2011/12 financial year than the 2010/11 year <http://www.bom.gov.au/jsp/awap/rain/archive.jsp?colour=colour&map=iadiff1&period=12month&year=2012&month=6&day=30&area=ns>

- ▼ Sydney Water sourced 25% more water from recycling in 2011/12 compared to the previous year.

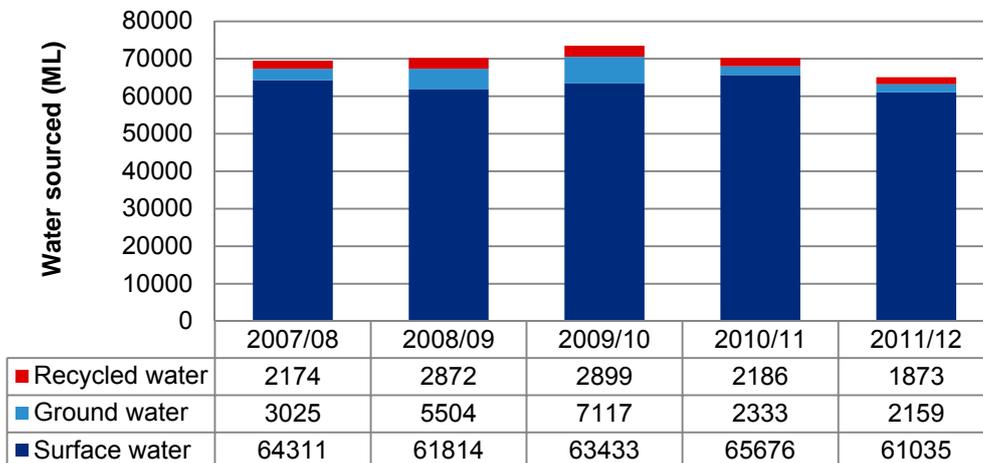
Figure 4.2 Sydney Water – Water obtained (by source)



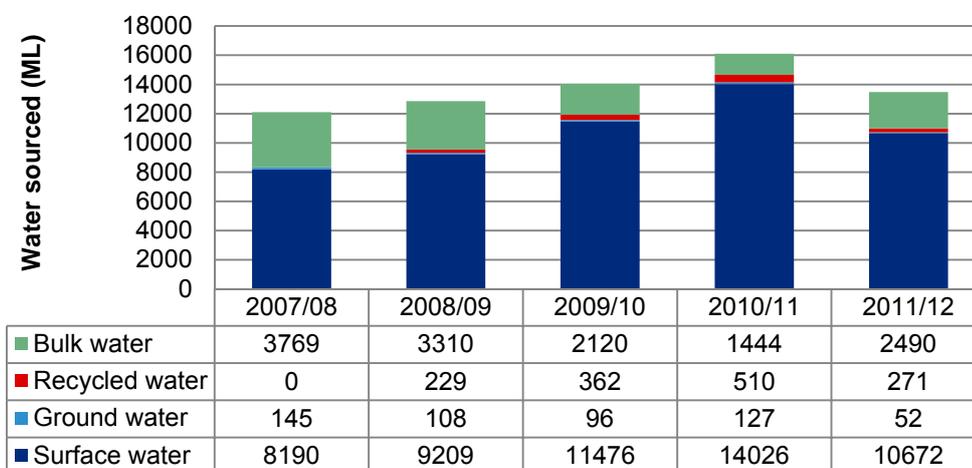
Note: Sydney Water obtains the majority of water from the 'bulk water' supplier Sydney Catchment Authority. This water is from surface water sources through the network of water supply dams operated by SCA.

Data source: NWI Indicators W1, W3, W4 and W5.

Figure 4.3 Hunter Water – Water obtained (by source)

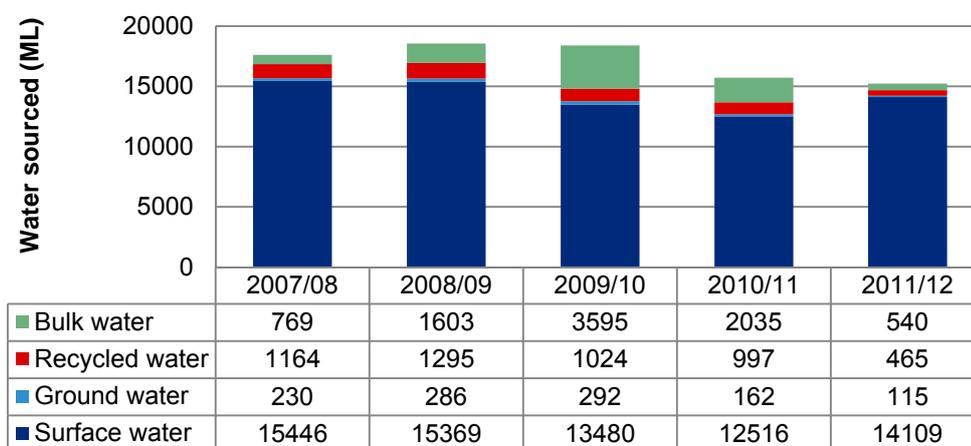


Data source: NWI Indicators W1, W2 and W4.

Figure 4.4 Gosford Council – water obtained (by source)

Note: Bulk water supplied by combined operation of dams between Gosford and Wyong.

Data source: NWI Indicators W1, W2, W4 and W5.

Figure 4.5 Wyong Council – water obtained (by source)

Note: Bulk water supplied by combined operation of dams between Gosford and Wyong and a small amount from Hunter Water.

Data source: NWI Indicators W1, W2, W4 and W5.

4.1.2 Water supplied

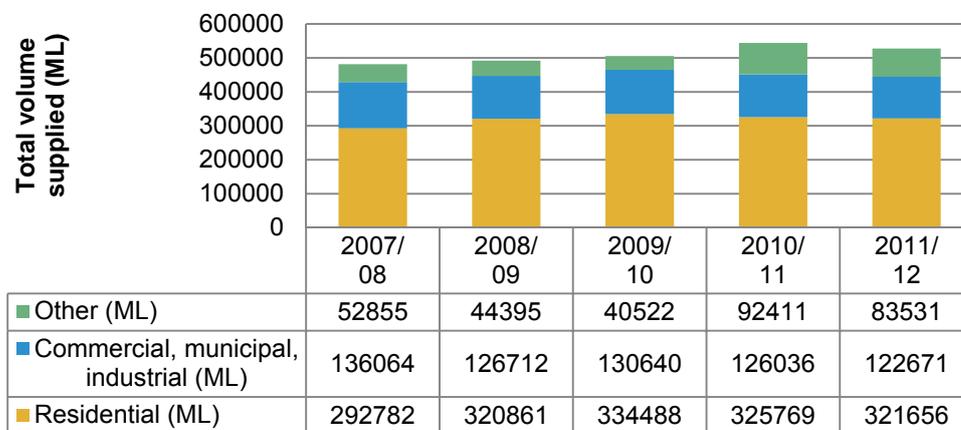
The utilities all supplied less urban water this year than the previous financial year. As a result, the average annual residential water supplied dropped this financial year for every utility. Additionally every utility experienced a drop in total annual urban water supplied across every category of use. Although the total volumes of water supplied reduced, there was little or no change in the proportion of water supplied to each user (eg, residential use of water remained around 60% of urban water supplied by Sydney Water).

The utilities have consistently reported that the wetter climactic conditions this financial year is the reason for the reduced demands for water from their systems, particularly for outdoor water use.

Bureau of Meteorology data confirms that all four utilities experienced wetter conditions in the 2011/12 financial year than the 2010/11 year.³⁰

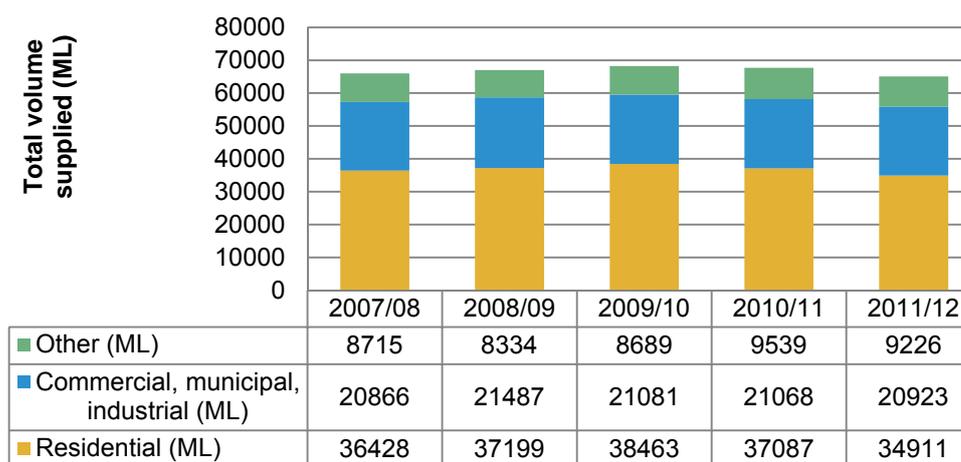
Presented in Figure 4.6 - Figure 4.9 is data for urban water supplied by the utilities (by use). Figure 4.10 presents a comparison of the average annual residential water supplied for all the utilities.

Figure 4.6 Sydney Water total annual urban water supplied (by use)



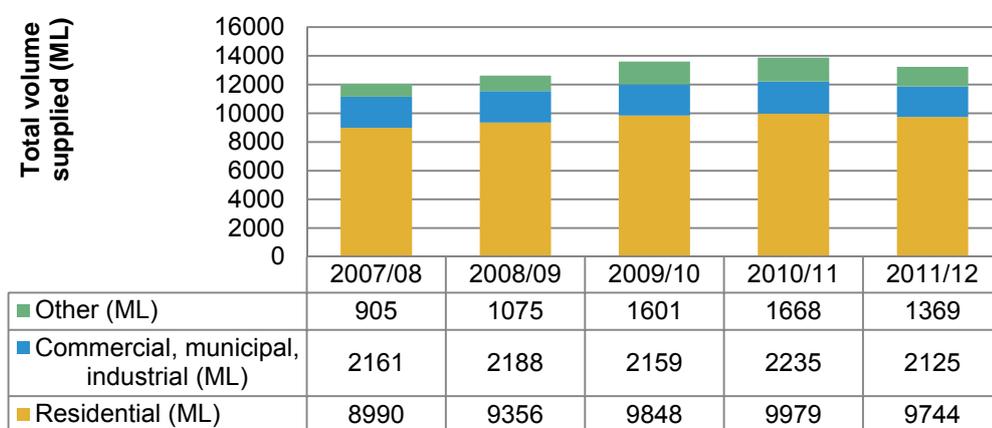
Data source: NWI Indicators W8, W9, W10.

Figure 4.7 Hunter Water total annual urban water supplied (by use)

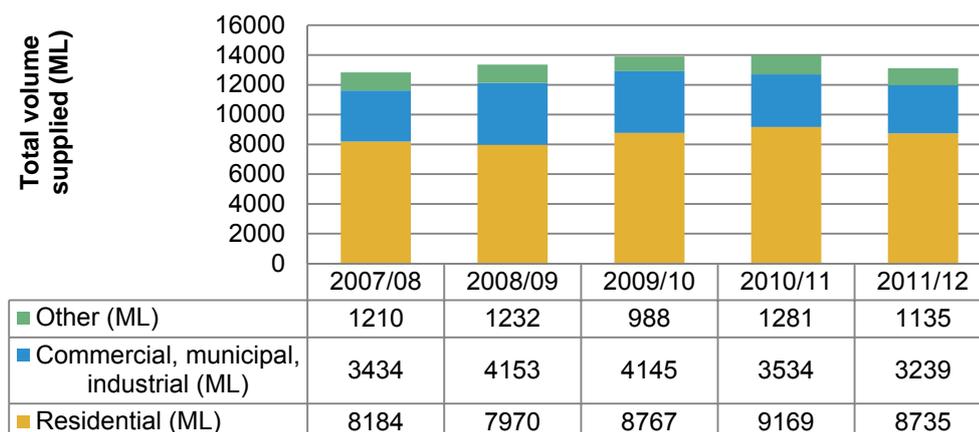


Data source: NWI Indicators W8, W9, W10.

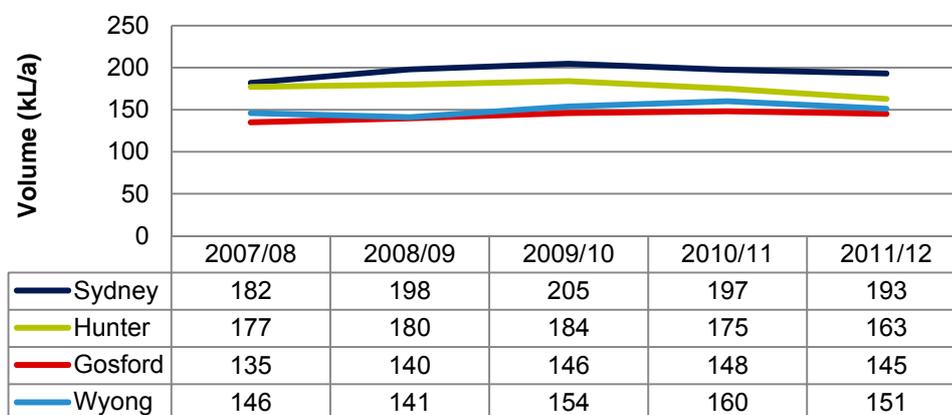
³⁰<http://www.bom.gov.au/jsp/awap/rain/archive.jsp?colour=colour&map=iadiff1&period=12month&year=2012&month=6&day=30&area=ns>

Figure 4.8 Gosford Council – total annual urban water supplied (by use)

Data source: NWI Indicators W8, W9, W10.

Figure 4.9 Wyong Council – total annual urban water supplied (by use)

Data source: NWI Indicators W8, W9, W10.

Figure 4.10 Average annual residential water supplied by the retail utilities

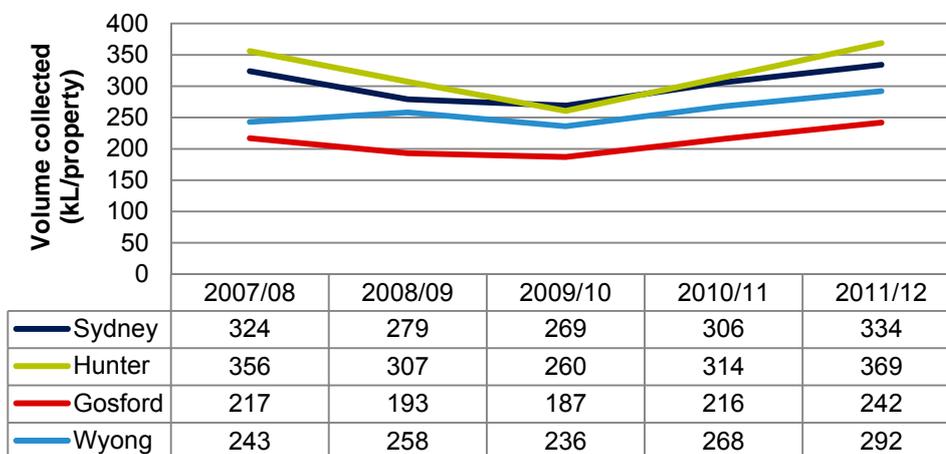
Data source: NWI A12.

4.2 Sewage

4.2.1 Total sewage collected

The total sewage collected, increased this financial year for all of the utilities. Again the utilities report that this is also due to the wetter conditions. Rainfall is well known to find its way into the sewerage system by inflow and infiltration and increase the volumes of sewage arriving at the treatment plants. Total sewage collected increased by between 10% and 20% this financial year. Figure 4.11 presents a comparison of the total sewage collected by the utilities.

Figure 4.11 Average volume of sewage collected per property



Data source: NWI Indicator W19.

4.2.2 Treated Sewage

Utilities treat sewage to a primary, secondary or tertiary level (as described in Box 4.1), to protect the health of the receiving environment and the local population. The level of treatment may depend on the size and distribution of a population, the sensitivity of the receiving environment to the treated effluent and reuse of the water.

Box 4.1 Levels of sewage treatment

Water utilities use a variety of methods and unit operations to treat sewage or wastewater.

Primary treatment removes large items such as paper, plastic and cotton tips, using screens. Settlement usually follows and allows sand and grit to sink to the bottom of the tank, while oils and grease can be skimmed off the top.

Secondary treatment includes biological and chemical processes to break down and remove the organic matter.

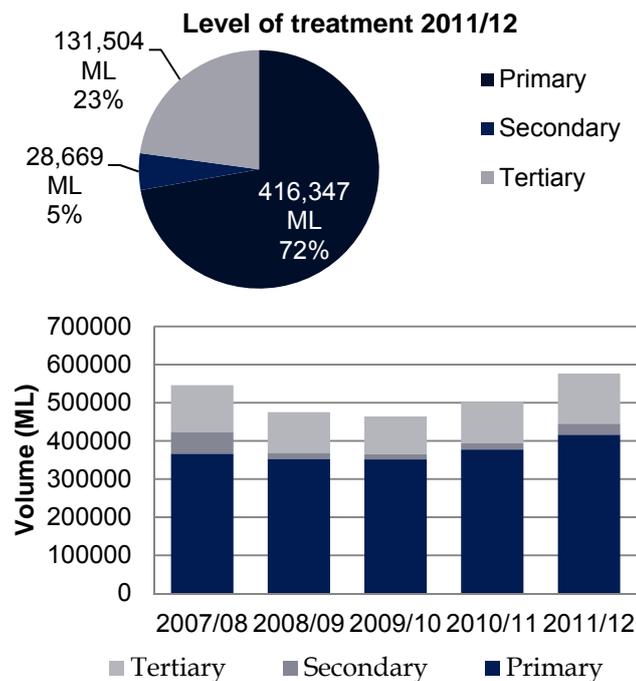
Tertiary (or advanced) treatment usually involves additional biological processes, filtration, membrane processes or lagoon 'polishing' to remove nutrients such as nitrogen and phosphorous, and provide further solids removal.

The level of treatment depends on the method of effluent disposal, and the sensitivity of the receiving environment to the components of the effluent.

The Environment Protection Authority issues Environmental Protection Licences (EPLs) to owners or operators of various industrial premises. Licence conditions relate to pollution prevention and monitoring.^a The conditions of the EPL will often influence the level of treatment adopted by the utilities and the technology selected.

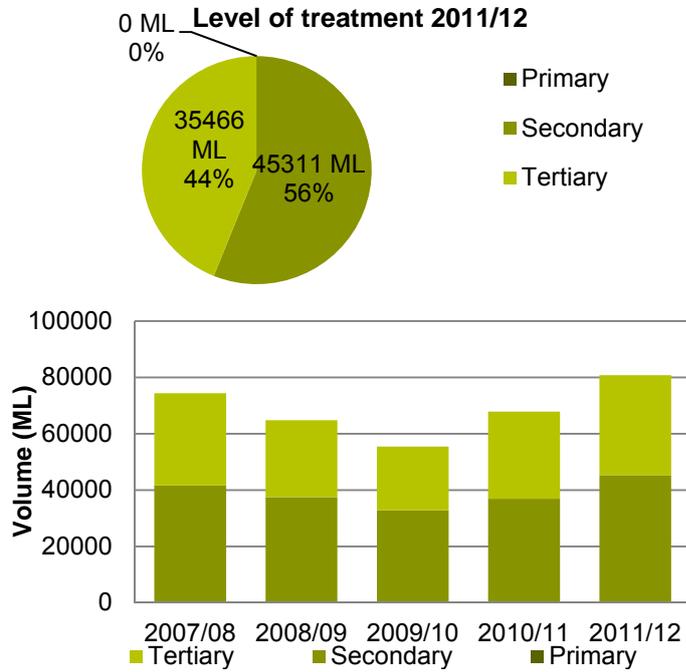
^a <http://www.environment.nsw.gov.au/licensing/>

Figure 4.12 Sydney Water level of sewage treatment



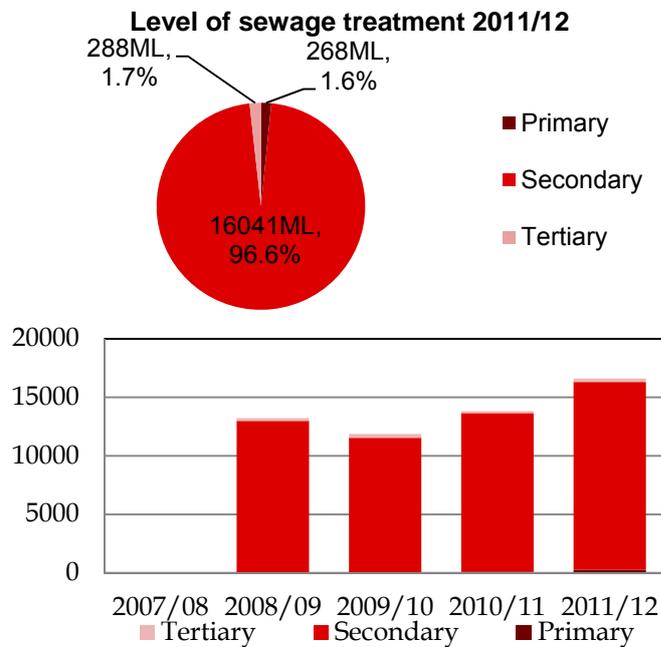
Data source: NWI Indicators IE1, IE2, IE3.

Figure 4.13 Hunter Water level of sewage treatment

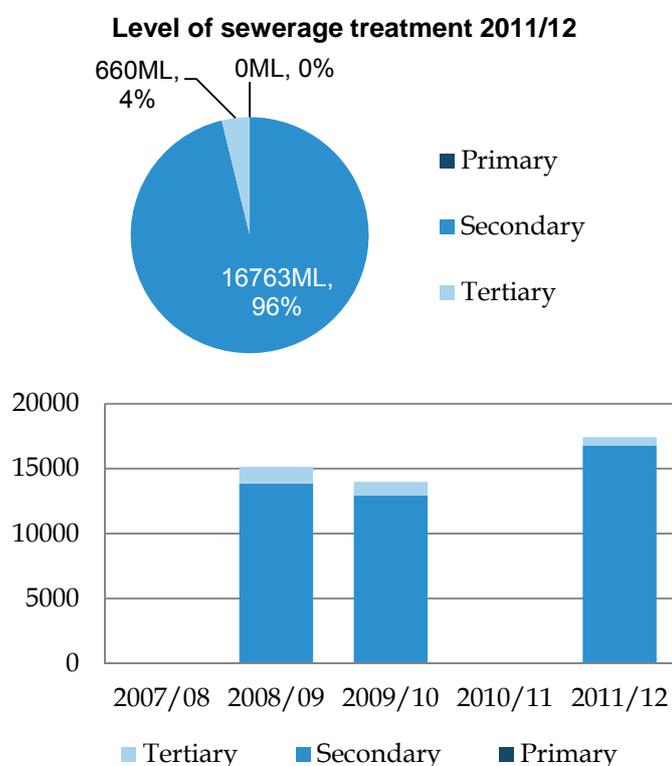


Data source: NWI Indicators IE1, IE2, IE3.

Figure 4.14 Gosford Council level of sewage treatment



Data source: NWI Indicators IE1, IE2, IE3.

Figure 4.15 Wyong Council level of sewage treatment

Note: As a result of a reporting error in the 2010/11 Wyong Council data all 2010/11 data was deleted.

Data source: NWI Indicators IE1, IE2, IE3.

Sydney Water is the only utility to treat most of its sewage to primary level only. This is due to the large volumes of sewage treated at the deep water ocean outfall plants Malabar, North Head and Bondi Plants which are licensed by the environmental regulator as high rate primary plants only.

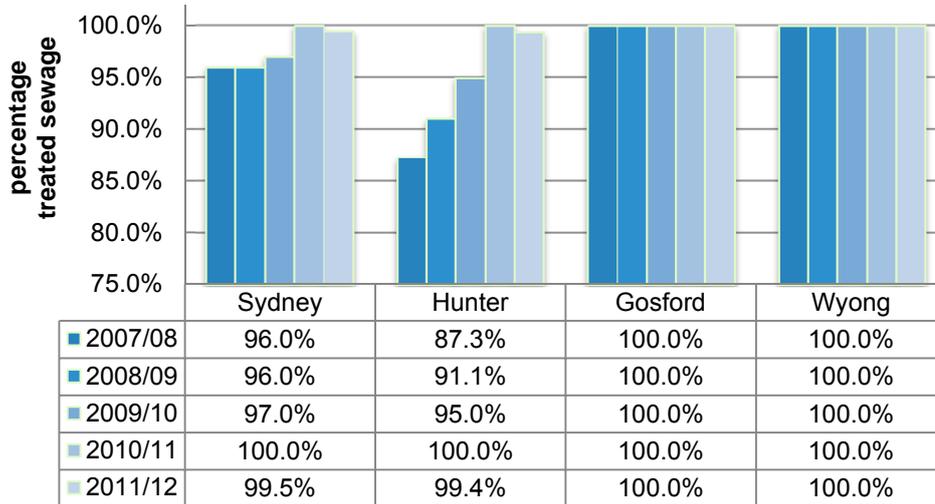
As a result of a reporting error in the 2010/11 Wyong Council data, all the data for last year was deleted to avoid confusion.

4.2.3 Percentage of sewage volume treated that complied with licence requirements

The utilities reported the percentage of sewage that was treated and complied with the requirements of their EPLs. Utilities should aim to treat 100% of their sewage to the requirements of the EPL. Sydney and Hunter Water's compliance fell slightly below 100%. Sydney Water reported 8 non-compliances occurred during the year from 5 wastewater treatment plants. They reported that increased wet weather periods brought increased pollutant concentrations and exceedances of annual loads and concentration limits at some plants resulted. Sydney Water report that the exceedances were short term and did not result in any known environmental harm. Hunter Water reported that effluent from their Belmont sewage treatment plant failed to meet the 3-day geometric mean limit

for total suspended solids also during a period of sustained wet weather and high flows through the plant.

Figure 4.16 Treated sewage compliance

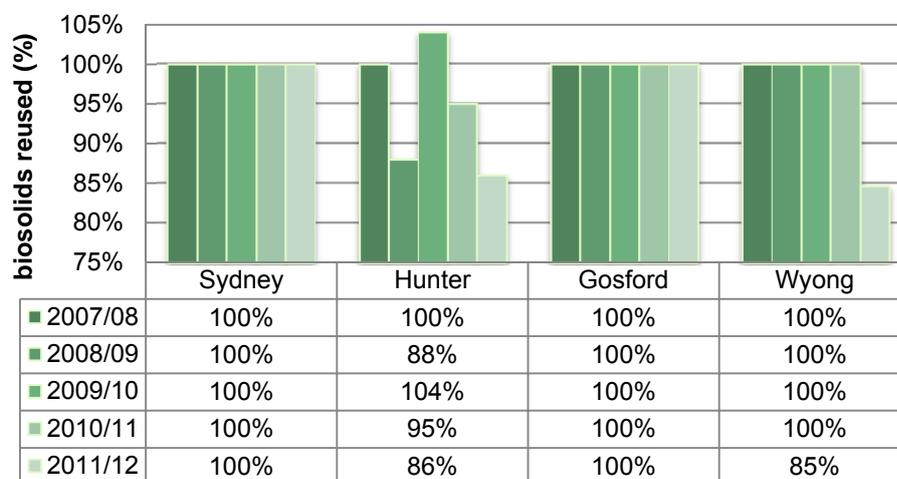


Note: vertical axis starts from 75%.

Data source: NWI E4.

4.2.4 Percentage of biosolids reused

The sewage treatment processes, removes the biosolids from the water and processes the biosolids to make them safe for reuse (eg, for agricultural purposes). The utilities record the percentage of biosolids generated by the treatment process that are beneficially reused. The percentage of biosolids reused can be larger than 100%. Utilities report that when they have been unable to use all the biosolids generated in a single financial year they have stockpiled them and reused them the following year, in addition to the amount generated in the next year. This is common and we would expect the data to fluctuate around the 100% point but be slightly over or under in any given year.

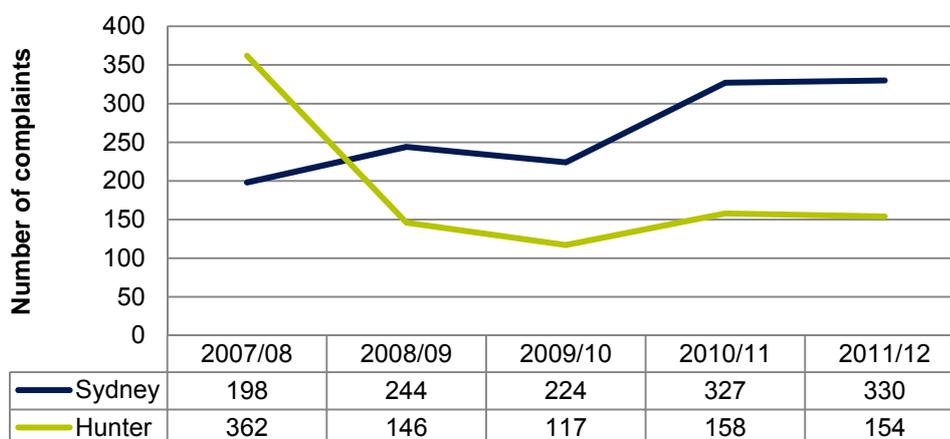
Figure 4.17 Percentage of biosolids reused

Note: vertical axis starts from 75%. Percentage of biosolids reused out of amount produced in financial year.

Data source: NWI E8.

4.2.5 Number of complaints about sewage odour

Complaints about sewer odour can indicate both the integrity and management of the sewerage system and the impact of these assets on the community. Sydney and Hunter Water report number of complaints to IPART as a requirement of their operating licences. The data presented shows that this indicator fluctuates year to year. It is important to note that the number of odour complaints cannot be directly compared between the utilities, due to the size difference of their populations.

Figure 4.18 Wastewater odour complaints

Data source: Sydney Water Corporation, September 1 Report to IPART Schedule C – *Performance Indicators Report 2011 – 12*, 31 August 2012, p 11, & Hunter Water Corporation, September 1 Report to IPART - *Environmental Performance Indicators Report 2011 -12*, August 2012 p 30.

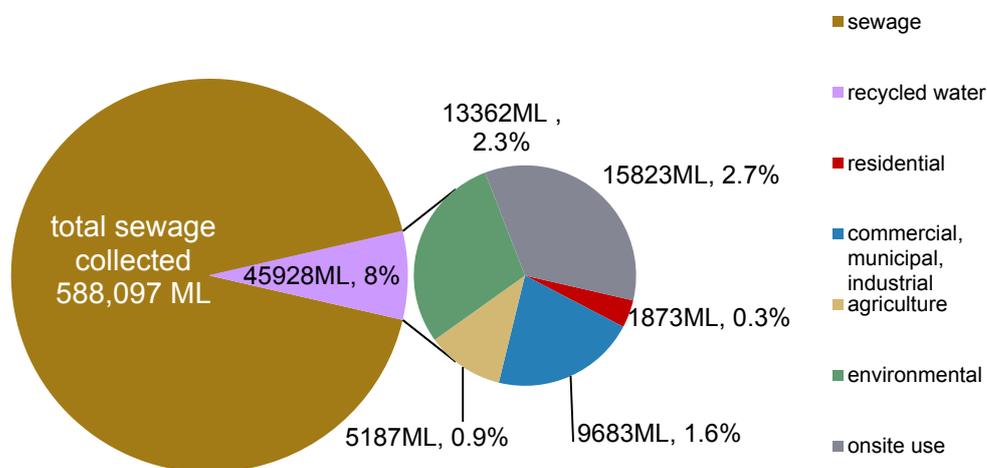
4.3 Recycled Water

The retail utilities all include recycled water in their operations. Recycled water has been recognised by the utilities and the community as an alternative water source, which can be used for a variety of purposes. While it can be costly, using recycled water can reduce demand on the more valuable potable (drinking) water. Reduced potable water usage can reduce a utility’s environmental impact in 2 ways; it diverts less water from natural water systems (rivers, dams and groundwater aquifers) and reduces the energy and chemical usage of potable water treatment.

4.3.1 Recycled Water as a percentage of sewage and uses of recycled water

Recycled water can be used for residential (toilet flushing, outdoor usage), commercial municipal and industrial (irrigation of sports fields, manufacturing process water). Figure 4.19 to Figure 4.22 show the percentage of sewage that is recycled on the large circle, and the uses of recycled water on the small circle. Table 4.1 lists the major users of recycled water supplied by the utilities.

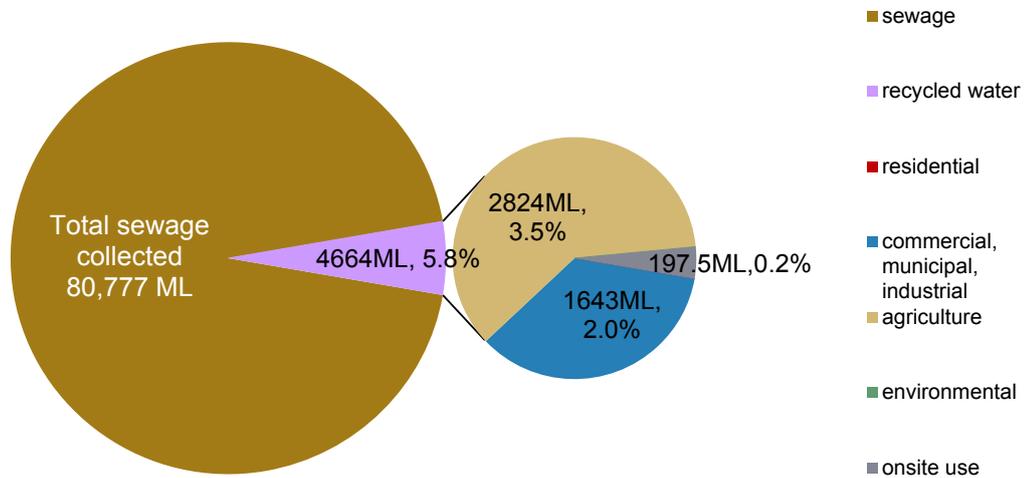
Figure 4.19 Sydney Water: Percentage of sewage recycled/Usage of recycled water



Note: Sum of categories may differ slightly due to small rounding errors.

Data source: NWI Indicators W18, W20, W21, W22, W23 & W24.

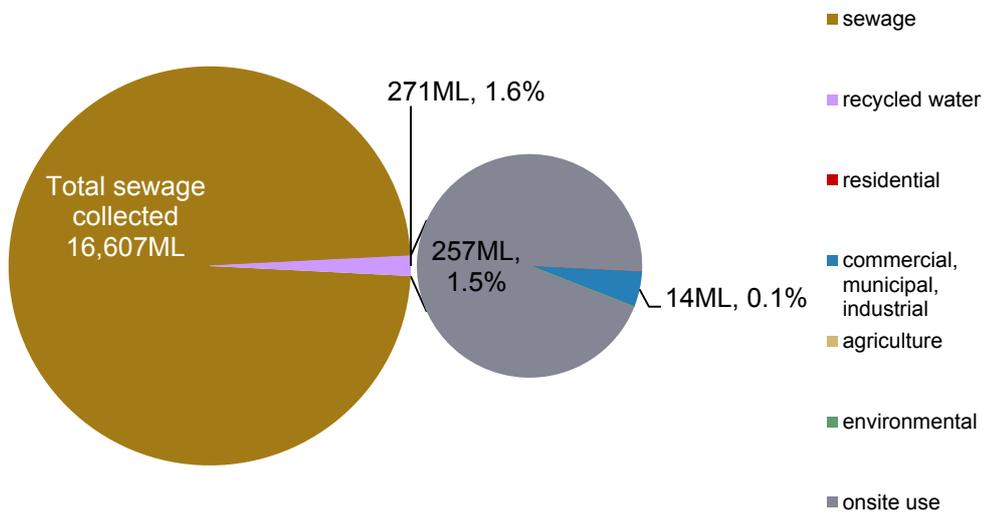
Figure 4.20 Hunter Water: Percentage of sewage recycled/Usage of recycled water



Note: Sum of categories may differ slightly due to small rounding errors.

Data source: NWI Indicators W18, W20, W21, W22, W23 & W24.

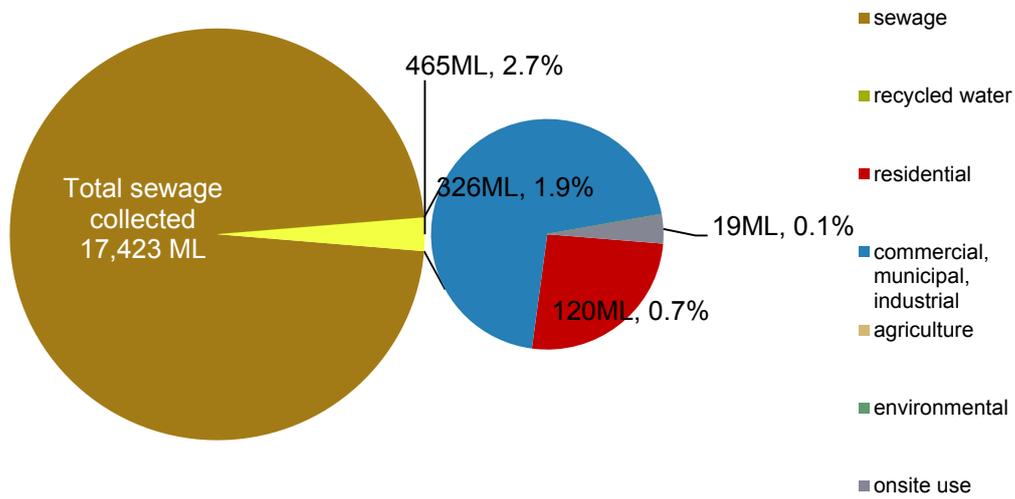
Figure 4.21 Gosford Council: Percentage of sewage recycled/Usage of recycled water



Note: Sum of categories may differ slightly due to small rounding errors.

Data source: NWI Indicators W18, W20, W21, W22, W23 & W24.

Figure 4.22 Wyong Council Percentage of sewage recycled/Usage of recycled water



Note: Sum of categories may differ slightly due to small rounding errors.

Data source: NWI Indicators W18, W20, W21, W22, W23 & W24.

Table 4.1 Amount of recycled water by category of use (ML)

Category of use	Utility	2007/08	2008/09	2009/10	2010/11	2011/12
Residential	Sydney Water	1,402	1,704	2,209	2,250	1,873
	Hunter	0	0	0	0	0
	Gosford Council	0	0	0	0	0
	Wyong Council	0	0	84 ^a	123	120
Commercial, municipal and Industrial	Sydney Water	7,212	5,155	7,537	7,687	9,683
	Hunter Water	1,984	2,289	2,648	2,006	1,643
Industrial	Gosford Council	0	68	14	37	14
	Wyong Council	832	865	940	570	326
Agricultural	Sydney Water	632	3,034	5,643	5,199	5187
	Hunter Water	2,269	2,623	2,520	2,488	2824
	Gosford Council	0	0	0	0	0
	Wyong Council	0	9	0	0	0
Environmental	Sydney Water	0	0	1,980	15,989	13,362
	Hunter Water	0	0	0	0	0
	Gosford Council	0	0	0	0	0
	Wyong Council	0	0	0	0	0
Onsite use	Sydney Water	14,917	15,549	16,314	16,396	15,823
	Hunter Water	218	180	180	180	197.5
	Gosford Council	277	216	348	141 ^b	257
	Wyong Council	391	422	0 ^a	304	19

a Correspondence from Wyong Council to IPART received 4 May 2011.

b Correspondence from Gosford Council to IPART received 23 January 2013.

Data source: NWI indicators W20-W24.

The majority of categories of recycled water usage observed reductions in the volumes of recycled water used in the 2011/12 year. This is expected in a wetter year particularly for residential, municipal and environmental uses which include outdoor watering and washing. Commercial and industrial usage is related to the level of business activity during the year.

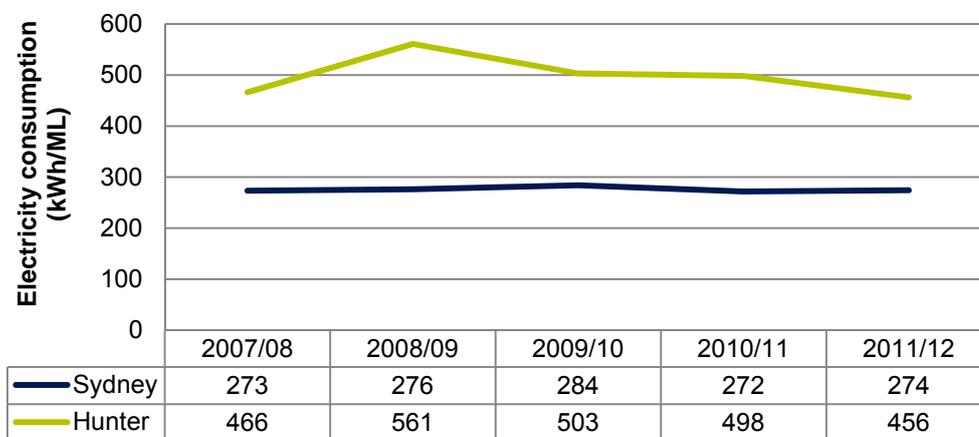
4.4 Energy and greenhouse gas emissions

The utilities report to IPART on the energy usage and greenhouse gas emissions. These indicators provide information on the impact of utilities' operations on the environment.

4.4.1 Electricity consumed by water and sewerage assets

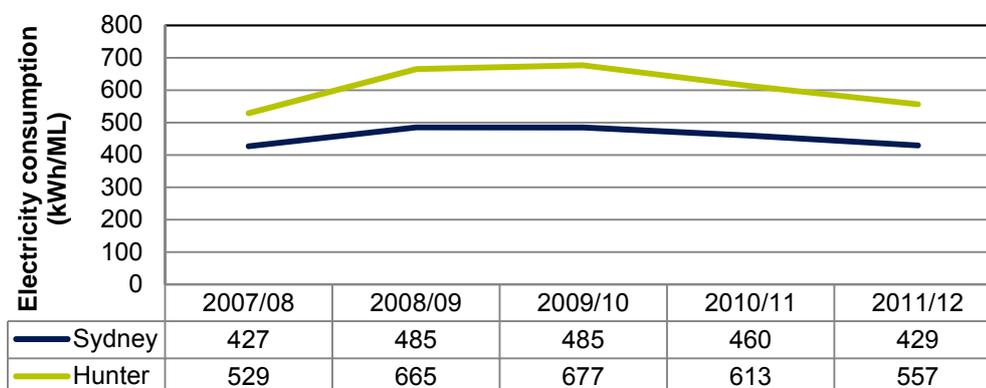
Electricity consumed by water and sewage assets can partially indicate the efficiency of the utility's processes and equipment. It is important to remember not to directly compare utilities as there are significant differences in their size and responsibilities (for example Hunter Water manages the dam infrastructure and bulk water transfers, Sydney Water does not). Electricity consumption has been presented for water and sewerage assets separately and expressed as kWh / ML.

Figure 4.23 Electricity consumption of water assets



Note: All Sydney Water data excludes energy used by the Sydney desalination plant.

Data source: Sydney Water Corporation, October 1 Report – *Sydney Water Operating Licence Environment Report Environmental Indicators Report 2011-12*, 27 September 2012 (IPART E9.2), p 29. Hunter Water Corporation, 1 September Report – *Environmental Performance Indicators Report 2011 -12*, August 2012, p 51.

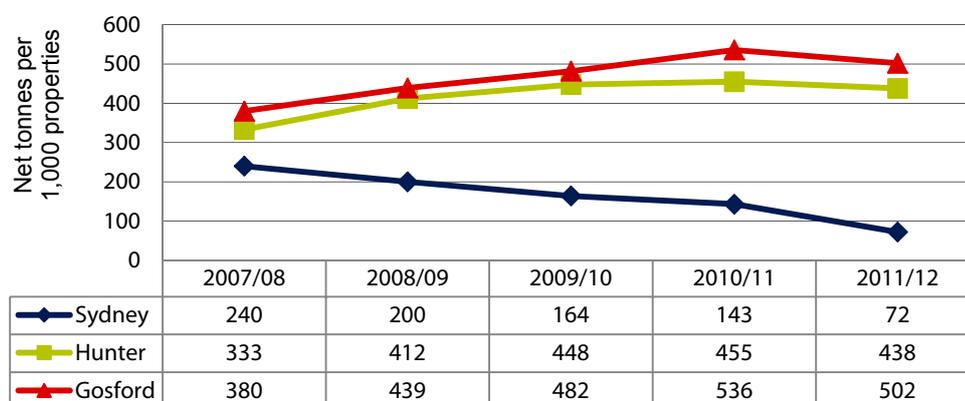
Figure 4.24 Electricity consumption of wastewater assets

Note: Hunter Water has experienced problems with data integrity from their energy retailers. Some corrections have been made to the data to improve consistency of data. Hunter Water reported data to IPART in kWh/EP and this was subsequently converted to kWh/ML.

Data source: Sydney Water Corporation, October 1 Report – *Sydney Water Operating Licence Environment Report Environmental Indicators Report 2011-12*, 27 September 2012, (IPART E9.3) p29. Hunter Water Corporation, 1 September Report – *Environmental Performance Indicators Report 2011 -12*, August 2012 p 51.

4.4.2 Net greenhouse gas emissions

One method used by the utilities to estimate the total impact of their operations on the environment is to estimate their total net greenhouse gas emissions. The utilities estimate their greenhouse gas emissions using different methods. Again, due to the differences in size and responsibility and differences in calculation methods, it is not appropriate to draw conclusions or comparisons between the utilities. These are presented in Figures 4.25 and 4.26.

Figure 4.25 Total greenhouse gas emissions of water utilities

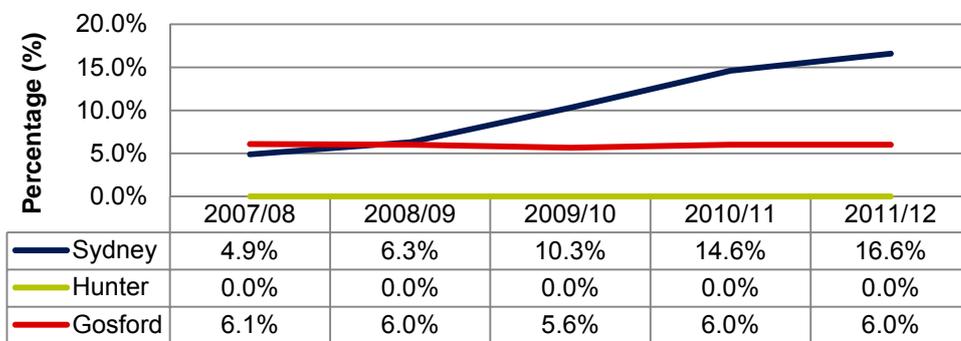
Note: Wong Council does not provide data on this indicator.

Data source: NWI Indicator E12.

4.4.3 Percentage of electricity consumed that was from renewable sources

The utilities do report the percentage of electricity that is consumed (either purchased or self-generated) that is from renewable sources. Sydney Water reports that installation of renewable generation capacity and business improvement program for their renewable generation assets has driven the increase in electricity consumed from renewable sources. Hunter Water does not consume any energy from renewable sources. Hunter Water reports that it has aerobic digesters at its sewage treatment plants and therefore does not have the same opportunities for cogeneration as other utilities.

Figure 4.26 Percentage of electricity consumed from renewable sources.



Note: Wong Council does not provide data on this indicator.

Data source: Sydney Water, October 1 Report – *Sydney Water Operating Licence Environment Report Environmental Indicators Report 2011-12*, 27 September 2012, (IPART E9.4), p 29. Hunter Water Corporation, 1 September report *Environmental Performance Indicators Report 2011 -12*, August 2012 (OL EC-4), p 54. Gosford Council data calculated from information in email D. Alvaro to J. Hanna 19/11/12.

5 Customers

Currently, the vast majority of water customers in NSW cannot change their water provider if they are unhappy with the service. For this reason there are customer service obligations in the operating licences of the major public water utilities.

Further, the 4 metropolitan retail utilities report on the water and sewerage service complaints they receive over each financial year, including the total number of complaints they receive per 1,000 properties, the time they took to resolve these complaints, and their call centre performance.

Finally, the Sydney and Hunter Water operating licences also require them to report on complaints referred to the Energy and Water Ombudsman of NSW (EWON).

5.1 Total number of water and sewerage service complaints

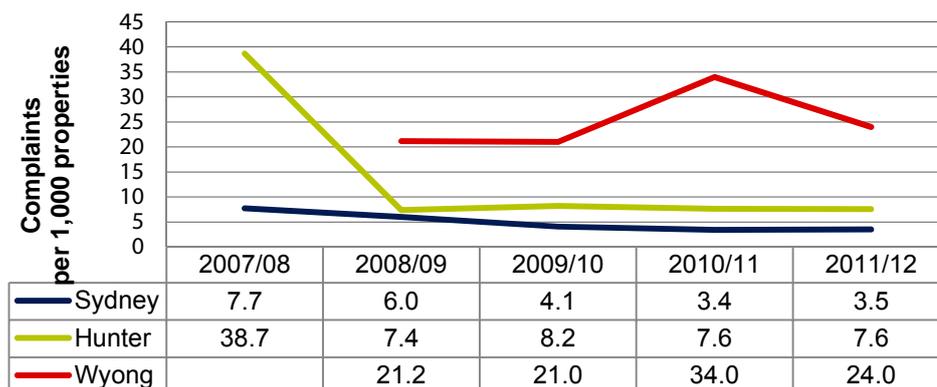
The total number of water and sewerage service complaints received by the utilities includes all complaints about

- ▼ bursts
- ▼ leaks
- ▼ service interruptions
- ▼ the adequacy of services
- ▼ water pressure
- ▼ water quality or reliability
- ▼ sewerage service
- ▼ sewage odours
- ▼ affordability
- ▼ billings and
- ▼ behaviour of staff or agents.

This indicator is expressed in number of complaints per 1,000 properties and is presented in Figure 5.1.

The level of complaints of the larger utilities has been steady over the last 4 to 5 years. Wyong Council, which observed a spike in complaints last year following work to their headworks, returned to similar levels as the previous 2 years. Gosford Council did not report on this indicator.

Figure 5.1 Total number of water and sewerage complaints per 1,000 properties



Note: Gosford did not report on this indicator.

Data source: NWI Indicator C13.

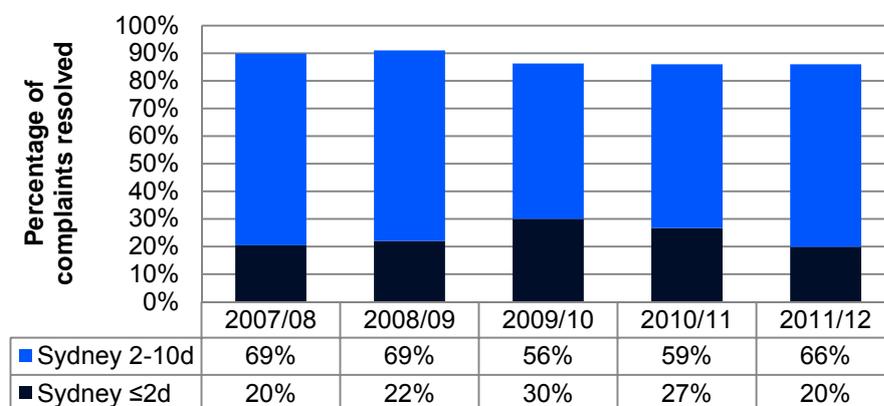
Sydney Water Corporation, September 1 Report to IPART Schedule C – *Operating Licence 2010-2015 Performance Indicators Report 2011-12*, 31 August 2012, p 10. NWI C13.

5.2 Time taken to resolve complaints

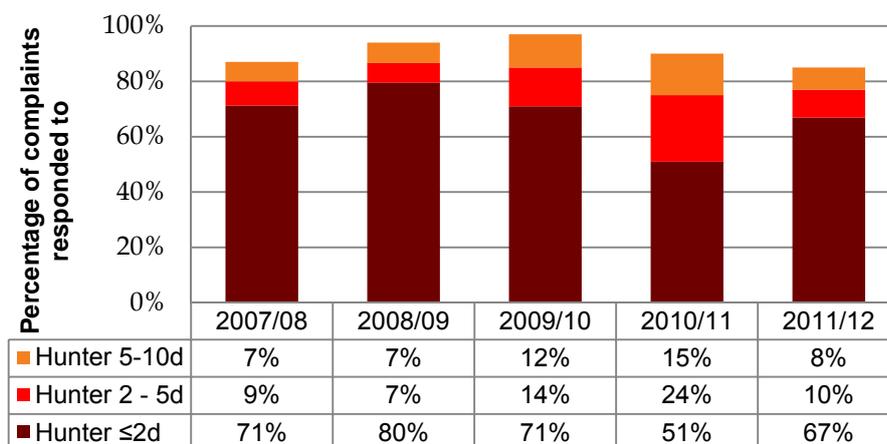
For Sydney Water, the total percentage of complaints resolved in less than 10 days remained the same although the percentage resolved in less than 2 days fell, meaning that customer complaints took longer to resolve compared to the previous year (see Figure 5.2).

Hunter Water expresses its data slightly differently. They report time taken to give a substantive response to a complaint. This year more substantive responses were provided within 2 and 5 days, but less within 10 days compared to the previous year (see Figure 5.3).

One notable feature of Hunter Water's data is the consistently high percentages of complaints responded to in under 2 days. This demonstrates a commitment to resolving complaints rapidly and prevents escalation of complaints to external bodies such as EWON and reduces the resource time spent on complaint resolution. This is ultimately a better outcome for customers.

Figure 5.2 Sydney Water percentage of complaints resolved within 10 days

Data source: IPART Indicators C15.1 and 15.2 Sydney Water Corporation, September 1 Report to IPART Schedule C – *Operating Licence 2010-2015 Performance Indicators Report 2011-12*, 31 August 2012, p 14.

Figure 5.3 Hunter Water percentage of complaints provided a substantive response within 10 days

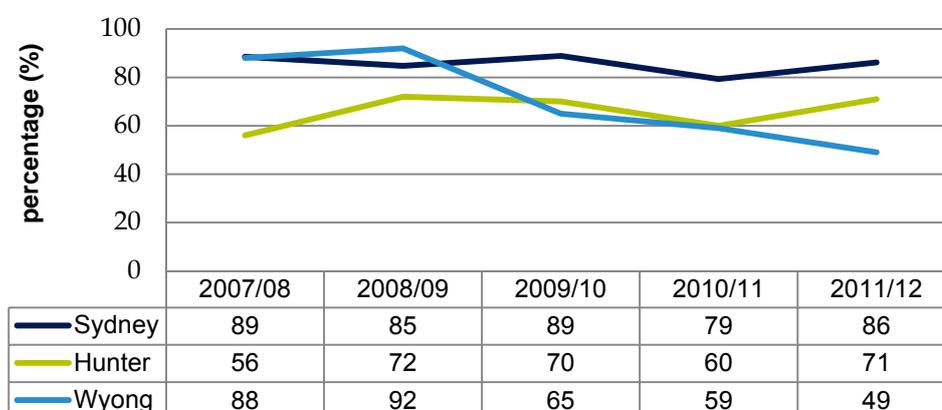
Note: Hunter Water data not comparable to Sydney Water as it reports the time taken to provide a substantive response not a resolution.

Data source: Hunter Water Corporation, September 1 Report – *Customer services Report 2011 – 12*, August 2012, p 5.

5.3 Call centre performance

Both Sydney Water and Hunter Water reported an increase in the percentage of calls answered within 30 seconds.

Wyong reported a reduced percentage of calls answered within 30 seconds for the third year in a row.

Figure 5.4 Percentage of telephone calls answered within 30 seconds

Note: Gosford did not report on this indicator.

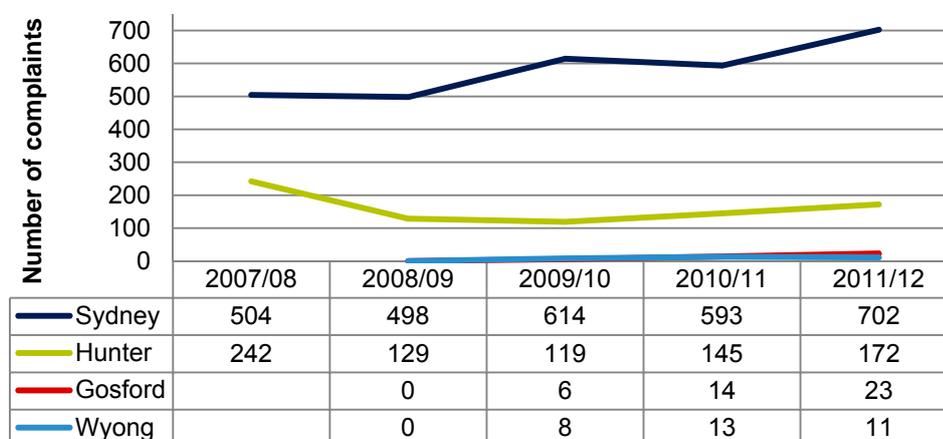
Data source: NWI Indicator C14.

5.4 Number of complaints referred to the Energy and Water Ombudsman of NSW

Analysis of the complaints referred to EWON can provide utilities with useful information to identify systemic issues and policies that may need improvement. Sydney Water and Hunter Water are required under their operating licences to be members of EWON, and must report on the number and details of customer complaints that were referred to EWON each year. Gosford and Wyong have also joined EWON.

Sydney Water logged 702 calls to EWON, an increase of 18% last year. Hunter Water reported 172 calls referred to EWON, an increase of 19% from last year. Hunter Water reported that consumer behaviour has changed due to affordability of services, with a greater number of consumers using external dispute channels.

Over the past 3 years EWON has reported on the number of customer complaints for Gosford and Wyong Councils. In 2011/12, EWON reported 23 customer complaints for Gosford Council and 11 complaints for Wyong Council (Figure 5.5).

Figure 5.5 Total number of complaints referred to EWON

Note: Figures for Gosford and Wyong are taken from the EWON Annual reports which reports number of complaints closed in the year. <http://www.ewon.com.au/index.cfm/publications/annual-reports/>

Data source: Sydney Water Corporation, September 1 report to IPART Schedule C - *Operating Licence 2010-2015 Performance Indicators Report 2011-12*, 31 August 2012, p 14, Sydney Water Corporation, September 1 report to IPART Schedule C - *Operating Licence 2010-2015 Performance Indicators Report 2010-11*, 31 August 2011, p 12; Hunter Water Corporation, September 1 Report – *Customer Services Report 2011-12*, August 2012, p 28.

Utilities report the issues that are being referred to EWON include billing, affordability, customer service, credit. Hunter Water considers that the change to economic environment and financial impact on customers are contributing to higher rates of external dispute resolution.

5.5 Hardship indicators

The Hardship indicators are a new section to be included in the report this year.

Licence conditions are in place for both Sydney Water and Hunter Water that have requirements for the utilities in the areas of customer hardship, debt, water flow restrictions and disconnections.

Sydney Water's operating licence states:

Sydney Water must have in place and comply with procedures relating to customer hardship, debt, water flow restriction and disconnection. These procedures must include:

- (1) a customer hardship policy for residential customers, that helps residential customers in financial difficulty to better manage their current and future bills
- (2) a payment plan for residential customers, who are responsible for paying their bill and who are, in Sydney Water's opinion, experiencing financial difficulty
- (3) conditions for disconnection of supply or water flow restriction in accordance with the disconnection procedure set out in the Customer Contract

- (4) provisions for the self - identification, identification by community welfare organisations and identification by Sydney Water of residential customers experiencing financial difficulty.

Hunter Water's operating licence states:

Hunter Water must have in place a code of practice and procedure on debt and disconnection (Code of Practice and Procedure on Debt and Disconnection).

The Code of Practice and Procedure on Debt and Disconnection must provide for:

- (a) deferred payment or payment by instalment options for bills; and
- (b) the payment options referred to in (a) are to be advised in bills.

IPART is working with the utilities to better understand and measure customers' experiences of hardship, and develop indicators to describe it. At the moment the utilities are not reporting hardship uniformly and the information we currently have is reported below. In future years we intend to have a common indicator or set of indicators to present.

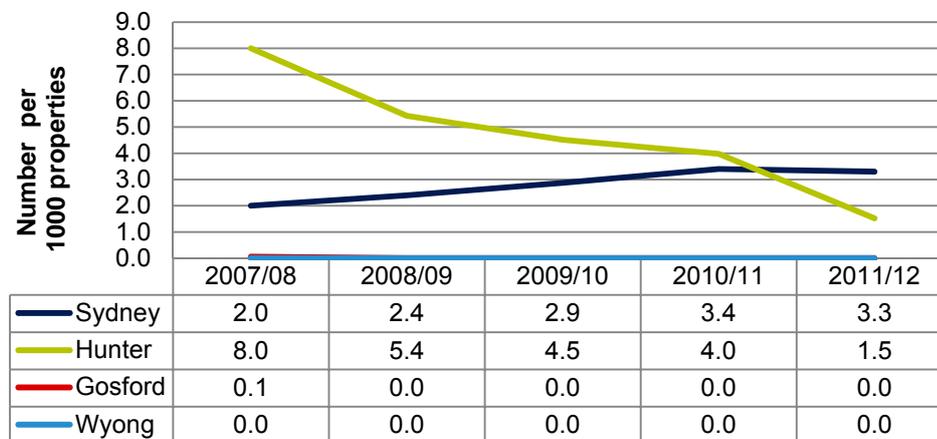
Indicators that may give some information of hardship include number of customers on payment plans, and flow restrictions applied due to non-payment of a bill. These have been presented below:

- ▼ Sydney Water had **156,502**³¹ requests for instalment or deferred payment plans that were approved and in place during 2011/12
- ▼ Hunter Water started **17,946**³² payment plans during 2011/12
- ▼ Gosford does not collect the number of payment plans that are in place and are unable to retrieve historical data
- ▼ Wyong Council reports that it receives about 100 hardship applications a year, and at any time Wyong council has about 2000 accounts that are subject to some payment arrangement.³³

³¹ Attachment to email from P. Nedelkovski to J.Hanna, 20 December 2012.

³² Hunter Water Corporation. September 1 Report - *Customer Services Report 2011-12*, p 31.

³³ Attachment to email sent I. Johnson to J. Hanna, 22 January 2013.

Figure 5.6 Flow restrictions applied

Data source: NWI Indicator C18.

Sydney and Hunter Water are the only 2 utilities that apply flow restrictions. Accounting for the differences in population sizes, the numbers of flow restrictions applied this financial year were:

- ▼ 5892 for Sydney Water
- ▼ 350 for Hunter Water.³⁴

³⁴ Hunter Water Corporation September 1 Report – *Customer Services Report 2011-12*, p 33.

6 Expenditure, sales and output measures for the retail water utilities

This chapter compares the actual operating expenditure, capital expenditure, water sales, revenue and output measures against the forecasts we used in setting prices for the 4 retail water utilities and 3 bulk water utilities. These forecasts are set out in our pricing determinations for each utility.

We have reviewed each utilities performance over the 8-years to 30 June 2012. As Figure 6.1 shows, this period includes a number of pricing determinations for each utility.

Figure 6.1 Determination periods for regulated utilities



In assessing a utility's performance we have considered the results over a 5-year period as well as the results for a particular year. We would expect to find variation in the actual results compared to the forecasts we used in making our price determinations as these were based on the best information available at the time. Where there is a significant variation, it is important to identify the reasons for this.

The forecasts that IPART determined prices underpinned prices are referred to as the 'allowed' values in the following discussion. Allowed values are expressed in \$2011/12, which means that they have been adjusted to take account of the impact of inflation. This has been done to facilitate comparison over years.

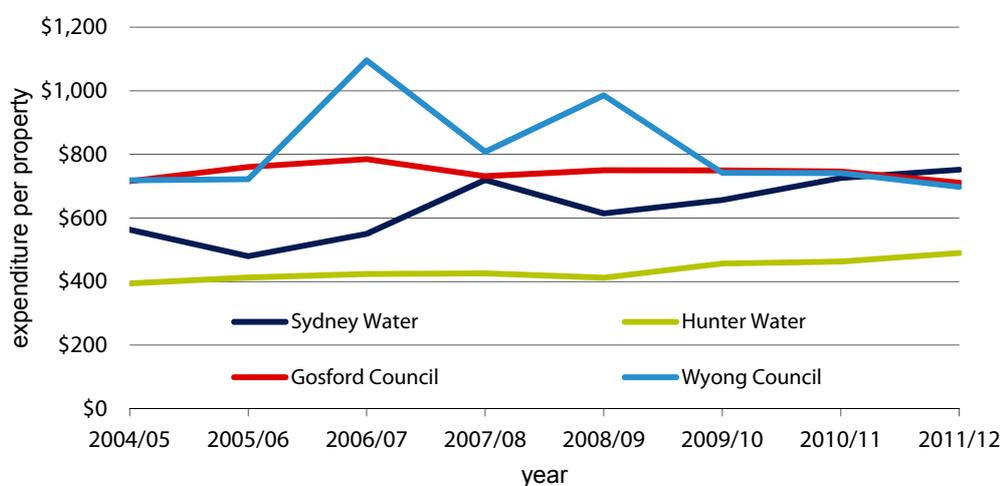
We note that the retail water utilities and the bulk water utilities provide different services. This should be considered when comparing results. Where feasible, we have integrated analysis of the metropolitan water utilities and State Water Corporation (eg, see Figure 6.8 Revenue variations from IPART determination allowed values).

We have received an Annual Information Return from the NSW Office of Water, however it is not complete. Accordingly, we have not reported on their actual operating expenditure, capital expenditure, water sales or revenue. However, we have received a more detailed report from the NSW Office of Water on its performance against the program set out in their determination that underpinned the calculation of prices.

6.1 Operating expenditure

The average operating expenditure per property for each of the retail water utilities is shown in Figure 6.2.

Figure 6.2 Average operating expenditure per property (\$2011/12)

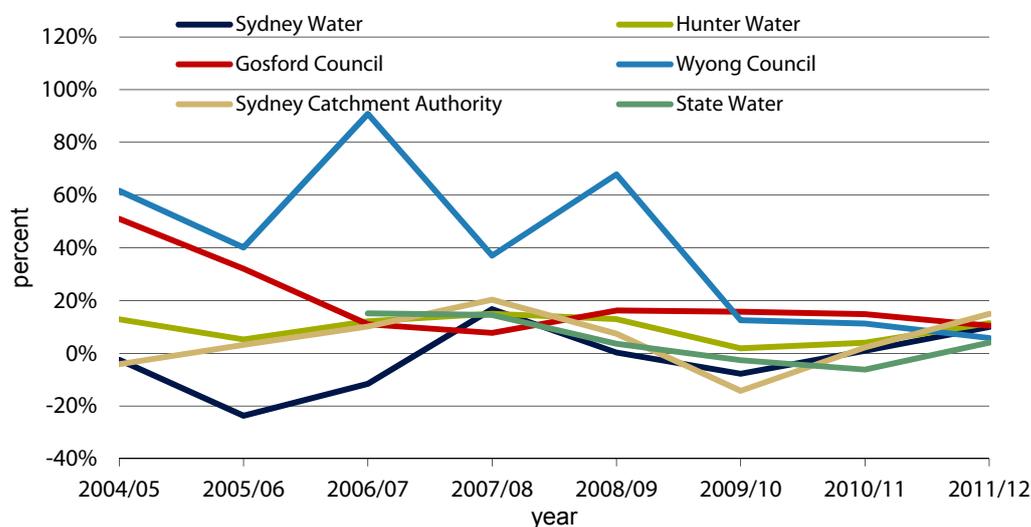


Note: Sydney Water's operating expenditure per property includes costs of bulk water purchases which are included in the return on assets for Hunter Water, Gosford Council and Wyong Council, because these utilities own their bulk water assets.

Data source: 2011/12 annual information returns.

Most of the water utilities have consistently incurred more operating expenditure than we have allowed in our Determinations. Figure 6.3 shows each utility's variation from our Determinations over the last 8 years.

Figure 6.3 Operating expenditure variations from IPART determinations (allowed values \$2011/12)



Data source: 2011/12 annual information returns and Determinations.

Gosford Council, Hunter Water, Sydney Water and Wyong Council all spent more than we allowed in 2011/12. Over the 8-year period, operating expenditures for Gosford Council, Hunter Water, and Wyong Council were greater than we allowed. We note that there is no impact on customers since these costs are absorbed by the business.

State Water and the Sydney Catchment Authority both spent more than we allowed in 2011/12. Over the 8-year period, operating expenditures for State Water and the Sydney Catchment Authority were greater than we allowed.

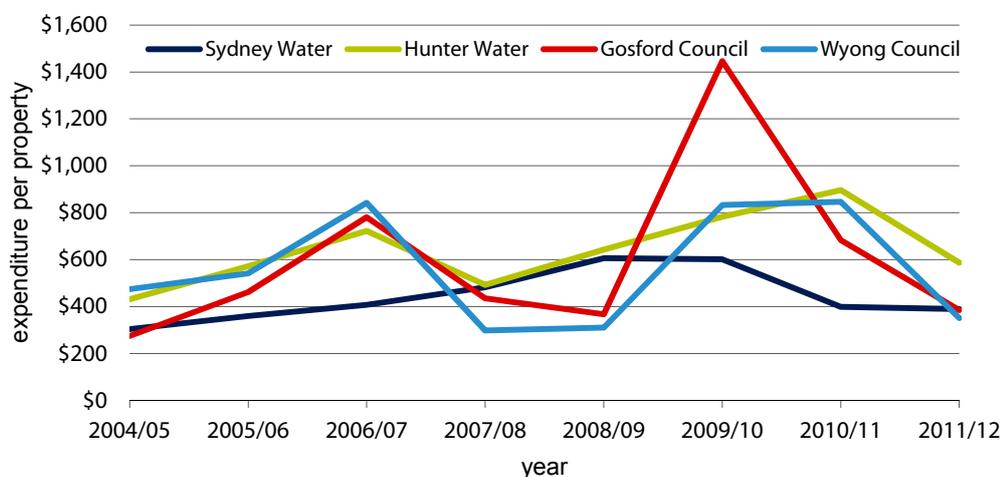
Variations can be explained by a number of factors. At the time of each price reset, we carefully examine the reasonableness of utility's explanation of its variations to help inform decisions about its future prices.³⁵

6.2 Capital expenditure

The average capital expenditure per property for each of the retail water utilities is shown in Figure 6.4.

³⁵ See for example, chapter 5 of the Final Report Sydney Water prices from 1 July 2012.

Figure 6.4 Average capital expenditure per property (\$2011/12)

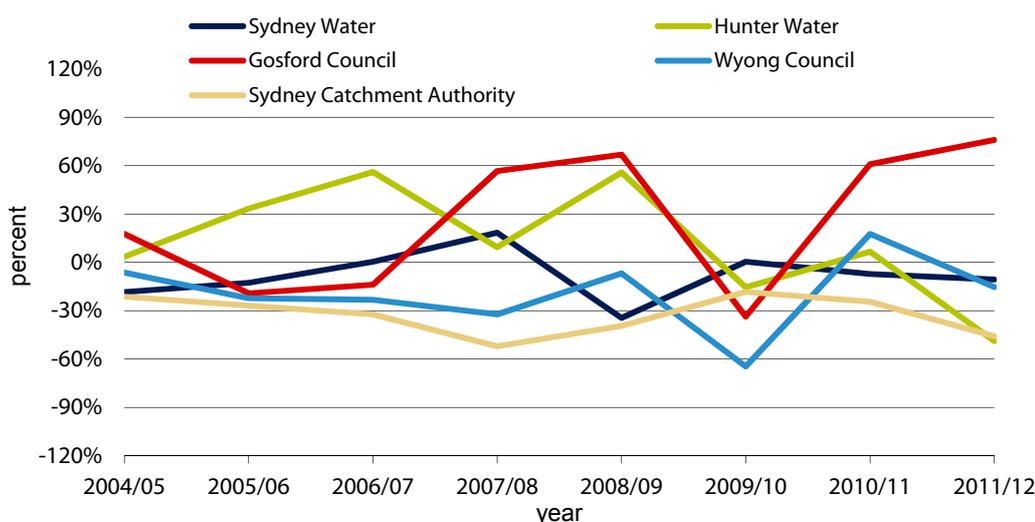


Data source: 2011/12 annual information returns.

The water utilities often incur capital expenditures in a different pattern to how we have in our Determinations. Figure 6.5 shows each utility's variation from our Determinations over the last 5 years.

As identified above, at the time of each price reset, we carefully examine the reasonableness of utility's explanation of its variations to help inform decisions about its future prices.³⁶

Figure 6.5 Capital expenditure variations from IPART determinations (allowed values \$2011/12)



Data source: 2011/12 Annual information returns and Determinations.

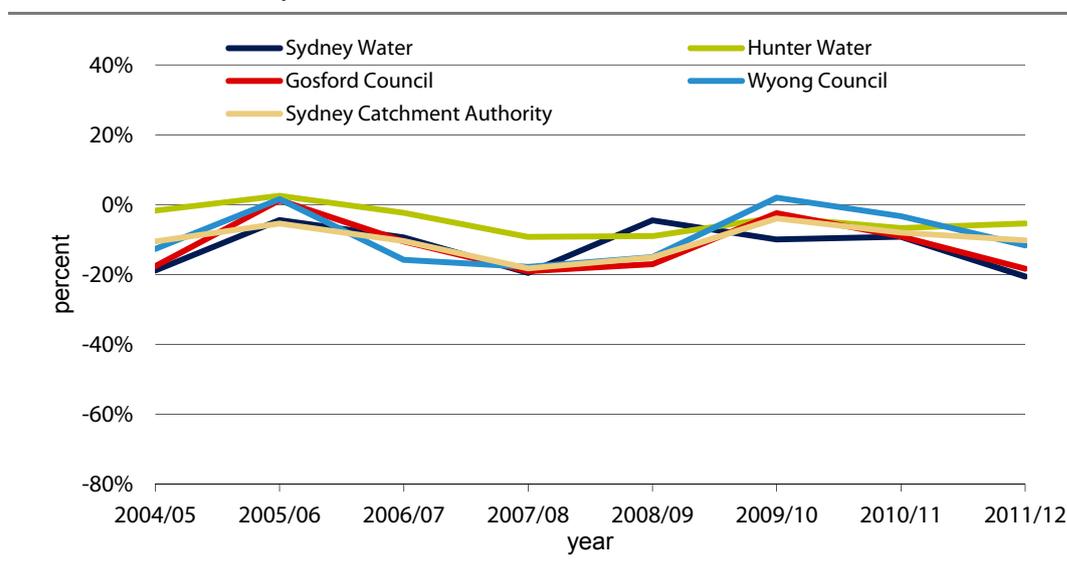
³⁶ See for example, chapter 6 of the Final Report Sydney Water prices from 1 July 2012.

Gosford Council incurred more capital expenditure in 2011/12 than we allowed in its current price determination. Hunter Water, Sydney Water, the Sydney Catchment Authority and Wyong Council spent less than we allowed in 2011/12.

6.3 Water sales

In line with the reductions in water sourced (described in section 4.1), in 2011/12, actual water sales (by volume) were below the forecast amount for each of the utilities, as shown in Figure 6.6. New South Wales encountered a relatively wet and mild summer.³⁷

Figure 6.6 Water sale variations from IPART determinations (allowed values)



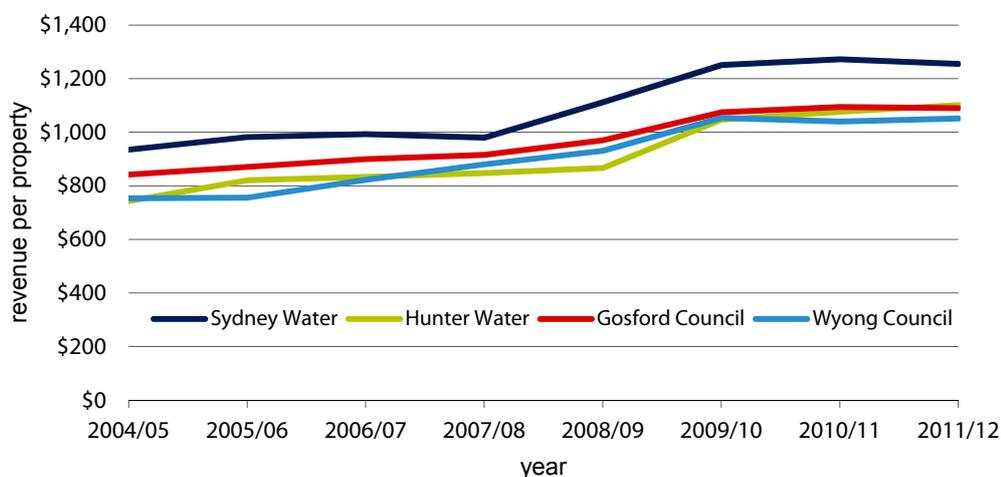
Data source: 2011/12 annual information returns and determinations.

6.4 Revenues

The average revenue per property for each of the retail water utilities' is shown in Figure 6.7.

³⁷ Bureau of Meteorology, *Sydney in summer 2011-12: A cool, wet summer for Sydney*, 1 March 2012, <http://www.bom.gov.au/climate/current/season/nsw/archive/201202.sydney.shtml>

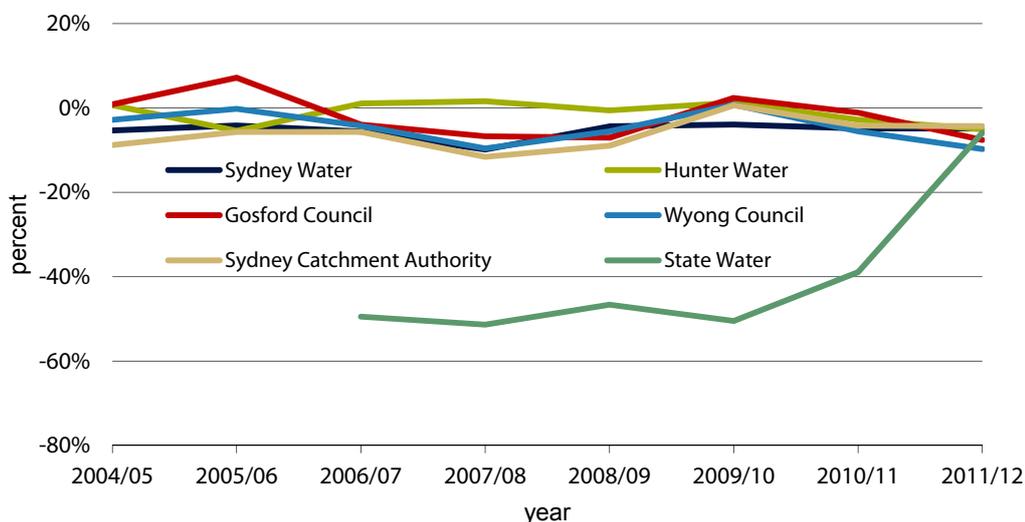
Figure 6.7 Average revenue per property (\$2011/12)



Data source: 2011/12 annual information returns.

The utilities have consistently recovered less revenue than forecast in our Determinations. Figure 6.8 shows each utilities' variation from our Determinations over the last 8 years.

Figure 6.8 Revenue variations from IPART determinations (allowed values \$2011/12)



Data source: 2011/12 annual information returns.

6.5 Performance against output measures and capital expenditure programs

Output measures are used as a means of monitoring the progress of the water utility in delivering the plans that it articulated at the time that prices were set. The output measures represent the outputs that we agreed with the utility should be expected with the revenue we forecast over the current determination. However, they are not in themselves targets to be achieved in the determination period, as there may be good reasons for variance. Reporting variance from the targets enables the assessment of prudent expenditure. This information is used at our price reviews as part of our assessment of prudent and efficient expenditure by the water utilities.

Gosford City Council, Wyong Shire Council and Hunter Water

At the time of publication of this report, our draft decisions on the prices of Gosford City Council, Wyong Shire Council and Hunter Water are not yet published. These decisions will describe how the utilities performance impacted on IPART's decisions.

At this stage, according to our consultants for the 2013 price review, Gosford Council did not meet a number of its service level outputs, including:

- ▼ water quality complaints
- ▼ water main breaks
- ▼ wastewater odour complaints
- ▼ wastewater main breaks and chokes
- ▼ wastewater overflows.³⁸

Gosford Council has completed or is on track to complete most of the capital expenditure program.

According to our consultants for the 2013 price review, Hunter Water has met most of the targets, with valid reasons provided with for any under or over target achievement.³⁹

³⁸ Oakley Greenwood, *Review of Capital and Operating Expenditure for Gosford City Council*, November 2012, pp 120-121.

³⁹ Atkins Cardno, *Final Report – Review of Hunter Water Corporation's Operating and Capital Expenditure*, November 2012, pp 155-156.

According to our consultants for the 2013 price review, Wyong Council has been able to achieve the majority of their proposed service standards. Wyong Council did not achieve some of the service level outputs, including:

- ▼ water quality complaints
- ▼ water quality
- ▼ effluent discharges.⁴⁰

Wyong Council have deferred or cancelled more than a third of the capital projects planned in 2009.

The full output measure reports for Gosford Council, Hunter Water and Wyong Council can be found in their submissions to their 2013 price reviews on our website www.ipart.nsw.gov.au.

Sydney Water, Sydney Catchment Authority

According to our consultants for the 2012 price review, Sydney Water was forecast to meet 47% of the target measures, exceed 11% and not meet 42%.⁴¹ Sydney Water's 2011/12 output measures report is largely consistent with their findings. Sydney Water's output measures report is included in Appendix D.

According to our consultants for the 2012 price review, the Sydney Catchment Authority was forecast to meet 67% of the target measures, and not meet 33% of its output measures.⁴² The Sydney Catchment Authority's 2011/12 output measures report is consistent with their findings. The Sydney Catchment Authority's output measures report is included in Appendix C.

Our consultant reports for Sydney Water and the Sydney Catchment Authority are available on our website: www.ipart.nsw.gov.au.

State Water

We did not request an output measures report from State Water and it was not provided.

⁴⁰ Oakley Greenwood, *Review of Capital and Operating Expenditure for Wyong Shire Council*, November 2012, pp 105-106.

⁴¹ Atkins Cardno, *Final Report – Detailed Review of Sydney Water's Operating and Capital Expenditure*, November 2011, p 65.

⁴² Halcrow, *Review of operating and capital expenditure of the Sydney Catchment Authority*, February 2012, pp 67-70.

New South Wales Office of Water

NOW submitted a report on its delivery of the Schedule of Monopoly Service Order outputs over 2011/12. The report shows that NOW has met or is on track to meet the bulk of the key outputs.

By nature NOW's services are difficult to measure, so a key question at each price review is what services and outcomes do users' bills fund. Users' concerns were further exacerbated in past price reviews by NOW's under delivery of key government policy commitment outputs. The 2011 Determinations output reports were identified as a vehicle to help to answer users' question.

A report on the full set of Monopoly Service Order outputs is not required on an annual basis. NOW is only required to report annually on key outputs.

Appendix B provides more detail on NOW's performance against the full set of outputs. Table 6.1 below summarises performance against the annual reporting framework included in the 2011 Final Report.

This performance will be considered by stakeholders, IPART and stakeholders in the course of the next price review.

Table 6.1 Summary of performance report against key outputs

Output measure	Cumulative progress as at 30 June 2012
Expanding the hydrometric network by 128 stations to a total of 513 by 2014/15, and increasing the frequency of visits to these stations to 6 visits a year to improve the monitoring information available to NOW and users.	Hydrometric Network Expansion project has concluded. Station visits have increased from 3.5 per year to 4.3 per year.
Completing the Water Sharing planning process and its implementation.	NOW is on track to meet this output target. All existing Water Sharing Plans for the Murray-Darling Basin River resources would need to be revised to enable accreditation of existing plans with the Murray Darling Basin Plan.
Publishing and implementing outstanding operational plans and policies.	Complete, with the exception of the Reasonable Use Guidelines for Basic Landholder Rights Holders.
Ensuring that 90% of transactions for the permanent transfer of access licences are processed within 28 days.	84% of all permanent transfers of access licenses were completed within 20 days in 2011/12, compared to 78% in the previous financial year.
Ensuring that 60% of all other transactions and approvals are processed within 3 months.	NOW has not provided a figure for the total share of all other transactions and approvals completed within 3 months, but it has advised that: <ul style="list-style-type: none"> ▼ 88% of "other dealings" completed within 60 days ▼ 90% of work approvals completed within 60 days ▼ 37% of combined approvals completed within 60 days ▼ 97% of zero share licences completed within 40 days ▼ 95% of specific licenses completed within 40 days.
Ensuring that 100% of licence breaches reported are actioned.	97% of all alleged licence breaches were actioned in 2011/12 compared to just 50% in the previous year.

Source: NOW, *Output Measures and Performance Indicators 2011-12*, January 2013.



Appendices

A | Data underlying figures in Chapter 6

Table A.1 Utilities' operating expenditure (\$millions, 2011/12)

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Average
Gosford Council	Allowed	30.8	37.7	46.5	45.5	43.5	43.7	44.0	43.4	41.9
	Actual	46.6	49.8	51.6	49.0	50.5	50.5	50.5	47.9	49.6
Hunter Water	Allowed	76.1	86.5	84.8	84.4	84.4	100.8	100.4	100.5	89.7
	Actual	85.9	91.0	95.1	97.1	95.3	102.6	104.4	111.9	97.9
Sydney Water	Allowed	989	1,090	1,089	1,089	1,093	1,264	1,290	1,233	1,142
	Actual	964	831	963	1,271	1,096	1,166	1,302	1,355	1,118
Wyong Council	Allowed	26.3	32.1	34.6	36.1	36.2	40.7	41.4	41.2	36.1
	Actual	42.5	45.0	66.0	49.4	60.8	45.8	46.1	43.6	49.9
State Water	Allowed			41.7	40.4	39.2	39.3	41.8	41.4	40.6
	Actual			48.0	46.3	40.6	38.2	39.2	43.0	42.6
Sydney Catchment Authority	Allowed	102.9	97.6	97.4	95.7	93.9	105.4	86.7	86.7	95.8
	Actual	98.7	100.7	107.3	115.2	100.9	90.4	88.6	99.6	100.2

Source: 2011/12 Annual information returns and price determinations since 2003.

Table A.2 Utilities' capital expenditure (\$millions, 2011/12)

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Average
Gosford Council	Allowed	18.3	31.2	51.9	29.2	24.9	98.0	46.5	26.4	40.8
	Actual	21.5	25.2	44.7	45.8	41.6	65.0	74.9	46.4	45.6
Hunter Water	Allowed	90.7	94.6	103.9	102.7	95.3	208.1	189.6	262.2	143.4
	Actual	93.9	126.1	162.1	112.3	148.5	175.8	202.1	134.1	144.4
Sydney Water	Allowed	668	713	709	718	1,648	1,062	769	785	880
	Actual	520	622	712	850	1,080	1,067	714	701	783
Wyong Council	Allowed	29.9	43.3	66.1	26.9	20.5	145.2	44.7	25.9	50.3
	Actual	28.0	33.7	50.7	18.2	19.1	51.3	52.6	21.9	34.4
Sydney Catchment Authority	Allowed	48.0	226.8	146.4	172.3	132.2	66.7	36.2	34.5	107.9
	Actual	37.7	165.9	99.2	82.5	80.0	54.5	27.3	18.7	70.7

Source: 2011/12 Annual information returns and price determinations since 2003.

Table A.3 Utilities' water sales (GL)

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Average
Gosford Council	Allowed	16.9	13.5	13.6	13.8	13.8	12.3	13.4	14.5	14.0
	Actual	13.9	13.7	12.2	11.2	11.5	12.0	12.2	11.9	12.3
Hunter Water	Allowed	62.0	62.7	62.8	63.1	63.6	63.3	61.4	59.0	62.2
	Actual	60.9	64.3	61.3	57.3	57.9	61.0	57.2	55.8	59.5
Sydney Water	Allowed	584	492	504	530	459	500	486	534	511
	Actual	474	470	457	426	438	450	441	424	448
Wyong Council	Allowed	15.0	12.8	12.9	13.1	13.2	11.7	12.4	13.2	13.0
	Actual	13.1	13.0	10.9	10.8	11.3	11.9	12.0	11.6	11.8
Sydney Catchment Authority	Allowed	584	557	567	587	578	502	453	443	533.8
	Actual	522	526	507	479	490	482	417	398	478

Source: 2011/12 Annual information returns and price determinations since 2003.

Table A.4 Utilities' revenue (\$millions, 2011/12)

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Average
Gosford Council	Allowed	54.3	53.2	61.6	65.7	70.3	70.7	74.9	79.4	66.3
	Actual	54.8	57.0	59.2	61.3	65.4	72.4	74.1	73.4	64.7
Hunter Water	Allowed	162.0	181.1	187.0	193.4	200.4	235.2	242.7	251.9	206.7
	Actual	163.1	171.3	188.9	196.5	199.2	238.3	236.0	239.3	204.1
Sydney Water	Allowed	1,692	1,776	1,841	1,919	2,073	2,311	2,398	2,378	2,048
	Actual	1,601	1,702	1,737	1,730	1,983	2,221	2,281	2,262	1,940
Wyong Council	Allowed	45.9	47.2	51.7	59.5	60.7	64.5	68.5	72.8	58.9
	Actual	44.6	47.1	49.5	53.8	57.4	65.0	64.7	65.7	56.0
State Water	Allowed			74.5	72.3	65.6	72.5	88.7	96.5	78.4
	Actual			37.6	35.2	35.0	35.9	54.2	90.8	48.1
Sydney Catchment Authority	Allowed	169.0	177.8	189.6	204.9	215.0	209.8	208.5	210.8	198.2
	Actual	154.2	167.7	178.8	181.1	195.8	211.2	199.8	201.7	186.3

Source: 2011/12 Annual information returns and price determinations since 2003.

Table A.5 Utilities' properties

		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Gosford Council	Allowed	66,618	67,554	66,520	67,251	67,991	67,789	68,196	68,605
	Actual	65,080	65,501	65,798	66,983	67,401	67,418	67,746	67,379
Hunter Water	Allowed	216,567	221,564	224,123	226,815	229,507	236,003	239,958	243,987
	Actual	218,144	220,690	224,442	228,312	231,266	224,725	225,637	228,682
Sydney Water	Allowed	1,720,879	1,746,866	1,776,120	1,805,120	1,807,884	1,835,439	1,859,990	1,884,790
	Actual	1,712,997	1,733,886	1,749,895	1,765,765	1,784,148	1,776,064	1,793,736	1,803,155
Wyong Council	Allowed	59,679	60,143	61,402	62,503	63,604	63,215	64,210	65,235
	Actual	59,202	62,301	60,236	61,179	61,657	61,715	62,241	62,533

Source: 2011/12 Annual information returns and price determinations since 2003.

B New South Wales Office of Water's performance against output measures

Activity	Activity Description	Service Output	Output Measures	Output @ 30 June 2010	Output Actual Number @ 30 June 2012	Output Target	Performance Indicator (PI)	PI as per Determination	PI Actual Number @ 30 June 2012	PI Target	Total IPART Allowed FTE	TOTAL ACTUAL FTE
C01-01	Surface water quantity monitoring	NOW is expanding its hydrometric network, over this determination period 2014, by 128 stations and will visit each of its 513 (385 + 128) stations 6 times per year (up from the current 3.5) by 2014. This activity includes surface water quality monitoring, data collecting (including environmental flows), data processing, data quality control, data archiving, data analysis and knowledge transfer. In the 2010-11 year, NOW installed and commissioned 31 recurrently funded gauging stations.	Number of NOW funded sites	385	420	480	Number of NOW funded sites visited	3.5 visits per year	4.3	6 visits per year in 2014	26.8	39.93
C01-02	Surface water quantity data management and reporting	NOW will increase the reliability of its telemetered network. The percentage of its telemetered sites that have on-line information to 95% (up from current level of 93%). This service relates to surface water quantity information that is compiled, stored, managed and reported to stakeholders and the general public.	Number of sites subject to data management	1832	1884	1947	Percentage telemetered sites with data available on internet at 9am each day.	93%	94%	95%	5.1	6.89
C01-03	Surface Water quality monitoring	NOW will sample 114 sites monthly and report results via the State Plan and the State of Environment report. Surface water quality monitoring covers system design, data collection/monitoring, data archiving, data analysis, information provision and knowledge transfer. Covers water quality sampling and assessment of ambient condition and trend for salinity, temperature, turbidity, nutrients and PH.	Number of NOW funded sites. Water Quality condition with reference to NEQMS Guidelines. Data for water quality trend assessment (2008, 2012, 2015)	114 sites sampled monthly	101 (average 109)	114 sites sampled monthly to quality standards	NSW State Plan, Priority E4, Target 5. (MER Riverine Ecosystems Theme). State of Environment reporting	WQ condition and trend assessment (three-yearly analysis and reporting to SoC) Five-yearly analysis and reporting to SOE).	Used for 2012 SoE Report - Water Quality data analysed (salinity, temperature, turbidity, nutrients, pH) from 114 sites to report (via SoC and SoE reports) on surface water condition and trends.	As for current	6	10.67
C01-04	Surface water ecology, biology and algal monitoring	NOW will monitor 73 sites weekly to monthly for blue green algal taxa cell count and biovolume (up from current level of 69). This covers primarily activities that are not WSP related. This activity relates to surface water, including estuarine ecosystems monitoring in ecological/biological attributes of rivers, flood plains and wetlands system designs, data collection, data archiving, data analysis, information provisions and knowledge transfer.	Blue-Green algal taxa cell count and biovolume referenced to NHMRC (2004) NHMRC (2005) and ANZECC/ARMCANZ (2000) under the NWQMS guidelines.	Current: 69 sites monitored weekly to monthly depending on alert level and sample regime in accordance with guidelines.	Average 68 sites monitored weekly to monthly	73 sites Weekly sampling sites above red alert level. The number will vary depending upon the incidence of blooms. Weekly reporting.	BGA Blooms monitored	All red alert sites monitored at least weekly.	In peak red alert season, weekly algal reports provided to RACC, Councils, Minister.	Same as current	1.4	2.27

C01-05	Surface water quality and biological database management	NOW will move at least 80% of its data on surface water quality and biological monitoring programs into a new central database. This activity includes State-wide coordination and administration, intra and interstate liaison, data archive management, data archive reporting, systems development/maintenance/upgrades, data quality accreditation, responsibilities for surface water quality and biology monitoring.	Operational Biological Database containing data for IMEF, unregulated, algae and Snowy River monitoring programs	No central database	Procurement approved - first stage development underway	One central database	Percentage of current projects with data stored on central database.	0%	100% of surface water quality data transferred to new corporate database. 80% of biological data transferred to centralised MS Access database awaiting commissioning of biological database.	80% of current project data stored on central database.	0.9	2.2
C01-06	Surface water monitoring assets management	NOW will upgrade 5% of its proposed 480 (this is the estimated number of sites in 2014) NOW funded sites per year. This activity involves the maintenance and operation of structures, vehicles and equipment installed at gauging stations and other fixed monitoring sites (sensors, loggers, batteries, solar panels, etc) associated safety equipment, laptops and field/mobile sensors.	Number of Office funded sites	385	420	480	% of sites upgraded each year	0%	2%	5%	1.4	0.98
C02-01	Groundwater quantity monitoring - systems design, data collection, data archiving, data analysis, information provision and knowledge transfer.	NOW will ensure the 80% of its proposed 3500 sites generate SWL data. This activity includes system design, data collection, data archiving, data analysis, information provision and knowledge transfer. NOW collects quantity data from groundwater monitoring bores in order to enable effective groundwater resource management.	Number of the Office funded sites:	3448	3955	3500	Percentage sites generating SWL data	70%	87% (WMI) 90% (WS)	80%	25.4	23.54
C02-02	Groundwater quality monitoring - systems design, data collection, data archiving, data analysis & information provision & knowledge transfer. Includes salinity & temperature by data loggers & spot sampling from bores.	NOW will ensure sampling of 10% of bores for water quality from 350 office funded sites. This activity incorporates groundwater quality monitoring systems design, data collection, data archiving, data analysis and information provision and knowledge transfer. Includes salinity and temperature by data loggers and spot sampling from bores.	Number of the Office funded sites	350	325	350	Percentage bores sampled for water quality	0%	10%	10%	0.8	0.05
C02-03	Groundwater data base - Corporate database administration, systems maintenance/upgrades, quality control/assurance (GDS).	NOW will conduct monitoring and data management on 100% of 3800 sites. This activity includes corporate database administration, systems maintenance/upgrades and quality control/assurance.	Number of sites subject to data management	3770	3955 (bores) 5532 (pipes)	3800	Percentage of sites upgraded each year	98%	100%	100%	0.2	0.34
C02-04	Groundwater monitoring assets - Maintenance & operation of structures, vehicles & equipment installed at bore monitoring sites (sensors, loggers, batteries, solar panels, etc.), laptops field/mobile sensors. Testing & calibration of hardware & software, sensor & instrument calibration & operation of technical workshops.	NOW currently does not upgrade any sites each year. NOW will upgrade 3% of its sites each year. NOW currently has 1% of new sites undergoing maintenance and 1% of sites on telemetry. NOW will achieve 10% for both of these measures for the end of the 2011 determination period. This activity includes the maintenance and operation of structures, vehicles and equipment installed at bore monitoring sites (sensor, loggers, batteries, solar panels, etc.), laptops and field/mobile sensors. Testing and calibration of hardware and software, sensor and instrument calibration and operation of technical workshops.	Percentage of sites upgraded each year	0%	1%	3%	Percentage new site undergoing maintenance; Percentage new sites on telemetry:	1%	2%	10%	1.6	2.48

C03-01	Operation & maintenance of existing licence holder owned meters, meter reading & compliance, undertaken by SWC under SLA with NOW.	NOW will meter 5000 users. NOW says this is equivalent to 26% of users. NOW undertakes operation and maintenance of existing license – holder owned meters, meter reading and compliance.	No. of Licence with water meters	2719	Installed 1145 (unreg), 5207 (GW - WMA), 245 (GW - WA)	5000	% of licences metered:	14%		26%	0	0.28
C03-02	Metering data custodianship activities, state-wide coordination & administration, intra & interstate liaison, data archive management, data archive reporting, systems development/maintenance/upgrades, data quality reporting, quality accreditation (including procedure development, best practice committees, internal quality audits, external quality accreditation, network design & review, system & application training, corporate data access & dissemination).		Issued entitlement metered	1 733 000M L	9 523 354.7 ML	2 600 000 ML	% of Issues entitlement metered	38%		58%	0	0
C03-03	Metering Operations Government Owned		Metered licences under government management:	0	1145	4000	% of meters under government management	0%		25%	0	0
C04-01	Water Quality Analysis	NOW will complete 3500 algal tests in the 2011 determination period. This activity included laboratory analytical services for water quality programs and outsourcing of analysis as required.	Chemical tests Algal tests	3478 algal, 24 435 water chemistry	6145 algal, 28005 water chemistry	3500 algal, 32 100 water chemistry	Standard of testing satisfied:	Maintain NATA accreditation on required tests, pass NATA audits	Maintained	Maintain NATA accreditation on required tests, pass NATA audits	2.5	6.26
C05-01	Water sharing/water management modelling	NOW will introduce surface water models capable of being used in the 2014 round of WSP reviews and consistent with the Basin Plan. NOW aims to develop climate and runoff predictions to specific valleys. This activity included surface water modelling for water sharing including: 1. WSP development and implementation, 2. MDB plan, 3. Climate variability and climate change, 4. Catchment change, 5. Implementation of cap management strategy, 6. Sustainable development projects, 7. Threats to shared MDB resources, 8. Environmental flow response modelling, 9. Surface water - Groundwater interaction.	Models providing information required for water sharing and water resource management.	IQQM – climate and runoff projections (~2030) for NSW	Metropolitan Water Plan	River Manager – climate and runoff predictions to specific valleys. Contribution to the MDB.	Model applicability for WSPs and basin monitoring and reporting commitments	Models applicable to WSPs		Surface water models capable of being used in the 2014 round of water sharing plan reviews and consistent with Basin Plan.	16.5	13.95
C05-02	Resource assessments	NOW will develop new surface water models to test the range of scenarios that might be investigated and are capable of providing the information required on demand for water resource assessments. This activity includes modelling for water resources assessments of projects/schemes: 1. Programs of works performance in meeting salinity targets, 2. Impacts of water trade on salinity and reliability, 3. MDBA salinity register compliance, 4. River, storage management for SWC, 5. Water recovery options/projects TLM, NWI, water for river (Snowy) & other clients.	Models providing information required on demand for water resource assessments	IQQM		River Manager – Contribution to the Murray Darling Basin	Model applicability:			Surface water models robust enough to test the range of scenarios that might be investigated	0.4	0.14
C05-03	Water balances/accounting	NOW will develop surface water models that are capable of being used in the 2014 round of WSP reviews. Models will be capable of providing information required on demand for water resources assessment. This activity involves development and administration of surface water balances and accounting systems for State, Murray Darling Basin and National Strategies including: 1. NWI requirements, 2. Hydrologic model maintenance, 3. MDBMC Cap auditing including model accreditation, 4. WSP auditing, 5. Cross border water trade - assessment of trading rules, 6. Development of water modelling software and application to valley models, 7. eWater CRC (Model development).	Models providing information required on demand for water resource assessments:	IQQM		River Manager contribution to the Murray Darling Basin	Model applicability	Applicable to current plans		Surface water models capable of being used in the 2014 round of water sharing plan reviews.	2.3	5.86

C05-04	Groundwater Modelling - Development & administration of groundwater water balances & accounting for: 1. development of groundwater models, 2. water accounting groundwater interaction, 3. assessment of groundwater trading impacts & protocols, 4. groundwater modelling for structural adjustment process	NOW will develop groundwater models capable of being used in the 2016 round of WSP reviews. It will construct groundwater models for all groundwater WSP's. This activity involves groundwater modelling associated with development and administration of groundwater balances and accounting for: 1. Development of groundwater models, 2. Water accounting - Groundwater interaction assessment of groundwater trading impacts and protocols, 3. Groundwater modelling for structural adjustment process, 4. Groundwater modelling for review of current WSP's, 5. Groundwater models for development of new WSP's, 6. MDB Basin plans.	Models providing information required for groundwater water sharing and resource management.	Regional groundwater models for GWMA's	Reviewed water balances from all models as one line of evidence for groundwater management actions	Groundwater models for all groundwater WSP's contributions to the Murray Darling Basin	Model applicability for WSP's and Basin monitoring and reporting commitments.	Applicable to current plans	Provision of status reports, consideration of AWD and at least one community meeting with water users for all subject water sources.	Groundwater models capable of being used in the 2016 round of water sharing plan reviews	2.2	7.68
C06-01	Systems operation and water availability management - Systems operation for water planning includes: 1. preparation & maintenance of implementation manuals specifying procedures to be undertaken to deliver provisions of WSP's, including reporting & auditing requirements, 2. review & amendment of implementation programs for each WSP, detailing deliverables & associated timetable, 3. oversight of system operation by SWC & ensuring compliance with requirements specified in WSP rules, 4. operational monitoring, announcements, etc. on unregulated rivers & groundwater. Water availability management for water planning includes: 1. assessment of compliance with long term extraction limit & development of growth in use response strategies, 2. available water determinations, 3. supplementary water announcements, 4. groundwater recharge review model development, 5. GDE studies, investigations & identification required during plan life.	NOW will review all implementation plans annually. NOW will continue to publish AWD's for all water sources by 1 July. NOW's systems operation for water planning includes: 1. Preparation and maintenance of implementation manuals' specifying procedures to be undertaken to deliver provisions of WSP's, including reporting and auditing requirements, 2. Review amendment of implementation programs for each WSP, detailing deliverables and associated timetables, 3. Oversight of system operation of SWC and ensuring compliance with requirements specified in WSP rules, 4. Operational monitoring, announcements, etc. on Unregulated rivers and Groundwater. Water availability management for water planning includes: 1. Assessment of compliance with long term extraction limit and development of growth in use response strategies, 2. Available determinations, 3. Supplementary water announcements, 4. Groundwater recharge review model development, 5. GDE studies, investigation and identification required during plan life.	No of IPs:	IP for all WSP's	IP's developed for all required WSP's	IP for all WSP's (note, more coming on line each year)	IPs reviewed, AWD's, Timeliness of AWD's	IP's - Once in 4 years, AWD's - All licence categories for all water sources (WMA & WA 1912), Timeliness of AWD's - At 1 July and within 5 days of revised assessment	IP's are being translated into internal project management processes and operational activities. Consequently, these IP's are being phased out and project management processes are being expanded to cover new WSP's as they come on line.	IP's - All Annually, AWD's - Same, Timeliness of AWD's - Same.	7.2	5.53
C06-02	Trading and Account Management - Trading (dealings) rules to ensure integrity of trading, including: 1. administration of constraints within the water source, 2. administration of changes to water source, 3. determination of conversion factors, 4. implementation of controlled allocation processes. Management of water accounts to comply with plan rules, including: 1. oversight of water allocation account management, 2. management of extraction conditions & audit of extractions, 3. general groundwater advice, 4. application of spill & carryover rules to water accounts.	NOW will achieve a reduction in the number of account holder's letters of complaint regarding water account transaction from a current 100 per annum to 50 per annum, or 2% down to 1%. This activity covers trading (dealings) rules to ensure integrity of trading, including: 1. Administration of constraints within the water source, 2. Administration of changes to water source, 3. Determination of conversion factors, 4. Implementation of controlled allocation processes. Management of water accounts to comply with plan rules including: 1. Oversight of water allocation account management, 2. Management of extraction conditions and audit of extractions, 3. General groundwater advice, 4. Application of spill and carryover rules to water accounts.	Level of annual water account disputations:	2%		1%	The number of account holders letters of complaint regarding water account transactions	100 p.a		50 p.a	8.8	0.02

C06-03	Plan performance monitoring and reporting - Plan monitoring & reporting includes: 1. monitoring of planned environmental water outcomes, 2. reporting on WSP performance indicators for annual reviews, for 5 year review by State Interagency Panel & 10 year review by NRC, 3. ecological evaluation of plan performance including monitoring activities (eg. IMEF recurrent), 4. field verification of CtP, 5. program evaluation of WSP's and WMA 2000, 6. compiling information reports to support NRC reviews of WSP's, 7. socio-economic assessment of impacts of WSP's, 8. monitoring of structural adjustment impacts, 9. activities associated with any amendments in WSP's.	Nine regulated water sources will have a monitoring plan. 100% of regulated WSP's will have an ecological monitoring program in place. NOW will have 100% high priority WSP areas with ecological performance monitoring implemented and reported. 100% of high priority unregulated WSP's will have low flow field verification implemented and reported. Plan monitoring and reporting includes: 1. Monitoring of planned environmental water outcomes, 2. Reporting on WSP performance indicators for annual reviews, for 5 year review by State Interagency Panel and 10 year review by NRC, 3. Ecological evaluation of plan performance including monitoring activities (eg. IMEF recurrent), 4. Field verification of CtP, 5. Program evaluation of WSP's and WMA 2000, 6. Compiling information reports to support NRC reviews of WSP's, 7. Socio-Economic assessment of impacts of WSP's, 8. Monitoring structural adjustments impacts, 9. Activities associated with any amendments of WSP's.	All regulated water sources have a monitoring plan to evaluate the key environmental water provisions of their WSPs	0%	9	9	Percentage of regulated WSPs with a ecological monitoring program in place. All priority Water Sharing plan areas have ecological performance monitoring implemented and reported. All high priority unregulated river WSPs have low flow field verification implemented and reported.	Percentage of regulated WSPs with a ecological monitoring program in place - 88%. All priority Water Sharing plan areas have ecological performance monitoring implemented and reported - 10%. All high priority unregulated river WSPs have low flow field verification implemented and reported - 10%.	All areas of NSW covered by reports detailing monitoring (past, present, future) associated with water sharing plans. Http://water.nsw.gov.au/Water-management/Monitoring/Valley-progress-reports/default.aspx	Percentage of regulated WSPs with a ecological monitoring program in place - 100%. All priority Water Sharing plan areas have ecological performance monitoring implemented and reported - 100%. All high priority unregulated river WSPs have low flow field verification implemented and reported - 100%.	13.2	18.33
C06-04	Blue-green algae management - Mitigating effects of water stored in major storages (ie. Reduced flushing flows), involving coordination of regional algal responses. Functions provided by regional algal coordinating committees (RACCs) & technical support to them, including: 1. weekly, fortnightly or monthly algal alerts for freshwater events (blue-green algae), 2. alerts for marine & estuarine events as required, 3. development of contingency plans, 4. maintenance of an algal information line & website, 5. training & awareness of management authorities (including councils), 6. coordination of media response to algal events, 7. coordination of scientific advice for each event. RACCs also provide linkage with State Disaster Plan (DISPLAN) via contingency plans (in emergencies DISPLAN would override contingency plans & provide for significant resources & state-wide coordination).	NOW will update all regional risk management plans. This activity comprises mitigating effects of water stored in major storages 9ie reduces flushing flows), involving coordination of regional algal responses. Functions provided by Regional algal coordinating committees (RACCs) and technical support to them including: 1. Weekly, fortnightly or monthly algal alerts for freshwater events (Blue Green Algae), 2. Alerts for marine and estuarine events as required, 3. Development of contingency plans, 4. Maintenance of an algal information line and website, 5. Training and awareness of management authorities (including councils), 6. Coordination of media response to algal events, 7. Coordination of scientific advice for each event.	Risk Management Plans	9 Regional Risk Management Plans	Revised RACC Contingency Plans developed and under review	All risk management plans updated	Reporting and management of algal blooms	Percentage of reports meeting weekly timeframe to RACC and State Algal Coordinator of Alert levels based on algal data. Actions implemented in accordance with Algal Risk Management Plan and Guidelines.	100%	Algal Bloom Risk mitigated and managed through RACC process and implementation of Algal risk management plan (warnings issued and communicated)	1.7	2.69
C06-05	Environmental water management - Environmental water management includes: 1. implementation of environmental water provisions, flow advisory committees, flow reference panels & management & monitoring of AEW outcomes, 2. implementation & revision of water savings strategies, 3. activities required for protecting & passing environmental water through systems, 4. monitoring adequacy of Environmental Assessment processes, 5. environmental assessment information dissemination, 6. providing information & reports to support CMA programs for environmental water programs, 7. advice on actions required to address regulated river quality health issues, eg. temperature fluctuations resulting from storage releases (cold water pollution) for inclusion in SWC's works approvals, 8. bacterial, chemical & other operational water quality investigations & management, 9. Snowy River environmental flow response monitoring.		Cold Water Pollution (CWP) monitoring:	Cold Water Pollution (CWP) monitoring: - Conditions on all priority stage 1 (of CWP strategy) works Approvals to reduce CWP impacts	Conditions on all priority stage 1 (of CWP strategy) Works Approvals to reduce CWP impacts 100%.	Cold Water Pollution (CWP) monitoring: - Conditions on Works Approvals for all priority CWP dams to reduce CWP impacts	Dams with CWP conditions in place. First Stage of environmental flow releases reported to public. Second stage of environmental flow releases reported to public. Snowy Montane Rivers Flow Response Monitoring Program designed and implemented and measures the response of Montane Releases.	Dams with CWP conditions in place - Percentage of priority dams with conditions to mitigate CWP on works Approvals: 100%. First Stage of environmental flow releases reported to public - 90%. Second stage of environmental flow releases reported to public - 30%. Snowy Montane Rivers Flow Response Monitoring Program designed and implemented and measures the response of Montane Releases - 100%.	Dams with CWP conditions in place - Percentage of priority dams with conditions to mitigate CWP on works Approvals: 100%. First Stage of environmental flow releases reported to public - 90%. Second stage of environmental flow releases reported to public - 30%. Snowy Montane Rivers Flow Response Monitoring Program designed and implemented and measures the response of Montane Releases - 100%.	Dams with CWP conditions in place - Percentage of all dams with conditions to mitigate CWP on works Approvals. First Stage of environmental flow releases reported to public - 100%. Second stage of environmental flow releases reported to public - 100%. Snowy Monane Rivers Flow Response Monitoring Program designed and implemented and measures the response of Montane Releases - 100%.	5.6	9.04

C07-01	WSP development includes: 1. interagency & stakeholder negotiations relating to development of water sharing provisions, 2. policies specifically related to development of water sharing provisions, 3. preparation of statutory documentation, 4. preparation of initial implementation programs for each WSP, detailing deliverables & associated timetable post commencement, 5. scientific & socio-economic studies required to support WSP development, 6. spatial data layer compilations & cartography	NOW will gazette 83 WSP's by 2014. NOW will complete the water sharing planning process and its implementation by: 1. Completing the remaining 18 inland WSP's by 2013, 2. Revisiting all existing WSP's for MDB river resources by 2014 to enable 'accreditation' of existing plans with the Basin Plan, 3. Reviewing and remaking a total of 31 existing WSP's before 2014, prior to their 10 expiry date. NOW's WSP's development activities include: 1. Inter-agency and stakeholder negotiations relating to development of water sharing provisions, 2. Policies specifically related to development of water sharing provisions, 3. Estuary licensing rules, 4. Preparation of statutory documentation, 5. Preparation of initial implementation programs for each WSP, detailing deliverables and associated timetable post commencement, 6. Scientific and socio economic studies required to support WSP development, 7. Spatial data layer compilations and cartography.	Water Sharing Plans gazetted	45	64	83		43% of Basin WSP	82%	100%	16.8	54.38
C07-02	Operational Planning	NOW's operational planning will publish: 1. Floodplain harvesting planning and rules for issuing license, 2. Delivery capacity rights (extraction component of licence to share channel capacity), 3. Water use planning, 4. Return Flow crediting for extractive users, 5. Develop rules and process for controlled allocation of unassigned water to licensed users, 6. Reasonable use guidelines and proliferation of basic landholder rights to ensure water is shared equitably with licensed users, 7. Aquifer interference rules and guidelines to inform and manage licensed extractive industries, 8. Planning rules for surface and groundwater interception and extraction, 9. Planning rules for stormwater harvesting, 10. Planning rules for groundwater trading in embargoes water sources.	Set rules and guidelines published	1	8 - Draft Aquifer Interference Policy published and publicly released. The following are not included in the list above but were finalised in 2011/12: a) Drafting of WSP's that commenced in 2011/12 (as per C07-01); b) Water sharing plan template rules; c) Planning guidelines for Aboriginal specific purpose access licences; d) Access rules for stock watering; e) Rules for converting Special Additional Licences to volumetric entitlements; f) Access rules and trading rules for pools; g) Access rules for buried groundwater sources.	10	Proportions of sets of guidelines published	10% published	100% published	90% published	34.7	16.31
C07-03	Environmental water planning - Planning processes directed at addressing specific hydrological environmental impacts, including: 1. development of drainage provisions in management plans for protection against irrigation-induced salinity, 2. development of floodplain development plans to limit or mitigate potential social, economic or environmental impact of flood inundation, 3. development of environmental protection provisions in management plans for controlling development in environmentally sensitive zones, 4. developing links between ecosystems & environmental flows to assist WSP development, 5. development of water savings strategies, 6. wetland recovery plans - water recovered for environment via improved efficiencies in delivery system, 7. wetland policy implementation - to assist in protection of wetlands in good condition, rehabilitate degraded wetlands where feasible & support appreciation of wetlands by implementing various principles & actions, 8. GDE studies, investigations & identification for development of WSP provisions, 9. river health & water quality plans - provision of advice to water users & other stakeholders to assist & influence their management of surface water quality to achieve outcomes sought under management plans & policies, including: a) bacterial, chemical & other operational water quality planning, including		Environmental management measures:	Environmental measures being investigated	NSW Office of Water Licensing staff - drainage plans, floodplain development plans, environmental protection zones involvement under legislated responsibility. NSW Office of Water Scientific staff - a) relationships between river flows and environmental responses further developed; b) review of OEH threatened species; c) wetland plans; d) development of river health and water quality plans (under MER, input into WSP processes); e) efficient and transparent hydrological environmental assessment procedures developed. No AEW use plans approved in 2011-12. Provided ongoing advice on annual and event objectives, water availability forecasts, delivery and accounting to support environmental water outcomes. NSW Office of Water, Water Management Unit - collaborated on water savings plans and implementation of NSW wetlands policy as appropriate under legislated responsibility. Process for mapping Groundwater Dependent Ecosystems (GDE) across NSW currently underway, with Central West completed and Hunter Central Rivers and Northern Rivers commenced.	Initial environmental measures	Environmental measures agreed	WP - Environmental measures being investigated. WS - None agreed.	100% WSP's contain explicit environmental water management plans. No AEW use plans approved in 2011-12. Provided ongoing advice on new and replacement AEW use plans (subsequently approved on 7 September 2012). Provided ongoing advice on annual and event objectives, water availability forecasts, deliver and accounting to support environmental water outcomes. 100% of output measures as above actioned under legislated responsibility. 100% responses by Scientific staff to water planners requests for environmental input. 70% efficient and transparent hydrological environmental assessment procedures developed related to Office of Water projections for life of IPART determination. Mapping of Groundwater Dependent Ecosystems (GDE) for coastal sands and coastal alluvium completed. Process for assigning priority to GDE and environmental protection provisions in plans agreed to.	Initial measures agreed	5.4	6.24

C07-04	Cross-border and national commitments. Activities to support operation of water management framework, including: 1. development & implementation of operational programs to meet NWI commitments, 2. participation in relevant interstate committees progressing NWI commitments, including National Water Accounting Development Committee, NWI Metering Expert Group, National Water Knowledge and Research Strategy group, national water quality management group, national river health negotiations & national assessment, 3. development & implementation of NSW commitment to Living Murray initiative, 4. development & implementation of programs for National Groundwater Committee support to Natural Resource Management Ministerial Council, 5. NSW contribution to NDB sustainable rivers audit, 6. MDBMC cap monitoring and reporting, 6. participation in COAG water reform process, 7. participation in interstate water trade negotiations, 8. development of interstate water sharing arrangements through MDB & Border Rivers Agreement, Snowy & ACT arrangements, 9. local water utilities - developing strategies to improve water supply & wastewater services in remote communities, as required by NWI.	NOW will ensure that 100% of valleys comply with the MDB CAP. These activities are to support operation of the water management framework, including: 1. Development and implementation of operational programs to NWI commitments, 2. Participation in relevant interstate committees progressing NWI commitments, including National Water Accounting Development Committee, NWI Metering expert Group, National Water Knowledge and Research Strategy group, National water quality management group, national river health negotiations and national assessment, 3. Development and implementation of NSW commitment to Living Murray initiative, 4. Development and implementation of programs for National Groundwater committee support to Natural Resource Management Ministerial Council, 5. NSW contribution to MDB sustainable rivers audit, 6. MDBMC Cap monitoring and reporting, 7. Participation in COAG water reform process, 8. Participation in interstate water trade negotiation, 9. Development of interstate water sharing arrangements through MDB and Border Rivers Agreement, Snowy and ACT arrangements, 10. Local water utilities - developing strategies to improve water supply and wastewater services in remote communities, as required by NWI.	Reports for national commitments (eg NWI, MDB), SRA – Meet contractual obligations with MDBA	Reports for national commitments (eg NWI, MDB) - Cap audit report to report to Independent Audit Group for all basin valleys., SRA – Meet contractual obligations with MDBA - Representation on SRA joint Venture Committee	NWI Policy Guidelines for Water Planning and Management signed off by CoAG April 2012. NSW Government Submission on the Proposed Murray Darling Basin Plan. NSW positions on two legislative notices from the Murray Darling Basin Ministerial Council to the MDBA and Commonwealth Minister for Water relating to the draft Basin Plan. NSW Office of Water and our partner agencies (Dept of Primary Industries-Fisheries, and Office of Environment and Heritage) have completed all requirements as listed in the 11/12 Funding Deed for the Sustainable Rivers Audit (SRA). All sampling has followed protocols adopted by the Joint Venture Committee (JVC) to enable the completion of fish sampling in the Namoi, Macquarie and Lachlan Valleys and macroinvertebrate sampling in the Gwydir, Castlereagh, Macquarie and Central Murray Valleys. Data has been provided to the Murray Darling Basin Authority at the date required in the Funding Deed. A Final Report demonstrating the deliver of agreed program outcomes will shortly be completed. The Office of Water and partner agencies have provided ongoing support to the SRA JVA through feedback on specific theme issues, including the development of	Reports for national commitments (eg. NWI, MDB) - Same. SRA – Meet contractual obligations with MDBA - Satisfy SRA Joint Venture Committee Terms of Reference	Percentage satisfaction of national commitments/deliverables	% Valleys in compliance with MDB Cap	100% of Valleys complying with the Cap	100% valleys comply with CAP	7.9	6.47
C07-05	Water Industry Regulation - Legal & regulatory support for water management planning, including litigation & legislative advice: 1. advice on compliance actions, litigation against licence holders & other water users, 2. facilitating appeals by licence holders & other water users, 3. advice on legal aspects & implication of draft & final WSP's, 4. advice on NOWs documentation used for water management regulation (eg. licence application forms), 5. advice to Government on regulatory & legislative proposals, 6. review & drafting of water availability orders to support operational decisions (for C06), 7. review & drafting of water regulations & orders.	NOW will achieve legislation that is capable of meeting the requirements of the COAG reform agenda. It will achieve a target of 100% of water entitlement being recovered by the Water Management Act. This activity comprises legal and regulatory support for water management planning, including litigation and legislative advice: 1. Advice on compliance actions, litigation against licence holders and other water users, 2. Facilitating appeals by licence holders and other water users, 3. Advice on legal aspects and implication of draft and final WSP's, 4. Advice on the Office's documentation used for water management regulation (eg Licence application forms), 5. Advice to Government on regulatory and legislative proposals, 6. Review & drafting of water availability order to support operational decision (for C06).	Legislation of meeting requirements of COAG Reform Agenda	Water Management Act 2000 and regulations	Aquifer Interference Regulation commenced 1st July 2011.	Legislation enhancements to satisfy Commonwealth and MDB requirements		50% Water entitlement covered by WMA	90% Water Entitlement covered by WMA	100% Water entitlement covered by WMA	3.9	1.13
C08-01	River Management Works - Management & works plans for repair & stabilisation of river & channel banks & beds to maintain their integrity & flow capacity, & other watercourse works.	NOW will manage 30000 metres of river bank for erosion control. In terms of highly impacted riverbank protected it aims to stabilise/protect 100% of high priority area. This activity involves management and works plans for repair and stabilisation of river and channel banks and beds to maintain their integrity and flow capacity, and other watercourse works.	Length of bank managed for erosion control	29 000 metres	34 000 meters	30 000 metres	Highly impacted riverbank protected:	95% of high priority areas stabilised/protected	58%	100% of high priority areas stabilised/protected	3	2.96

C09-01	License administration - Consent administration includes: 1. Licensing Administration System (LAS) administration, including maintenance of surface water & groundwater consents integrity consistent with NOWs statutory responsibilities in regulating water extraction. Excludes processing of transaction on consents, 2. administration of access licence, approvals, trading & environmental water registers, 3. systems development and maintenance of procedures & guidelines for access licence dealings, approvals transactions, monitoring of systems performance & information dissemination, 4. LAS systems maintenance/upgrade.	NOW will administer 100% of licensing transactions through a single database. These are comprised of: 1. Licensing administration system (LAS) administration, including maintenance of surface water and groundwater consents integrity consistent with the Office's statutory responsibilities in regulating water extraction. Excludes processing of transactions on consents, 2. Administration of access licences, approvals, trading and environmental water registers, 3. Systems development and maintenance of procedures and guidelines for access licence dealings, approvals transactions, monitoring of systems performance and information dissemination, 4. LAS systems maintenance/upgrade.	Percentage of all licensing transactions administered through a single database:	90% - No online applications or electronic payment options. No Assessment support systems. MP - 100% - Percentage of all State significant development assessment and determinations administered through a single database the ERMS.	1. 100% of water applications and approvals managed on Licence administration System (LAS) or new Water Licensing System (WLS). LAS is based on old operating technology. 2. WLS is a web-based application that will eventually replace LAS. 3. WLS has an Approval Transaction Module (ATM) to process all approval applications and a Water Transaction Module to process dealings. 4. LAS is still largely used to process Water Act 1912 (WA) applications, while WLS is used for applications under the Water Management Act 2000 (WMA). There are still transitional issues that mean that the majority of applications are still handled under LAS. This will ultimately be phased out. 5. WLS will provide major improvements to transaction and approval processes. Migrated from old technology to new web-based technology. Implemented improved query tools. 6. Introduced staff systems helpdesk to address issues in a more streamlined and responsive approach. 7. Other systems developed and used in 2011/12 include: a) Assessment Support Tool (AST) - a decision assessment support tool for the management of applications; b) Water applications online (WAO) - developed to allow clients to complete and lodge applications for new approvals and water access licences online. This also provides for an online payment facility. 8. Improved customer service through central handling of water licensing queries. 9. Developed and maintain the Environmental Water Register (EWR) which provides daily information about water allocations. This	100%	Improve the accuracy of data and security of access to system. MP - Retention of all environmental Assessment information and assessment determinations in a digital format (further to hard copy records kept at a local regional office).	MP - 100%	1. 13443 calls and emails received with 95% responded to within three days. 2. All (two) formal complaints handled in accordance with Complaints Handling Procedure. 3. 112% increase in credit card payments (\$274,202 received in credit card payments from 990 requests). 4. Twenty-five online applications processed (low take up due to operational difficulties and security concerns which are now being addressed). 5. Introduction of system user "help-desk" provides improved reporting and issue response times as all service requests are logged into this system. 6. Data access, integrity and security improvements implemented with a high level of auditability. 7. System "user roles" identified to ensure security of systems and access is only available on hierarchy basis. 8. Spatial data available within systems is "quality coded" according to hierarchy of values relating to input - for example: the results of a site inspection is afforded the highest level of quality code. This quality coding improves the accuracy of the data. 9. All solicitor enquiries are completed within 5 days under improved procedure. 10. 5800 to 6000 regulated river licence and approval holders issued four billing flyers. 11. 10850 unregulated river licence holders issued one billing flyer. 12. 7800 groundwater licence	Implement by 1/1/2011	20.6	45.23
C09-02	License conversion and entitlement specification - Licence conversion includes: 1. cleansing of licences for conversion o WMA, 2. volumetric conversions, 3. transcribing water sharing provisions into licence conditions. Entitlement specification includes: 1. ongoing program of establishing entitlements allocations for town water licences & determination of new entitlements when requested by councils, 2. S66 reviews.	90% of access licences will be recorded on the public registers within 5 months of the implementation of the WSP. Licence conversion includes: 1. Cleansing of licences for conversion to WMA, 2. Volumetric conversions, 3. Transcribing water sharing provisions into licence conditions. Entitlement specification includes: 1. Ongoing program of establishing entitlements allocations for town water licence and determination of new entitlement when requested by councils, 2. S66 reviews.	Number of Access licences recorded on the public registers.		29082 licences uploaded to the public register			90% of the access licence to be recorded on the public registers within 6 months of the implementation of WSP.	a) 95% of access licences were uploaded to the public register within one month of the commencement of the WSP. B) 6400 access licences were uploaded to the public register.	90% of the access licence to be recorded on the public registers within 5 months of the implementation of WSP.	8.9	11.26
C09-03	Compliance	70% of licences currently audited are in compliance with licence requirements. NOW will progress towards 100% of licences audited being in compliance with licence requirements. It will increase it auditing level from 0.05% of total licences audited to 1% and will action 100% of breach reports up from current level of 50%. NOW's compliance activities included: 1. Administration of monitoring activities and surveillance to check compliance with consent conditions, including audits, fieldwork, inspections and compliance checking, 2. Enforcement, including prosecution for non-compliance with consent conditions for all licence holders, 3. Litigation against licence holders and other water users for non-compliance with consent conditions.	Compliance audits, alleged breached reports actioned:	Compliance audits - 0.5%, Alleged breached reports actioned: - 50%	Management of Alleged Breach Reports: a) 97% of all reports actioned; b) 460 reports received; c) 447 cases allocated for investigation; d) 372 investigations finalised; e) 236 enforcement actions taken, including: 1. 7 prosecutions finalised in court (17 offences and \$463,386 court imposed fines and costs); 2. 19 Stop Work orders; 3. 54 Penalty Infringement Notices totalling \$28,550 in fines; 4. 53 Statutory Notices; 5. 53 Warning letters; 6. 112 Advisory letters. Compliance Audits (largely Commonwealth funded): a) 10% of licence holders in high-risk areas audited for compliance with conditions of licence, compared to 0.5% the previous year (this includes all works, and use approvals in regulated, unregulated and groundwater systems as well as controlled works); b) 1921 proactive audits of licensed works completed; c) 80% of licences audited were in compliance (compared with 70% in previous years); d) 365 minor non compliances detected; e) 15 serious non compliances referred for further investigation and enforcement action.	Compliance audits - 1%, Alleged breached reports actioned: - 100%	Percentage of licences audited that are in compliance with licence requirements	All alleged breaches are risk assessed - high, low or medium.	a) 97% of all alleged breach notifications were risk assessed; b) >90% assessed within 14 days of receipt; c) 90% of investigations commenced within 14 days of allocation (mainly background investigation being undertaken in this time); d) 199 high and very high cases allocated for investigation. 59% allocated within 30 days; e) 112 Advisory letters sent but target of sending letters for all low and medium breaches within 30 days is not being met. A review was undertaken to improve the process. Changes being implemented; f) Monthly report provided on the management of alleged breaches.	100% of alleged breaches are risk assessed within 14 days of receipt. Allocate resources to all high risk alleged breaches within 30 days of allocation. Commence investigations of all high risk alleged breaches within 14 days of allocation. Send advisory letters for all low and medium breaches unallocated after 30 days. Send warning letters to all offenders within 14 days of Compliance Officer's determination. Provide a monthly report on the management of alleged breaches. MP 75% .	27.4	19.02

C10-01	Water Consents Transactions	NOW will process 90% of other consents for permanent transfer of access licences within 28 working days. It will process 60% of other consents within 3 months. This activity applies to dealings, assessments, change of conditions and new applications for water licences and approvals undertaken on a fee for service basis, including licensing of irrigation and other industry activities, controlled activities and aquifer interference activities.	Number of consents processed	12000	2004 applications determined under the WMA 2000 and 3305 under the WA 1912.	12000	Percentage of other consents for permanent transfer of access licences processed within 28 working days, Percentage of other consents processed within 3 months	Percentage of other consents for permanent transfer of access licences processed within 28 working days - 78%, Percentage of other consents processed within 3 months - 50%	Dealings: a) 84% of 71Q (permanent transfers) completed within 20 days; b) 88% of other dealings completed within 60 days. Approvals: a) 90% of work approvals completed within 60 days; b) 37% of combined approvals completed within 60 days. Access Licences: a) 97% of zero share licences completed within 40 days; b) 95% of specific purpose licences completed within 40 days.	Percentage of other consents for permanent transfer of access licences processed within 28 working days - 90%, Percentage of other consents processed within 3 months - 60%	52	48.56
C11-01	Metering and Billing water Usage	NOW will collect 95% of revenue within 3 months of the billing period. This activity includes water management reporting required by stakeholders, including IPART, ACCC, and NWI. Billing administration, revenue collection, maintenance of metering and billing SLA's for unregulated rivers and groundwater. Maintenance of pricing database, and responding to queries, correspondence, briefings.	Licences Billed	31200	9896 (unreg not billed at time of reporting)	31200	Percentage of revenue collected within 3 months of billing period.	0	70%	95%	7.8	0.11
C11-02	Business Development	NOW will achieve 100% participation in State Water's valley customer service committees. This activity includes planning to support implementation of water management business function, including strategic, organisational, financial, human resource and corporate governance requirements. Preparation of complete and QA checked pricing submission for IPART, submitted by the due date.	Business Plans. IPART Submission	Annual Business Plans, 2010 submission		Annual business plans, and 2011 Determination reporting	Participation in Valley Customer Service Committees	0.75		1	0	0.96

C Sydney Catchment Authority's performance against output measures

C.1 Activity against output measures

Table C.1 Activity against output measures 2011/12

Output or activity measure	Indicator of activity by 2011/12	Activity 2011/12	Cumulative progress as at 2012
1. Future of the Upper Canal	Deliver a strategy by June 2013	A Board decision in 2012 established a 10 year timeframe for the replacement of the Upper Canal.	An Options report has been completed. A Business case has been developed with a package of interim capital works to address a number of high risk elements and enable the canal to function until replacement.
2. Prospect Reservoir upstream embankment stabilisation upgrade	Complete by April 2013	Completed detailed investigation work for both the stabilising and piping components of this project.	The business case for improvement work to the downstream embankment to mitigate the potential piping issue has been prepared and is currently undergoing the Treasury Gateway Review Process. The preferred option for the improvement works is expected to be endorsed by the Dam Safety Committee and approved by the SCA Board by November 2012
3. Warragamba Dam crest gates construction project	Complete by June 2011	All construction work on this project was completed in June 2011.	All work completed. A close out works shop has been held and post project report completed.
4. Wingecarribee Dam safety upgrade	Complete June 2013	Site works commenced.	All site works were completed in September 2012. A construction report has been forwarded to the NSW Dam Safety Committee for review. A close out workshop is scheduled for October 2012.
5. Upper Nepean Environmental flows works project	Complete by April 2010	All construction work on this project was completed in February 2011.	Close out workshops have been completed and the post project review report has been finalised.

C Sydney Catchment Authority's performance against output measures

Output or activity measure	Indicator of activity by 2011/12	Activity 2011/12	Cumulative progress as at 2012
6. Metropolitan Dams electrical systems upgrade project	Complete by April 2013	A detailed condition assessment has been completed and a business case approved for the design stage.	The design stage is due for completion in early 2013, with construction commencing in late 2013 and completing in 2018.

D Sydney Water's performance against output measures

D.1 Activity against output measures

Table D.1 Activity against output measures 2011/12

Output or activity measure	Indicator of activity by 2011/12	Activity 2011/12	Cumulative progress as at 2012
Water services			
1. Renewal of critical water mains	40 km	10.5 km	38 km
2. Renewal/reliability of distribution mains	420 km	52 km	343 km
3. Pressure control areas established	112 no.	19 no.	150 no.
4. Bulk water meters: new and refurbished	200 no.	28 no.	152 no.
5. Water Pumping Station Renewals	28 no.	4 no.	10 no.
6. Installation/renewal of SCADA systems	2 sites	1 site	4 sites
7. Renewal of customer water meters	426,000 no.	71,380 no.	268,537 no.
8. Additional generation capacity installed	8.5 MW	0 MW	9 MW
Wastewater services			
9. Renew critical mains	55 km	11.6 km	56.7 km
10. Rehabilitate sewers subject to dry weather overflows	290 km	36 km	224 km
11. Major Sewage Treatment Plants (STP) renewals	North Head	-	North Head
12. Sewage Pumping Station (SPS) renewals	100 no.	45 no.	119 no.
13. Increase capacity at STP	6 no.	-	3 no.
14. Reduce wet weather overflows	7 catchments	2 no.	6 no.
15. Priority Sewerage Program Schemes	5 no.	-	6 no.
Recycled water			
16. Recycled water schemes	1 no.	-	1 no.

Output or activity measure	Indicator of activity by 2011/12	Activity 2011/12	Cumulative progress as at 2012
Stormwater services			
17. Complete Alexandria Canal Improvements to satisfaction of DIPNR by 2009	Water quality improvements 2009/10	-	-
18. Pipe and channel renewal and rehabilitation	15 km	2.4 km	4 km
Desalination			
19. Desalination Project	Completion by 2009/10	-	-

Comments:

Insert comments 1-19, corresponding to the rows in the table above, as necessary.

1. A total of 38 kilometres were renewed, 2 kilometres less than the four-year target. The reason for the variance is that the level of renewals identified from condition and risk assessment was less than planned.
2. A total of 343 kilometres were renewed, 77 kilometres less than the four-year target. The variance is mainly due to the effects of the pressure reduction program and refinements in decision-making processes resulting in reduced lengths of main identified for renewal.
3. 150 pressure control areas were completed, 38 more than the four-year target. The variance is attributed to the schemes sizes being smaller than originally anticipated.
4. 152 meters were completed, 48 less than the four-year target. The variance is due to a change in the program to support efficient management of leakage.
5. The original target of 28 stations over four years was not achieved due to: the scoping and delivery of projects taking much longer than anticipated, the need to defer work to periods of lowest water demand and issues with availability and timing of water pumping equipment. In addition, there has been a major focus on improved contingency against power supply failure at various water pumping stations, which has not previously been included in this output measure.
6. Cascade and Orchard Hills WFPs were completed in June 2010. Castle Hill WWTP was completed in 2010/11 and Nepean WFP was completed in 2011/12.

7. 268,537 meter renewals were completed against the target of 426,000. The variance is mainly due to changes in criteria used for replacing meters (age of water meters renewed increased from 10 to 15 years), difficulties predicting numbers of new and faulty meters and delays from electrical work safety procedures.
8. By June 2011, the Renewable Energy Generation program completed the installation of 5 co-generation plants (Bondi, Glenfield, Liverpool, Wollongong and Warriewood) and three hydro-electric generation plants (North Head, Woronora and Prospect). The total installed generation capacity of these units is 9.0 MW.
9. A total of 57 kilometres were renewed, exceeding the four-year target of 55 kilometres.
10. A total of complete 224 kilometres rehabilitated. This is less than the target of 290 because the quantity of renewals identified from condition and risk assessment was less than anticipated. In addition, some areas required shorter rehabilitation lengths and there was a higher proportion of work in difficult access areas (environmentally sensitive sites) and higher associated costs.
11. The original scope of works at the North Head WWTP was completed in 2009/10. Additional works on the bio solids component was completed in July 2011.
12. A total of 119 Sewage Pumping Station (SPS) Renewal projects were completed, exceeding the original target of 100 stations over four years. This was due to an increased focus on the delivery of sewage pumping stations renewal projects in 2011/12 and improved project management practices.
13. Rouse Hill WWTP, North Head WWTP and Winmalee WWTP were completed. Warriewood is forecast to be completed in 2012/13 due to unexpected long wet weather periods and longer than expected project planning and approval stages. A planning review indicated lower growth forecasts which has resulted in proposed upgrades to Picton and North Richmond being deferred.
14. Six catchments have been completed including Hayes St Beach, Blackwattle Bay, North Richmond, Northern Beaches Local Solution Illawarra and Quakers Hill. The Northern Beaches Storage Project is forecast to be completed in 2013. Further investigations showed Bombo and West Hornsby did not require abatement work. The recent plant upgrade work carried out at Warriewood will meet wet weather abatement requirements for the catchment.

15. The target of 6 schemes in 2008-12 was achieved including Upper Blue Mountains, Hawkesbury Heights Yellow Rock, Brooklyn Dargar Island, Ages Banks and Londonderry and Freemans Reach, Glossodia and Wilberforce and Appin.
16. The 'Replacement Flows' recycled water project was completed in 2010/11.
17. Investigation to date has found that the original strategy of constructing SQIDs (Stormwater Quality Improvement Devices) to improve the water quality entering Alexandra Canal is not viable, aside from one site at Sydney Park.

The Sydney Park site presented an opportunity to implement a stormwater harvesting scheme using bio filtration. Sydney Water has assessed the market for recycled water in the surrounding area, and found that a stormwater harvesting scheme would not be financially viable; however, City of Sydney Council are intending to construct the scheme and treat up to 440 ML/year using \$5.4m of Federal Government funding.

Sydney Water may yet proceed with a SQID at Sydney Park to treat stormwater pollution (in keeping with OE&H plan), however its viability will be subject to Council's proposed harvesting scheme.

18. A total of 4 km were renewed or rehabilitated, 11km less than the 4-year target. Detailed investigation revealed a significant quantity of the originally identified 15 km did not require renewal. In addition, the delivery of approximately 3.6 km has been affected by delays in option development, delays in procurement, and stakeholder negotiation issues.
19. The Desalination project was completed in June 2010 with the first water being pumped into the distribution network in January 2010.

D.2 Capital Expenditure Program

Table D.2 Capital expenditure program 2011/12 (\$2011/12)

Description	Actual 2011/12 (\$m)	Allowed 2011/12 (\$m)	Actual cumulative 2008-2012 (\$m)	Allowed cumulative 2008-2012 (\$m)
1. Maintain water distribution systems – Sydney, Blue Mountains	89.5	130.5	513.3	589.3
2. Sewer Network Reliability Upgrades	71.2	109.0	351.7	404.1
3. Overflow abatement	87.5	56.7	273.8	289.7
4. Water meter replacement program	7.0	8.2	31.6	34.4
5. Growth works to service urban development	101.8	214.2	402.1	648.3
6. Critical watermain program	32.8	68.2	145.2	193.1
7. Upgrade Illawarra Sewage Treatment Plants to protect beaches	0.2	0.0	19.6	20.9
8. Upgrade Hawkesbury/Nepean Sewage Treatment Plants	0.0	0.0	4.7	12.4
9. Upgrade reliability of sewage treatment plants	60.2	18.5	189.6	102.3
10. Blue Mountains Sewerage	-0.1	0.0	40.4	58.8
11. Upgrade to Warriewood Sewerage Treatment Plant to protect oceans	0.0	0.0	9.0	22.3
12. Maintain Stormwater Capacity	9.4	0.0	19.6	0.0
13. Improve Stormwater Quality	0	8.8	0.0	45.4
14. Maintenance Plant Renewals	1.6	6.0	9.3	22.5
15. Property Management and Acquisition	44.6	5.3	245.1	127.0

D Sydney Water's performance against output measures

Description	Actual 2011/12 (\$m)	Allowed 2011/12 (\$m)	Actual cumulative 2008-2012 (\$m)	Allowed cumulative 2008-2012 (\$m)
16. South Western Sydney Sewerage Scheme	0.0	0.0	3.4	3.3
17. Information Technology Projects	49.7	41.5	261.2	214.5
18. Brooklyn Dangar Island Sewerage Scheme	0.7	0.0	8.9	5.7
19. Mt Ku-ring-gai Sewerage Scheme	0.0	0.0	2.3	1.1
20. Mulgoa Wallacia Silverdale Sewerage Scheme	0.0	0.0	0.8	0.7
21. North Head STP Performance and Reliability	0.0	0.0	71.8	76.7
22. Recycled Water Projects	35.9	0.0	91.4	25.4
23. Desalination Project	9.8	0.0	1178.7	1190.9
24. Priority Sewerage Program – Stage 2	1.6	26.4	4.4	39.6
25. Western Sydney Recycled Water Initiative	1.1	0.0	184.0	202.6
26. Hawkesbury Heights Yellow Rock	3.6	0.0	51.1	55.2
27. Freemans Reach, Glossodia and Wilberforce	7.1	43.7	117.2	119.0
28. Appin, Wilton and Douglas Park	42.5	25.4	51.8	61.4
29. Agnes Banks and Londonderry	1.3	0.0	a 24.3	44.5
30. Diamond Bay/Vaucluse Sewage Transfer Scheme	0.2	17.8	0.5	19.9
	659.3	780.0	4,306.6	4,630.9

Note: All figures inflated by year-on-year CPI June to June.

Note: Actual expenditure in 2008/09, 2009/10 and 2010/11 inflated by 3.1%, 2.3% and 2.5% respectively to convert to \$2011/12.

Comments:

Major variances to IPART forecasts include:

- 1 & 6. Water distribution systems and critical water main programs below IPART forecast mainly due to reduced lengths of mains identified for renewal and favourable market rates. The effects of the pressure reduction program and refinements in decision-making processes have also resulted in reduced lengths of mains identified for renewal.
2. Variance to IPART on sewer network reliability upgrades is mainly due to the quantity of renewals identified from condition and risk assessment being less than planned.
3. Variance not considered significant. Further investigation concluded some catchments did not require abatement work.
4. Water meter replacement program below IPART forecast due to smaller number of customer meter installations, replacements and renewals than planned due to changes in replacement criteria, difficulties in predicting numbers of new and faulty meters and delays from electrical work safety procedures.
5. Variance to IPART across growth programs is largely related to the deferral of schemes due to the financial climate, lower than expected urban growth and favourable market rates achieved on some projects.
9. Upgrade reliability of sewage treatment plants above IPART forecast mainly due to high priority work being brought forward from future years and expenditure on odour works including Malabar WWTP and Cronulla WWTP.
- 10, 18, 19, 20, 24, 26, 27, 28, & 29. Priority sewerage schemes were generally delivered under budget.
- 12 & 13. The stormwater program variance to IPART is mainly due to detailed condition assessments which have shown that the assets are in better condition than previously assumed. This has meant significant expenditure could be deferred.
14. Less expenditure required than planned on minor plant and equipment.
15. Property management and acquisitions are above the IPART forecast primarily due to scope changes to two large workplace accommodation projects (Parramatta Head Office and Potts Hill) and land developments required for sale of surplus properties were not budgeted in the 2008-12 IPART submission.

17. IT projects are above the IPART forecast mainly due to higher than forecast expenditure on modernisation projects and renewals which will contribute to longer term operational efficiency in Sydney Water and services to its customers.
21. North Head STP Performance and Reliability was delivered under budget
22. Variance to IPART on Recycled Water Projects (unregulated capital expenditure) is mainly due to the timing and scope variation of the Hoxton Park Recycled Water Scheme.
23. Sydney Desalination Plant was delivered under budget.
25. Western Sydney Recycled Water Initiative was delivered under budget due to favourable market rates.
30. Diamond Bay/Vaucluse Sewage Transfer Scheme below IPART forecast due to delays in selection of final strategy and project approval, substantial construction to commence in the current price path.

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