



Australian Government
Bureau of Meteorology

National performance report 2014–15: urban water utilities

PART A



Publication details

National performance report 2014–15: urban water utilities, part A
March 2016

ISBN: 978-0-642-70659-1

ISSN: 1837-7572

Published by the Bureau of Meteorology
GPO Box 1289
Melbourne VIC 3001
(03) 9669 4000

waterinfo@bom.gov.au
www.bom.gov.au

National Library of Australia Cataloguing-in-Publication entry

Title: National performance report 2014 - 15 : urban water utilities. : Part A / Bureau of Meteorology [and 12 others]

ISBN: 9780642706683 (ebook)

Series: National performance report ... urban water utilities ;

Subjects: Water-supply.

Water utilities--Australia.

Municipal water supply--Australia.

Water-supply--Australia--Management.

Other Creators/Contributors: Australia. Bureau of Meteorology.

Dewey Number: 363.610994



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Cover image: Aerial view of Australian luxury golf neighbourhood, Gold Coast, Queensland.

An appropriate citation for this publication is: Bureau of Meteorology 2016, *National performance report 2014–15: urban water utilities, part A*, Bureau of Meteorology, Melbourne

Acknowledgements

Data for this report were supplied by Australian urban water utilities.

Data coordination was undertaken by the Bureau of Meteorology, the Independent Pricing and Regulatory Tribunal of New South Wales (for Sydney Water, Hunter Water, and Water NSW); the NSW Department of Primary Industries Water (for all other New South Wales utilities); the Essential Services Commission (for Victorian utilities); the Department of Energy and Water Supply (for Queensland utilities); the Economic Regulation Authority (for Western Australian utilities); the Essential Services Commission of South Australia (for South Australia); the Environment and Sustainable Development Directorate (for Icon Water); the Department of Treasury and Finance (for the Northern Territory); and the Tasmanian Economic Regulator (for Tasmanian utilities).

Tables, graphs, and performance narratives are produced by the Bureau of Meteorology.

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Australian Government
Bureau of Meteorology

National performance report 2014–15: urban water utilities

PART A



Environment,
Land, Water
and Planning



Department of
Primary Industries
Water



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Explanatory notes

Utilities

Within the tables and charts of this report, utilities that form part of a city council, shire council, regional council, or similar local government entity are reported under only the town or city name (for example, Gosford City Council is referred to as 'Gosford' in tables and charts throughout the report).

In addition, several utilities are represented by shorter forms of their full names to aid presentation in charts and tables:

- WC = Water Corporation
- Aqwest–Bunbury = Aqwest–Bunbury Water Corporation
- Busselton = Busselton Water Corporation
- Kal–Boulder = Kalgoorlie–Boulder
- P&W = Power and Water

Utility types

Nine of the reporting utilities are 'single-service' utilities, five of which provide water services only and four of which provide sewerage services only. Utilities that provide water-only services are denoted by '(W)' after the utility name; those that provide sewerage-only services are denoted by '(S)'.

Note also that Goldenfields Water has two businesses: a bulk business, Goldenfields (B) and a water reticulation business Goldenfields (R).

Bulk water agencies operate in a number of jurisdictions across Australia. These agencies are wholesalers of water and wastewater services and do not have a direct relationship with retail customers. For example, Melbourne Water supplies bulk water and wastewater services to the eight retail utilities within the region (City West Water, South East Water, Yarra Valley Water, Western Water, Gippsland Water, Barwon Water, South Gippsland Water, and Westernport Water)

Utility groups

For the purpose of this report, the 80 contributing utilities are grouped according to number of connected properties (bulk water suppliers are grouped separately). There are four groups, as follows:

- 100,000+ connected properties group (100,000+ group)
- 50,000–100,000 connected properties group (50,000–100,000 group)
- 20,000–50,000 connected properties group (20,000–50,000 group)
- 10,000–20,000 connected properties group (10,000–20,000 group).

Reporting years

In the context of this report:

- The terms '2014–15' and 'reporting year' refer to the 2014–15 reporting year.
- References to years are according to reporting years (1 July – 30 June) and not by calendar year.

Tables

In the context of the tables in this report, certain data have the following meaning:

0 = result was 0

blank = result was not supplied or was not available

n/a = results not applicable

Other common abbreviations

NPR	=	National performance report
Urban NPR	=	National performance report: urban water utilities
2015 Urban NPR	=	2014–15 National performance report: urban water utilities
2014 Urban NPR	=	2013–14 National performance report: urban water utilities
Bureau	=	Bureau of Meteorology

Interpreting the ‘Overview of results’ tables

Figure EN1 demonstrates how to interpret the ‘Overview of results’ table provided for each indicator.

Size group	1 Range		2 Number of utilities with increase/ decrease from previous year		3 Median		4 Change in median from previous year %
	High	Low	Increase	Decrease	Previous year	Current year	
100,000+ connected properties	249 WC (Perth)	140 Logan	10	1	158	162	3
50,000–100,000 connected properties	454 P&W (Darwin)	130 Toowoomba	9	1	164	181	10
20,000–50,000 connected properties	479 Lower Murray Water	143 MidCoast Water	17	1	175	201	15
10,000–20,000 connected properties	450 Multiple utilities	80 Ballina	19	5	174	179	3
All size groups	479 Lower Murray Water	80 Ballina	55	8	166	177	7

- 1 The range shows the utilities with the highest and lowest result in current reporting year for each size group.
- 2 These columns show the number of utilities that reported an increase and those that reported a decrease from the previous year result for each size group. Where a utility did not report in both years it will not be reflected in this column.
- 3 The median value is the middle number from the range of results. For example, if there were five utilities reporting for this indicator and their results were 190, 195, 206, 207, and 210, the median is 206 as it is the middle number. For indicators that are not represented as an ‘average’ for the utility (e.g., average duration of water interruptions) or have been divided by the number of properties (per property), the summary tables presents the sum (or total) of the results. Where a utility did not report in both years it will not be reflected in this column.
- 4 This column shows the percentage change between the current and previous year and has been rounded to the nearest integer.
- 5 ‘Multiple utilities’ means that more than one utility recorded this value.

Figure EN1 Example and explanation of an ‘Overview of results’ table

Interpreting the 'box and whisker' plots

In order to show trends in the annual distribution of key indicators the report utilises 'box and whisker' plots. Figure EN2 demonstrates how to interpret these figures.

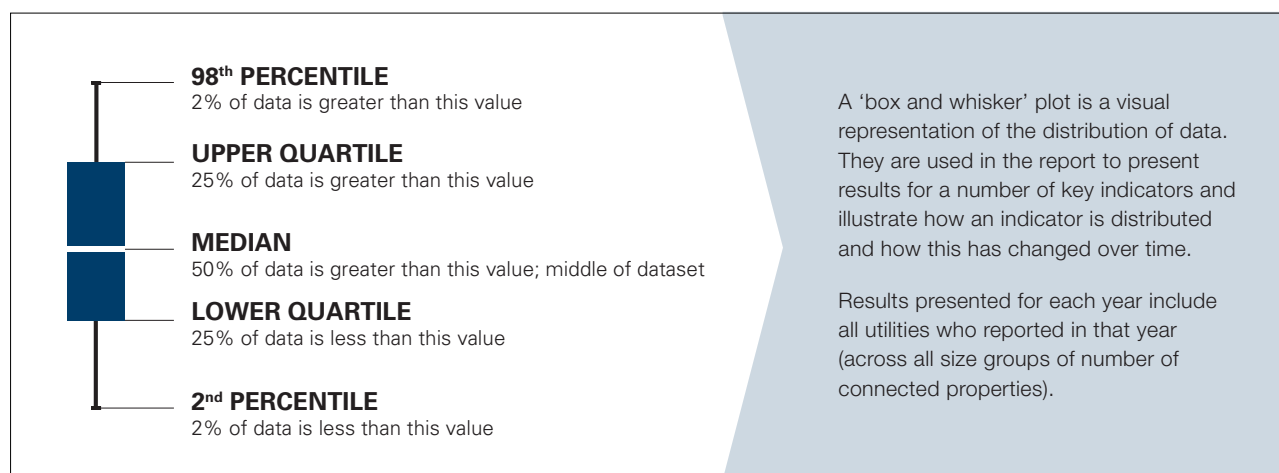


Figure EN2 Example and explanation of a 'box and whisker' plot

Notes on commentary

When interpreting the data and commentary in this report, the following matters should be considered:

- The indicator codes in the titles of each section, chart, and table are specific to each indicator and can be cross-referenced with the *National Performance Framework: 2014–15 urban water performance report indicators and definitions handbook*.
- The 2015 Urban NPR presents analysis based on median values. The median is the preferred metric for the Urban NPR dataset because in many cases there are outlying results that can affect the average. Using the average in these cases can skew results towards the outliers. With the median, 50 per cent of utilities fall above and 50 per cent fall below the median value. In cases where average results are presented in addition to the median, they should be interpreted in conjunction with the data itself.
- Individual performance indicators in this report should not be interpreted in isolation. A low ranking for a particular indicator does not necessarily mean that the utility is performing well or badly because a number of factors can influence performance. For example, a utility might have a low operating cost per property but also poor drinking water quality and environmental performance and a high level of complaints.
- In discussions of indicators, the 'normaliser' has often been omitted to improve the flow of the commentary. For example, in the discussion of results for water main breaks per 100 km of water main, the commentary refers to a utility's 'water main breaks'. It is important to remember that it is not the absolute number of water main breaks that is being referenced, but rather the number of breaks per 100 km of water main.
- Single-service utilities are included in the 'Overview of results' tables only where comparisons can still be made on a like-for-like basis with utilities that provide both water and sewerage services. Otherwise, they have been excluded from calculations of the median values and high/low results. For example, the overview tables for water and sewerage operating expenditure per connected property and for typical residential bills do not include single-service providers, but the overview tables for sewer overflows per 100 km of sewer main include all utilities that provide sewerage services.
- Charts are presented in order of reported results, that is, from the utility with the highest result for the indicator to the utility with the lowest. Tables are sorted on the basis of percentage change in an indicator from the previous year with the utility with the largest percentage increase to the largest percentage decrease.

- Financial time-series information is given in real 2014–15 dollars; that is, the impact of inflation has been removed to ensure that years can be compared on a like-for-like basis.
- The ‘% change’ column (the last column in most tables) is calculated from 2013–14 and 2014–15. The figures have been rounded (usually) to the nearest integer.
- For indicators P3 and P6 (‘Typical residential bill’), the adjective ‘typical’ is used in this report rather than ‘average’ because the average is affected by vacant lots that pay no usage charges and by pensioners, who generally receive a pensioner concession.
- The 2015 Urban NPR provides summary tables covering all utility groups. Commentary is limited to a discussion of the 100,000+ utility size grouping only.

Executive summary

The National performance report 2014–15: urban water utilities, is the tenth in the series of national performance reports and the second to be produced by the Bureau of Meteorology. It provides a comparison of performance for 87 urban water service providers, comprised of 80 water utilities and councils (collectively referred to as utilities) and 7 bulk water suppliers. These utilities provide urban water services to over 20 million people. This Part A of the report provides an overview of the key drivers of water performance in 2014–15, including rainfall, temperature, utility size, and water source availability, provides a context for urban water performance. The reports commentary and analysis includes key indicators covering water resources, pricing, finance, customer service, assets, environment and health.

Average to drier-than-average conditions across Australia ahead of an El Niño declared in May 2015

Rainfall deficiencies continued across southern and eastern Australia. This was consistent with longer-term drying trends and the El Niño conditions in the tropical Pacific, experienced across 2014 and 2015. Rainfall trends across the States and Territories in 2014–15 were average for the Northern Territory, close to average for New South Wales and Western Australia, and drier-than-average elsewhere (Bureau 2016).

Median annual residential water supply per property falls following three years of increases

Despite drier-than-average conditions across much of Australia, the median annual volume of residential water supplied fell by 3 per cent to 179 kL/property, halting a run of consecutive rises over the past three reporting periods (2011–12, 2012–13, and 2013–14).

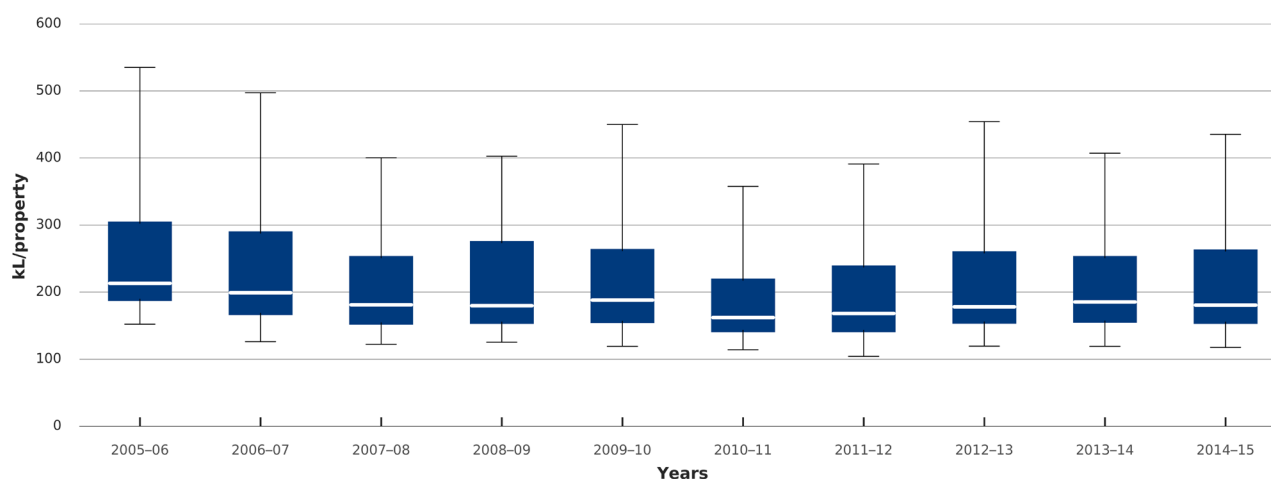


Figure ES1 W12—Average annual residential water supplied (kL/property), 2005–06 to 2014–15

Increased supply of recycled water by larger non metropolitan utilities

Nationally, the total volume of recycled water supplied by utilities that reported in both 2013–14 and 2014–15 increased by 2 per cent in 2014–15. This increase came after a 2 per cent decrease reported in 2013–14. Importantly, there was an observed 13 per cent increase in recycled water supplied by utilities in the 50,000–100,000 connected properties size group. This increase reflects the reduced availability of surface water for the larger non-metropolitan utilities and the need to diversify supply sources in the face of growing demand.

Typical residential bill continues its steady growth, rising 4 per cent in real terms

In real terms the national median typical residential bill for water and sewerage rose by 4 per cent in 2014–15, increasing to \$1,299 in 2014–15 from \$1,255 in 2013–14.

Small to medium utilities, those within the 10,000–20,000 and 20,000–50,000 size groupings, reported a 3 and 2 per cent increase in median typical bill respectively.

Figure ES2 highlights the long-term trend for the typical residential bill and is based on all utilities reporting within each year. It shows that the rate of increase of the typical residential bill has slowed in recent years.

An increasing spread of values in the middle 50 per cent reflects a greater variance of typical bills in 2014–15. Eight new utilities reporting in 2014–15 all had typical residential bill values in the upper end of the dataset, extending the upper range of the distribution.

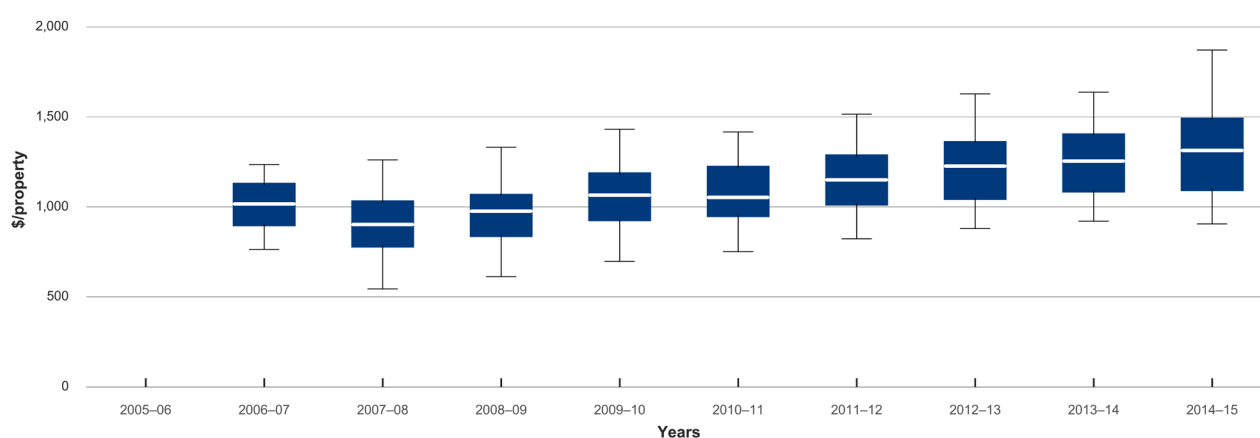


Figure ES2 P8—Typical residential bill: water and sewerage (\$), 2005–06 to 2014–15

Note: P8 was introduced for the first time in the 2006–2007 reporting year.

Increased capital expenditure on sewerage offset by a fall in water supply spending

In real terms, total capital expenditure on water supply and sewerage services by utilities decreased by 4 per cent (\$126 million) from 2013–14. Expenditure was \$3.022 billion in 2014–15, down from \$3.148 billion in 2013–14. In 2014–15 an increase in sewerage expenditure was offset by a decrease in water supply expenditure.

Figure ES3 shows the total capital expenditure for water supply and sewerage services over the period 2007–08 to 2014–15. While capital expenditure is highly variable from year to year there is a clear downward trend across this period.

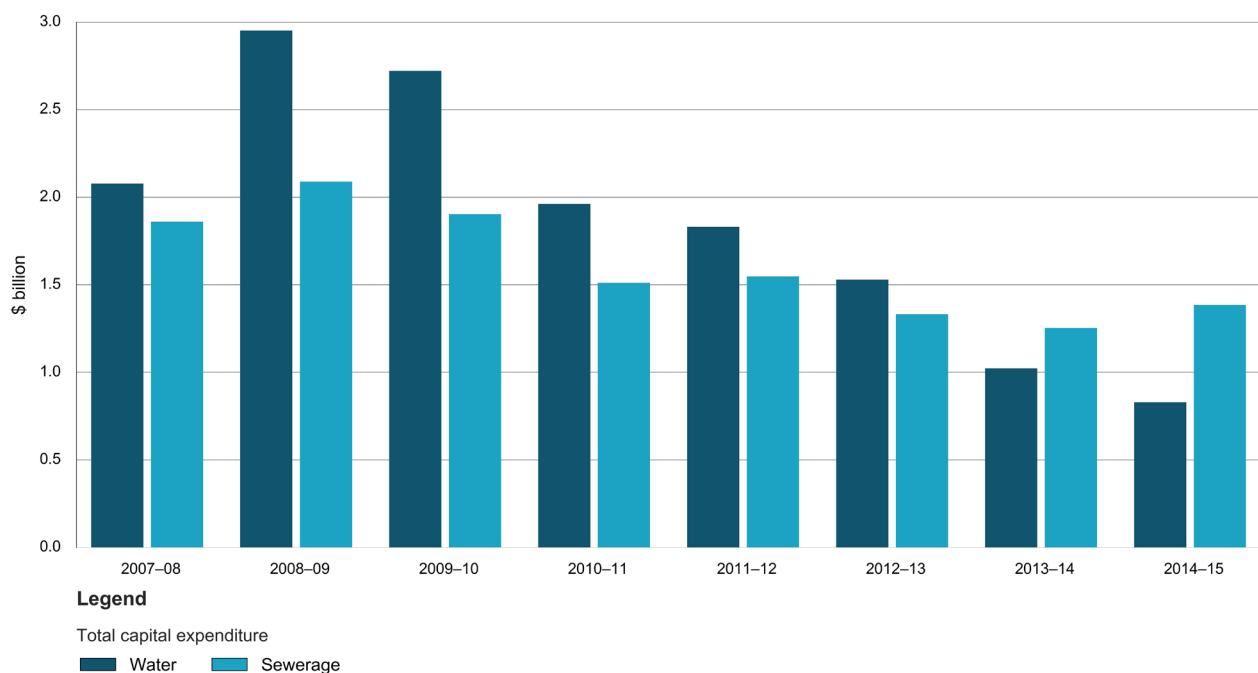


Figure ES3 F16—Total capital expenditure: water and sewerage (\$ billion), 2007–08 to 2014–15

Note: Total is for utilities that reported all seven years

Median combined operating costs down 5 per cent in real terms

The national median combined operating expenditure, on a dollar per property basis, fell 5 per cent in real terms in 2014–15. Costs were \$850 per property in 2014–15, down from \$892 in 2013–14.

Figure ES4 highlights the long-term trend for combined operating costs per property and is based on all utilities reporting within each year. It shows a flattening of the median combined operating costs over the last five years.

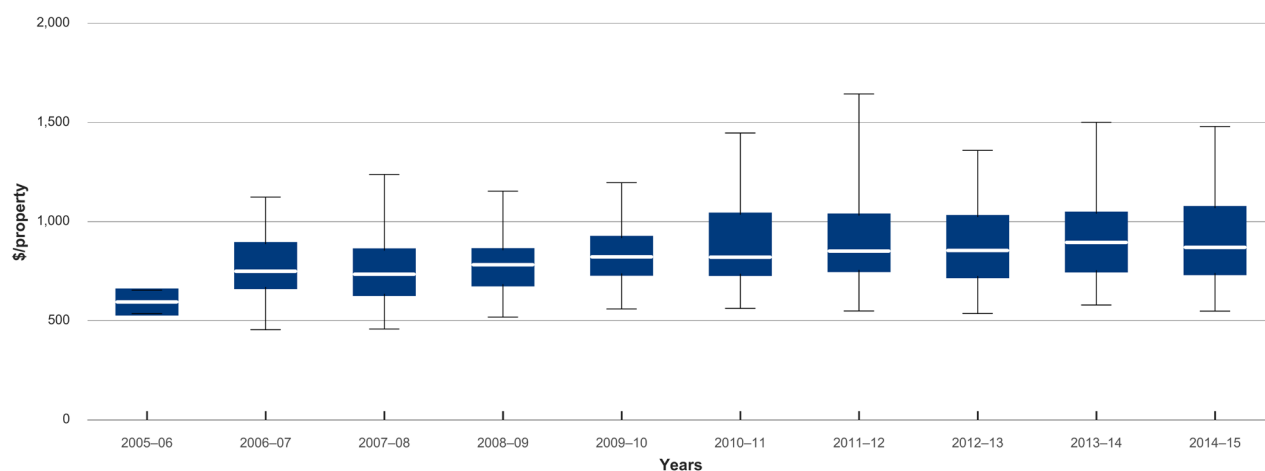


Figure ES4 F13—Combined operating costs: water and sewerage (\$/property), 2005–06 to 2014–15

Water quality compliance remains strong

Water supply quality compliance, measured as the percentage of the population serviced by the utility for which microbiological compliance was achieved, remained strong across Australia in 2014–15. Compliance is assessed against the *Australian drinking water guidelines 2011* (Australian National Health and Medical Research Council 2011) or licence conditions imposed on the utility. In the 2014–15 reporting year, the median percentage of population where microbiological compliance was achieved was 100 per cent for each size group.

1 Introduction

1.1 Context and overview

The *National performance report 2014–15: urban water utilities* (2015 Urban NPR) is the tenth in the series of national performance reports. It is the second to be produced by the Bureau of Meteorology, in conjunction with State and Territory governments and the Water Services Association of Australia.

The Urban NPR supports the commitments made by States and Territories under the National Water Initiative (NWI) to report publicly and independently on the performance of water utilities (NWI clauses 75–76).

The 2015 Urban NPR compares the performance of 87 water utilities providing urban water services to over 20 million people across all of Australia. The number of utilities reporting on urban water services in 2014–15 increased from that of 2013–14. This is because of changes to Queensland State regulations that now require all utilities with over 10,000 connections to report through the NPR process. In order to compare reports between years, analysis has been undertaken in a manner that mitigates the impacts of these changes. In all cases, the assumptions or methods used are clearly noted.

This Part A of the report provides commentary and analysis for key indicators that apply to retail/distribution utilities (the capital cities analysis in Chapter 2 includes performance data for bulk water suppliers). Part B of the report contains data for the full set of over 180 indicators that are reported on by urban water utilities and bulk water suppliers for all reporting years.

The analysis and commentary provides a context for each indicator, discusses changes in reporting methodologies, and highlights trends within and/or between different utility groups. The utilities are grouped according to their number of connections (see ‘Common abbreviations and explanatory notes’). The 2015 Urban NPR provides summary tables covering all utility groups. Commentary is limited to a discussion of the 100,000+ utility size grouping only.

The commentary and analysis contained in this report is not intended to be a comprehensive explanation of every reported indicator. It has been prepared to explain some of the more apparent trends or differences between years and utilities. Much of the information is sourced from publicly available documents, such as annual reports, regulatory decisions, and the utilities’ websites.

1.2 Reporting

The 87 urban water service providers that have contributed data for the 2015 Urban NPR are listed in Appendix C. A summary of utility type by jurisdiction is shown in Table 1.1.

The 2015 Urban NPR includes nine utilities that reported in Queensland for the first time in the 2014–15 year as a result of changes to regulations at State level. These are:

- Bundaberg Regional Council
- Western Downs Regional Council
- Gladstone Regional Council
- Redland City Council
- Southern Downs Regional Council
- Whitsunday Regional Council
- Cassowary Coast Regional Council
- Central Highlands Regional Council
- Livingston Shire Council.

The 87 urban water service providers included in this report are comprised of 80 water utilities and councils (collectively referred to as utilities) and 7 bulk water suppliers. Of the 80 utilities, 71 provide both reticulated water supply and sewerage services. The remaining utilities providing only water supply or sewerage services. In summary the breakdown is:

- water supply and sewerage: 71 utilities
- water supply only: 5 utilities
- sewerage only: 4 utilities
- bulk water: 7 suppliers.

Table 1.1 Utilities reporting in the 2015 Urban NPR by size group and jurisdiction

Jurisdiction	Bulk utility	100,000+	50,000–100,000	20,000–50,000	10,000–20,000	Total
Australian Capital Territory	0	1	0	0	0	1
New South Wales	4	2	2	10	14	32
Northern Territory	0	0	1	0	1	2
Queensland	2	4	3	6	7	22
South Australia	0	1	0	0	0	1
Tasmania	0	1	0	0	0	1
Victoria	1	4	5	5	2	17
Western Australia	0	1	0	1	9	11
Total	7	14	11	22	33	87

1.3 Locations of utilities

The administrative boundaries of all utilities reporting data through the 2015 Urban NPR are shown in Figure 1.1. Further details about the utilities are available from their respective websites.

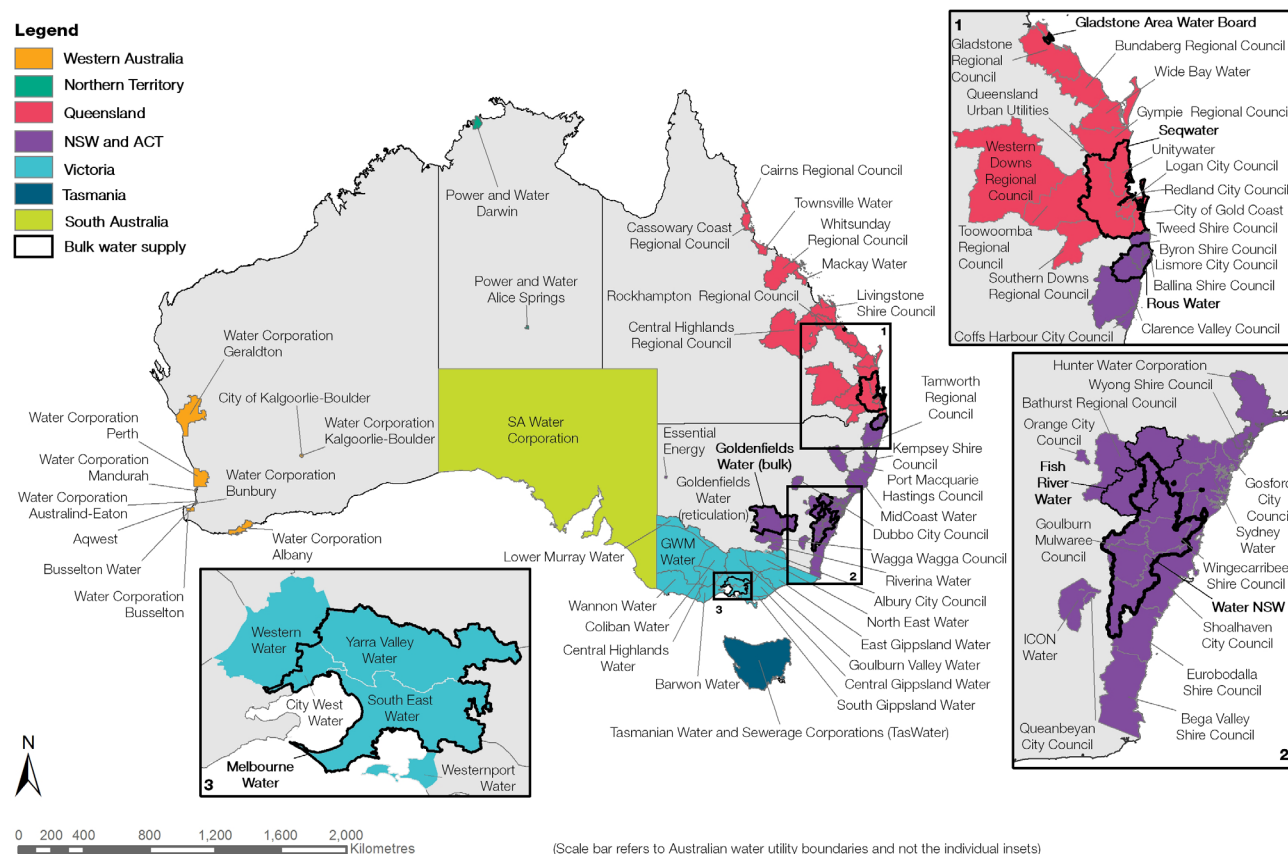


Figure 1.1 Organisational boundaries of utilities reporting to the 2015 Urban NPR

1.4 Key drivers

This section discusses some of the key drivers of the water utility performance indicators presented in the 2015 Urban NPR. Rainfall, temperature, utility size, and sources of water are discussed. Many other factors that also affect the results, including network density, soil types, the age and condition of infrastructure, and Government policy and regulation, are not discussed.

1.4.1 Rainfall

Figure 1.2 shows how rainfall has varied from the long-term average across Australia over the past eight years: white shows 'average'; blue shows 'above average'; and red shows 'below average' rainfall. Weather conditions have been extremely variable over this period in terms of both the average rainfall over time and the distribution of rainfall within each year.

Rainfall deficiencies continued across southern and eastern Australia. This was consistent with longer-term drying trends and the El Niño conditions in the tropical Pacific, experienced across 2014 and 2015 (Bureau 2016).

Annual rainfall trends across the States and Territories in 2014–15 were: average for the Northern Territory, close to average for New South Wales and Western Australia, and drier-than-average for the other States and Territory (Bureau 2016).

Below-average rainfall was recorded across most of Queensland and parts of the Northern Territory's Top End; Victoria and southeast South Australia; Tasmania; the western half of South Australia and the far southwest of the Northern Territory; and the southwest of Western Australia (Bureau 2016), with some pockets experiencing their lowest rainfall on record, including major urban centres of Melbourne, Townsville, Adelaide, and Perth. These urban centres experienced drier conditions than in 2013–14 when rainfall deciles varied from average to very-much-above average.

Rainfall was above average for the Gascoyne and Pilbara in Western Australia; areas of the Northern Territory stretching from the western Top End, across the central region, through the southeast of the Northern Territory and across northeastern South Australia, into northwestern New South Wales; and also for small parts of the east coast between southeastern Queensland and East Gippsland in Victoria (Bureau 2016).

Annual rainfall was below to very-much-below-average for west-facing parts of southern Australia, including southwest Western Australia, Tasmania, South Australia, and Victoria (Bureau 2016). These areas experienced a decline in rainfall from 2013–14 when rainfall deciles varied from average to very-much-above average.

Rainfall can affect the performance results of utilities in many ways. These include:

- Significant droughts with prolonged periods of low rainfall can stress urban water supply systems. Depending on the severity of the drought, the security of the system, and the availability of climate-independent water sources (such as desalination or recycled water), the utility may need to impose water restrictions in order to conserve water and assure continuity of the water supply.
- Wet or dry conditions can affect demand for outdoor watering, resulting in a change in urban water and recycled water supplied to residents, councils, and golf courses (indicators W12 and W26 relate to residential water supplied and recycled water). Changes in water consumption affect the revenue collected by water utilities, their profitability, and the strength of their water-usage pricing signal.
- Wet or dry conditions can also affect decisions about which water sources to use (W1–W7). For example, persistent dry conditions can trigger thresholds for production from desalination plants or for the use of particular groundwater or recycled water sources, affecting the operating costs of utilities (F11, F12, F13).
- Increased rainfall can result in infiltration of water into sewer systems. This can increase the volume of sewage to be pumped and treated, increasing the operating costs of utilities (F12, F13) and also greenhouse gas emissions from sewage (E12). Additional rainfall and sewer infiltration can also result in additional sewer overflows. This is especially the case during heavy rainfall.

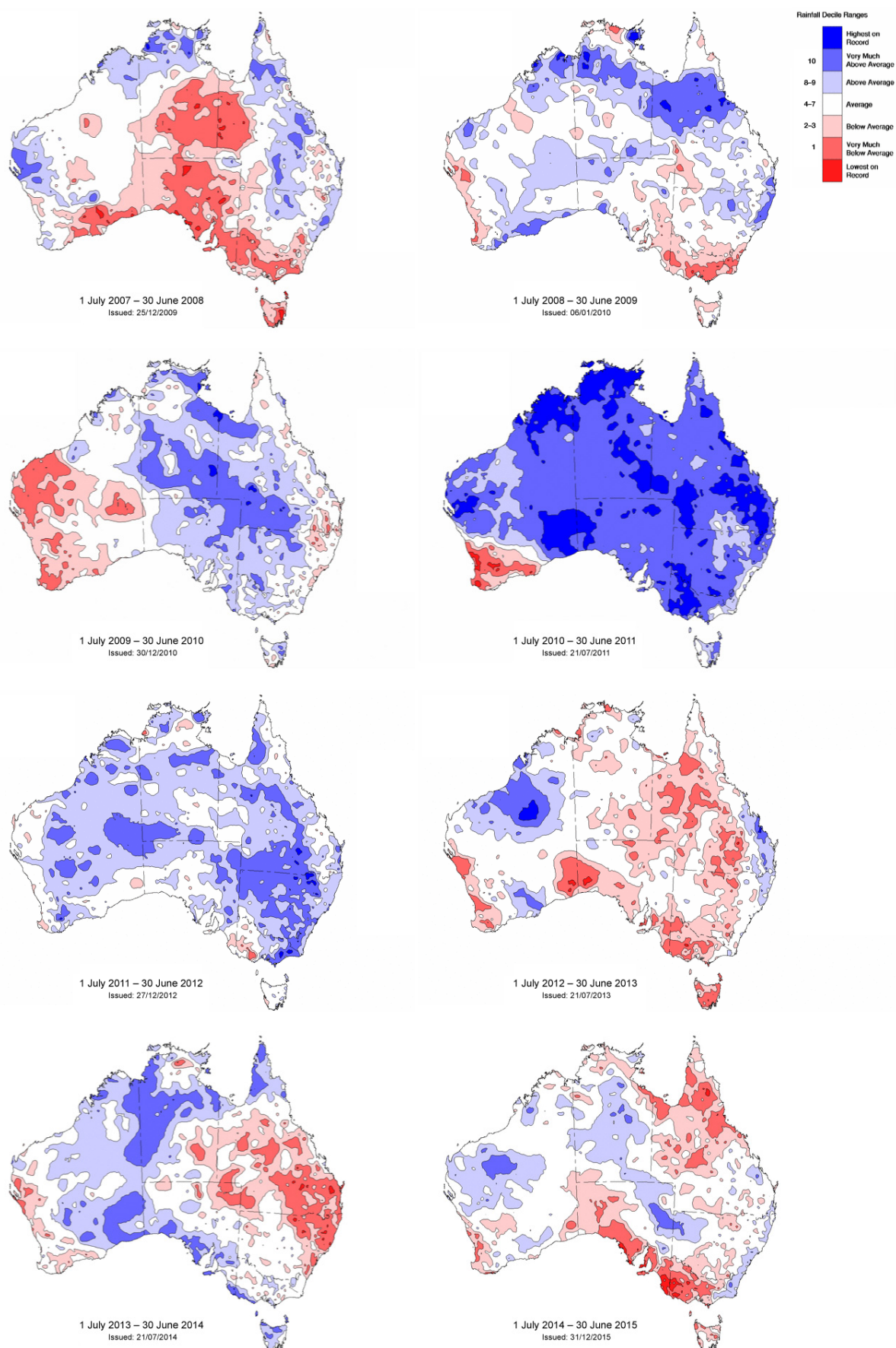


Figure 1.2 Australian 12-month rainfall deciles, 2007–08 to 2014–15. Decile 1 means the lowest 10 per cent of records, decile 2 the next lowest 10 per cent, and so on, up to decile 10, the highest 10 per cent of records.

- Extreme wet or dry conditions can cause expansion and shrinking of reactive clay soils in some parts of Australia, resulting in ground movements that can cause an increase in water or sewer main breaks (A8, A14). This is especially the case when conditions fluctuate rapidly from wet to dry or vice versa. In periods of more even rainfall, the soils maintain more even moisture levels, resulting in less ground movement.

1.4.2 Temperature

Figure 1.3 shows the annual maximum temperature deciles for 2014–15, indicating largely above-average to very-much-above-average temperatures across the majority of the country, with a general trend of cooler temperatures from the largely very-much-above-average to highest-on-record maximum temperature deciles recorded in 2013–14.

2015 was Australia's fifth warmest year on record. This is consistent with general trends of warming over recent years, with eight of Australia's warmest years on record having occurred in the 14 years since 2002. Only one cooler-than-average year has occurred in the past decade (2011) and the 10-year mean temperature for 2006–2015 was the second highest on record at 0.53 °C above-average, with the highest on record being 2005–2014 (Bureau 2016).

A number of heatwaves and warm spells, important because of their impacts on water use, were experienced across Australia in 2014–15. Most notable were an exceptional autumn heatwave in northern and central Australia in March, an early season spring heatwave in southern Australia in October, and extreme heat for the start of the summer season in much of southeast Australia in December (Bureau 2016).

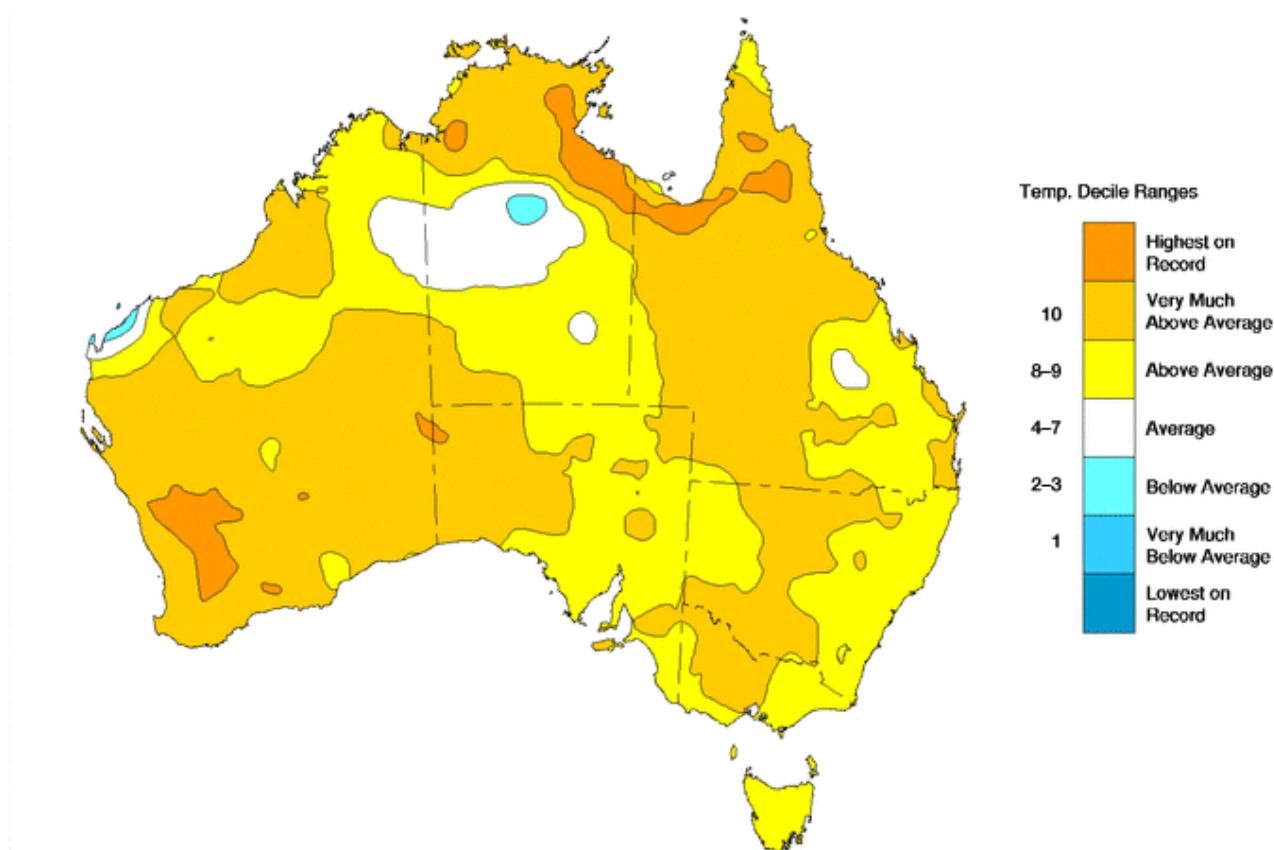


Figure 1.3 Australian 12-month maximum temperature deciles for 2014–15. Map issued 30 December 2015.

There are many relationships between temperature and the performance of utilities. These include:

- The relationship between demand and temperature in particular residential and non-residential outdoor demand. Increased temperature, in particular prolonged periods above long-term averages, can result in increased potable and recycled water supplied to residents, councils, and golf courses (indicators W12, W26, and W27 relate to residential water supplied and recycled water). Changes in water consumption affect the revenue collected by water utilities, their profitability (F3, F24), and the strength of their water-usage pricing signal (F4).
- The relationship between hot weather and an increased risk of bushfires. This risk can result in the deployment of resources to protect water supply catchments and mitigate the impacts of a bushfire should one occur. Such deployments can affect the operating expenditure of a utility (F11, F12, F13), in particular if responding to an actual bushfire event. In addition, temporary water restrictions that ensure the availability of supply to meet firefighting requirements can be implemented during extreme fire weather. Such restrictions can impact on the volume of water supplied by a utility and in turn affect its operating cost and revenue. Should a catchment be burnt, this can impact on water supply due to water quality issues that may require the storage to be taken off-line for some time.
- That extended periods of heat or cold can impact on the quality of water sources and supplies and therefore affect decisions about which water sources are to be used (W1–W7) and the level of the treatment required. For example, a heatwave contributes to the decline in dissolved oxygen levels within a waterbody and can trigger the need to supply water from an alternative source or increase the cost of treatment, in turn affecting the operating costs of utilities (F11, F12, F13).
- The relationship between temperature and the quality of treated water. In particular, biological processes are sensitive to extremes of heat or cold as well as rapid fluctuations in temperature. Such events can have important consequences for the quality of water supplied (H indicators) and the operational costs of a utility (F11, F12, F13).
- Extended hot conditions give rise to dry soil conditions. Consequently, many plant species will seek out moisture, and their roots can enter the sewer system causing blockages and/or breaks (A14, A15) as well as increasing water main breaks (A8).

1.5 Utility size

While many factors influence performance, there is a relationship between the size of the utility's customer base (in terms of the number of connections) and its performance on a number of indicators. This relationship may be causal, coincidental, or due to a related matter (for example, larger utilities are subject to price regulation while many smaller utilities are not). Utility size also has a role in establishing economies of scale; however, such economies are also affected by the size of the area serviced by a utility and the density of the population within it.

1.6 Sources of water

The sources of water used by a utility and the geographical relationship between the source and the urban centre it supplies are two important drivers of performance. The combination and interaction of these drivers serve to create widely varying engineering, operational, and social challenges for each utility across the country. The sources of water available to a utility are an important driver of a number of key performance indicators. For example, the cost of treating water to an acceptable standard and supplying it to users affect the revenue collected by water utilities, their profitability (F3, F24), and the strength of their water-usage pricing signal (F4).

Traditionally, Australians have relied on surface and, to a lesser extent, groundwater sources to meet their urban consumptive needs. Increased demand driven by factors such as population growth and changes to the reliability of existing sources (predominantly driven by water quality and climatic variability) have resulted in a need to further develop water supply sources to ensure supply is maintained. Financial, environmental, and social considerations mean a reduced number of opportunities exist to develop more of these traditional supply sources. As a result, utilities and bulk water suppliers across the country are developing non-traditional (alternative) supply sources such as desalination and recycling, while continuing to explore options for stormwater and rainwater harvesting.

This diversification has important consequences for the performance of urban water utilities. It impacts upon how much it costs to treat water to an acceptable standard and supply multiple water types to end-users while meeting regulatory requirements.

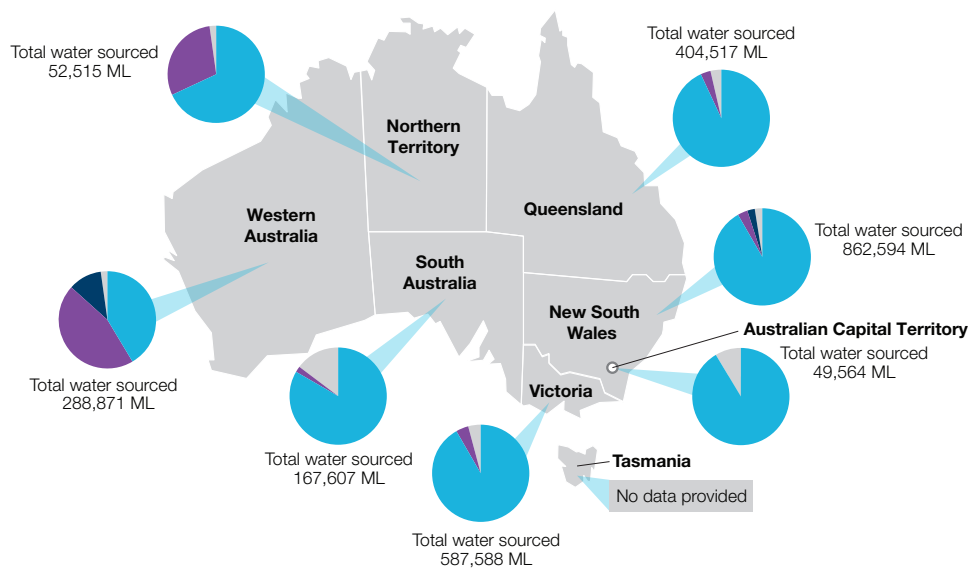
For example, water from a storage in a protected (or 'closed') catchment is typically of a higher quality than that of an 'open' catchment and therefore requires less treatment, hence reducing the cost of supply. Groundwater sources can also vary significantly. The type and depth of an aquifer as well as the quality of the water it contains each have a significant impact on the extraction and treatment of the water. Urban water users supplied from recycled sources typically require a dual-pipe supply system to separate the recycled water from potable water, and thereby incur a greater infrastructure cost.

Figure 1.4 shows the breakdown of sourced water for each State and Territory for utilities reporting in a given year. These charts show all results for all reporting utilities for each year. Therefore, care should be taken when comparing the total source water volumes between years. Additionally, differing interpretations of the definition of Indicator W4 have most likely led to the under reporting of recycled water sourced volumes. By definition, W4 only includes the volume of recycled water supplied that has been directly substituted for potable supply. That is, had the recycled water not been available potable water would have been used to meet the demand. Because of the observed issues in interpreting this definition the total volume of recycled water supplied (W26) is preferred and will replace W4 in future Urban NPR reporting. By way of comparison, in this reporting year, the national total volume of recycled water sourced (W4) was 126,359 ML while the total volume of recycled water supplied (W26) was 261,525 ML, the bulk of which was for agricultural irrigation.

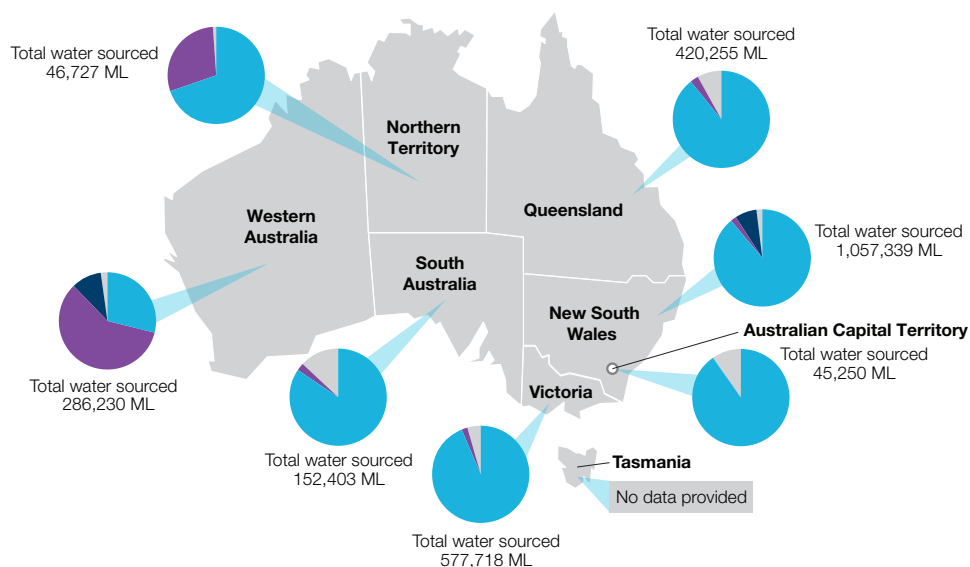
The charts show the following:

- Water sourced from surface water (W1), from rivers, streams, and dams, is the dominant water source in all States and Territories except Western Australia, where most of the water supplied is sourced from groundwater (W2).
- The importance of desalination (W3.1) as a reliable source of water continues to grow, in particular for Western Australia and South Australia, where constraints on traditional water sources have driven diversification. In 2013–14, desalination within these two States supplied 36 per cent and 10 per cent respectively of the reported total water sourced. This represents a 1 per cent increase in the percentage of total water sourced from desalination in Western Australia but a drop of 18 per cent in South Australia, where the availability of surface water within the year reduced the states reliance on desalination.
- Desalination in other States remains minimal with plants in New South Wales Victoria and Queensland operating in maintenance or 'stand-by' modes.

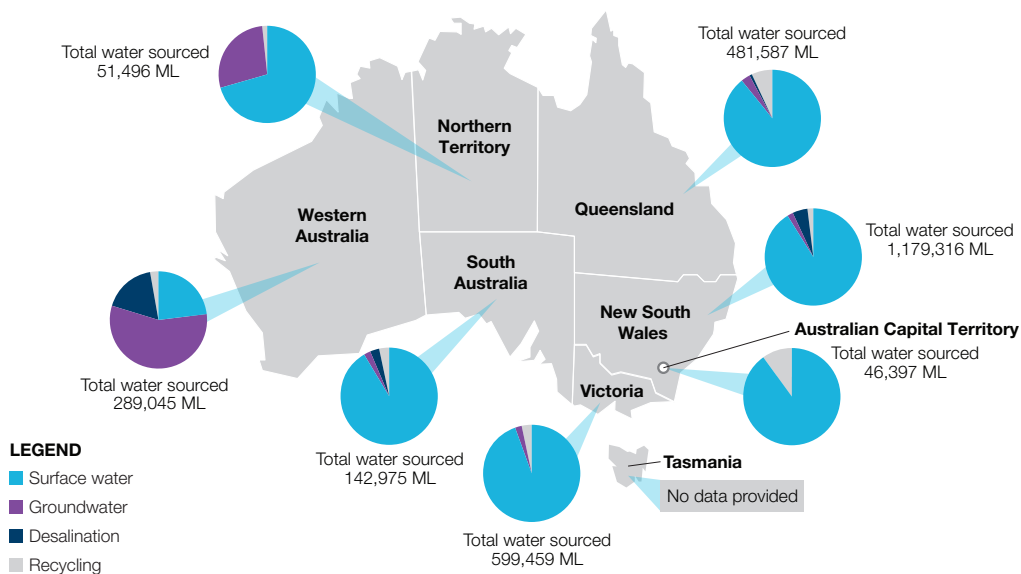
2009–10



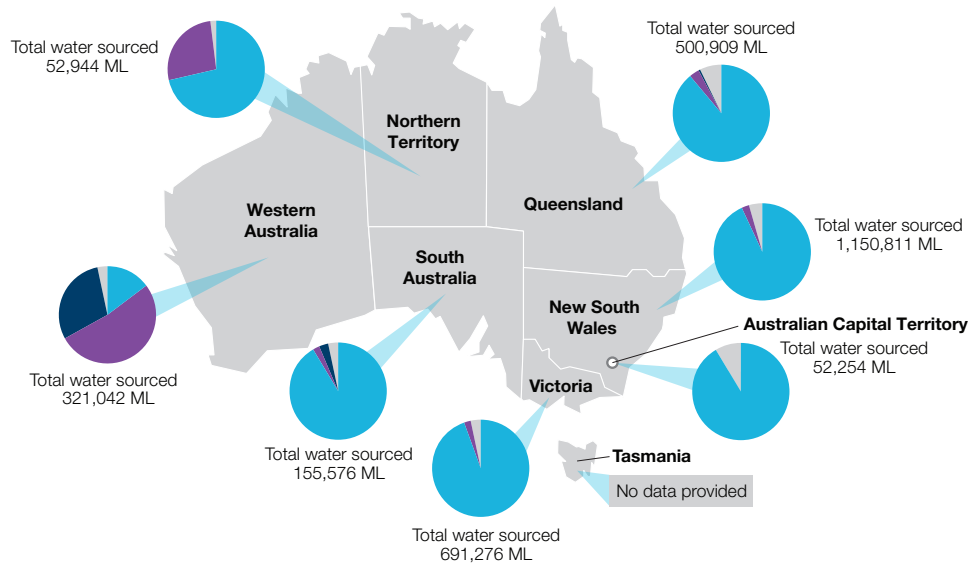
2010–11



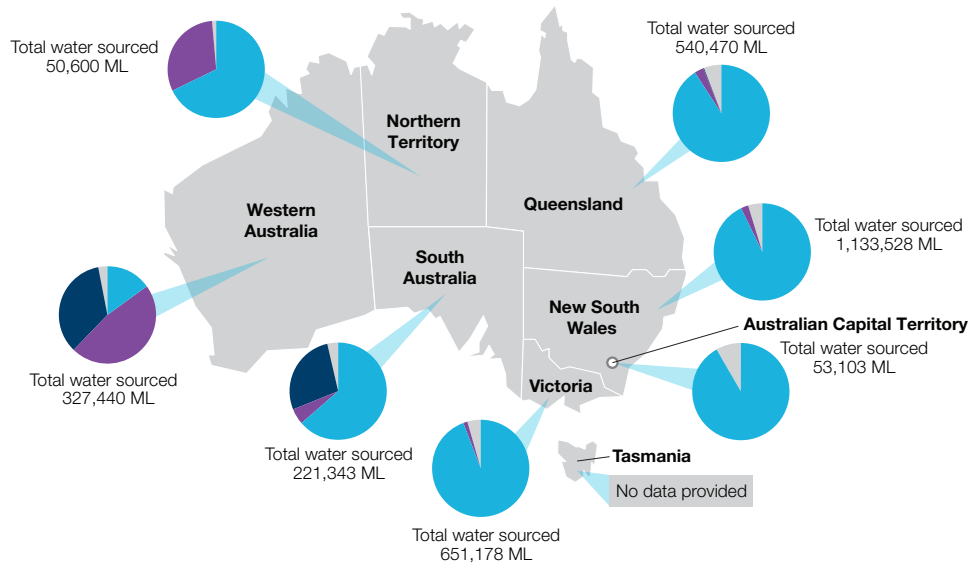
2011–12



2012–13



2013–14



2014–15

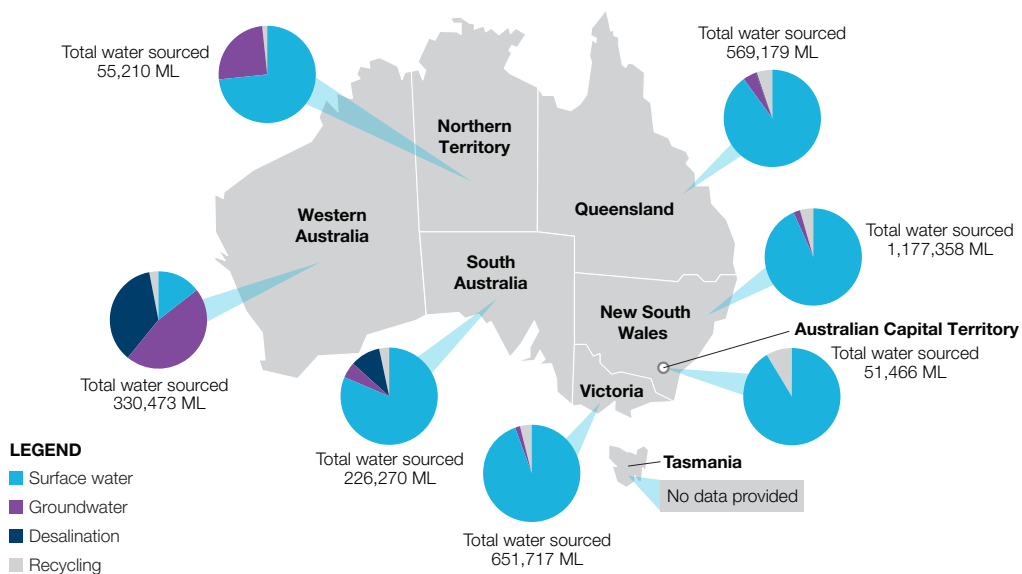


Figure 1.4 Water source breakdown (W1, W2, W3.1, W4) in each State and Territory, 2009–10 to 2014–15

2 Comparison of major urban centres

2.1 Background on major urban centres comparison data

This chapter provides comparative tables and figures about a selection of key indicators (water resources, pricing, environment, finance, and customer) for major urban centres (each of which generally corresponds to a capital city and its environs. The exception is South East Queensland which includes Brisbane as well as Logan, Redlands and the Gold Coast). The tables and figures are compiled using data supplied by the utilities detailed in Table 2.1. Any exceptions are indicated in the notes provided for each table.

This year, comprehensive South East Queensland metrics and performances are provided, with Redland City Council reporting for the first time in the 2014–15 year.

Because utilities' structures vary, the figures in this chapter should be treated with some caution and be read in conjunction with the notes accompanying the tables. For example, to provide figures that represent Sydney, Melbourne, and South East Queensland, it is at times necessary to aggregate the numbers for both bulk and retail utilities servicing those areas. Notes on the methods used to derive figures are provided for each table.

It should be noted that historical values for all financial indicators have been adjusted using consumer price index (CPI) data to facilitate comparison in real terms.

In some instances sufficient data was not available to compile a comprehensive major urban centre-scale view. This is denoted by a blank cell in a table.

Table 2.1 Data source for capital city analysis

Major urban centre	Utility data
Perth	WC (Perth)
Adelaide	SA Water
Canberra	Icon Water ¹
South East Queensland	Seqwater (B), Qld Urban Utilities, Unitywater, Gold Coast, Redland, and Logan
Sydney	Water NSW (B), and Sydney Water
Melbourne	Melbourne Water (B), City West Water, South East Water, and Yarra Valley Water
Hobart	No data—TasWater services this area; however, performance data is available only on an aggregated basis for the entire State of Tasmania.
Darwin	P&W (Darwin)

2.2 Water Resources

2.2.1 W1, W2, W3.1, W4—Volume of water sources

The volume of water sourced from surface water, groundwater, desalination, and recycled water in each city is shown in Table 2.2 and is represented by the indicators W1, W2, W3.1, and W4 respectively. The dependence on surface water as a main source of water is evident in all centres with the exception of Perth. In Perth, desalinated and groundwater are the city's key water sources. Adelaide is also relatively dependant on desalinated sea water; however, the 2014–15 year saw a substantial drop (63 per cent) in its use with a corresponding increase (52 per cent) in surface water use. South East Queensland's desalination plant has been operating in 'hot standby' mode since 2013–14 and produces minimal potable water for the water supply system.

The total volume of water sourced by major urban centres in Australia remained relatively constant compared with last year at 1,800 GL. Within each centre, however, there was a slight decrease in volumes sourced by Sydney (3 per cent), South East Queensland (2 per cent), and Canberra (3 per cent), with increases observed in Adelaide (2 per cent) and Darwin (12 per cent).

¹ In 2014–15, ACTEW Water was renamed Icon Water. There were no changes to their operations that affected data for the purposes of this report.

In 2014–15, nationally there was a significant drop in the volume of sourced desalinated sea water (18 per cent) and recycled water (13 per cent) and a marginal drop in sourced groundwater volumes (4 per cent) compared with 2013–14. This was complemented by an increase in the volume of surface water sourced (2 per cent).

Table 2.2 Volume of water sourced from surface water, ground water, desalinated sea water, and recycled water in each urban centre

Major urban centre	Surface water (W1)		Groundwater (W2)		Desalination (W3.1)		Recycled water (W4)		Total	
	2013–14	2014–15	2013–14	2014–15	2013–14	2014–15	2013–14	2014–15	2013–14	2014–15
Sydney	530,587	516,041	0	0	0	0	41,543	38,280	572,130	554,321
Melbourne	399,596	401,899	0	0	0	0	16,316	13,059	415,912	414,958
South East Queensland	282,698	284,202	10,462	9,218	1,435	1161	22,027	16,259	316,622	310,840
Perth	49,025	47,519	124,850	122,127	113,060	119457	7,767	7,564	294,702	296,667
Adelaide	80,836	122,634		0	60,953	22725	5,258	5,054	147,047	150,413
Canberra	48,731	47,114	0	0	0	0	4,372	4,352	53,103	51,466
Darwin	34,396	40,530	6,343	5,139	0	0	347	492	41,086	46,161

Table notes

Sydney surface water includes the total volume of Sydney Water's surface water and the water it received from bulk suppliers (W5).

Melbourne's surface water is that sourced by Melbourne Water while its recycled water is the total sourced by Melbourne Water and the three retailers (Yarra Valley Water, South East Water, and City West Water).

The volume of South East Queensland surface water, groundwater, and desalinated water is derived from Seqwater.

The volume of South East Queensland recycled water is the total derived from Seqwater and the retailers (Qld Urban Utilities, Unitywater, Gold Coast, Redland, and Logan).

2.2.2 W12—Average annual residential water supplied

This indicator represents the average annual volume of residential water supplied to customers for each capital city. Canberra and Perth experienced a notable decrease in the average annual volumes of residential water supplied compared with that of the previous year (Table 2.3). Melbourne continued to supply the lowest average volume (149 kL/property) and Darwin continued to supply the highest average volume (409 kL/property).

For more detail on average water supplied to customers by each urban utility in Australia, refer to [Section 3](#).

Table 2.3 W12—Average annual residential water supplied (kL/property), 2010–11 to 2014–15

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Adelaide	180	179	193	183	186	1.6
Darwin	405	471	454	407	409	0.5
Melbourne	138	142	152	150	149	–0.7
South East Queensland	142 ^b	146 ^b	156	164	160 ^a	–2.4 ^a
Sydney	197	193	198	206	201	–2.4
Perth	264	250	249	254	244	–3.9
Canberra	177	180	199	203	188	–7.4
Hobart						

Table notes

^a Redland reported for the first time in 2014–15; therefore the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

^b Gold Coast and Logan did not report against the indicator for that specific year.

The figures exclude bulk utilities because they do not supply to customers.

Melbourne and South East Queensland figures are the weighted averages of their respective retailers (that is, W8/C2—Total connected residential properties: water supply).

2.2.3 W26—Total recycled water supplied

This indicator represents the total volume of recycled water supplied to customers, aggregated for the capital cities. There were significant changes this reporting year in the total recycled water supplied in most urban cities. Melbourne (31 per cent) and Adelaide (14 per cent) both saw a large increase in their volumes of recycled water supplied to consumers, whereas South East Queensland and Sydney recorded decreases of 19 and 8 per cent respectively (Table 2.4). Following recommendations from a Ministerial Review of Operating Arrangements for the Western Corridor Recycled Water Scheme (WCRWS) in late 2012, Seqwater stopped producing and supplying recycled water during 2014–15, putting WCRWS into a care-and-maintenance state on 31 March 2015 (Science and Innovation Committee 2015). Among the urban centres, Darwin remains by far the smallest producer of recycled water, both by total volume (Table 2.4) and as a percentage of total effluent collected. The 42 per cent increase in recycled water supply in Darwin was due to a return to normal operation in 2014–15 after major operational issues were experienced by Power and Water—Darwin's water reclamation plant in 2013–14.

For more detail on recycled water supplied to customers by each urban utility in Australia, refer to [Section 3](#).

Table 2.4 W26—Total recycled water supplied (ML), 2010–11 to 2014–15

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Darwin	305	376	499	347	492	41.8
Melbourne	32,244	38,100	29,734	27,890	36,428	30.6
Adelaide	19,802	22,714	28,393	25,515	29,177	14.4
Canberra	4,305	4,607	4,416	4,372	4,352	–0.5
Perth	9,134	10,370	10,272	10,029	9,354	–6.7
Sydney	47,521	45,929	46,951	46,943	43,075	–8.2
South East Queensland	11,947 ^a	11,432 ^a	23,136	23,082	18,774 ^b	–18.7
Hobart						

Table notes

^a Gold Coast and Logan did not report against the indicator for that specific year.

^b Redland reported for the first time in 2014–15; therefore the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

Melbourne and South East Queensland figures for W26 are the aggregated figures for the bulk utility and the retailers.

2.3 Pricing

2.3.1 P8—Typical residential bill

This indicator reports the typical residential bill received by customers in each capital city, including water and sewerage services. Typical residential bills for water and sewerage are presented in Table 2.5.

There was a notable increase in South East Queensland (5.7 per cent), Adelaide (3.4 per cent), and Darwin (3.1 per cent). Darwin continued to have the highest average residential water bill of all Australian capital cities as well as the largest price increase over the last five years.

Additionally, there was a significant drop in the typical residential bill in Melbourne (–11.6 per cent) for 2014–15, returning it closer to the typical bill in previous years following a high result in the 2013–14 year. The Victorian State Government's Fairer Water Bills Initiative precipitated this decrease, which resulted in reduced bills for residential customers of Melbourne's three major metropolitan retailers. Melbourne still has the lowest average residential water bill compared with the other major urban areas in Australia.

For more detail on the typical bills charged by each urban utility in Australia, refer to [Section 4](#).

Table 2.5 P8—Typical residential bill (P3 water and P4 sewerage combined), 2010–11 to 2014–15 (\$)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
South East Queensland	1,144 ^a	1,177 ^a	1,274	1,301	1,375 ^b	5.7 ^b
Adelaide	1,010	1,206	1,399	1,282	1,326	3.4
Darwin	1,219	1,516	1,857	1,815	1,871	3.1
Perth	1,151	1,205	1,260	1,310	1,336	2.0
Sydney	1,136	1,165	1,162	1,161	1,155	–0.5
Canberra	1,052	1,147	1,227	1,118	1,096	–2.0
Melbourne	798	912	926	1,107	979	–11.6
Hobart						

Table notes

^a Gold Coast, Logan, and Redland did not report against the indicator for that specific year.

^b Redland reported for the first time in 2014–15; therefore the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

Melbourne and South East Queensland figures are the weighted average of the retail utilities (that is, P3/C2—Connected residential properties: water supply and P6/C6—Connected residential properties: sewerage).

The figures exclude bulk utilities as they do not supply to customers.

2.4 Environment

2.4.1 E12—Total net greenhouse gas emissions

This indicator reports the contribution of the utilities' operations to greenhouse gas (GHG) emissions, aggregated here by major urban area. There was a significant drop of 20 per cent in the GHG emissions in Darwin (Table 2.6), with abatement attributed to the use of variable speed drive units at the water and sewerage major pump stations. Perth continued to be the highest GHG-emitting capital city by a significant margin and a continued increasing trend, predominantly as a result of its diversification of water sources from surface water to desalinated sea water. There was also a notable decline in GHG emissions in Melbourne, which is a continuing trend. Adelaide observed an increase (16 per cent) in emissions despite less water being sourced from desalinated sea water and recycling in the 2014–15 year.

For more detail on GHG emissions from each urban utility in Australia, refer to [Section 8](#).

Table 2.6 E12—Total net greenhouse gas emissions, 2010–11 to 2014–15 (net tonnes CO₂ equivalents per 1,000 connected water properties)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Adelaide	293	328	422	258	299	16
Perth	573	647	663	731	738	1
Canberra	362	313	288	260	257	–1
Sydney	143	72	85	85	84	–1
Melbourne	250	239	253	229	215	–6
Darwin	189	208	219	205	165	–20
South East Queensland						
Hobart						

Table notes

Sydney figures are based on data provided by Sydney Water.

Melbourne figures are the weighted average of the three retailers (that is E12/C4—Total connected properties) plus Melbourne Water's emissions, expressed on a per connection basis.

2013–14 Adelaide figures are based on data for the entire State of South Australia operated by SA Water. The 2014–15 year includes Adelaide-specific data. Data for years prior to 2013–14 were not available as a result of boundary changes.

2.5 Finance

2.5.1 F13—Combined operating cost of water and sewerage

This indicator reports the combined operating cost of the utilities' water and sewerage operations, aggregated here by major urban area (Table 2.7). In 2014–15, there was an 11 per cent decrease in operating cost for Melbourne and an 8 per cent decrease for Adelaide from 2013–14. Adelaide now has the lowest operating cost of all the major cities (\$553/property) and South East Queensland continues to have the highest (\$1,081/property).

For more detail on operating cost of each urban utility in Australia, refer to [Section 5](#).

Table 2.7 F13—Combined operating cost: water and sewerage (\$/property)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Canberra	769	840	810	752	764	2
South East Queensland	816 ^a	913 ^a	1,000 ^b	1,083 ^b	1,081	0 ^c
Sydney	633	657	687	676	664	–2
Perth	508	545	579	595	579	–3
Adelaide	455	488	620	600	553	–8
Melbourne	672	799	762	1,021	909	–11
Darwin	1,050	1,119	1,146	1,022		
Hobart						

Table notes

^a Gold Coast, Logan, and Redland did not report against the indicator for that specific year.

^{b, c} Redland reported for the first time in 2014–15; therefore the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

Sydney figures are for Sydney Water. Sydney Water's operating costs include bulk water purchases, including from Water NSW.

Perth and Adelaide figures are based on reported F13—Combined operating cost: water and sewerage (\$/property).

- F11 and F12 contain common corporate operating cost and therefore F13 is less than the sum of F11 and F12.
- The breakdown of Adelaide figures for F11 and F12 was not available for the Adelaide metropolitan city area.

Melbourne and South East Queensland figures are the weighted average of the retailers. The operating costs for the retailers include bulk purchases (that is F11/C2—Connected residential properties: water supply and F12/C8—Total connected properties: sewerage).

2.5.2 F16—Total capital expenditure for water and sewerage

This indicator reports the combined capital expenditure related to the utilities' water and sewerage operations, aggregated here by major urban centre. Capital expenditure for water increased significantly in Perth (34 per cent) and Melbourne (13 per cent) from the 2013–14 year; however it was still well below the peak in expenditure that occurred in 2010–11 during the height of the Millenium Drought (Table 2.8). Canberra and Adelaide saw a significant reduction in capital expenditure (18 and 19 per cent respectively), continuing their downward trend.

For more detail on the capital expenditure of each urban utility in Australia, refer to [Section 5](#).

Table 2.8 F16—Total capital expenditure for water and sewerage, 2010–11 to 2014–15 (\$'000)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Perth	700,348	550,203	504,668	262,529	351,732	34
Melbourne	1,355,928	942,090	735,799	609,752	686,136	13
Sydney	805,693	792,228	713,762	629,305	641,685	2
South East Queensland	504,764 ^a	989,579 ^a	653,563	517,648	487,636	–6 ^b
Canberra	256,668	230,838	143,365	59,393	48,937	–18
Adelaide	595,851	530,075	331,038	187,945	152,124	–19
Darwin	51,978	58,080	64,789	25,600		
Hobart						

Table notes

^a Gold Coast, Logan, and Redland did not report against the indicator for that specific year.

^b Redland reported for the first time in 2014–15; therefore, the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

Melbourne, Sydney, and South East Queensland figures are the aggregate for the bulk utility and the respective retailers.

2.6 Customer

2.6.1 C13—Total water and sewerage complaints

This indicator reports the combined water and sewerage complaints received by the utilities, aggregated here by major urban area. There was a general trend of decreasing water and sewerage complaints across the country in 2014–15 (Table 2.9), with the exception of Canberra, which saw a marginal increase (8 per cent). This result is consistent with the focus on enhancing customer experience across the urban water sector in Australia.

For more detail on customer complaints received by each urban utility in Australia, refer to [Section 6](#).

Table 2.9 C13—Total water and sewerage complaints (per 1,000 properties)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Canberra	6.4	5.0	4.8	4.0	4.3	8
Sydney	3.4	3.5	3.9	3.2	2.6	–19
Perth	12.1	9.5	0.6	1.0	0.8	–20
Darwin	53.1	72.7	37.5	49.9	39.5	–21
Melbourne	4.8	6.3	7.4	5.3	4.0	–25
South East Queensland					3.8 ^a	
Adelaide		1.5	2.4			
Hobart						

Table notes

^a Logan did not report against the indicator for that specific year.

Melbourne and South East Queensland figures are the weighted average of the retailers (that is, C13/C4—Total connected properties: water supply). The figures exclude bulk utilities as they do not supply to retail customers.

2.6.2 C15—Average duration of an unplanned interruption to water supply

This indicator reports the average duration of unplanned interruption to water supply in a utility's operation, aggregated here by major urban area. Canberra recorded an increase (14.9 per cent) in average duration of unplanned interruptions in their water supply (Table 2.10). South East Queensland also recorded an increase; however, this may be attributed to Unitywater and Redland City Council commencing reporting on C15 in the 2014–15 year. Overall, Darwin recorded the shortest average duration of unplanned interruptions compared with the other major urban areas, followed closely by Perth and Melbourne.

For more detail on interruptions to water supply recorded by each urban utility in Australia, refer to [Section 6](#).

Table 2.10 C15—Average duration of an unplanned interruption—water, 2010–11 to 2014–15 (minutes)

Major urban centre	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2014–15%
South East Queensland			106 ^a	104 ^a	137 ^a	31.7 ^b
Canberra	111	119	148	104	120	14.9
Adelaide		201	158	153	165	7.8
Melbourne	109	102	103	99	99	0.1
Sydney	147	155	153	151	147	–2.6
Perth	114	118	130	117	96	–18.2
Darwin	92	72			94	
Hobart						

Table notes

^a Unitywater and Redland did not report against the indicator for that specific year.

^b Redland reported for the first time in 2014–15; therefore the percentage change for South East Queensland does not provide a direct comparison between the 2014–15 and 2013–14 years.

Melbourne and South East Queensland figures are the weighted average of the retailers (that is, C15/A2—Length of water mains).

The figures exclude bulk utilities as they do not supply to retail customers.

3 Water resources

3.1 W12—Average annual residential water supplied (kL/property)

3.1.1 Introduction

The average annual residential water supplied indicator (W12) reports the average volume (kL/property) of metered and estimated non-metered potable and nonpotable water supplied to residential properties during 2014–15. It is derived by dividing the total volume of residential water supplied (Indicator W8) by the number of connected residential water properties (Indicator C2).

This average volume is influenced by a number of factors, including climate, rainfall, water restriction policies of the utility, water conservation measures in place, the available water supply, housing density, and the price of water. Of these, rainfall is arguably the most influential factor affecting residential consumption. All things being equal, an increase in rainfall should reduce demand and a decrease in rainfall should increase demand. A decrease in rainfall that results in a significant decrease in runoff into storages can, however, trigger demand-management measures such as restrictions.

Average annual residential water supplied by all utilities reporting Indicator W12 in 2014–15 can be found in [Table A1](#).

3.1.2 Key findings

A summary of the reported average annual volume of residential water supplied, by utility group, is presented in Table 3.1. Figure 3.1 shows a 'box and whisker' plot of the average annual volume of residential water supplied for all utilities reporting W12 for a given reporting year, from 2005–06 to 2014–15.

In 2014–15, there was a decrease of 3 per cent in the nationwide median from the previous year. There was also a downturn in the trend of year-to-year increases in the median for this indicator across all utility groups nationwide for the 4-year period from 2010–11 to 2013–14.

This decrease can be explained, in part, by the observation that overall temperatures were cooler than in previous record-setting years, despite being above average.

In addition to temperature, the introduction of water restrictions by a number of utilities also explains the reduction in residential water supplied.

Table 3.1 Overview of results: W12—Average annual residential water supplied (kL/property)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	244	148	3	10	164	159	–3
	WC (Perth)	City West Water					
50,000– 100,000	435	146	5	6	182	178	–2
	Townsville Water	Toowoomba					
20,000– 50,000	475	140	3	15	202	185	–8
	Lower Murray Water	East Gippsland Water					
10,000– 20,000	632	80	4	19	197	185	–6
	Central Highlands Regional Council	Westernport Water					
All size groups (national)	632	80	15	50	185	179	–3
	Central Highlands Regional Council	Westernport Water					

Table note

The median average annual residential water supplied (kL/property) is calculated using data from all utilities providing water supply services that reported data for W12 in both the 2013–14 and 2014–15 reporting years.

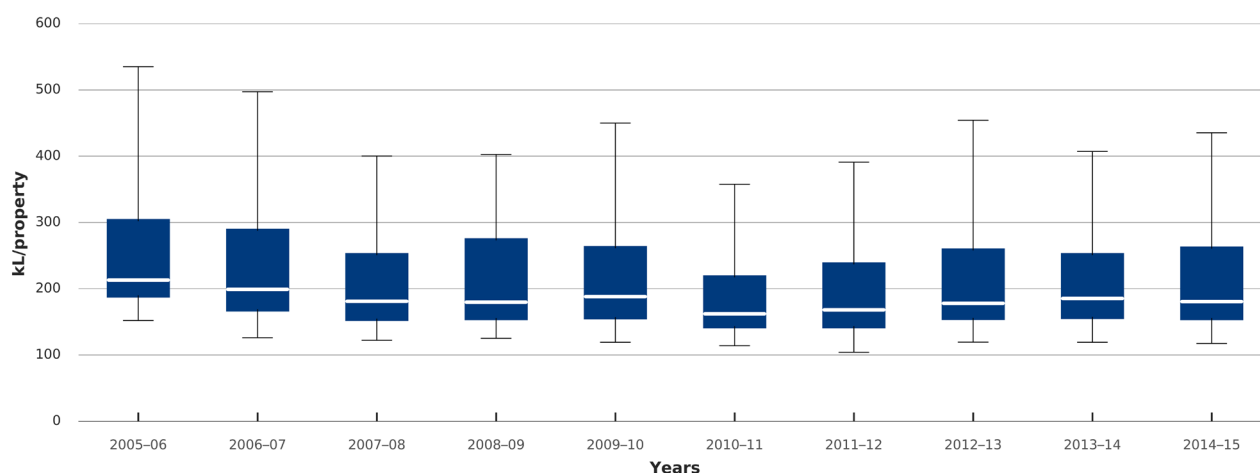


Figure 3.1 W12—Average annual residential water supplied (kL/property), 2005–06 to 2014–15

3.1.3 Results and analysis—100,000+ group

A ranked breakdown of the average residential water supplied per annum for each utility in this group from 2009–10 to 2014–15 is presented in Figure 3.2.

In the 2014–15 year, 10 of the 13 major utilities (100,000+ connected properties) reported a decrease in the volume of water supplied from 2013–14 (Table 3.1), even though most in this group had supplied more water in 2013–14 than in 2012–13 (2014 Urban NPR). The decreases reported by most of the major utilities from 2013–14 were in the range 1–4 per cent. There were notable decreases of 7 per cent reported by Hunter Water Corporation, Icon Water, and City of Gold Coast (Figure 3.2).

Hunter Water's decrease can be attributed to higher rainfalls and lower maximum temperatures within its service area in 2014–15 (compared with the previous year). The Water Wise Rules, which came into effect across the Lower Hunter on 1 July 2014 (Hunter Water 2015a), also contributed. Similarly, City of Gold Coast's decrease can also be attributed to higher rainfalls and lower maximum temperatures within its service area in 2014–15. A decrease in maximum temperatures across the ACT was a contributing factor in its result.

The three major utilities that reported an increase in their average supply volumes from 2013–14 were City West Water, Barwon Water, and SA Water.

3.2 W26—Total recycled water supplied (ML)

3.2.1 Introduction

Total recycled water supplied is the sum of all treated sewage effluent that is used by either the utility or businesses supplied by the utility, or supplied through a third-pipe system for urban reuse.

The volume of recycled water supplied is affected by a number of factors, including the availability of potable water, the size of the utility, its proximity to potential customers (such as agricultural users, major industrial customers, and recreational facilities), fluctuations in sewage received and therefore effluent available for recycling, and government policy.

Total recycled water supplied by all utilities reporting Indicator W26 in 2014–15 can be found in [Table A2](#).

3.2.2 Key findings

A summary of the total recycled water supplied, by utility group, is presented in Table 3.2. The nationwide total across all groups saw a 2 per cent increase in the total volume of recycled water supplied in 2014–15 from 2013–14, following a 2 per cent decrease in the previous year. Most notable, however, is the 13 per cent increase in recycled water supplied by utilities in the 50,000–100,000 group. This increase reflects the reduced availability of surface water for the smaller regional utilities and the need to diversify supply sources in the face of growing demand.



Figure 3.2 W12—Average annual residential water supplied (kL/property), 2009-10 to 2014-15, for utilities with 100,000+ connected properties

Table 3.2 Overview of results: W26—Total recycled water supplied (ML)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Total		Change in the total from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	43,075	140	5	9	132,573	134,353	1
	Sydney Water	City West Water					
50,000– 100,000	7,687	19	7	4	25,804	29,086	13
	Goulburn Valley Water	Gosford					
20,000– 50,000	5,620	131	10	8	40,048	40,587	1
	Wagga Wagga	WC (Mandurah)					
10,000– 20,000	3,712	5	11	12	21,001	20,709	–1
	Bathurst	Lismore					
All size groups (national)	43,075	5	33	33	219,426	224,736	2
	Sydney Water	Lismore					

Table note

The total recycled water supplied (ML) is calculated using data from all utilities that reported data for W26 in both the 2013–14 and 2014–15 reporting years.

3.2.3 Results and analysis—100,000+ group

In the major utilities group (100,000+ connected properties), there was a 1 per cent increase in the total volume of recycled water supplied in 2014–15 from 2013–14.

The most significant increases in this group were volumes supplied by Barwon Water, South East Water, and Yarra Valley Water, with a 103 per cent, 31 per cent, and 22 per cent increase respectively (Table A2). All three have continued to report an increase in total recycled water supply over the 4 years since 2011–12 (Table A2), consistent with continuing rainfall deficiencies in their service areas.

There were significant decreases in supply reported by Logan Water (50 per cent), Unity Water (30 per cent), and City of Gold Coast (19 per cent). This was again consistent with the rainfall trends, with increased rainfall in South East Queensland in 2014–15. The region also experienced average or above-average rainfall compared to the below-average to lowest-on-record the previous year.

4 Pricing

4.1 P8—Typical residential bill: water and sewerage (\$)

4.1.1 Introduction

The typical residential bills presented in this chapter are the sum of fixed charges and volumetric-usage charges for water (and sewerage in some utilities) that are billed to a residential customer. They are based on each utility's average annual volume of residential water supplied (Indicator W12). Prices, which are presented in real 2014–15 dollars, may be set by government or, in some jurisdictions, by a regulator, council, or utility.

While the size of a utility's customer base has some influence on bills, the geographical location and distribution of the customer base, the local topography, climate, available sources of water, and government policy and legislation all influence water bills.

The mix of fixed-and-usage charges and the level of water consumption also impacts on the typical residential bill. Therefore, when drawing comparisons between utilities, it is important to note that a change in the typical bill may be the result of both a change in average consumption and a change in the price of water.

Historically, residential water-bill pricing models have varied across the nation; however, with one exception, all utilities now have a water-supply pricing model based on a two-part structure, that is, a fixed component and a component based on volumetric usage. The exception is Townsville Regional Council, where ratepayers have a choice between a flat charge and a tiered structure.

Unlike residential water-supply pricing, the majority of utilities have a fixed price model for sewerage services. The exceptions are the Melbourne retailers; Byron Shire Council; and Unitywater, each of which have both a fixed and volumetric component in their sewerage charges.

Typical residential bill data for all utilities reporting Indicator P8 in 2014–15 can be found in [Table A3](#).

4.1.2 Key findings

A summary of the reported typical residential bill data, by utility group, is presented in Table 4.1.

The national median typical residential bill rose by 4 per cent in 2014–15 compared with the previous year. In the 10,000–20,000 group, 75 per cent of the utilities that reported in both years recorded an increase, as did 70 per cent in the 20,000–50,000 group. In the larger size groups, the typical residential bill rose by only 1 per cent.

Figure 4.1 shows a 'box and whisker' plot of typical residential bill data for all utilities reporting on the P8 indicator for a given reporting year from 2005–06 to 2014–15. The plot shows an increasing trend in the median typical residential bill over this period.

An increasing spread of values in the middle 50 per cent reflects a greater variance of typical bills in 2014–15. Eight new utilities reporting in 2014–15 all have typical residential bill values in the upper end of the dataset, extending the upper range of the distribution.

In each utility size group, Victorian utilities had the lowest typical residential bill. The Victorian State Government's Fairer Water Bills Initiative was a major driver of bill decreases statewide, whereby some Victorian utilities provided rebates and others passed on the savings through tariff reductions.

Table 4.1 Overview of results: P8—Typical residential bill: water and sewerage (\$)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2012–13		Median		Change in the median from 2014–15%
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	1,591	906	6	7	1,162	1,156	–1
	Gold Coast	City West Water					
50,000– 100,000	1,871	891	5	6	1,252	1,239	–1
	P&W (Darwin)	Goulburn Valley Water					
20,000– 50,000	1,694	843	12	5	1,275	1,304	2
	Bundaberg	North East Water					
10,000– 20,000	2,022	957	15	5	1,325	1,370	3
	Central Highlands Regional Council	South Gippsland Water					
All size groups (national)	2,022	843	38	23	1,255	1,299	4
	Central Highlands Regional Council	North East Water					

Table note

The typical residential bill is calculated using data from all utilities supplying both water and sewerage services that reported data for P3 and P6 in both the 2013–14 and 2014–15 reporting years.

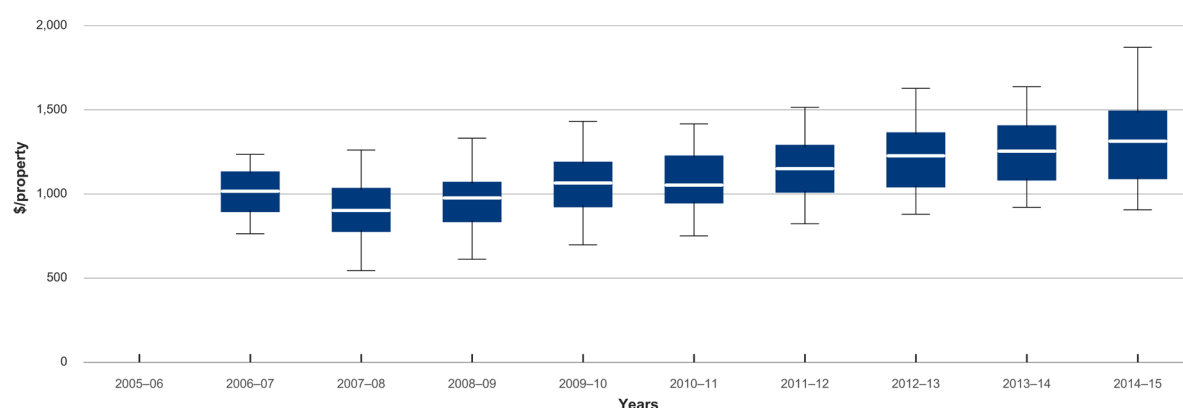


Figure 4.1 P8—Typical residential bill: water and sewerage (\$/property), 2005–06 to 2014–15

Note: P8 was introduced for the first time in the 2006–2007 reporting year.

4.1.3 Results and analysis—100,000+ group

A ranked breakdown of the typical residential bill for this group is presented in Figure 4.2. The figure highlights the component of water (P3) and sewerage (P6) cost for each utility in the group from 2011–12 to 2014–15.

Although recording a modest 1 per cent decrease in the median typical residential bill, the utilities in the 100,000+ group recorded significant variation in the reported bill values.

Within the group, Queensland's utilities remain amongst the most expensive; however, nationally, Gold Coast City and Logan City councils rank just inside the top ten, at nine and ten respectively.

Logan City Council joined City of Gold Coast and Unitywater at the top of the group (Figure 4.2) after a significant 27 per cent increase in its typical residential bill.

The Victorian State Government's Fairer Water Bills Initiative drove bill decreases for Melbourne's three major metropolitan retailers. Yarra Valley Water, South East Water, and City West Water all reported a significant decrease in typical residential bills (12 per cent, 11 per cent, and 11 per cent respectively).

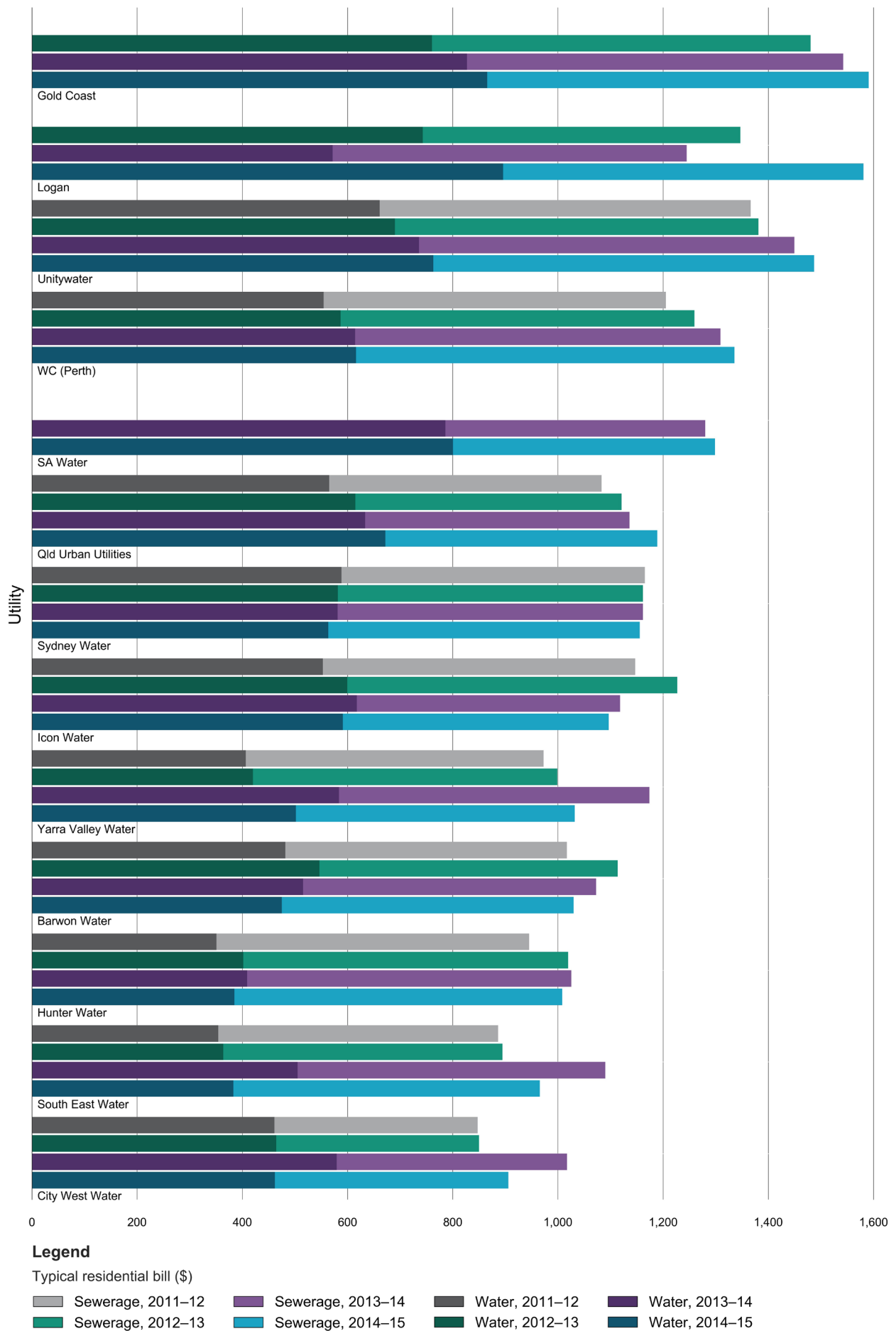


Figure 4.2 P8—Typical residential bill: water and sewerage (\$), 2011–12 to 2014–15, for utilities with 100,000+ connected properties

4.2 P7—Annual bill based on 200 kL: water and sewerage (\$)

4.2.1 Introduction

This indicator comprises the sum of P2 (Annual bill based on 200 kL: water) and P5 (Annual bill based on 200 kL: sewerage). It has many of the same drivers as P8 (Typical residential bill: water and sewerage). For these indicators, all utilities report the annual bill for a hypothetical residential customer using 200 kL per year. The use of 200 kL as the basis for the bill in part normalises the reported data by correcting for differences in the volumes of residential water supplied to customers.

The P7 indicator aids comparisons between the utilities' annual bills (for the particular usage volume of 200 kL) and improves the transparency of price increases; however, the P8 indicator (Typical residential bill: water and sewerage) remains the best guide to determining the impact of pricing on a utility's customers because it is based on the typical bill paid by those customers.

Residential bill data based on a use of 200 kL per year for all utilities reporting against the P7 indicator in 2014–15 can be found in [Table A4](#).

4.2.2 Key findings

A summary of the 200 kL per annum residential bill data, by utility group, is presented in Table 4.2.

In real terms, the median residential bill based on a usage of 200 kL per annum remained unchanged in 2014–15. This was in contrast to a 4 per cent increase in 2013–14.

Table 4.2 Overview of results: P7—Annual bill based on 200 kL: water and sewerage (\$)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14%
	High	Low	Increase	Decrease	High	Low	
100,000+	1,748	1,079	9	4	1,289	1,251	–3
	Logan	Hunter Water					
50,000– 100,000	1,487	818	6	5	1,277	1,286	1
	Townsville Water	Goulburn Valley Water					
20,000– 50,000	1,693	735	14	3	1,279	1,290	1
	MidCoast Water	Lower Murray Water					
10,000– 20,000	1,827	960	18	2	1,324	1,401	6
	Eurobodalla	Bathurst					
All size groups (national)	1,827	735	47	14	1,301	1,302	0
	Eurobodalla	North East Water					

Table note

The 200 kL residential bill data for water and sewerage is calculated using data from all utilities who reported against the P2 and P5 indicators in both 2013–14 and 2014–15.

4.2.3 Results and analysis—100,000+ group

A ranked breakdown of the annual bill based on the supply of 200 kL is presented in Figure 4.3. The figure highlights the component of water (P2) and sewerage (P5) cost for each utility in the group from 2011–12 to 2014–15.

Taking the volume of residential water supplied into consideration, Queensland's major urban utilities (Logan City Council, City of Gold Coast, and Queensland Urban Utilities) remain amongst the most expensive in the group. These utilities report that bulk water charges, set by the Queensland Government, are responsible for as much as 60 per cent of their residential bills. Price increases within the group were driven by a combination of increased bulk water prices in 2014–15, rising operating costs, and the need for continued investment in new and existing infrastructure.

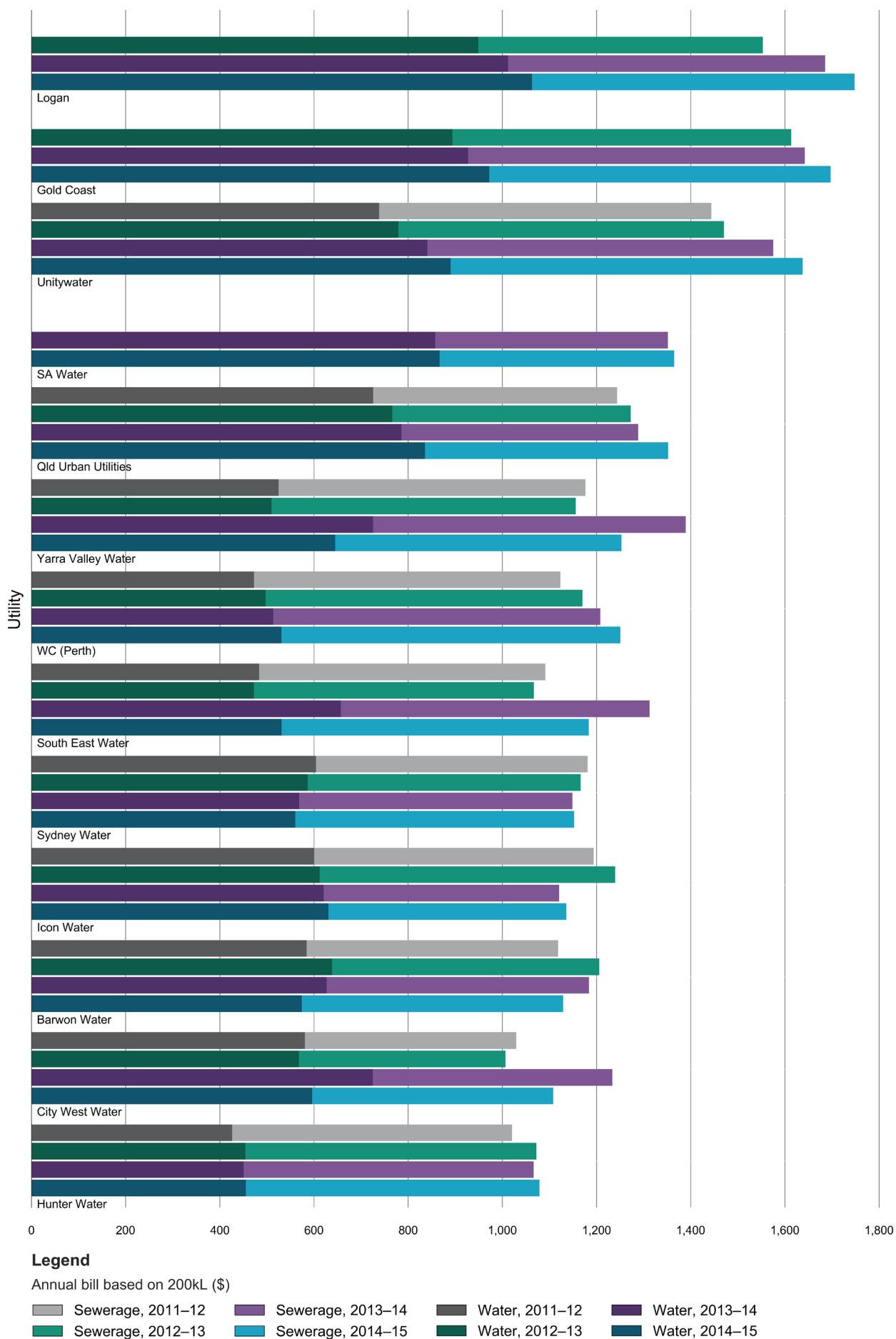


Figure 4.3 P7— Annual bill based on 200 kL: water and sewerage (\$), 2011–12 to 2014–15, for utilities with 100,000+ connected properties

Following increases in the order of 20 per cent in 2013–14, Victoria's major metropolitan utilities in the 100,000+ connected properties group all reported a 10 per cent decrease in their annual residential bill, based on the supply of 200 kL per annum. As observed in [section 4.1.3](#), the Fairer Water Bills Initiative was the main reason for bill reductions. The initiative sought wide-ranging cost saving measures across the utilities in order to lower bills by around \$100 per annum.

5 Finance

5.1 F16—Total capital expenditure: water and sewerage (\$'000s)

5.1.1 Introduction

This section presents total capital expenditure in real dollar terms. It provides the total level of capital investment by each utility and an indication of the size of the utility and its capital responsibilities.

It is difficult to compare utilities for total capital expenditure because the figures are not normalised to account for variations due to the size of a utility or its geographic extents. Further analysis for individual utilities is given in [section 5.2](#), which indicates the level of investment by each utility relative to its customer base.

A number of factors influence capital expenditure, many of which also affect operating expenditure (see [section 5.3](#)). In addition, capital expenditure programmes are influenced by the age of the current infrastructure and the stage of the each asset's lifecycle. An individual utility's capital expenditure will be irregular over time, as many projects are occasional and long lasting and can take several years to complete.

Total capital expenditure for water and sewerage for all utilities reporting the F16 indicator in 2014–15 can be found in [Table A7](#).

5.1.2 Key findings

A summary of the data for total capital expenditure for water and sewerage, by utility group, is presented in [Table 5.1](#). In real terms, total capital expenditure decreased by 4 per cent (\$126 million) from 2013–14 expenditure.

[Figure 5.1](#) summarises total capital expenditure from 2007–08 to 2014–15 for utilities from all size groups reporting in all eight years in this period. Expenditure is broken down by expenditure on water (F14) and sewerage (F15).

Table 5.1 Overview of results: F16— Total capital expenditure: water and sewerage (\$ billion)

Size group (connected properties)	Range (\$ million)		Number of utilities with increase/decrease from 2013–14		Total (\$ billion)		Change in the total from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	628	36	5	9	2.415	2.327	–4
	Sydney Water	Gold Coast					
50,000– 100,000	48	15	6	4	0.301	0.305	1
	Central Gippsland Water	Central Highlands Water					
20,000– 50,000	26	4	3	14	0.295	0.229	–22
	Mackay Water	Albury					
10,000– 20,000	27	0.7	11	8	0.138	0.161	17
	Central Highlands Regional Council	Whitsunday					
All size groups (national)	628	0.7	25	35	3.148	3.022	–4
	Sydney Water	Whitsunday					

Table note

Total capital expenditure: water and sewerage (\$ billion) is calculated using data from all utilities that reported against F14 and F15 in both 2013–14 and 2014–15.

Highest and lowest utilities in each group are expressed as \$ million.

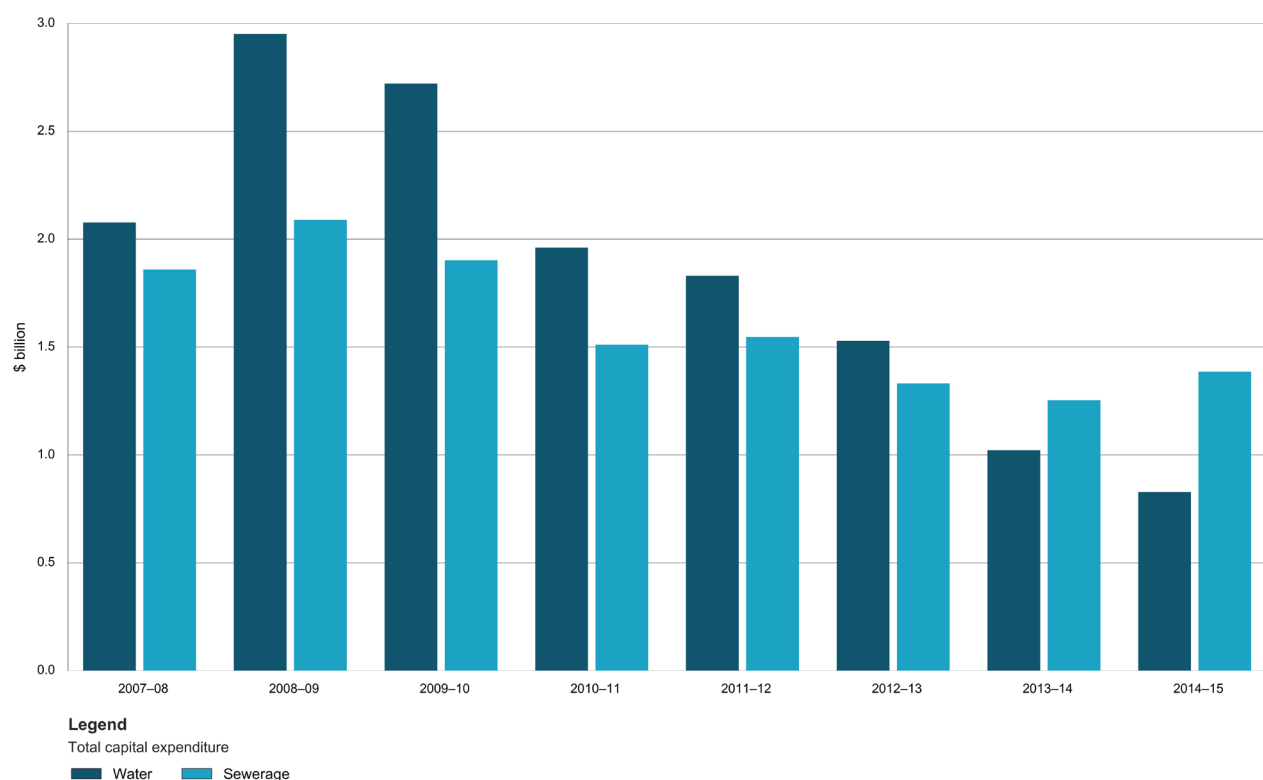


Figure 5.1 Summary of results: F14—Total capital expenditure: water (\$ billion) and F15—Total capital expenditure: sewerage (\$ billion), 2007–08 to 2014–15

Note: Total is for utilities that reported all eight years and excludes bulk water utilities.

5.1.3 Results and analysis—100,000+ group

With the exception of Water Corporation—Perth, Logan City Council, Sydney Water Corporation, and South East Water, all other utilities in the 100,000+ group reported decreases in capital expenditure across their water and sewerage operations. Both Water Corporation—Perth and Logan City Council reported significant increases, while Sydney Water Corporation and South East Water reported a modest increase of 5 per cent and 3 per cent respectively (tables A6–A9).

Water Corporation—Perth recorded an increase of 34 per cent in capital expenditure from 2013–14, heavily influenced by the strong level of housing development activity across the State and also pipeline and pump infrastructure projects. This followed the 48 per cent decrease in capital expenditure between 2012–13 and 2013–14.

Water, sewerage, and reticulation services projects accounted for the 25 per cent increase in capital expenditure recorded by Logan City Council.

In 2014–15, Sydney Water Corporation's total capital expenditure increased 5 per cent from 2013–14 following a decrease of 14 per cent in that year from 2012–13. This was driven by core investment expenditure, such as renewing existing assets and adding new assets for growth areas.

Unitywater recorded the highest percentage decrease in total capital expenditure due to a 53 per cent decrease in sewerage-related capital expenditure. This came as a result of completing the replacement and upgrade of 11 legacy Supervisory Control and Data Acquisition (SCADA) systems to achieve a single sophisticated and networked monitoring-and-control system, leading to fewer sewage overflows and more efficient development of field crews.

City West Water's reduction in capital expenditure was due to decreases in capital expenditure for both water (23 per cent) and sewerage (48 per cent).

5.2 F28—Capital expenditure: water (\$/property) and F29—Capital expenditure: sewerage (\$/property)

5.2.1 Introduction

This indicator reports the utilities' capital expenditure on a per property basis. It provides an indication of the level of investment undertaken by each utility relative to its customer base.

Total capital expenditure for water and sewerage, on a per connected property basis, for all utilities reporting against the F28 and F29 indicators in 2014–15 can be found in [tables A8–A9](#).

5.2.2 Key findings

A summary of the data for water supply and sewerage capital expenditure on a per property basis, by utility group, is presented in Table 5.2 and Table 5.3.

In 2014–15, the national median-per-property capital expenditure on water services decreased by 8 per cent (Table 5.2). This result reflects the decreases reported by 57 per cent of utilities in the reporting year.

In 2014–15, the national median-per-property capital expenditure on sewerage services decreased by 3 per cent (Table 5.3); however, the per property capital expenditure increased in all size groups except the 20,000–50,000 group which decreased by 21 per cent.

Table 5.2 Overview of results: F28—Capital expenditure: water (\$/property)

Size group (connected properties)	Range (\$000)		Number of utilities with increase/decrease from 2013–14		Median		Change in the total from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	251	62	5	8	146	129	–12
	TasWater	Gold Coast					
50,000– 100,000	426	94	4	6	198	193	–3
	Goulburn Valley Water	Gosford					
20,000– 50,000	435	26	3	15	221	168	–24
	Mackay Water	Redland					
10,000– 20,000	2300	2	15	7	157	212	35
	Central Highlands Regional Council	Whitsunday					
All size groups (national)	2300	2	27	36	177	162	–8
	Central Highlands Regional Council	Whitsunday					

Table note

Median capital expenditure: water (\$/property) is calculated using data from all utilities that reported against F28 in both 2013–14 and 2014–15.

Table 5.3 Overview of results: F29—Capital expenditure: sewerage (\$/property)

Size group (connected properties)	Range (\$000)		Number of utilities with increase/decrease from 2013–14		Median		Change in the total from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	573	35	7	6	173	195	13
	Logan	City West Water					
50,000– 100,000	649	121	5	5	223	249	12
	Central Gippsland Water	Central Highlands Water					
20,000– 50,000	1,603	72	4	14	242	191	–21
	Clarence	Wide Bay Water					
10,000– 20,000	1,664	14	13	9	231	275	19
	WC(Busselton) (S)	Southern Downs					
All size groups (national)	1,664	14	29	34	221	215	–3
	WC(Busselton) (S)	Southern Downs					

Table note

Median capital expenditure: sewerage (\$/property) is calculated using data from all utilities that reported against F29 in both 2013–14 and 2014–15.

5.2.3 Results and analysis—100,000+ group

A ranked breakdown of capital expenditure on a connected property basis is presented in Figure 5.2. The figure highlights the component of water and sewerage expenditure (F28 and F29 respectively) for each utility in the 100,000+ group from 2011–12 to 2014–15.

Barwon Water had a significant change in capital expenditure for both water and sewerage from 2013–14. Sewerage capital expenditure increased by 54 per cent while water capital expenditure decreased by 54 per cent.

Only four utilities in the 100,000+ group reported increases in their capital expenditure on a per property basis in 2014–15.

Water Corporation—Perth reported the highest increase in total water and sewerage capital expenditure per property (32 per cent). This was primarily driven by increased sewerage capital expenditure which increased by 54 per cent.

The 22 per cent increase recorded by Logan City Council was driven by a 22 per cent growth (\$104 per property) in sewerage-related capital expenditure in addition to a 20 per cent (\$32 per property) growth in capital expenditure on water, resulting in a net increase of \$136 per property.

Unitywater reported the highest percentage decrease in total capital expenditure water and sewerage (43 per cent) which resulted from a significant decrease of 54 per cent in sewerage capital expenditure (equivalent to \$232 per property).

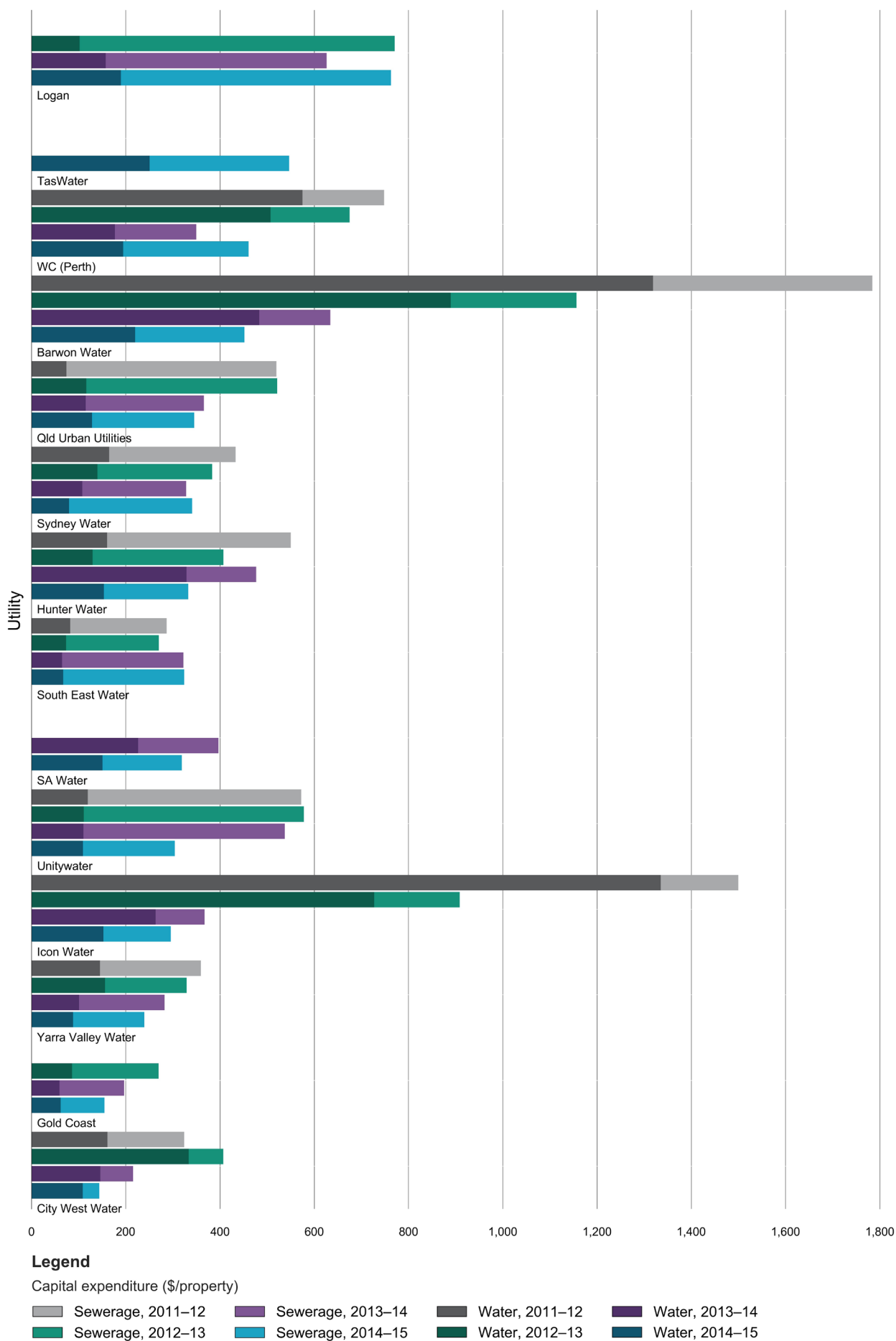


Figure 5.2 F28—capital expenditure: water (\$/property) and F29—capital expenditure: sewerage (\$/property), 2011-12 to 2014-15, for utilities with 100,000+ connected properties

5.3 F13—Combined operating cost: water and sewerage (\$/property)

5.3.1 Introduction

These indicators report the operating costs (for operation, maintenance, and administration) of each water utility in relation to the number of properties serviced. Operating costs are influenced by many factors, including:

- utility size;
- government policy;
- climate and rainfall;
- the distance and way that water is transported (including whether it is required to be piped);
- the sources of water (including whether it is purchased from a bulk utility, and also whether it is sourced from dams or alternative sources, such as desalination plants);
- escalation of input costs (for example, those of fuel, chemicals, and labour);
- the level of water and sewerage treatment required; and
- capital procurement strategies, such as public–private partnerships and build–own–operate–transfer (BOOT) schemes.

Operating expenditure per property has been increasing in recent years, particularly for larger utilities; however, because economies of scale are possible, operating expenditure per property can fall as the size of the utility increases.

Combined operating costs on a per connected property basis for all utilities providing both water and sewerage services can be found in [Table A6](#).

5.3.2 Key findings

A summary of the data for combined operating cost on a per property basis (by utility group) is presented in Table 5.4. Figure 5.3 is a ‘box and whisker’ plot of combined operating cost (water and sewerage) data for all utilities reporting indicator F13 for a given reporting year from 2005–06 to 2014–15.

The national 2014–15 median operating cost (on a per property basis for utilities delivering both water and sewerage services) was \$850 (Table 5.4). This figure represents a decrease of 5 per cent from 2013–14.

All groups recorded declines in their median amounts. Nationally, 44 utilities across all groups reported decreases in their operating expenditure per property, while 15 recorded increases.

5.3.3 Results and analysis—100,000+ group

A ranked breakdown of operating expenditure on a connected property basis is presented in Figure 5.4. The figure highlights the component of water (F11) and sewerage (F12) expenditure for each utility in the 100,000+ group from 2011–12 to 2014–15.

With a median operating cost of \$859 per property for the utilities who reported in both 2013–14 and 2014–15, the 100,000+ size group reported an average decrease of 10 per cent from 2013–14. Additionally, the water component of operating costs was higher than the sewerage component for all utilities except Icon Water, Hunter Water Corporation, and Tasmanian Water and Sewerage Corporation.

The Victorian utilities saw the largest decrease in 2014–15, following the increase they reported in 2013–14. South East Water decreased by 12 per cent while Yarra Valley Water and City West Water decreased by 10 per cent from 2013–14, following corresponding increases of 36 per cent, 33 per cent, and 32 per cent reported in 2013–14 against 2012–13 figures.

Hunter Water Corporation reported the highest percentage increase of in the 100,000+ group, with an 8 per cent growth in combined operating costs. This increase was driven by costs associated with major storm events in April 2015.

Table 5.4 Overview of results: F13—Combined operating cost: water and sewerage (\$/property)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	1,149	579	5	8	953	859	–10
	Gold Coast	WC (Perth)					
50,000– 100,000	1,194	655	1	9	800	766	–4
	Central Gippsland Water	Wyong Shire					
20,000– 50,000	2,360	548	4	13	895	850	–5
	Gladstone	WC (Mandurah)					
10,000– 20,000	1,653	286	5	14	964	940	–2
	Central Highlands Regional Council	Gympie					
All size groups (national)	2,360	286	15	44	892	850	–5
	Central Highlands Regional Council	Gympie					

Table note

The combined operating cost: water and sewerage (\$/property) is calculated using F11, F12, and F13 data from utilities that reported in both 2013–14 and 2014–15.

Table 5.4 is based on F13 (Combined operating cost: water and sewerage) for the reporting utilities that provide both reticulated water supply and sewerage services. This is not always a straight addition of F11 and F12, depending on the relative numbers of connected water properties and connected sewerage properties. For this reason, some figures presented in the charts and tables may differ from those based on a summation of F11 and F12.

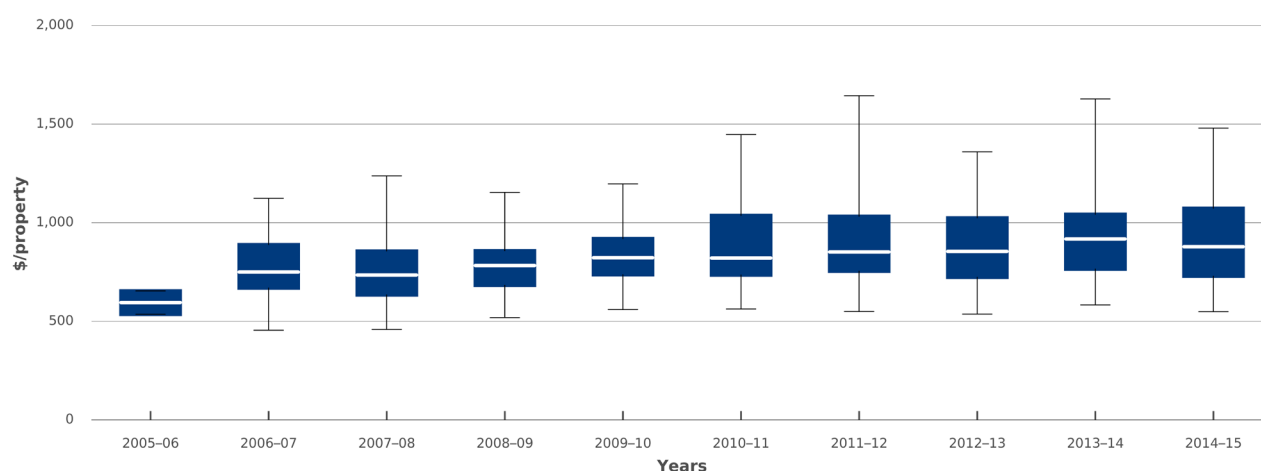


Figure 5.3 Summary of results: F13—Combined operating cost: water and sewerage (\$/property)

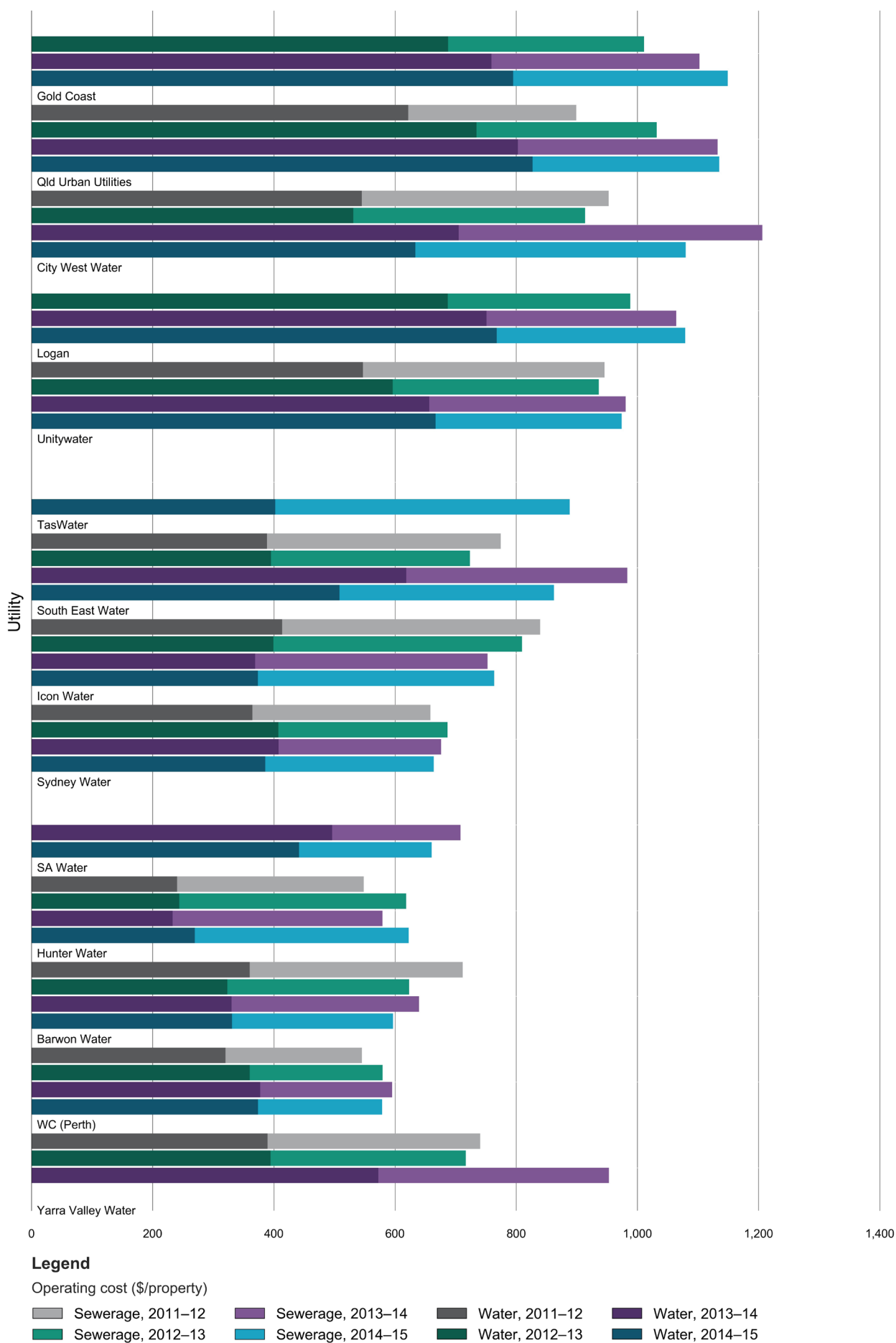


Figure 5.4 F13, Combined operation cost: water and sewerage (\$/property), 2011-12 to 2014-15, for utilities with 100,000+ connected properties

5.4 F8—Revenue from community service obligations (%)

5.4.1 Introduction

Revenue from community service obligations (CSOs) represents payments to a utility by the State or Territory government following a government direction to undertake activities that the utility would not perform on a solely commercial basis. In the water sector, CSOs may be provided to:

- allow reductions on bills to certain disadvantaged customer groups (for example, pensioners);
- allow utilities to charge common tariffs across all their geographical regions despite cost differences;
- ensure the delivery of government policy (for example, by administering rebates); and
- allow utilities to provide services to high-cost areas where full cost recovery would otherwise result in unaffordable bills.

Revenue from CSOs data for all utilities reporting Indicator F8 in 2014–15 can be found in [Table A16](#).

5.4.2 Key findings

A summary of the data for revenue from CSOs, by utility group, is presented in Table 5.5.

In 2014–15, 24 utilities reported increases and 33 reported decreases in revenue received from CSOs. This resulted in a 6 per cent decrease in the national median in 2014–15 from 2013–14 despite an increase in the median in the 100,000+ and 20,000–50,000 size groups.

Table 5.5 Overview of results: F8—Revenue from community service obligations (%)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	9.4	0	5	6	4.1	4.2	2
	SA Water	Gold Coast					
50,000– 100,000	5.5	1.3	2	6	3.5	3.5	0
	Goulburn Valley Water	Gosford					
20,000– 50,000	18.3	0	8	9	1.2	1.4	17
	WC (Mandurah)	Gladstone					
10,000– 20,000	59.1	0	9	12	1.2	1.2	0
	WC (Kal–Boulder) (W)	Aqwest–Bunbury (W)					
All size groups (national)	59.1	0	24	33	1.7	1.8	–6
	WC (Kal–Boulder) (W)	Multiple utilities					

Table note

Median percentage of revenue from CSO is calculated for all utilities that reported data for F8 in both 2013–14 and 2014–15.

5.4.3 Results and analysis—100,000+ group

While six utilities in this group reported decreases, the median revenue from CSOs increased. Icon Water reported the largest increase, with its percentage of revenue rising from 3.3 per cent in 2013–14 to 3.7 per cent in 2014–15 (Table 5.5).

Almost all Victorian utilities had an increase in revenue from CSOs in 2014–15 following a significant decrease in 2013–14. The exception was Barwon Water, which recorded a 3 per cent reduction in revenue from 2013–14.

City West Water revenue from CSOs increased by 7 per cent from 2013–14 due to higher provision of concessions to customers and more rebates paid to not-for-profit organisations under the water and sewerage rebate scheme.

Historically, SA Water Corporation and Water Corporation—Perth have had the highest proportions of revenue from CSOs, although both proportions have reduced over time. SA Water Corporation reported the highest percentage decrease of 40 per cent from 15.6 in 2010–11 to 9.4 per cent in 2014–15. Water Corporation—Perth reported the second highest percentage decrease of 31 per cent, given that the percentage dropped from 9 per cent in 2010–11 to 6.2 per cent in 2014–15.

6 Customer

6.1 C15—Average duration of an unplanned interruption: water (minutes)

6.1.1 Introduction

This indicator reports the average time (in minutes) that a customer is without a water supply due to an unforeseen interruption that requires attention by the utility. It also includes instances in which scheduled (planned) interruptions exceed the time limit originally notified by the utility. It is in part an indicator of customer service and the condition of the water network, and also of how effectively the network is being managed.

The average duration is influenced by the scale of the event that causes the interruption, the location of the interruption (its proximity to the utility's repair crews and, for example, the depth or location of a pipe that has burst), the utility's response policy for outlying areas, and the number of maintenance and repair staff at the utility's disposal. A single event affecting a small number of properties for a long duration can have a material effect on this indicator, particularly for smaller utilities, and hence there are often relatively large variations from year to year.

Average duration of an unplanned interruption (water supply) data for all utilities reporting Indicator C15 in 2014–15 can be found in [Table A14](#).

6.1.2 Key findings

A summary of the data for the average duration of an unplanned interruption, by utility group, is presented in Table 6.1.

In 2014–15, 28 utilities reported increases, whereas 22 utilities reported decreases. The median value for all utilities increased by 4 per cent from the previous year (Table 6.1) while in 2013–14 it decreased by 8 per cent from 2012–13.

Table 6.1 Overview of results: C15—Average duration of an unplanned interruption: water (minutes)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	163	88	5	6	122.7	126	3
	SA Water	Barwon Water					
50,000– 100,000	382	44.1	5	4	100	95.3	-5
	Gosford	Cairns					
20,000– 50,000	210	15.9	8	6	101.3	101.4	0
	Port Macquarie Hastings	Gladstone					
10,000– 20,000	418	22.9	10	6	120	131	9
	Cassowary Coast	Livingstone					
All size groups (national)	418	15.9	28	22	112.8	117.3	4
	Cassowary Coast	Gladstone					

Table note

Median average duration of an unplanned interruption: water (minutes) is calculated for all utilities that reported data for C15 in both 2013–14 and 2014–15.

6.1.3 Results and analysis—100,000+ group

A ranked breakdown of the average duration of an unplanned interruption for this group from 2009–10 to 2014–15 is presented in Figure 6.1.

In 2014–15, five utilities in the 100,000+ group reported increases while three reported decreases from 2013–14. The median for the group was 126 minutes, an increase of 3 per cent from 2013–14 following a 7 per cent decrease in 2013–14 from 2012–13.

SA Water reported the highest result, which at 163 minutes was slightly higher the previous year. Barwon Water had the lowest duration of 88 minutes, a decrease of 6 per cent from 2013–14 due to Barwon Water's annual asset renewal programme and further through a continued roll-out of pressure-management programmes across Geelong that reduced the risk of customers experiencing multiple unplanned interruptions (Figure 6.1).

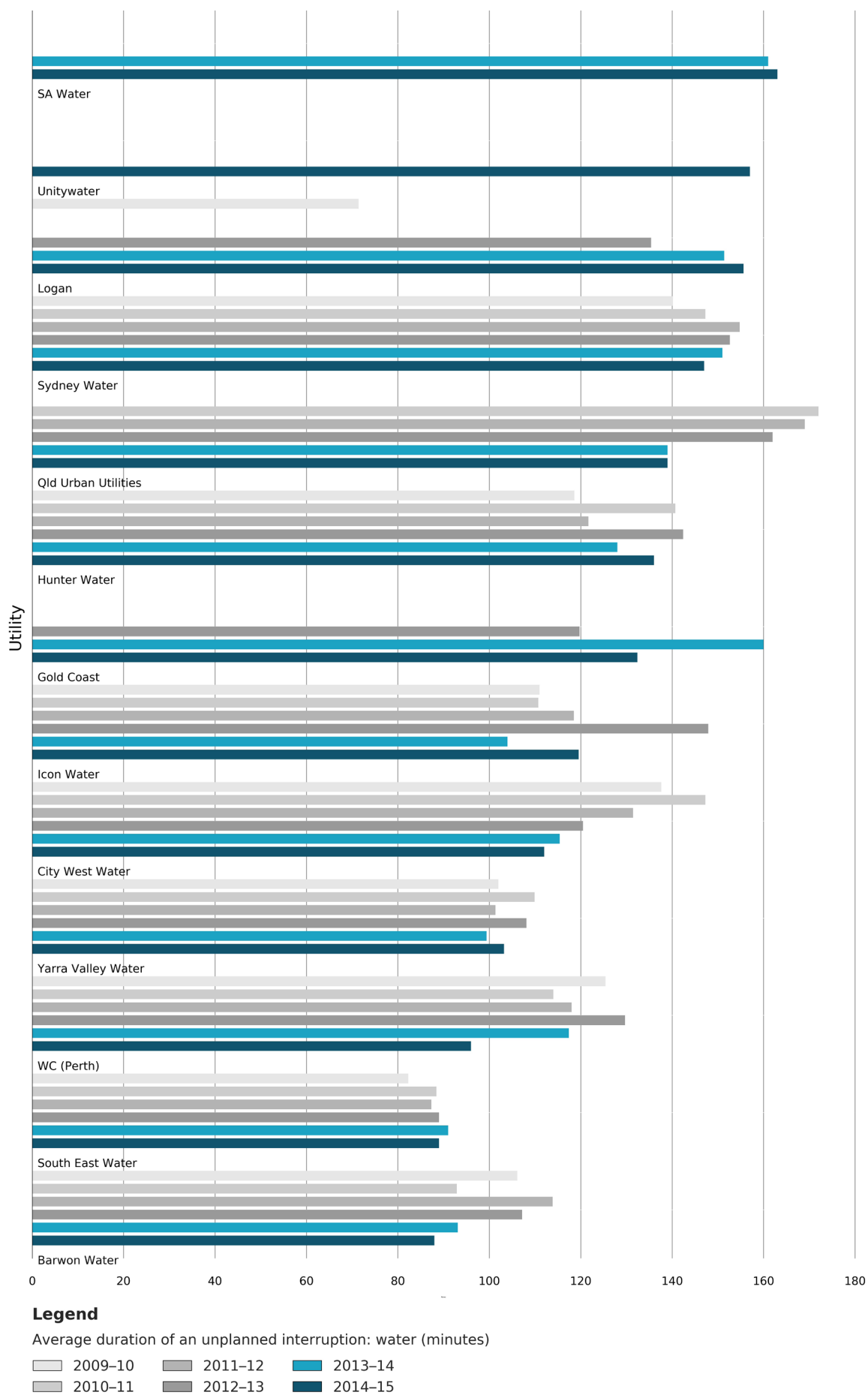


Figure 6.1 C15—Average duration of unplanned interruption: water (minutes), 2009-10 to 2014-15, for utilities with 100,000+ connected properties

6.2 C13—Total complaints: water and sewerage (per 1,000 properties)

6.2.1 Introduction

This indicator reports the total number of complaints received by a water utility per 1,000 properties. A complaint can be a written or verbal expression of dissatisfaction about an action or proposed action or a failure to act by the water utility, its employees, or contractors. Complaints from different customers arising from the same cause are recorded as separate complaints. The number of complaints is an indicator of the level of customer service and customer satisfaction and is a common performance indicator in many industries.

Total water and sewerage complaints (per 1,000 properties) data for all utilities reporting against this indicator in 2014–15 can be found in [Table A12](#).

6.2.2 Key findings

A summary of the data for total water and sewerage complaints, by utility group, is presented in Table 6.2.

In 2014–15, the median number of complaints per 1,000 properties (4) decreased by two from that of 2013–14 (6). Total water and sewerage complaints (per 1,000 properties) decreased across all size groups except the 100,000+ and 20,000–50,000 groups which recorded increases of 8 and 12 per cent respectively (Table 6.2).

Table 6.2 Overview of results: C13—Total complaints: water and sewerage (per 1,000 properties)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	6.3	0.8	4	8	3.6	3.9	8
	Hunter Water	WC (Perth)					
50,000– 100,000	39.5	2	3	6	8.3	6.3	–24
	P&W (Darwin)	Toowoomba					
20,000– 50,000	109	0	10	6	6	6.7	12
	Clarence Valley	Gladstone					
10,000– 20,000	182	0	4	13	9.6	4	–58
	Central Highlands Regional Council	Gympie					
All size groups (national)	182	0	21	33	5.9	4.3	–27
	Central Highlands Regional Council	Multiple utilities					

Table note

Median total complaints: water and sewerage (per 1,000 properties) is calculated for all utilities that reported data for C13 in both 2013–14 and 2014–15.

6.2.3 Results and analysis—100,000+ group

A ranked breakdown of the total water and sewerage complaints from 2009–10 to 2014–15 is presented in Figure 6.2.

In the 100,000+ group, four utilities reported increases in the number of complaints and eight reported decreases in 2014–15 compared with 2013–14. City of Gold Coast recorded a significant decrease of 72 per cent in 2014–15 compared with 2013–14.

Significant variation between the years in the number of complaints is evident for some utilities, particularly Barwon Water (up 58 per cent following a 50 per cent decrease in 2013–14). Water Corporation (Perth) reported the lowest number of complaints (0.8), and Hunter Water recorded the highest number of complaints per 1,000 properties (6) as shown in Figure 6.2.

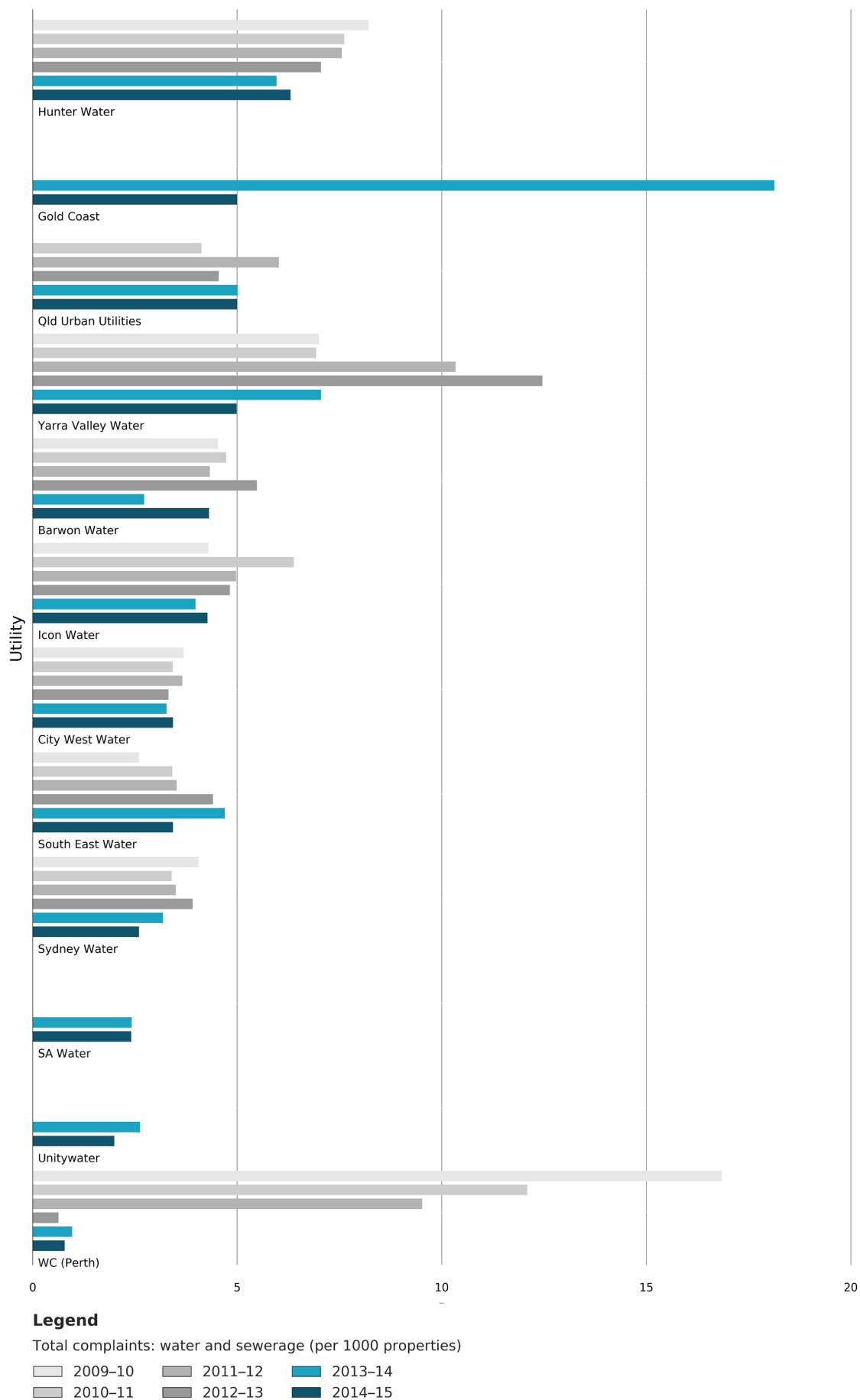


Figure 6.2 C13—Total complaints: water and sewerage (per 1,000 properties), 2009-10 to 2014-15, for utilities with 100,000+ connected properties

6.3 C14—Percentage of calls answered by an operator within 30 seconds

6.3.1 Introduction

Where utilities use interactive voice response systems, this indicator measures the number of calls answered within 30 seconds after the 'operator' option has been selected. It gives an indication of the efficiency of the utility's customer service centre and is affected by the ratio of customer service staff to customers, particularly when severe events such as storms or floods result in a large increase in customer calls.

A summary of the data for the percentage of calls answered by an operator within 30 seconds, by utility group, is presented in Table 6.3.

The percentage of calls answered by an operator within 30 seconds data for all utilities reporting Indicator C14 in 2014–15 can be found in Table A13.

6.3.2 Key findings

In 2014–15, 19 utilities recorded a decrease in the percentage of calls answered by an operator within 30 seconds while 13 utilities recorded an increase from the previous year; overall, there was minor change of 1 per cent in the median percentage of calls answered within 30 seconds between 2013–14 and 2014–15 (Table 6.3).

Table 6.3 Overview of results: C14—Percentage of calls answered by an operator within 30 seconds (%)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	89.5	43	3	9	79.6	78	–2
	Barwon Water	Gold Coast					
50,000– 100,000	99	34	4	2	87.6	91.6	5
	Goulburn Valley Water	Wyong					
20,000– 50,000	100	48	3	4	95.2	95	0
	Wagga Wagga	Tweed					
10,000– 20,000	100	45	3	4	79.5	83.5	5
	Eurobodalla	Kempsey					
All size groups (national)	100	34	13	19	84	84.9	1
	Multiple utilities	Wyong					

Table note

Median percentage of calls answered by an operator within 30 seconds (%) is calculated for all utilities that reported data for C14 in both 2013–14 and 2014–15.

6.3.3 Results and analysis—100,000+ group

A ranked breakdown of the percentage of calls answered by an operator within 30 seconds for this group from 2009–10 to 2014–15 is presented in Figure 6.3.

In the 100,000+ group there was little change in the percentage of calls answered by an operator within 30 seconds between the 2013–14 and 2014–15 reporting years. The median decreased by less than 2 per cent, with the highest percentage decrease reported by Tasmanian Water and Sewerage Corporation (89 per cent) and the lowest by Gold Coast Water (43 per cent) (Figure 6.3).

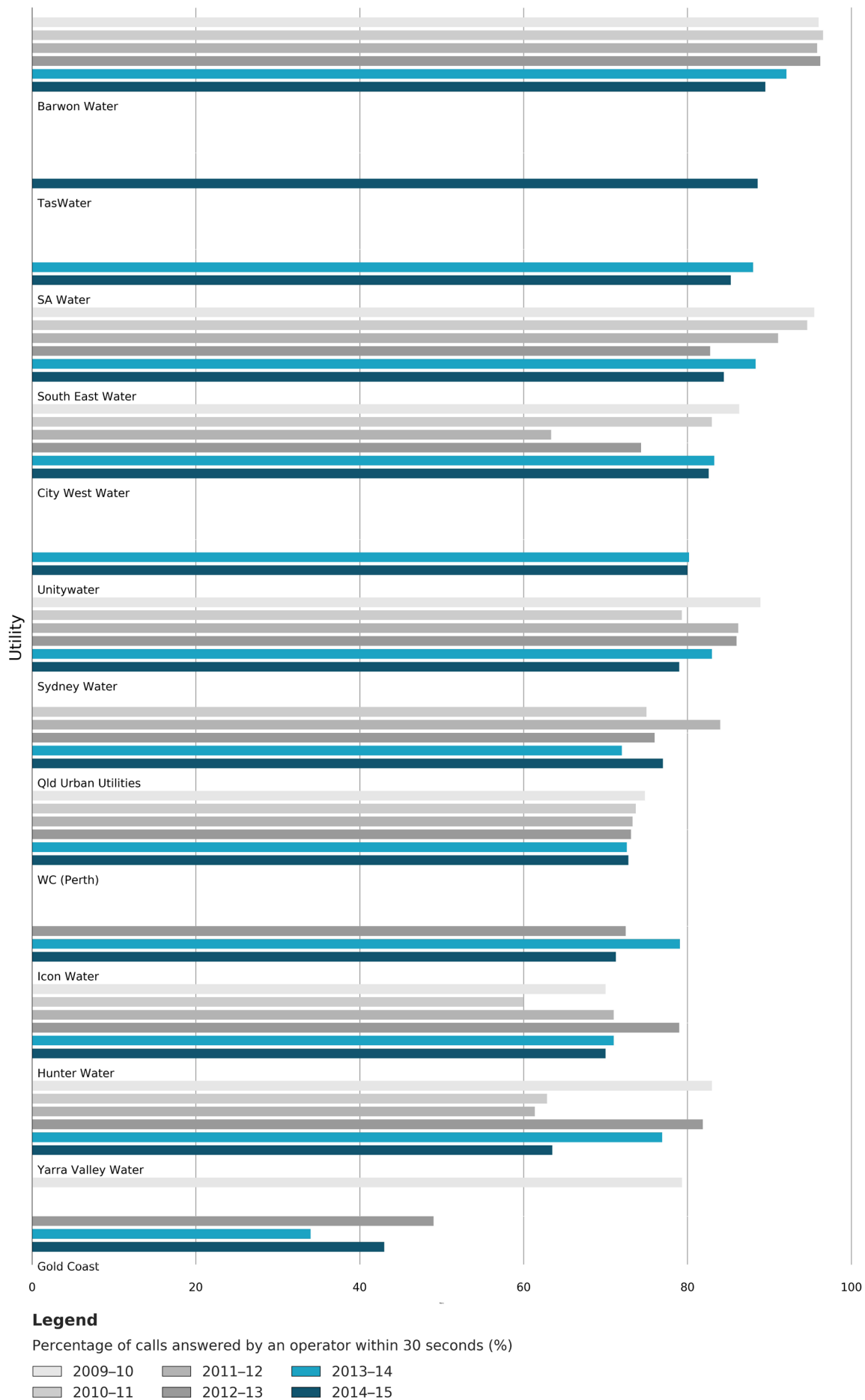


Figure 6.3 C14—Percentage of calls answered by an operator within 30 seconds, 2009-10 to 2014-15, for utilities with 100,000+ connected properties

7 Asset

7.1 A8—Water main breaks (no. per 100 km of water main)

7.1.1 Introduction

This indicator reports the total number of breaks, bursts, and leaks in all distribution system mains (including both potable and nonpotable water mains), but excludes breaks associated with headworks and transfer mains. It provides a partial indication of the customer service provided and the condition of the network.

The number of main breaks is influenced by various factors, including soil type, rainfall, and pipe material, as well as the age and condition of the network.

Water main breaks per 100 km of water main, for all utilities reporting against this indicator in 2014–15, can be found in [Table A16](#).

7.1.2 Key findings

A summary of the reported water main breaks per 100 km of water main, by utility group, is presented in Table 7.1. Figure 7.1 is a 'box and whisker' plot of water main breaks data for all utilities reporting indicator A8 for a given reporting year from 2005–06 to 2014–15.

The median for the over 100,000 connected properties group in 2014–15 was 26 water main breaks per 100 km, higher than the national median for all groups (13 breaks per 100 km, see Table 7.1), in line with the observed historical trend of fewer breaks per 100 km reported by the smaller utilities (2013 Urban NPR, 2014 Urban NPR).

Table 7.1 Overview of results: A8—Water main breaks (no. per 100 km of water main)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	39.3	3.3	4	9	29	26	–10
	Yarra Valley Water	Unitywater					
50,000– 100,000	28.6	12.2	3	8	22.2	20.7	–7
	Townsville Water	Western Water					
20,000– 50,000	14.1	2.7	6	12	9.9	9.5	–4
	Gladstone	Coffs Harbour					
10,000– 20,000	42.5	2.2	7	17	10.3	8.5	–17
	Central Highlands Regional Council	P&W (Alice Springs)					
All size groups (national)	14.1	2.2	20	46	12.3	12.7	3
	Gladstone	P&W (Alice Springs)					

Table note

Median water main breaks (per 100 km of water main) was calculated using data from all utilities (dual and single service providers) that reported data against A8 in both 2013–14 and 2014–15.

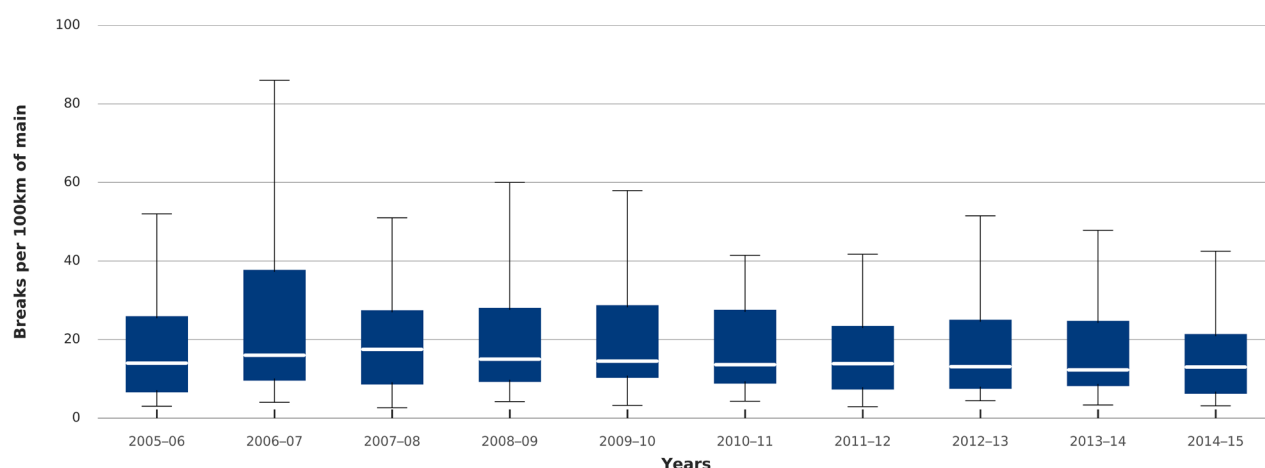


Figure 7.1 Summary of results: A8—Water main breaks (no. per 100 km of water main), 2005–06 to 2014–15

7.1.3 Results and analysis—100,000+ group

A ranked breakdown of the water main breaks per 100 km of water main for each utility in this group from 2009–10 to 2014–15 is presented in Figure 7.2.

In 2014–15, this group presented a 10 per cent decrease in the median water main breaks per 100 km of water main from 2013–14, with a decrease in main breaks reported by 9 of the group's 13 utilities (Table 7.1).

Significant reductions in water main breaks from 2013–14 were reported by Sydney Water Corporation (13 per cent), Yarra Valley Water (22 per cent), City of Gold Coast (41 per cent), and Unitywater (41 per cent). These utilities all experienced a change in climate conditions between 2013–14 and 2014–15, with Sydney Water Corporation, City of Gold Coast, and Unitywater experiencing greater rainfall and milder temperatures in 2014–15 (average to above-average rainfall deciles compared to lowest-on-record to below-average in 2013–14, and above-average temperature deciles compared to highest-on-record in 2013–14).

Three utilities reported an increase in the number of water main breaks per 100 km of water main from 2013–14: Icon Water (23 per cent), SA Water Corporation (22 per cent), and Water Corporation—Perth (12 per cent). The common trends in climate conditions for these utilities may have been a contributing factor, with each experiencing either no change or a drop in temperature, and lower rainfall in 2014–15 compared with that of 2013–14.

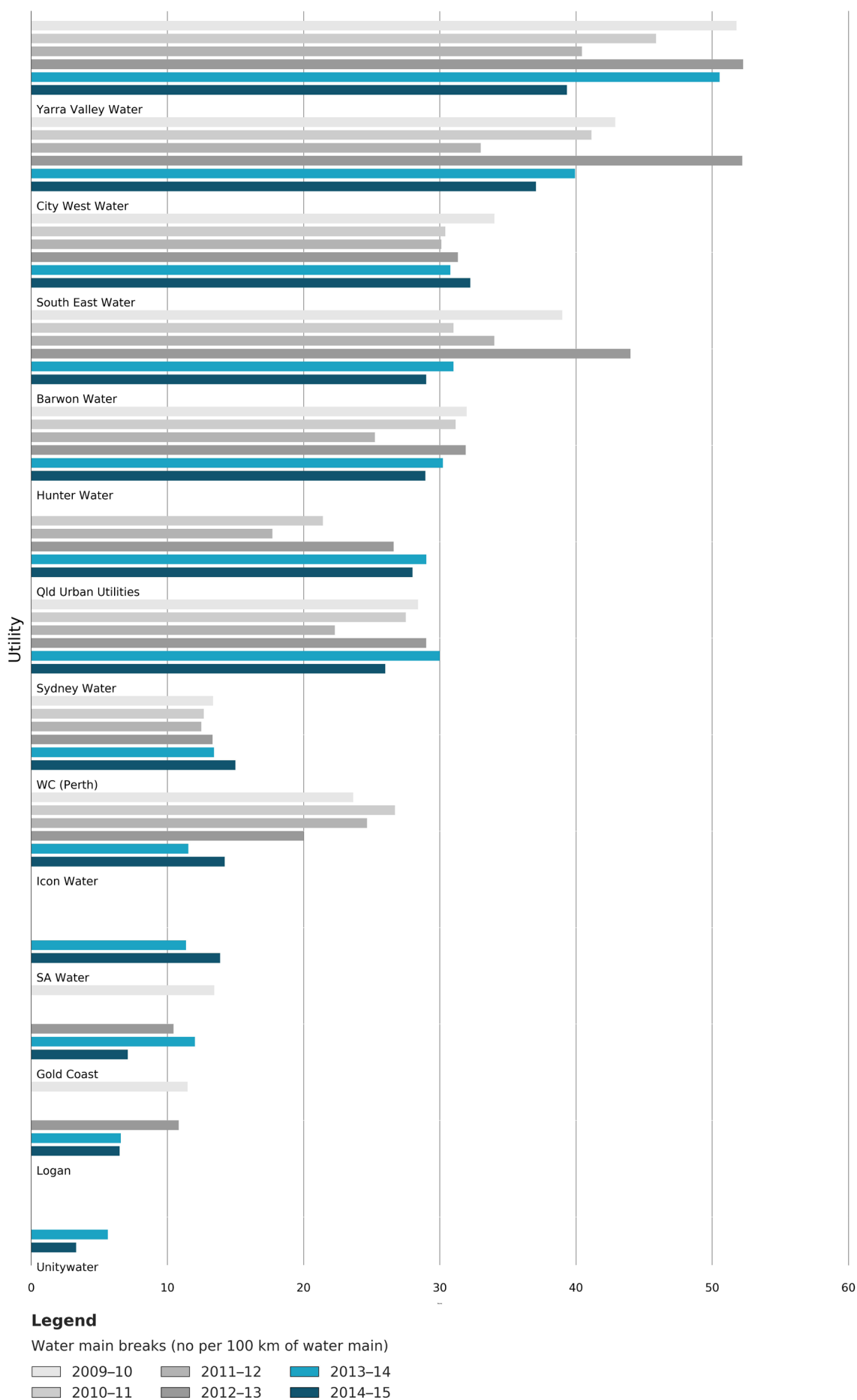


Figure 7.2 A8—Water main breaks (no. per 100 km of water main), 2009–10 to 2014–15, for utilities with 100,000+ connected properties

7.2 A14—Sewerage mains breaks and chokes (no. per 100 km of sewer main) and A15—Property connection sewer breaks and chokes (no. per 1,000 properties)

7.2.1 Introduction

Indicator A14 reports the number of breaks and chokes per 100 km of sewerage main while A15 reports the number of property-connection sewerage breaks and chokes per 1,000 properties. The indicators are presented together to provide a complete picture of sewer system performance, which is important because water utilities have sewer networks with various configurations. For example, some have a very long property connection (from the customer's sanitary drain to the middle of a road), while others have a very short or no property connection (i.e., the sanitary drain may connect straight to the sewer main, which runs down an easement at the back of the property).

Some utilities do not own or maintain the property connections and therefore do not report them (in accordance with the definition of the indicator). Other utilities are responsible for only a portion of property sewer connections and so only report results on those for which they are responsible.²

The performance of a sewerage system is influenced by such factors as soil type, pipe material, and sewerage configuration, as well as age, tree root intrusion, the management of trade waste, the volume of sewage inflows, and rainfall. The results are a partial indicator of the condition of the network and level of customer service.

Sewerage mains breaks and chokes for all utilities reporting against the A14 indicator in 2014–15 can be found in [Table A18](#).

Property connection sewer breaks and chokes for all utilities reporting Indicator A15 in 2014–15 can be found in [Table A19](#).

7.2.2 Key findings

A summary of the sewerage mains breaks and chokes, by utility group, is presented in [Table 7.2](#).

A summary of the property connection sewer breaks and chokes, by utility group, is presented in [Table 7.3](#).

In 2014–15, the 100,000+ group presented a 22 per cent increase in the median for sewerage main breaks and chokes per 100 km of sewer main ([Table 7.2](#)) and a 12 per cent decrease in the median for sewer breaks and chokes per 1,000 properties ([Table 7.3](#)) from 2013–14. Three of the four size groups reported increases in both sewerage mains breaks and chokes as well as property connection sewer breaks and chokes.

7.2.3 Results and analysis—100,000+ group

A ranked breakdown of the sewerage mains breaks and chokes per annum for each utility in this group from 2009–10 to 2014–15 is presented in [Figure 7.3](#).

A ranked breakdown of the property connection sewer breaks and chokes per annum for each utility in the group from 2009–10 to 2014–15 is presented in [Figure 7.4](#).

South East Water and Icon Water both reported a decrease in sewerage main breaks and chokes from 2013–14 ([tables A18–A19](#)). This is consistent with both utilities experiencing a decrease in rainfall from 2013–14.

Logan City Council reported an 80 per cent increase in breaks and chokes per 1,000 properties (A15), from 2013–14. This is consistent with above-average rainfall in 2014–15.

Unity Water reported an increase in sewerage main breaks and chokes per 100 km sewer main (A14) and breaks and chokes per 1,000 properties (A15) per 1,000 properties from 2013–14, consistent with the significant increase in rainfall in the region.

² For such utilities, each property owner is responsible for the property's sewer connections.

Table 7.2 Overview of results: A14—Sewerage mains breaks and chokes (no. per 100 km of sewer main)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	68.7	3.9	10	2	25.3	30.8	22
	Sydney Water	Gold Coast					
50,000– 100,000	49	2.8	3	8	18.8	15.5	–18
	Wyong Shire	Townsville Water					
20,000– 50,000	89	0	8	7	12.1	13.4	11
	Coffs Harbour	Tweed Shire					
10,000– 20,000	129	0.3	15	6	20.6	22.8	11
	Essential Energy	Whitsunday					
All size groups (national)	129	0	36	23	19.7	20.8	6
	Essential Energy	Tweed Shire					

Table note

The median sewerage main breaks (per 100 km of sewer main) is calculated using data from all utilities (dual and single service providers) that reported data against A14 in both 2013–14 and 2014–15.

Table 7.3 Overview of results: A15—Property connection sewer breaks and chokes (no. per 1,000 properties)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	29	0.2	8	3	4.2	4.7	12
	SA Water	Sydney Water					
50,000– 100,000	5	0	3	7	3.7	3.1	–16
	Western Water	Goulburn Valley Water					
20,000– 50,000	25.1	0	6	7	1.9	2.4	26
	GWMWater	Lower Murray Water					
10,000– 20,000	41.3	0	9	8	4.3	5.1	19
	Essential Energy	Queanbeyan					
All size groups (national)	41.3	0	26	25	3.7	3.4	–8
	Essential Energy	Multiple utilities					

Table note

The median property-connection sewer breaks and chokes (per 1,000 properties) is calculated using data from all utilities (dual and single service providers) that reported data against A15 in both 2013–14 and 2014–15.

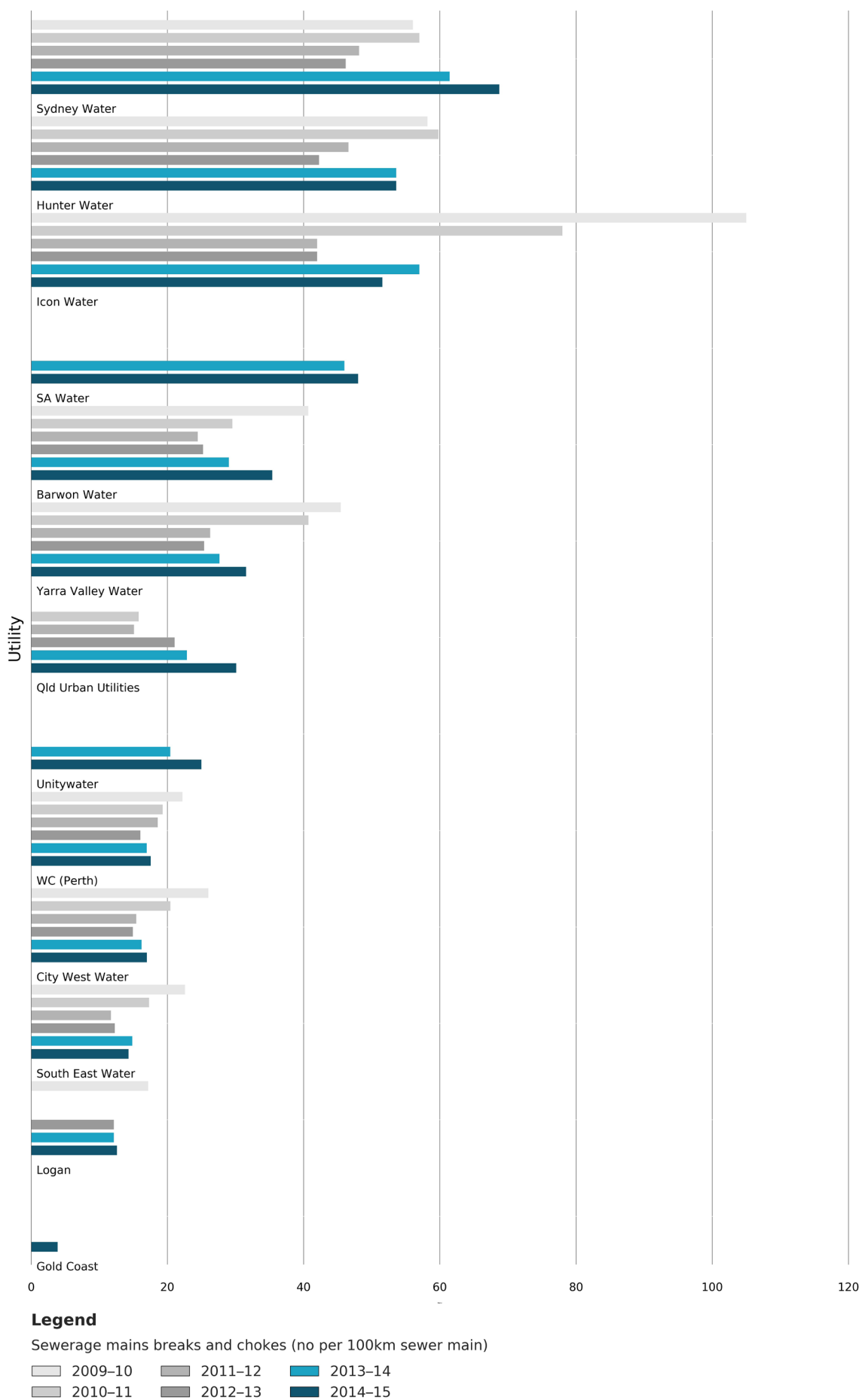


Figure 7.3 A14—Sewerage mains breaks and chokes (no. per 100 km of sewer main), 2009-10 to 2014-15, for utilities with 100,000+ connected properties

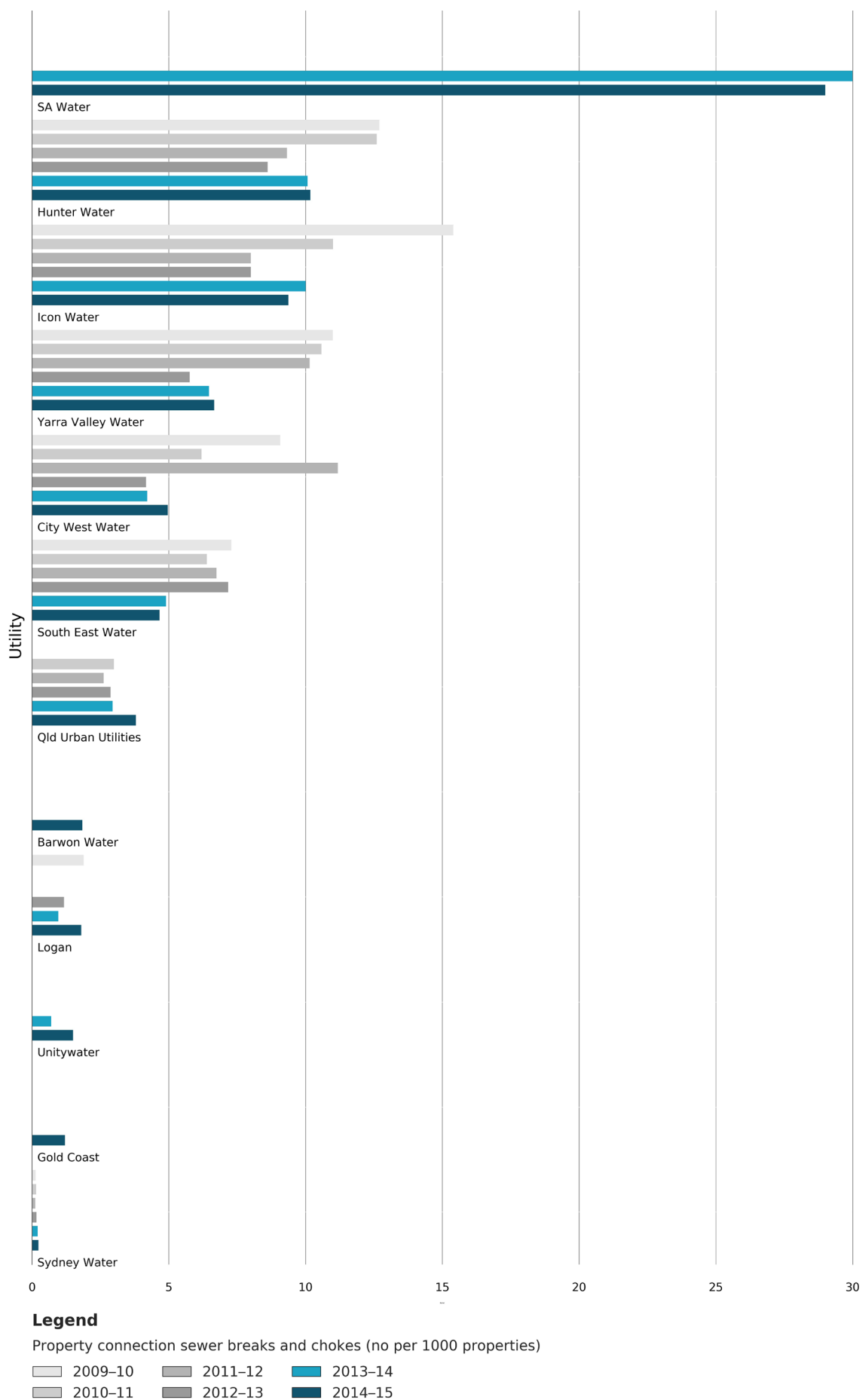


Figure 7.4 A15—Property connection sewer breaks and chokes (no. per 1,000 properties), 2009–10 to 2014–15, for utilities with 100,000+ connected properties

7.3 A10—Real losses (L/service connection/day)

7.3.1 Introduction

‘Real’ losses are leakages and overflows from potable water mains, service reservoirs, and service connections before the customer meter. This indicator does not include metering errors and unauthorised consumption (which are referred to as ‘apparent’ losses). It also excludes unbilled authorised consumption, which may include water used for fire-fighting.

Performance on this indicator can be influenced by the condition of mains and other infrastructure and also by water pressure.

Real losses are estimated using a range of assumptions, including assumed errors in metered water deliveries, estimates of unmetered components, and metering of night flows. Therefore, the real losses reported are not likely to be as accurate as for some of the other indicators (for example, water main breaks), and that should be considered when comparing utilities.

Real losses for all utilities reporting Indicator A10 in 2014–15 can be found in [Table A17](#).

7.3.2 Key findings

A summary of real losses, by utility group, is presented in [Table 7.4](#).

Figure 7.5 shows a ‘box and whisker’ plot of real losses for all utilities reporting A10 for a given reporting year from 2005–06 to 2014–15.

In 2014–15 there was a 5 per cent decrease in the national median across all groups ([Table 7.4](#)), with the national median remaining relatively steady since 2012–13 ([Figure 7.5](#)).

Hunter Water Corporation continued to report the highest real losses in the major utilities group each year since 2011–12 ([Table A17](#)), although this does not correlate with water main breaks for that utility compared with others in its group ([Table A16](#)).

Table 7.4 Overview of results: A10—Real losses (L/service connection/day)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	91	25	6	6	70	70	0
	Hunter Water	Barwon Water					
50,000– 100,000	229	24	3	7	68	64.5	–5
	P&W (Darwin)	Cairns					
20,000– 50,000	860.2	44.1	7	11	65.5	70	7
	Gladstone	Redland					
10,000– 20,000	537.2	13	8	14	90	82	–9
	Whitsunday	Westernport Water					
All size groups (national)	860.2	13	24	38	76.4	72.5	–5
	Gladstone	Westernport Water					

Table note

The median real losses (L/service connection/day) are calculated using data from all utilities (dual and single service providers) that reported data against A10 in both 2013–14 and 2014–15.

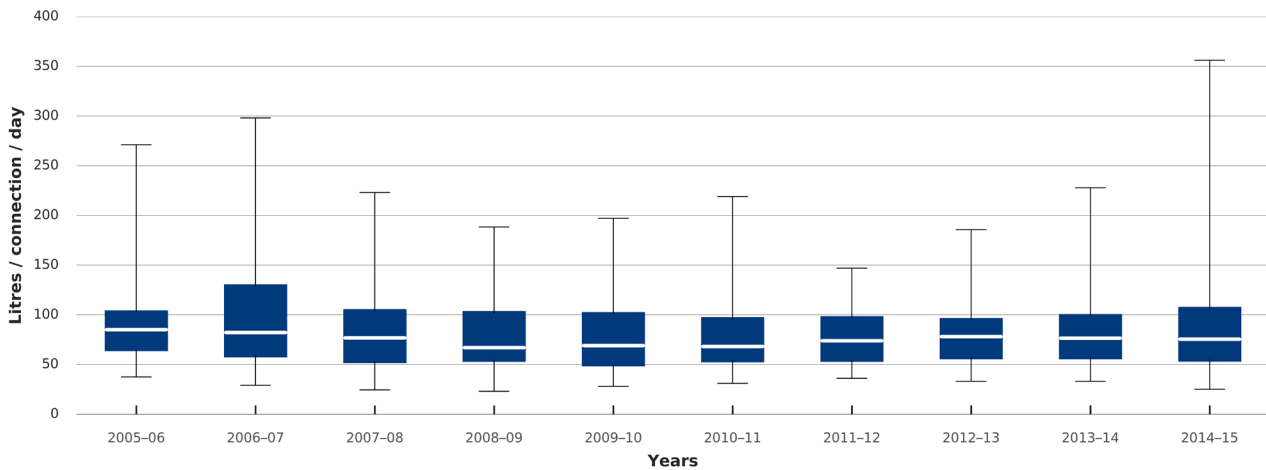


Figure 7.5 Summary of results: A10—Real losses (L/service connection/day), 2009–10 to 2014–15, for utilities with 100,000+ connected properties

7.3.3 Results and analysis—100,000+ group

Figure 7.6 presents a ranked breakdown of the real losses per annum for each utility in this group from 2009–10 to 2014–15.

Logan City Council reported a significant increase (141 per cent) from 2013–14 ([Table A17](#)). The utility identified excess pressure in the network as a contributor to leaks and, since 2008, it has divided the water network into smaller areas for leak detection and repair work. This work is still underway (Logan City Council 2015).

After reporting a decrease in losses each year since 2010–11, Icon Water reported an increase in 2014–15 ([Table A17](#)). This is consistent with the increase in water main breaks per 100 km of water main also reported in 2014–15 by the utility after reporting a decrease in water main breaks each year since 2010–11 ([Table A16](#)).

Yarra Valley Water, Gold Coast, and Barwon Water each reported significant reductions in real losses with 14 per cent, 30 per cent, and 36 per cent respectively from 2013–14 ([Table A17](#)).

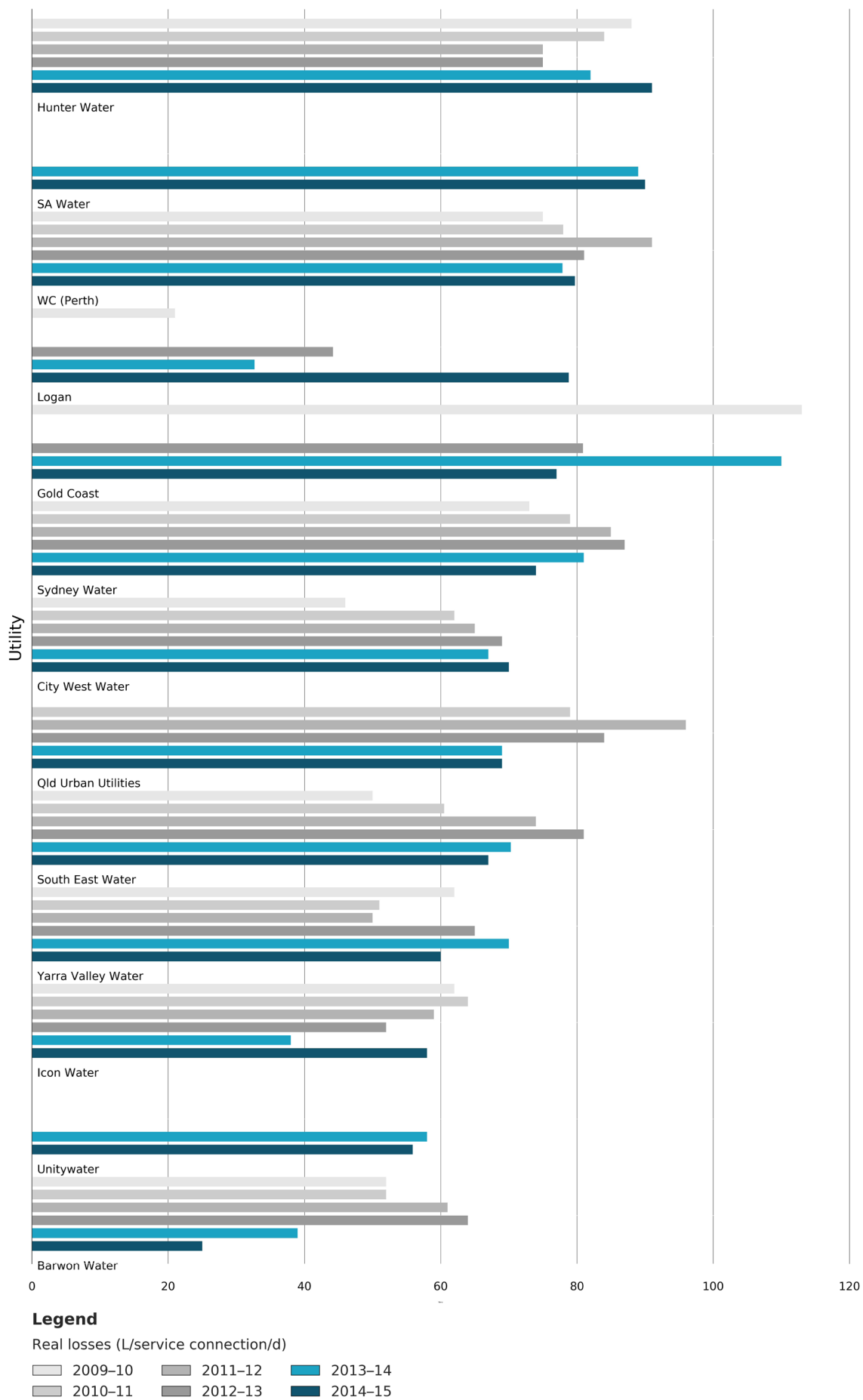


Figure 7.6 A10—Real losses (L/service connection/day), 2009-10 to 2014-15 for utilities with 100,000+ connected properties.

8 Environment

8.1 E12—Total net greenhouse gas emissions (net tonnes CO₂ equivalents per 1,000 properties)

8.1.1 Introduction

This indicator reports the contribution of the utility's operations to greenhouse gas (GHG) emissions. Utilities' calculations are required to refer to the National Greenhouse Accounts Factors issued by the Australian Department of the Environment and updated annually. GHG emissions are reported in net terms; that is, any quantity of carbon sequestered through activities such as the purchase of carbon offsets is deducted.

The National Greenhouse Accounts outline three distinct types of emissions factors that may need to be calculated to estimate the full greenhouse impact of an organisation's activities:

- direct emission factors (Scope 1), which calculate the quantity of carbon dioxide equivalent (CO₂ equivalent) emitted per unit of activity, at the point of emission release;
- indirect emission factors (Scope 2), which calculate the greenhouse impact of purchasing and consuming electricity (i.e., the impact of burning fuels such as coal or gas at the power station); and
- various emission factors (Scope 3), which include the impact of various activities, such as the disposal of waste, employee business travel, and the transportation of products.

Comparing different utilities' net GHG emissions is a difficult exercise. It should be undertaken with caution because of the number of variables affecting emissions. Those variables include: the source of water; gravity versus pumped networks; geographical conditions (which influence the need for pumping); the number of large-volume customers and the extent of industry within the customer base; the prevailing greenhouse policy in the jurisdiction; and the method of calculation.

Total net greenhouse gas emissions by all utilities reporting Indicator E12 in 2014–15 can be found in [Table A15](#).

8.1.2 Key findings

A summary of the total net GHG emissions, by utility group, is presented in Table 8.1.

Nationwide, across all utility groups, there was a slight increase in the median emissions in 2014–15, up 2 per cent from 2013–14 (Table 8.1).

Table 8.1 Overview of results: E12—Total net greenhouse gas emissions (net tonnes CO₂ equivalents per 1,000 properties), 2013–14 to 2014–15

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	738	27	4	5	260	210	–15
	WC (Perth)	City West Water					
50,000– 100,000	872	165	5	3	421	491	17
	Goulburn Valley Water	P&W Darwin					
20,000– 50,000	838	119	7	7	419	416	–1
	North East Water	Clarence					
10,000– 20,000	1,688	165	5	21	395	368	–7
	WC (Kal–Boulder) (W)	Aqwest–Bunbury (W)					
All size groups (national)	1,688	27	21	36	385	392	2
	WC (Kal–Boulder) (W)	City West Water					

Table note

The median total net GHG emissions is calculated using data from all utilities supplying both water and sewerage services which reported data for E12 for both 2013–14 and 2014–15.

8.1.3 Results and analysis—100,000+ group

In 2014–15, the major utilities (100,000+ group) reported a 15 per cent reduction in median net GHG emissions (as tonnes of CO₂ equivalents) per 1,000 properties from 2013–14 (Table 8.1). This was a significant reduction compared with the 3 per cent reduction reported from 2012–13 to 2013–14 (2014 Urban NPR).

The notable changes from 2013–14 included a 47 per cent reduction in emissions by Hunter Water Corporation and increases by South East Water and SA Water Corporation of 13 per cent and 11 per cent respectively (Table A15).

Factors contributing to the reduction in Hunter Water Corporation's emissions were the divestment of two assets in 2014–15: the Newcastle Head Office and the consulting subsidiary Hunter Water Australia, which included a laboratory and an engineering consultancy business (Hunter Water 2015a). This resulted in, amongst other reductions, a 29 per cent reduction in contractor fuel emissions. Furthermore, the awarding of an operation contract for the water and wastewater treatment plants to Veolia in October 2014 means that fugitive emissions and electricity consumption associated with water and wastewater treatment are now reported by Veolia (Hunter Water 2015b).

The increase in emissions from 2013–14 by South East Water was due to the Pakenham treatment plant becoming operational in 2014–15 (South East Water 2015). The increase from 2013–14 by SA Water Corporation is attributable to an increase in pumping, the single greatest contributor of emissions for the utility (SA Water 2015).

9 Health

9.1 H3—Percentage of population for which microbiological compliance was achieved (%)

9.1.1 Introduction

This indicator reports the percentage of the population serviced by the utility for which microbiological compliance was achieved. Compliance is assessed against the *2011 Australian Drinking Water Guidelines* or licence conditions imposed on the utility by the regulator. Typically, utilities record very high (often 100 per cent) compliance, but occasionally there are unforeseen events that result in lower compliance. The cause of non-compliance is not always traceable.

The percentage of the population for which microbiological compliance was achieved, for all utilities reporting Indicator H3 in 2014–15 can be found in [Table A20](#).

9.1.2 Key findings

A summary of the percentage of population for which microbiological compliance was achieved, by utility group, is presented in [Table 9.1](#).

In 2014–15, nationwide and across all groups, most utilities achieved 100 per cent microbiological compliance ([Table 9.1](#)), with Tasmanian Water and Sewerage Corporation (TasWater) being the sole exception, as was the case in its size group (100,000+ group) in 2013–14 ([Table A20](#)).

Table 9.1 Overview of results: H3—Percentage of population for which microbiological compliance was achieved (%)

Size group (connected properties)	Range		Number of utilities with increase/decrease from 2013–14		Median		Change in the median from 2013–14 %
	High	Low	Increase	Decrease	2013–14	2014–15	
100,000+	100	98.6	0	1	100	100	0
	Multiple utilities	TasWater					
50,000– 100,000	100	100	1	0	100	100	0
	Multiple utilities	Multiple utilities					
20,000– 50,000	100	100	0	0	100	100	0
	Multiple utilities	Multiple utilities					
10,000– 20,000	100	100	0	0	100	100	0
	Multiple utilities	Multiple utilities					
All size groups (national)	100	98.6	1	1	100	100	0
	Multiple utilities	TasWater					

Table note

The median percentage of population for which microbiological compliance was achieved was calculated using data from all utilities supplying both water services that reported data against H3 for both 2013–14 and 2014–15.

9.1.3 Results and analysis—100,000+ group

With 2014–15 being its second year of reporting, TasWater continued to report less than 100 per cent of population for which microbiological compliance was achieved ([Table A20](#)).

Following the 2013–14 amalgamation of the three Tasmanian regional utilities (Ben Lomond Water, Southern Water, and Cradle Mountain Water) into the one entity (Tasmanian Water and Sewerage Corporation), TasWater continued to progress major water quality projects as part of a strategy to improve water quality around Tasmania, with significant investment (\$95.93 million) in major water quality projects underway at the end of June 2015 (TasWater 2015).

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Appendix A Individual utility group tables

- Tables A1 to A20 present a summary of key indicators by utility group for the period 2010–11 to 2014–15.
- Utilities are sorted in descending order of percentage change (2013–14 to 2014–15) within each group.
- Unlike the summary tables contained within the body of this report median and mean values presented at the end of each group are based on all utilities reporting within the year.

Table A1 W12—Average annual residential water supplied (kL/property), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Barwon Water	142	152	160	151	156	3
City West Water	139	143	150	145	148	2
SA Water				178	180	1
Logan			140	157	157	0
South East Water	136	139	148	149	149	0
Qld Urban Utilities	138	139	154	156	155	–1
Yarra Valley Water	139	144	156	153	150	–2
Sydney Water	197	193	198	206	201	–2
Unitywater	149	158	163	164	159	–3
WC (Perth)	264	250	249	254	244	–4
Hunter Water	175	163	176	181	168	–7
Icon Water	177	180	199	203	188	–7
Gold Coast			162	187	173	–7
TasWater					172	
Median	146	155	161	164	164	–2
Mean	166	166	171	176	171	–2
50,000–100,000 group						
Cairns	231	245	258	243	263	8
Townsville	287	362	383	404	435	8
Toowoomba		101	130	144	146	1
Coliban Water	144	165	194	190	192	1
P&W (Darwin)	405	471	454	407	409	0
Goulburn Valley Water	199	234	276	266	265	0
Gosford	148	145	157	161	160	–1
Central Highlands Water	125	138	150	150	149	–1
Western Water	158	169	181	182	178	–2
Central Gippsland Water	162	163	176	171	164	–4
Wyang	160	151	166	158	150	–5
Median	161	165	181	182	178	0
Mean	202	213	230	225	228	1
20,000–50,000 group						
Lower Murray Water	313	391	479	450	475	6
GWMWater	161	208	236	226	237	
Wannon Water	134	148	152	140	144	3
Mackay Water	186	231	216	216	214	–1
Coffs Harbour	162	156	161	169	167	–1
WC (Mandurah)	252	239	239	241	238	–1
Tweed	167	163	177	184	178	–3

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Shoalhaven	136	130	149	148	143	–3
Port Macquarie Hastings	147	144	157	157	151	–4
Riverina Water (W)	225	256	347	324	311	–4
North East Water	167	179	216	206	197	–4
MidCoast Water	139	131	143	150	142	–5
East Gippsland Water	145	138	158	151	140	–7
Wide Bay Water	160	170	186	197	181	–8
Clarence Valley	142	139	148	161	147	–9
Fitzroy River Water	254	288	311	348	317	–9
Albury	180	203	255	232	205	–12
Tamworth	216	204	261	287	188	–34
Bundaberg					230	
Gladstone					245	
Redland					168	
Median	164	175	201	202	188	–4
Mean	183	195	222	222	210	–5
10,000–20,000 group						
Gympie				215	300	40
WC (Kal–Boulder) (W)	348	310	335	306	320	5
Bega Valley	129	130	139	134	137	2
Lismore	152	143	145	155	155	0
Westernport Water	69	72	80	80	80	0
WC (Albany)	190	188	179	188	188	0
Byron	159	168	176	181	180	–1
Aqwest–Bunbury (W)	266	255	254	267	265	–1
South Gippsland Water	114	114	119	118	117	–1
Bathurst	182	180	260	227	225	–1
Busselton (W)	285	280	272	287	284	–1
Kempsey	156	143	156	157	155	–1
Orange			180	174	170	–2
WC (Australind/Eaton)		334	338	337	329	–2
Queanbeyan	191	185	175	178	173	–3
Goldenfields Water (R)	176	199	265	287	275	–4
Eurobodalla	109	104	116	119	114	–4
WC (Geraldton)	357	343	327	321	306	–5
Dubbo	263	249	368	350	327	–7
Ballina	162	166	177	194	181	–7
P&W (Alice Springs)	403	470	490	466	432	–7
Essential Energy	219	237	285	281	257	–9
Wingecarribee	159	157	186	200	178	–11
Goulburn Mulwaree	133	138	150	165	139	–16
Livingstone					260	
Western Downs					176	
Southern Downs					210	
Whitsunday					281	
Cassowary Coast					298	
Central Highlands Regional Council					632	
Median	176	182	180	197	218	–2
Mean	201	208	225	224	238	–1

Table A2 W26—Total recycled water supplied (ML), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Barwon Water	1,997	3,483	4,790	5,008	10,157	103
South East Water	1,653	2,277	3,091	2,967	3,891	31
Yarra Valley Water	2,425	2,318	2,687	3,135	3,817	22
SA Water				28,048	31,666	13
City West Water	175	1,216	1,140	138	140	1
Icon Water	4,305	4,607	4,416	4,372	4,352	0
Qld Urban Utilities	10,144	10,104	9,961	9,760	9,322	-4
Hunter Water	4,674	4,664	4,269	4,895	4,600	-6
WC (Perth)	9,134	10,370	10,272	10,029	9,354	-7
TasWater				5,239	4,814	-8
Sydney Water	47,521	45,929	46,951	46,943	43,075	-8
Gold Coast			7,307	8,931	7,269	-19
Unitywater	1,803	1,328	1,713	1,737	1,215	-30
Logan			2,000	1,372	681	-50
Median	3,365	4,045	4,342	4,952	4,707	-5
Mean	8,383	8,630	8,216	9,470	9,597	3
50,000–100,000 group						
Toowoomba		1,338	1,213	1,683	2,864	70
Central Gippsland Water	1,113	1,128	1,651	1,104	1,701	54
P&W (Darwin)	305	376	499	347	492	42
Coliban Water	1,781	3,893	3,346	2,658	3,198	20
Goulburn Valley Water	4,021	6,824	7,344	6,594	7,687	17
Townsville	1,758	2,806	3,166	2,740	2,877	5
Western Water	4,053	4,814	4,880	5,701	5,747	1
Cairns	2,118	3,065	2,101	2,300	2,212	-4
Central Highlands Water	1,410	1,628	1,971	1,683	1,530	-9
Wyong	997	465	877	962	759	-21
Gosford	37	271	28	32	19	-41
Median	1,584	1,628	1,971	1,683	2,212	5
Mean	1,759	2,419	2,461	2,346	2,644	12
20,000–50,000 group						
Wannon Water	825	1,248	1,490	1,251	1,979	58
North East Water	1,312	1,959	2,203	1,895	2,561	35
Lower Murray Water	2,735	2,456	2,491	3,202	3,855	20
Mackay Water	11,099	4,409	8,314	4,412	5,076	15
Clarence Valley	25	109	128	176	195	11
WC (Mandurah)	70	119	104	119	131	10
Port Macquarie Hastings	292	294	242	363	386	6
Tamworth	5,250	3,656	3,595	4,128	4,278	4
Fitzroy River Water	1,537	2,175	1,807	681	696	2
Wagga Wagga	6,357	5,971	5,543	5,523	5,620	2
Albury	5,222	5,287	2,733	2,468	2,398	-3
GWMWater	2,036	2,291	2,366	2,302	2,233	-3
East Gippsland Water	2,511	2,469	2,959	2,903	2,754	-5
MidCoast Water	546	282	848	1,439	1,327	-8
Tweed	436	386	431	604	551	-9
Wide Bay Water	3,105	2,624	4,061	4,794	3,830	-20

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Shoalhaven	863	744	1,992	2,352	1,705	–28
Coffs Harbour	701	489	801	1,436	1,013	–29
Bundaberg					642	
Gladstone					3,521	
Redland					287	
Median	1,424	2,067	2,098	2,098	1,979	2
Mean	2,496	2,054	2,339	2,225	2,145	3
10,000–20,000 group						
Queanbeyan	0	0	0	0	37	
Ballina	123	164	132	273	517	89
South Gippsland Water	40	87	168	108	146	35
Wingecarribee	42	35	98	124	163	31
Kal–Boulder (S)	2,289	1,817	1,793	1,410	1,607	14
Goulburn Mulwaree	1,635	1,540	1,567	1,593	1,806	13
Eurobodalla	160	86	189	216	243	12
Dubbo	1,496	1,396	2,178	1,958	2,183	11
Essential Energy	320	416	629	709	776	9
P&W (Alice Springs)	480	707	1,034	835	910	9
WC (Australind/Eaton)		1,257	1,350	1,378	1,433	4
Orange	1,714	2,218	1,681	2,947	2,826	–4
WC (Geraldton)	233	223	235	237	227	–4
Westernport Water	163	129	238	273	261	–4
WC (Albany)	1,993	1,929	2,051	2,114	2,009	–5
Bathurst			4,788	3,942	3,712	–6
WC (Busselton)			261	245	230	–6
Byron	489	511	596	478	444	–7
Bega Valley	448	485	680	626	446	–29
Kempsey	0	0	10	110	77	–30
WC (Bunbury) (S)	138	111	110	148	102	–31
Gympie				1,243	549	–56
Lismore	0	0	0	34	5	–85
Western Downs					1,025	
Southern Downs					1,545	
Whitsunday					727	
Livingstone					458	
Median	233	320	428	478	517	–4
Mean	619	656	899	913	906	–2

Table A3 P8—Typical residential bill (\$), 2010–10 to 2014–15 (\$), by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Logan			1,347	1,245	1,581	27
Qld Urban Utilities	1,053	1,083	1,121	1,136	1,189	5
Gold Coast			1,481	1,542	1,591	3
Unitywater	1,447	1,367	1,381	1,450	1,487	3
WC (Perth)	1,151	1,205	1,260	1,309	1,336	2
SA Water				1,280	1,299	1
Sydney Water	1,136	1,165	1,162	1,162	1,156	-1
Hunter Water	919	945	1,020	1,025	1,008	-2
Icon Water	1,052	1,147	1,227	1,118	1,097	-2
Barwon Water	921	1,017	1,114	1,073	1,030	-4
City West Water	751	847	850	1,017	906	-11
South East Water	789	886	895	1,090	966	-11
Yarra Valley Water	834	973	999	1,174	1,032	-12
Median	986	1,050	1,141	1,162	1,156	-1
Mean	1,005	1,064	1,155	1,202	1,206	0
50,000–100,000 group						
Gosford	949	970	1,026	1,069	1,119	5
P&W (Darwin)	1,219	1,515	1,857	1,815	1,871	3
Coliban Water	959	1,032	1,112	1,255	1,283	2
Cairns	1,177	1,223	1,254	1,252	1,276	2
Goulburn Valley Water	724	811	903	884	891	1
Townsville	1,347	1,410	1,444	1,498	1,487	-1
Toowoomba			1,201	1,325	1,312	-1
Wyong	949	970	1,019	993	979	-1
Central Gippsland Water	1,199	1,267	1,318	1,263	1,239	-2
Central Highlands Water	1,101	1,171	1,222	1,239	1,185	-4
Western Water	946	1,022	1,021	1,043	964	-8
Median	1,030	1,102	1,201	1,252	1,239	-1
Mean	1,057	1,139	1,216	1,240	1,237	0
20,000–50,000 group						
Albury	710	740	880	925	993	7
Tweed	1,038	1,100	1,191	1,265	1,316	4
Lower Murray Water	756	823	869	887	921	4
WC (Mandurah)	1,224	1,273	1,322	1,356	1,405	4
Clarence Valley	1,108	1,155	1,262	1,357	1,401	3
GWMWater	1,036	1,172	1,265	1,284	1,317	3
Port Macquarie Hastings	1,158	1,184	1,248	1,275	1,304	2
MidCoast Water	1,417	1,459	1,517	1,510	1,535	2
Fitzroy River Water	962	1,017	1,050	1,125	1,136	1
Shoalhaven	970	982	1,035	1,049	1,059	1
Coffs Harbour	1,290	1,303	1,353	1,375	1,388	1
Wide Bay Water	1,321	1,379	1,428	1,482	1,487	0
East Gippsland Water	1,019	1,087	1,186	1,135	1,102	-3
Mackay Water	1,412	1,364	1,415	1,531	1,457	-5
Wannon Water	986	1,115	1,216	1,159	1,101	-5
Tamworth	1,256	1,278	1,360	1,399	1,273	-9
North East Water	803	859	963	927	843	-9

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Bundaberg					1,694	
Gladstone					1,301	
Redland					1,389	
Median	1,038	1,155	1,248	1,275	1,310	1
Mean	1,086	1,135	1,210	1,238	1,271	0
10,000–20,000 group						
Gympie				1,182	1,368	16
Orange	827	849	893	920	987	7
Queanbeyan	1,104	1,116	1,148	1,250	1,341	7
Lismore	1,178	1,243	1,282	1,367	1,438	5
Ballina	1,025	1,137	1,205	1,305	1,362	4
WC (Albany)	1,200	1,247	1,268	1,325	1,381	4
Kempsey	1,193	1,215	1,255	1,325	1,371	3
WC (Australind/Eaton)		1,488	1,564	1,607	1,657	3
Bathurst	832	840	989	975	1,001	3
WC (Geraldton)	1,373	1,426	1,490	1,534	1,572	2
Eurobodalla	1,320	1,333	1,389	1,500	1,533	2
Essential Energy	1,018	1,130	1,274	1,241	1,266	2
Byron	1,372	1,507	1,596	1,637	1,667	2
Dubbo	1,220	1,228	1,469	1,513	1,538	2
Bega Valley	1,580	1,565	1,628	1,628	1,650	1
Wingecarribee	990	1,038	1,153	1,205	1,202	0
P&W (Alice Springs)	1,217	1,521	1,923	1,924	1,910	–1
Westernport Water	1,015	1,056	1,089	1,082	1,072	–1
Goulburn Mulwaree	1,270	1,295	1,331	1,400	1,348	–4
South Gippsland Water	991	1,024	1,048	1,009	957	–5
Western Downs					1,082	
Southern Downs					1,344	
Whitsunday					1,593	
Livingstone					1,543	
Cassowary Coast					1,514	
Central Highlands Regional Council					2,023	
Median	1,185	1,228	1,274	1,325	1,376	2
Mean	1,151	1,224	1,315	1,346	1,412	3

Table A4 P7—Annual bill based on 200 kL (\$), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Qld Urban Utilities	1,201	1,244	1,273	1,289	1,352	5
Unitywater	1,375	1,444	1,471	1,575	1,638	4
Logan			1,553	1,685	1,748	4
WC (Perth)	1,064	1,123	1,170	1,208	1,251	4
Gold Coast			1,614	1,643	1,697	3
Icon Water	1,102	1,194	1,240	1,121	1,136	1
Hunter Water	966	1,021	1,072	1,067	1,079	1
SA Water				1,352	1,365	1
Sydney Water	1,142	1,181	1,166	1,149	1,153	0
Barwon Water	1,035	1,119	1,206	1,184	1,129	-5
Yarra Valley Water	1,025	1,177	1,156	1,390	1,253	-10
South East Water	984	1,091	1,067	1,313	1,183	-10
City West Water	926	1,029	1,006	1,234	1,108	-10
Median	1,049	1,150	1,188	1,289	1,251	1
Mean	1,082	1,162	1,250	1,324	1,315	-1
50,000–100,000 group						
Gosford	1,054	1,086	1,122	1,155	1,208	5
P&W (Darwin)	977	1,147	1,399	1,431	1,476	3
Coliban Water	1,083	1,111	1,125	1,277	1,307	2
Goulburn Valley Water	725	777	818	810	818	1
Wyong	1,035	1,073	1,118	1,080	1,089	1
Cairns	1,144	1,174	1,191	1,205	1,206	0
Townsville	1,335	1,410	1,444	1,498	1,487	-1
Central Gippsland Water	1,269	1,338	1,366	1,319	1,309	-1
Toowoomba			1,444	1,455	1,430	-2
Central Highlands Water	1,239	1,291	1,314	1,312	1,286	-2
Western Water	1,016	1,080	1,055	1,077	1,006	-7
Median	1,068	1,129	1,191	1,277	1,286	0
Mean	1,088	1,149	1,218	1,238	1,238	0
20,000–50,000 group						
Albury	724	738	797	884	988	12
Tweed	1,097	1,173	1,241	1,301	1,370	5
Clarence Valley	1,199	1,254	1,347	1,423	1,495	5
Fitzroy River Water	927	939	972	997	1,041	4
WC (Mandurah)	1,153	1,209	1,251	1,279	1,332	4
Port Macquarie Hastings	1,274	1,312	1,349	1,382	1,429	3
MidCoast Water	1,563	1,633	1,666	1,641	1,693	3
Wide Bay Water	1,382	1,427	1,479	1,478	1,518	3
Lower Murray Water	702	713	713	724	735	2
Shoalhaven	1,071	1,094	1,117	1,134	1,151	1
Coffs Harbour	1,380	1,414	1,454	1,456	1,475	1
Mackay Water	1,292	1,309	1,367	1,395	1,412	1
GWMWater	1,092	1,159	1,208	1,241	1,256	1
Tamworth	1,236	1,272	1,274	1,277	1,290	1
East Gippsland Water	1,101	1,187	1,257	1,228	1,220	-1
Wannon Water	1,101	1,215	1,316	1,281	1,216	-5
North East Water	876	909	925	912	850	-7

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Bundaberg					1,262	
Gladstone					1,220	
Redland					1,389	
Median	1,101	1,209	1,257	1,279	1,276	2
Mean	1,128	1,174	1,220	1,237	1,267	2
10,000–20,000 group						
Queanbeyan	1,132	1,166	1,235	1,331	1,450	9
Orange	901	921	931	969	1,049	8
Gympie				1,139	1,230	8
Ballina	1,089	1,197	1,247	1,316	1,400	6
Essential Energy	994	1,072	1,133	1,103	1,168	6
Lismore	1,292	1,388	1,425	1,492	1,574	5
WC (Geraldton)	1,153	1,184	1,250	1,303	1,366	5
WC (Australind/Eaton)		1,263	1,300	1,342	1,402	4
Dubbo	1,114	1,146	1,182	1,249	1,302	4
WC (Albany)	1,213	1,267	1,306	1,348	1,404	4
Kempsey	1,262	1,317	1,342	1,414	1,464	4
Bathurst	857	869	887	930	960	3
P&W (Alice Springs)	977	1,147	1,399	1,431	1,476	3
Wingecarribee	1,050	1,109	1,177	1,205	1,241	3
Eurobodalla	1,559	1,630	1,652	1,782	1,827	3
Goulburn Mulwaree	1,387	1,407	1,437	1,498	1,519	1
Byron	1,513	1,628	1,703	1,723	1,745	1
Bega Valley	1,750	1,734	1,779	1,790	1,807	1
Westernport Water	1,238	1,283	1,305	1,308	1,301	–1
South Gippsland Water	1,121	1,164	1,188	1,148	1,101	–4
Western Downs					1,106	
Southern Downs					1,386	
Whitsunday					1,439	
Livingstone					1,360	
Cassowary Coast					1,452	
Central Highlands Regional Council					1,282	
Median	1,143	1,197	1,300	1,324	1,393	4
Mean	1,200	1,257	1,309	1,341	1,377	4

Table A5 F8—Revenue from community service obligations (%), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Icon Water	3.7	3.7	3.9	3.3	3.7	12
Yarra Valley Water	6	5.6	6.1	4.8	5.3	10
City West Water	4.1	4	4.3	3.6	3.9	8
South East Water	5.8	5.3	5.7	4.6	4.9	7
Hunter Water	4.9	4.8	4.7	4.6	4.6	0
Sydney Water	7	6	6.3	6	6	0
SA Water	15.6	12.1	7.4	9.7	9.4	-3
TasWater				2.8	2.7	-4
Barwon Water	5.2	4	4.6	5	4.8	-4
Unitywater	5.5	5.6	9.4	1	0.9	-10
Qld Urban Utilities	1.9	2.4	6.3	2	1.8	-10
WC (Perth)	9	8.3	7.9	7.9	6.2	-22
Gold Coast			0	0	0	
Logan			0	0	0	
Median	5.5	5.3	5.7	4.1	4.2	-2
Mean	6.3	5.6	5.1	3.9	3.9	-1
50,000–100,000 group						
Coliban Water	7.4	5.3	5.1	4	4.4	10
Central Gippsland Water	3.9	4	3.9	4	4.2	5
Western Water	3.7	3.9	4	4.6	4.6	0
Goulburn Valley Water	5.9	6	5.7	5.6	5.5	-2
Wyong	1.9	2	1.8	1.7	1.6	-6
Townsville		0	0	1.7	1.6	-6
Gosford	0.8	0.8	1.4	1.4	1.3	-7
Cairns	2.8	2.8	2.8	3.1	2.7	-13
P&W (Darwin)	9	3	2	3.3		
Median	3.8	3	2.8	3.3	3.5	-4
Mean	4.4	3.1	3	3.3	3.2	-2
20,000–50,000 group						
Mackay Water	0.4	0.1	0	0.1	0.2	100
Fitzroy River Water	1.6	1.5	1.7	0.7	1.3	86
East Gippsland Water	5			5.2	6.1	17
Port Macquarie Hastings	2.1	1.7	1.7	1.2	1.4	17
Tamworth	1.1	1	1.1	0.9	1	11
Tweed	2	1.6	1.5	1.1	1.2	9
North East Water	6.3	6.7	5.7	6.1	6.6	8
Albury	1.3	1.2	1	0.9	0.9	0
Clarence Valley	2	1.7	1.6	1.4	1.4	0
Wide Bay Water	0.3	1.8	1.7	0.4	0.4	0
MidCoast Water	1.6	0.9	1.5	1.4	1.4	0
Wannon Water	4.5	3.6	3.9	4.4	4.3	-2
Lower Murray Water	5.4	6.3	6	5.9	5.7	-3
Shoalhaven	1.8	1.8	1.6	1.6	1.5	-6
WC (Mandurah)	30	32.2	19.3	19.9	18.3	-8
GWMWater	9	8.6	7.4	7.1	6.5	-8
Coffs Harbour	1.1	1.1	1.1	1.1	1	-9
Wagga Wagga	1.2	0.9	0.9	1	0.8	-20

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Riverina Water (W)	1.4	1.2	0.8	0.8	0.6	–25
Bundaberg					1.8	
Gladstone					0	
Redland					0.4	
Median	1.8	1.6	1.6	1.2	1.4	0
Mean	4.1	4.1	3.2	3.2	2.9	9
10,000–20,000 group						
Busseton (W)	0.1	0.1	0.1	0.1	4.2	4,100
Ballina	1.2	1.4	1.4	1.1	1.9	73
WC (Busseton) (S)			23	17.6	23.9	36
Essential Energy	1.8	1.3	1.1	1.7	2.2	29
South Gippsland Water	5	5	5.2	5.3	5.5	4
WC (Kal–Boulder) (W)	61	52.8	47.9	58.7	59.1	1
Queanbeyan	1	0.9	0.7	0.5	0.5	0
Gympie				4.4	4.4	0
Bega Valley	1.2	1	1.1	1	1	0
Bathurst	1.2	1.1	0.9	0.8	0.8	0
Byron	0.8	0.8	0.7	0.6	0.6	0
Goldenfields Water (R)	1.3	1	0.9	0.7	0.7	0
Wingecarribee	1.5	1.4	1.3	1.2	1.2	0
WC (Albany)	34.4	27.2	20.8	36.5	34.6	–5
WC (Geraldton)	17.4	15.7	14.1	14.5	13.6	–6
Eurobodalla	1.3	1.3	1.4	1.2	1.1	–8
WC (Australind/Eaton)		27.7	29.2	25.1	22.9	–9
Orange	1.3	1.1	1	0.9	0.8	–11
Kempsey	1.6	1.6	1.5	1.5	1.3	–13
Westernport Water	3.2	2.5	3.6	4.3	3.7	–14
Lismore	1.7	1.3	1.4	1.2	1	–17
Dubbo	0.8	0.9	0.6	0.6	0.5	–17
WC (Bunbury) (S)	28.8	7.1	23.1	22.9	14.4	–37
Goulburn Mulwaree	1.1	1	0.9	0.9	0.2	–78
Aqwest–Bunbury (W)	0		0	0	0	
Kal–Boulder (S)	0	0	0	0	0	
Western Downs					40.6	
Southern Downs					1	
Whitsunday					1.7	
Livingstone					0	
Cassowary Coast					0	
P&W (Alice Springs)	8	13	12	7.5		
Median	1.3	1.3	1.4	1.2	1.2	0
Mean	7.3	7	7.5	7.8	7.9	168

Table A6 F13—Combined operating cost: water and sewerage (\$/property), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Hunter Water	562	548	618	579	623	8
Gold Coast			1,011	1,103	1,149	4
Icon Water	769	840	810	753	764	1
Logan			988	1,064	1,079	1
Qld Urban Utilities	791	899	1,032	1,132	1,135	0
Unitywater	871	946	936	981	974	–1
Sydney Water	633	659	687	676	664	–2
WC (Perth)	508	545	579	595	579	–3
Barwon Water	655	712	623	639	597	–7
SA Water				708	661	–7
City West Water	810	953	914	1,206	1,080	–10
Yarra Valley Water	608	741	717	953	859	–10
South East Water	664	774	724	983	862	–12
TasWater					888	
Median	659	758	767	953	860	–2
Mean	687	762	803	875	851	–3
50,000–100,000 group						
Toowoomba		510	536	647	859	33
Goulburn Valley Water	783	849	817	804	801	0
Central Gippsland Water	1,447	1,916	1,311	1,224	1,194	–2
Cairns	778	797	689	691	672	–3
Coliban Water	620	769	795	796	770	–3
Wyong	818	690	695	684	655	–4
Townsville		731	756	1,052	994	–6
Central Highlands Water	554	890	852	808	763	–6
Gosford	651	715	841	784	710	–9
Western Water	1,096	1,182	1,229	840	693	–18
P&W (Darwin)	1,050	1,119	1,146	1,022		
Median	783	797	817	804	766	–4
Mean	866	924	879	850	811	–2
20,000–50,000 group						
Fitzroy River Water	605	689	660	574	703	22
MidCoast Water	886	1,032	963	917	1,021	11
Lower Murray Water	792	754	623	612	653	7
Shoalhaven	803	781	780	765	775	1
Wannon Water	1,035	1,113	1,000	978	977	0
Tweed	892	877	928	945	943	0
North East Water	799	876	767	809	803	–1
Coffs Harbour	896	913	1,016	1,023	1,014	–1
Port Macquarie Hastings	743	754	865	895	878	–2
GWMWater	915	907	909	953	927	–3
Clarence Valley	823	876	945	891	850	–5
Wide Bay Water	1,036	1,386	417	887	839	–5
WC (Mandurah)	575	563	554	582	548	–6
Tamworth	854	976	989	1,024	941	–8
Albury	759	788	799	747	670	–10
East Gippsland Water	1,004	851	449	947	819	–14

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Mackay Water	1,119	1,252	1,319	1,500	1,269	–15
Bundaberg					765	
Gladstone					2,360	
Redland					862	
Median	854	876	865	895	856	–2
Mean	855	905	823	885	931	–2
10,000–20,000 group						
WC (Australind/Eaton)		796	1,045	784	940	20
Bathurst	917	890	975	964	980	2
Bega Valley	1,266	1,334	1,283	1,261	1,281	2
South Gippsland Water	1,062	1,174	1,088	1,042	1,057	1
Byron	1,139	1,189	1,269	1,275	1,283	1
Kempsey	1,044	990	1,078	1,041	1,040	0
Ballina	1,177	1,246	1,358	1,307	1,292	–1
WC (Geraldton)	731	667	755	698	685	–2
Queanbeyan	1,229	1,266	1,265	1,354	1,322	–2
WC (Albany)	785	795	730	677	660	–3
Orange	827	687	722	769	748	–3
Lismore	1,041	1,102	1,113	1,100	1,066	–3
Dubbo	897	797	854	869	832	–4
Goulburn Mulwaree	775	832	842	799	757	–5
Westernport Water	637	666	690	471	444	–7
Eurobodalla	935	1,031	955	1,004	904	–10
Wingecarribee	707	785	808	921	810	–12
Essential Energy	1,525	1,791	1,534	1,627	1,357	–17
Gympie				892	286	–68
Western Downs					1,111	
Southern Downs					1,479	
Whitsunday					1,203	
Cassowary Coast					925	
Central Highlands Regional Council					1,653	
P&W (Alice Springs)	1,448	1,643	2,103	1,728		
Median	988	990	1,045	984	1,010	–3
Mean	1,008	1,036	1,077	1,030	1,005	–6

Table A7 F16—Total capital expenditure: water and sewerage (\$000s), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
TasWater				75,422	102,481	36
WC (Perth)	700,348	550,203	504,668	262,529	351,732	34
Logan			71,169	59,697	74,642	25
Sydney Water	775,548	770,897	695,266	596,483	627,709	5
South East Water	210,501	185,496	177,054	216,155	221,962	3
Qld Urban Utilities	214,742	277,095	277,047	198,692	190,507	–4
Yarra Valley Water	239,137	246,597	230,736	200,369	173,700	–13
Icon Water	256,668	230,838	143,365	59,393	48,937	–18
Gold Coast			61,950	44,663	35,887	–20
SA Water				270,289	214,335	–21
Barwon Water	193,744	243,088	160,998	89,721	63,497	–29
Hunter Water	174,969	122,350	91,670	110,755	77,397	–30
City West Water	124,422	122,350	158,303	86,796	59,570	–31
Unitywater	159,057	147,272	151,466	143,700	84,449	–41
Median	212,622	236,963	159,650	127,228	93,465	–15
Mean	304,914	289,619	226,974	172,476	166,200	–7
50,000–100,000 group						
Townsville		53,022	42,520	25,124	47,040	87
Goulburn Valley Water	20,775	26,294	19,006	22,597	30,498	35
Toowoomba			45,067	20,078	26,024	30
Central Highlands Water	28,460	23,792	14,568	14,340	15,263	6
Central Gippsland Water	54,249	39,412	54,035	45,719	47,696	4
Wyong	39,395	95,015	26,831	26,807	27,357	2
Western Water	28,888	17,862	17,031	26,598	26,358	–1
Gosford	74,725	45,922	47,712	41,232	36,061	–13
Cairns	27,924	44,175	29,567	36,579	29,233	–20
Coliban Water	39,070	39,780	43,033	42,081	19,820	–53
P&W (Darwin)	51,978	58,080	64,789	25,600		
Median	39,070	41,977	42,520	26,598	28,295	3
Mean	40,607	44,335	36,742	29,705	30,535	8
20,000–50,000 group						
Clarence Valley	13,055	31,870	12,268	11,030	25,504	131
Port Macquarie Hastings	19,483	13,718	14,133	9,057	15,863	75
Coffs Harbour	9,621	7,054	8,864	10,481	13,974	33
Shoalhaven	18,829	28,064	21,900	24,078	22,629	–6
Wannon Water	12,348	28,794	22,398	15,066	12,735	–15
Lower Murray Water	12,867	10,989	9,575	9,750	7,759	–20
East Gippsland Water	13,033	11,348	6,766	10,057	7,606	–24
WC (Mandurah)	43,144	37,424	30,750	29,077	21,645	–26
Albury	4,756	2,613	6,045	5,843	4,130	–29
Fitzroy River Water	40,250	28,103	23,793	22,640	15,844	–30
GWMWater	9,647	16,563	14,378	16,146	10,826	–33
Wide Bay Water	17,173	27,573	18,462	18,006	11,393	–37
MidCoast Water	28,002	85,078	22,303	11,476	6,789	–41
Mackay Water	51,050	46,215	48,000	47,887	26,339	–45
Tweed	8,690	39,186	13,882	13,302	6,997	–47
North East Water	11,328	14,163	37,105	19,657	9,800	–50

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Tamworth	33,120	10,794	13,231	20,982	9,034	–57
Bundaberg					21,777	
Gladstone					10,082	
Redland					15,440	
Median	13,055	27,573	14,378	15,066	12,064	–29
Mean	20,376	25,856	19,050	17,326	13,808	–13
10,000–20,000 group						
Dubbo	6,326	5,792	7,677	4,550	21,085	363
Goulburn Mulwaree	35,844	13,917	4,495	3,908	8,443	116
Wingecarribee	7,413	18,746	14,398	2,968	5,934	100
Bathurst	3,734	6,135	6,952	6,734	13,015	93
WC (Geraldton)	13,941	8,846	13,181	8,356	13,180	58
Essential Energy	7,761	4,390	5,580	4,175	6,302	51
Westernport Water	5,227	12,333	13,294	3,471	4,725	36
WC (Australind/Eaton)		30,110	7,083	3,456	4,632	34
South Gippsland Water	9,610	12,900	7,677	10,010	12,145	21
Lismore	6,669	12,432	9,191	5,030	5,939	18
Kempsey	6,895	3,896	7,072	6,618	6,983	6
Bega Valley	24,030	7,109	4,505	8,305	8,155	–2
Eurobodalla	20,200	17,724	6,924	6,857	6,509	–5
Gympie				6,568	5,405	–18
Orange	5,479	4,570	7,755	28,595	21,857	–24
Ballina	16,831	32,711	28,891	11,079	8,220	–26
Byron	6,303	1,476	2,562	1,984	1,197	–40
WC (Albany)	12,833	10,393	6,175	8,166	4,864	–40
Queanbeyan	1,107	2,355	918	7,213	2,757	–62
Western Downs					16,856	
Southern Downs					3,232	
Whitsunday					723	
Cassowary Coast					5,686	
Central Highlands Regional Council					27,207	
P&W (Alice Springs)	9,214	10,421	11,933	9,857		
Median	7,587	10,393	7,083	6,676	6,406	18
Mean	11,079	11,382	8,751	7,395	8,960	36

Table A8 F28—Capital expenditure: water (\$/property), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Logan			102	157	190	21
Qld Urban Utilities	79	74	116	115	129	12
WC (Perth)	745	575	507	177	195	10
Gold Coast			86	59	62	5
South East Water	106	82	74	65	67	3
Unitywater	86	119	111	110	109	–1
Yarra Valley Water	130	145	156	101	88	–13
City West Water	252	161	334	146	109	–25
Sydney Water	178	165	140	108	80	–26
SA Water				226	151	–33
Icon Water	1,555	1,335	727	264	153	–42
Hunter Water	119	161	130	329	154	–53
Barwon Water	992	1,319	890	483	220	–54
TasWater					251	
Median	154	161	135	146	140	–13
Mean	424	414	281	180	140	–15
50,000–100,000 group						
Townsville		192	308	98	317	223
Goulburn Valley Water	277	349	187	225	426	89
Central Highlands Water	273	210	61	113	127	12
Western Water	242	140	95	178	194	9
Central Gippsland Water	289	222	218	147	147	0
Toowoomba			115	213	193	–9
Cairns	185	326	160	267	209	–22
Wyong	574	1,390	234	328	250	–24
Gosford	659	198	183	183	94	–49
Coliban Water	310	440	497	416	116	–72
P&W (Darwin)	560	354	463	248		
Median	289	274	187	213	194	–5
Mean	374	382	229	220	207	16
20,000–50,000 group						
Port Macquarie Hastings	233	259	213	82	325	296
Riverina Water (W)	321	218	196	213	397	86
Mackay Water	974	1,065	535	338	435	29
Shoalhaven	430	130	95	230	218	–5
Lower Murray Water	116	168	153	174	164	–6
Wannon Water	177	278	126	164	146	–11
Wide Bay Water	369	569	378	289	257	–11
Clarence Valley	238	93	118	103	90	–13
Albury	103	114	153	105	88	–16
Fitzroy River Water	583	331	344	372	292	–22
Coffs Harbour	249	69	143	68	53	–22
WC (Mandurah)	949	522	499	252	171	–32
North East Water	186	240	307	223	132	–41
Tamworth	234	314	511	520	305	–41
East Gippsland Water	290	186	151	218	111	–49
MidCoast Water	458	1,238	286	198	80	–60

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
GWMWater	132	234	314	442	178	–60
Tweed	192	212	173	276	61	–78
Bundaberg					88	
Gladstone					136	
Redland					26	
Median	244	237	205	220	146	–19
Mean	346	347	261	237	179	–3
10,000–20,000 group						
Wingecarribee	143	143	135	40	146	265
Goulburn Mulwaree	3,219	1,146	279	249	551	121
Busseton (W)	329	566	143	133	289	117
WC (Australind/Eaton)		2,814	86	103	215	109
Bathurst	133	290	183	237	473	100
WC (Geraldton)	789	452	605	257	490	91
Bega Valley	1,351	369	145	184	283	54
Ballina	190	127	119	151	215	42
South Gippsland Water	249	210	161	97	134	38
WC (Albany)	119	138	167	166	210	27
Dubbo	81	112	269	99	123	24
Essential Energy	534	278	338	300	350	17
Eurobodalla	463	193	142	120	131	9
Gympie				151	158	5
Kempsey	436	150	373	411	428	4
Aqwest–Bunbury (W)	232	263	238	171	162	–5
Byron	102	13	92	39	31	–21
Orange	292	202	425	1,610	1,055	–34
Lismore	130	120	145	163	87	–47
Westernport Water	202	234	819	106	46	–57
Queanbeyan	25	38	35	128	52	–59
WC (Kal–Boulder) (W)	2,873	1,750	1,453	6,168	321	–95
Goldenfields Water (R)					162	
Western Downs					615	
Southern Downs					275	
Whitsunday					2	
Cassowary Coast					305	
Central Highlands Regional Council					2,300	
P&W (Alice Springs)	591	590	539	357		
Median	249	222	175	163	215	20
Mean	594	464	313	497	343	32

Table A9 F29—Capital expenditure: sewerage (\$/property), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
WC (Perth)	223	173	168	173	266	54
Barwon Water	465	465	267	151	232	54
Icon Water	157	165	181	104	143	38
Logan			668	469	573	22
Hunter Water	684	390	278	148	179	21
Sydney Water	261	268	243	221	261	18
South East Water	226	205	196	257	257	0
SA Water				171	168	–2
Qld Urban Utilities	334	445	405	251	216	–14
Yarra Valley Water	229	214	173	181	152	–16
Gold Coast			184	137	93	–32
City West Water	87	163	73	70	35	–50
Unitywater	550	453	467	427	195	–54
TasWater					296	
Median	245	241	220	173	206	0
Mean	322	294	275	212	219	3
50,000–100,000 group						
Toowoomba			854	169	315	86
Wyong	81	181	212	110	186	69
Townsville		565	259	243	289	19
Gosford	412	465	504	403	418	4
Central Gippsland Water	681	453	708	630	649	3
Central Highlands Water	226	201	198	126	121	–4
Coliban Water	315	165	136	198	176	–11
Western Water	347	214	237	323	286	–11
Cairns	196	253	228	263	212	–19
Goulburn Valley Water	124	151	178	204	129	–37
P&W (Darwin)	522	803	815	238		
Median	315	233	237	238	249	0
Mean	323	345	394	264	278	10
20,000–50,000 group						
Clarence Valley	551	2,043	666	603	1,603	166
GWMWater	222	369	182	92	205	123
Coffs Harbour	153	230	228	373	533	43
Tweed	84	1,050	280	149	164	10
East Gippsland Water	380	397	184	273	265	–3
MidCoast Water	342	1,080	323	110	105	–5
Shoalhaven	1,963	540	424	316	295	–7
Port Macquarie Hastings	468	221	285	240	215	–10
Wagga Wagga	238	261	144	183	161	–12
Wannon Water	151	500	490	231	183	–21
WC (Mandurah)	114	456	267	495	366	–26
Fitzroy River Water	476	403	255	390	227	–42
Lower Murray Water	340	204	167	145	83	–43
Albury	115	0	115	154	78	–49
North East Water	67	71	538	206	76	–63
Wide Bay Water	115	224	192	243	72	–70

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Tamworth	1,508	222	124	509	123	–76
Mackay Water	315	123	669	863	198	–77
Bundaberg					771	
Gladstone					317	
Redland					274	
Median	277	315	261	242	205	–16
Mean	422	466	307	310	301	–9
10,000–20,000 group						
Dubbo	319	249	198	178	1,152	547
Orange	45	74	34	56	204	264
Essential Energy	222	151	210	105	269	156
WC (Bunbury) (S)	271	334	624	546	1,329	143
Westernport Water	159	626	38	126	280	122
Bathurst	116	118	276	197	352	79
Lismore	384	851	562	212	367	73
Goulburn Mulwaree	160	153	179	125	212	70
Wingecarribee	330	1,095	808	141	199	41
Kal–Boulder (S)	178	121	97	49	66	35
South Gippsland Water	317	549	278	489	561	15
Kempsey	172	216	254	153	166	8
WC (Geraldton)	51	103	201	310	332	7
WC (Busselton) (S)			2,239	1,681	1,664	–1
WC (Australind/Eaton)		131	745	270	245	–9
Eurobodalla	632	780	232	250	218	–13
Bega Valley	396	150	200	464	334	–28
Gympie				404	284	–30
Ballina	1,041	2,313	1,981	636	364	–43
Byron	502	127	148	147	80	–46
Queanbeyan	44	109	21	306	107	–65
WC (Albany)	974	748	318	481	130	–73
Western Downs					1,060	
Southern Downs					14	
Whitsunday					60	
Cassowary Coast					292	
Central Highlands Regional Council					42	
P&W (Alice Springs)	225	334	538	535		
Median	248	216	243	250	269	12
Mean	327	444	463	342	385	57

Table A10 C9—Water quality complaints (no. per 1,000 properties), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Logan			4	4.2	7	67
City West Water	0.6	0.7	0.7	0.4	0.6	50
Icon Water	1	0.9	0.8	1.1	1.2	9
WC (Perth)	6.7	6.9	0.1	0.1	0.1	0
SA Water				1	1	0
Hunter Water	2.8	2.9	2.9	3.4	3	–12
Gold Coast			1.2	1.2	1	–17
Barwon Water	2	1.8	2.1	1.6	1.3	–19
Qld Urban Utilities	4.1	5.2	3.2	2.7	2	–26
Yarra Valley Water	3.3	3.6	4.2	3.7	2.6	–30
Sydney Water	0.6	0.5	0.5	0.3	0.2	–33
South East Water	2	2	2.7	2.7	1.8	–33
Unitywater				0.1	0	–100
Median	2	2	2.1	1.2	1.2	–17
Mean	2.6	2.7	2	1.7	1.7	–11
50,000–100,000 group						
Wyong	17.1	7.6	17.9	5.2	10	92
P&W (Darwin)	2.6	6.3	1.9	1.8	2.1	17
Coliban Water	5.3	5.2	3	3	3.4	13
Central Gippsland Water	2.8	7.2	4	4	4.3	7
Cairns	2.9	3.1	2.7	3	3	0
Townsville	2.2	0.9	1.3	1	1	0
Western Water	3.7	3.1	3.2	3.9	3.4	–13
Gosford	9.3	13.7	25	14.9	11.9	–20
Toowoomba			2.1	2.6	2	–23
Goulburn Valley Water	6.6	5	3.3	3.1	1.6	–48
Central Highlands Water	3.8	3.4	3.9	3.2	1.2	–62
Median	3.8	5.1	3.2	3.1	3	0
Mean	5.6	5.6	6.2	4.2	4	–3
20,000–50,000 group						
Fitzroy River Water	6.1	5.9	6.1	2.1	9	329
Shoalhaven	1.3	0.5	0.3	0.3	0.5	67
GWMWater	9.7	9.3	7.5	2.5	3.7	48
Mackay Water	2.1	2.1	2.5	2.3	3	30
Tweed	4.9	4.5	4.2	4.9	5.9	20
Lower Murray Water	4	1.1	0.7	0.5	0.6	20
MidCoast Water	6.6	3.5	2.8	2.6	3	15
Wannon Water	2.7	1.3	0.8	0.6	0.6	0
North East Water	1.3	1.9	0.8	0.4	0.4	0
Riverina Water (W)	3.6	2.8	4.4	3.1	3	–3
Port Macquarie Hastings	5.2	3	8.5	6.7	6	–10
Albury	1.2	1	4.2	3.2	2.6	–19
Wide Bay Water	1.3	1.1	2.4	1.3	1	–23
Clarence Valley	8	6.7	8.1	22.6	13.9	–38
East Gippsland Water	1.2	0.3	0.3	0.5	0.2	–60
WC (Mandurah)	4.2	3.1	0.1	0.1	0	–100
Tamworth			0.8	0.2	0	–100

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Coffs Harbour	3.6	1.1	0	0	0	
Bundaberg					1	
Gladstone					0	
Redland					2	
Median	3.6	2.1	2.4	1.7	1	0
Mean	3.9	2.9	3	3	2.7	10
10,000–20,000 group						
WC (Geraldton)	4.6	3.7	0.1	0	0.1	
WC (Australind/Eaton)		11.8	1.8	0.1	0.3	200
Dubbo	0.4	0.4	0.6	0.4	0.7	75
Byron	0.3	0	0.3	1.3	1.9	46
Orange	2.2	1.5	1.6	1.3	1.4	8
Aqwest–Bunbury (W)	7.5	8.9	8.1	0.1	0.1	0
Queanbeyan			0	0.1	0.1	0
WC (Albany)	10.4	15.9	0.1	0.2	0.2	0
Bathurst	50.9	29.3	37.5	34.6	34	–2
Bega Valley	0.7	4.7	8.7	13.3	12.7	–5
Eurobodalla	0	0.3	0.3	0.9	0.7	–22
Busselton (W)	1.4	22	17.8	2.4	1.8	–25
Goldenfields Water (R)	6.6	6.6	8.8	7.2	4.8	–33
Wingecarribee	9.8	9.5	13.2	11.7	7.7	–34
Goulburn Mulwaree	2	1.4	3	7.7	4.5	–42
South Gippsland Water	6.9	2.7	9	5.8	1.8	–69
Kempsey	0.7	0.2	0.4	0.7	0.2	–71
Westernport Water	1.7	2.6	1.2	6.4	1.8	–72
P&W (Alice Springs)	1.9	1.6	0.9	0.1	0	–100
Gympie				0.1	0	–100
Ballina	0.3	0.1	0.3	4.3	0	–100
Essential Energy	0	0	8	0	0	
Lismore	1	1.1	0	0	0	
WC (Kal–Boulder) (W)	2.4	5	0	0	0	
Western Downs					5	
Southern Downs					1	
Whitsunday					2	
Cassowary Coast					4	
Central Highlands Regional Council					12	
Median	1.9	2.7	1.2	0.8	1	–22
Mean	5.3	5.9	5.3	4.1	3.4	–17

Table A11 C11—Service complaints: sewerage (no. per 1,000 properties), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Qld Urban Utilities	0.1	0.2	0.4	0.3	0.6	100
Barwon Water	0.6	0.6	0.7	0.5	0.9	80
Yarra Valley Water	0.4	0.3	0.3	0.2	0.3	50
Icon Water	2.6	1.4	1.2	0.9	1.3	44
Unitywater				0.3	0.4	33
Hunter Water	2.2	2.2	1.6	0.8	1	25
Sydney Water	0.3	0.5	0.4	0.5	0.6	20
City West Water	0.4	0.3	0.3	0.3	0.2	–33
SA Water				0.2	0.1	–50
Gold Coast				8.4	1.7	–80
WC (Perth)	1.4	0.4	0.1	0.1	0	–100
South East Water	0.1	0	0	0	0	
Median	0.4	0.4	0.4	0.3	0.5	25
Mean	0.9	0.7	0.6	1	0.6	8
50,000–100,000 group						
Gosford	1.9	2.6	2.2	1.9	2.1	11
Coliban Water	1.6	1.8	2.2	2	2.2	10
Wyong	12.4	12	10.1	12.1	12.4	2
Central Gippsland Water	0.6	1	0.6	0.6	0.6	0
Townsville	6.5	9.5	9.9	10.9	10	–8
Goulburn Valley Water	0.7	0.7	0.7	1.1	0.6	–45
Central Highlands Water	1.4	0.2	0.1	0.2	0.1	–50
P&W (Darwin)	9.8	10.7	4.5	5.1	2.2	–57
Cairns	9.1	8.6	6.9	4.3	0.1	–98
Western Water	0	0	0.1	0	0	
Median	1.8	2.2	2.2	1.9	1.4	–8
Mean	4.4	4.7	3.7	3.8	3	–26
20,000–50,000 group						
East Gippsland Water	1.8	0.3	0.1	0	0.2	
Coffs Harbour	15.3	22.4	0.3	0	0.3	
Albury	37.2	33.2	0.5	0.5	2.2	340
North East Water	0.3	0.3	0.2	0.1	0.3	200
MidCoast Water	1.2	1.4	1.7	1.7	3	76
Wide Bay Water	10.4	0.6	0.8	1.9	2.9	53
Lower Murray Water	0.1	0.2	0.1	0.2	0.3	50
GWMWater	1.6	0.4	1.3	0.6	0.8	33
Clarence Valley	29.1	23.9	22.9	19.3	25.6	33
Mackay Water		9.4	9	5.6	5.7	2
Tweed	6.4	5.5	5.8	6.7	5.8	–13
Fitzroy River Water	69.9	0	21	22	18.9	–14
Wagga Wagga	51.2	49.8	53.7	53.4	41.4	–22
Tamworth	26.1	21.8	21.9	21.3	16.4	–23
Shoalhaven	3.5	0.5	0.4	0.6	0.4	–33
Port Macquarie Hastings	7.9	5.2	8.1	9.9	6.3	–36
Wannon Water	0.7	0.3	0.4	0.3	0.1	–67
WC (Mandurah)	0.7	0.3	0.1	0	0	
Bundaberg					1.4	

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Gladstone					0	
Redland					0.1	
Median	6.4	1	1	1.1	1.4	33
Mean	15.5	9.8	8.2	8	6.3	39
10,000–20,000 group						
WC (Busselton) (S)			0.3	0.1	0.2	100
WC (Albany)	1.1	0.8	0.3	0.1	0.2	100
Orange	40.9	47.9	25.6	30.4	40.8	34
Bathurst	25.3	19.5	17.7	24	29	21
WC (Geraldton)	1.3	0.7	0.2	0.7	0.8	14
Queanbeyan	21.5	18	10.1	10.8	11.9	10
Dubbo	10	9.4	11	11	11.6	5
Goulburn Mulwaree	32.4	28.4	21	29.9	28.5	–5
South Gippsland Water	0.2	0.1	0.3	0.7	0.6	–14
Kempsey	2.2	0.6	1.5	1.6	1.3	–19
Ballina	8.7	2.6	1	3.8	2.8	–26
Bega Valley	6.5	9.3	1.5	1.6	1.1	–31
Kal–Boulder (S)	24.6	12.3	4.1	4.2	2.7	–36
Wingecarribee	34.8	23.5	20.9	19.6	11.3	–42
Byron	1.5	1.3	2.3	3.7	1.3	–65
Essential Energy	0.7	0.4	0.7	0.8	0.2	–75
Eurobodalla	1.9	1	1.1	1.8	0.4	–78
Westernport Water	0.2	1.6	1.3	1	0.1	–90
Lismore	25.1	21.5	2.7	16.3	1.6	–90
Gympie				1.4	0.1	–93
P&W (Alice Springs)	6.4	8.5	3.4	0.8	0	–100
WC (Bunbury) (S)	0.4	1.6	0.2	0.1	0	–100
WC (Australind/Eaton)		2.4	0.1	0.1	0	–100
Western Downs					0.2	
Southern Downs					13.2	
Whitsunday					9	
Cassowary Coast					6.5	
Central Highlands Regional Council					10.3	
Livingstone					6.4	
Median	6.4	2.6	1.5	1.6	1.3	–31
Mean	12.3	10.1	5.8	7.2	6.6	–30

Table A12 C13—Total complaints: water and sewerage (no. per 1,000 properties), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Barwon Water	4.7	4.3	5.5	2.7	4.3	59
Icon Water	6.4	5	4.8	4	4.3	7
Hunter Water	7.6	7.6	7	6	6.3	5
City West Water	3.4	3.7	3.3	3.3	3.4	3
SA Water				2.4	2.4	0
Qld Urban Utilities	4.1	6	4.6	5	5	0
Sydney Water	3.4	3.5	3.9	3.2	2.6	–19
WC (Perth)	12.1	9.5	0.6	1	0.8	–20
Unitywater				2.6	2	–23
South East Water	3.4	3.5	4.4	4.7	3.4	–28
Yarra Valley Water	6.9	10.3	12.5	7	5	–29
Gold Coast				18.1	5	–72
Logan						
Median	4.7	5	4.6	3.6	3.8	–9
Mean	5.8	5.9	5.2	5	3.7	–10
50,000–100,000 group						
Wyong	34	24	33	23	29	26
Coliban Water	7.7	7.7	5.7	5.6	6.3	12
Central Gippsland Water	10.1	14.6	9.5	9.2	9.5	3
Townsville	30	9.3	9.9	10.7	10	–7
Western Water	4.5	4	4	4.7	4	–15
P&W (Darwin)	53.1	72.7	37.5	49.9	39.5	–21
Goulburn Valley Water	9.7	8.4	5.9	5.9	4.3	–27
Central Highlands Water	11	8.2	13.5	8.3	3.2	–61
Toowoomba			10.9	5.8	2	–66
Cairns	77.2	74.8			3	
Median	11	9.3	9.9	8.3	5.3	–15
Mean	26.4	24.9	14.4	13.7	11.1	–17
20,000–50,000 group						
Coffs Harbour	63	80	1	0	1	
North East Water	2.4	3.1	1.6	0.8	2.6	225
Shoalhaven	6	1	1	1	2	100
East Gippsland Water	4	2	1.3	0.6	1	67
MidCoast Water	10	6	7	7	11	57
Lower Murray Water	7.1	7.9	5.8	1.4	1.8	29
Albury			6	5	6	20
Clarence Valley	105	76	53	101	109	8
Port Macquarie Hastings	36	24	33	31	32	3
Wannon Water	11	7.3	5.6	3.5	3.6	3
Fitzroy River Water	94.1	38.8	61.9	56	51	–9
Tamworth	57	82	67	78	59	–24
Tweed	35	31	33	40	29	–28
GWMWater	23.3	26.4	21.5	11	7.3	–34
WC (Mandurah)	7.8	5.1	0.4	0.7	0.4	–43
Mackay Water	3.4	99.8	119.2	131.8	30	–77
Wide Bay Water	30.9	5.2			4	
Bundaberg					2	

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Gladstone					0	
Redland					4	
Median	17.1	16	6.5	6	4	6
Mean	31	31	26.1	29.3	17.8	20
10,000–20,000 group						
Westernport Water	4.3	9.4	9.1	3.6	4.9	36
Orange			85	92	104	13
Bathurst	139	100	100	82	91	11
South Gippsland Water	13.8	7.2	14.3	5.9	6.1	3
WC (Geraldton)	10.7	7.2	1.7	1.3	1.3	0
WC (Australind/Eaton)		16.3	2.5	0.7	0.7	0
Dubbo			15	15	15	0
Essential Energy	1	1	10	1	1	0
Bega Valley			16	17	16	–6
Queanbeyan	52	49	45	37	33	–11
WC (Albany)	13.9	18.2	0.7	0.8	0.6	–25
Wingecarribee	133	120	105	103	74	–28
Byron	14	32	5	7	5	–29
Kempsey	3	1	2	3	2	–33
Eurobodalla			1	3	1	–67
P&W (Alice Springs)	136.3	169.6	60	9.6	3	–69
Ballina	10	3	1	12	3	–75
Lismore	30	28	4	19	4	–79
Gympie				11.3	0	–100
Western Downs					5	
Southern Downs					49	
Whitsunday					150	
Cassowary Coast					128	
Livingstone					140	
Central Highlands Regional Council					182	
Median	13.9	17.2	9.5	9.6	5.5	–11
Mean	43.2	40.1	26.5	22.3	44.6	–24

Table A13 C14—Percentage of calls answered by an operator within 30 seconds (%), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Gold Coast			49	34	43	26
Qld Urban Utilities	75	84	76	72	77	7
WC (Perth)	73.7	73.3	73.1	72.6	72.8	0
Unitywater				80.2	80	0
City West Water	83	63.4	74.3	83.3	82.6	-1
Hunter Water	60	71	79	71	70	-1
Barwon Water	96.6	95.8	96.2	92.1	89.5	-3
SA Water				88	85.3	-3
South East Water	94.6	91	82.8	88.3	84.4	-4
Sydney Water	79.3	86.2	86	83	79	-5
Icon Water			72.5	79.1	71.3	-10
Yarra Valley Water	62.9	61.4	81.9	76.9	63.5	-17
TasWater					88.6	
Median	77.2	78.7	77.5	79.7	79	-2
Mean	78.1	78.3	77.1	76.7	75.9	-1
50,000–100,000 group						
Coliban Water	88.4	78	80.3	84.8	91.3	8
Wyong	59	49	32	33	34	3
Central Highlands Water	90.1	90.6	89.8	90.4	92	2
Goulburn Valley Water	98	97.3	97.8	98.9	99	0
Central Gippsland Water	83.8	82	82.6	83.1	82.7	0
Western Water	96.2	98.1	97.2	97.8	94.4	-3
Cairns	70.2	79.7	75.5		76.2	
Median	88.4	82	82.6	87.6	91.3	1
Mean	83.7	82.1	79.3	81.3	81.4	1
20,000–50,000 group						
Port Macquarie Hastings	74	72	77	75	84	12
Lower Murray Water	90.5	86	87.7	85.7	87.6	2
North East Water	95.8	96.8	96.5	89.5	89.9	0
Coffs Harbour	99	99	99	99	99	0
Shoalhaven	100	100	100	96	96	0
Wagga Wagga			100	100	100	0
East Gippsland Water	94.8	95.9	99.5	99.8	99.8	0
Wannon Water	99.6	99.5	99.4	99.2	99	0
GWMWater	78.1	81.1	90.5	94.4	94	0
Tweed			51	56	48	-14
Fitzroy River Water					80	
Redland					89	
Median	95.3	96.3	97.7	95.2	92	0
Mean	91.5	91.3	90.1	89.5	88.9	0
10,000–20,000 group						
Gympie				60	80	33
Bega Valley	79	65	72	79	87	10
South Gippsland Water	99.6	99.5	99.5	99.5	99.7	0
Essential Energy	79	78	76	78	78	0
Lismore			80	80	80	0
Kal-Boulder (S)		100	100	100	100	0

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Westernport Water	93.4	95	95.1	97.8	97.7	0
Dubbo	86	90	89	89	87	–2
Kempsey			49	48	45	–6
Wingecarribee			66	79	53	–33
Eurobodalla			84		100	
Median	86	92.5	82	79.5	87	0
Mean	87.4	87.9	81.1	81	82.5	0

Table A14 C15—Average duration of an unplanned interruption: water (minutes), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Icon Water	110.8	118.5	147.9	104	119.5	15
Hunter Water	140.7	121.7	142.4	128	136	6
Yarra Valley Water	109.9	101.3	108.1	99.4	103.2	4
Logan			135.4	151.4	155.6	3
SA Water				161	163	1
Qld Urban Utilities	172	169	162	139	139	0
South East Water	88.4	87.3	89	91	89	-2
Sydney Water	147.3	154.8	152.6	151	147	-3
City West Water	147.3	131.4	120.5	115.4	112	-3
Barwon Water	92.9	113.9	107.2	93.1	88	-5
Gold Coast			119.7	160	132.4	-17
WC (Perth)	114	118	129.7	117.4	96	-18
Unitywater					157	
Median	114	118.5	129.7	122.7	132.4	-1
Mean	124.8	124	128.6	125.9	126	-2
50,000–100,000 group						
Townsville	0	3.5	3.5	3.2	67.3	2,003
Western Water	81.2	67	129.2	76.9	95.3	24
Gosford	222	196	199	311	382	23
Central Gippsland Water	77.6	75.1	86.4	74.4	89	20
Goulburn Valley Water	104.1	97.4	128.3	100	113	13
Cairns	49	46	109.3	49.7	44.1	-11
Coliban Water	274	105.5	113.9	170.2	115	-32
Wyong	195	180	204	200	133	-34
Central Highlands Water	217	127.7	142.2	103.8	69	-34
P&W (Darwin)	92	72			93.6	
Median	98	86.3	128.3	100	94.4	13
Mean	131.2	97	124	121	120.1	219
20,000–50,000 group						
Fitzroy River Water	59	39.5	60	4.1	98.2	2,295
Wide Bay Water	90			38.9	129.5	233
Lower Murray Water	55.1	54.5	50.5	43.1	57	32
Port Macquarie Hastings	198	205	163	174	210	21
GWMWater	79.6	80	64.5	73.2	85.2	16
Albury			104	124	137	10
Riverina Water (W)	260	281	308	173	185	7
North East Water	80.9	198.8	87.3	101.7	104.7	3
Wannon Water	66	88.6	110.8	100.9	91.2	-10
Tweed			160	149	134	-10
WC (Mandurah)	34	79	64.3	68	61	-10
East Gippsland Water	60.1	92.1	70.8	75.8	64	-16
Mackay Water	181.5	282	113	121	92	-24
Shoalhaven	84	177	194	220	135	-39
Gladstone					15.9	
Redland					20.5	
Median	80.3	92.1	104	101.3	95.1	5
Mean	104	143.4	119.3	104.8	101.3	179

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
10,000–20,000 group						
Busselton (W)	41.6	79.5	87.2	77.1	197.5	156
Dubbo	147	168	152	75	131	75
Kempsey	114	132	165	127	215	69
Lismore			288	120	140	17
Eurobodalla			240	190	220	16
South Gippsland Water	100	94.8	118	138.6	160	15
Wingecarribee			91	108	122	13
Westernport Water	117.7	175.1	123.6	92.3	103	12
Orange			240	238	255	7
Goldenfields Water (R)			235	192	205	7
Queanbeyan	180	180	180	180	180	0
WC (Albany)	121	145	123.8	123.3	120.8	-2
WC (Geraldton)	102	193	139.7	110.2	103.4	-6
WC (Australind/Eaton)		86	75.7	78.2	72.2	-8
Aqwest–Bunbury (W)	50	61.8	56.7	47.5	43.6	-8
WC (Kal–Boulder) (W)	28	36	33.9	55.9	39.6	-29
Gympie				240	97.2	-60
Western Downs					62	
Southern Downs					120	
Whitsunday					120	
Livingstone					22.9	
Cassowary Coast					418	
Central Highlands Regional Council					45	
Median	108	132	131.8	120	120.8	7
Mean	100.1	122.8	146.8	129	138.8	16

Table A15 E12—Total net greenhouse gas emissions (net tonnes CO₂ equivalents per 1,000 connected water properties), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
South East Water	48	50	59	53	60	13
SA Water				287	320	11
City West Water	–3	–4	25	26	27	4
WC (Perth)	573	647	663	731	738	1
Yarra Valley Water	42	40	41	44	44	0
Icon Water	362	313	288	260	257	–1
Sydney Water	143	72	85	85	84	–1
Barwon Water	416	403	266	274	262	4
Hunter Water	455	438	381	412	220	–47
Qld Urban Utilities					199	
Median	252	193	176	260	210	0
Mean	254	245	226	241	221	–3
50,000–100,000 group						
Western Water	411	320	282	267	520	95
Coliban Water	490	487	475	446	610	37
Gosford	566	539	438	401	462	15
Central Gippsland Water	1,082	959	661	580	639	10
Wyong			486	441	459	4
Goulburn Valley Water	448	777	848	873	872	0
Central Highlands Water	305	236	228	250	246	–2
P&W (Darwin)	189	208	219	205	165	–20
Median	448	487	457	421	491	7
Mean	499	504	455	433	497	17
20,000–50,000 group						
Coffs Harbour	450	460	515	362	487	35
Shoalhaven	408	489	423	377	437	16
Wannon Water	703	819	739	693	751	8
Port Macquarie Hastings	202	222	417	386	416	8
Clarence Valley	98	137	114	114	119	4
Lower Murray Water	725	1,092	346	533	544	2
MidCoast Water	306	315	340	483	490	1
Riverina Water (W)	307	624	365	372	372	0
North East Water	773	820	837	860	838	–3
East Gippsland Water	404	383	380	359	344	–4
Tamworth	368	374	378	419	393	–6
Tweed	429	454	434	441	413	–6
GWMWater	502	487	384	652	607	–7
Albury	494	528	541	451	393	–13
WC (Mandurah)	280	287	306	290	193	–33
Median	408	460	384	419	416	0
Mean	430	499	435	453	453	0
10,000–20,000 group						
Queanbeyan	110	143	190	170	184	8
South Gippsland Water	673	429	445	354	377	6
WC (Kal–Boulder) (W)	1,820	1,814	1,773	1,604	1,688	5
Wingecarribee	382	377	398	467	469	0

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Westernport Water	288	476	402	411	412	0
Bega Valley	72	193	331	343	342	0
Byron	283	363	164	167	166	–1
Busselton (W)	202	194	193	198	196	–1
Eurobodalla	341	351	352	363	359	–1
Dubbo	482	429	527	499	491	–2
Kal–Boulder (S)	475	169	295	281	276	–2
WC (Australind/Eaton)		337	443	469	457	–3
Orange	449	390	414	416	405	–3
Aqwest–Bunbury (W)	176	158	159	170	165	–3
Goldenfields Water (R)			461	407	394	–3
Lismore	69	69	210	248	233	–6
Bathurst	616	512	384	362	337	–7
Kempsey	340	368	376	349	324	–7
Ballina	351	347	366	425	390	–8
P&W (Alice Springs)	600	704	778	686	609	–11
WC (Busselton) (S)			297	320	275	–14
Essential Energy	550	572	647	930	779	–16
WC (Albany)	590	621	554	541	434	–20
WC (Geraldton)	471	448	419	433	341	–21
Goulburn Mulwaree			615	618	449	–27
WC (Bunbury) (S)	406	386	330	384	201	–48
Median	394	377	391	396	368	–3
Mean	443	428	443	447	414	–7

Table A16 A8—Water main breaks (no. per 100 km of water main), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Icon Water	26.7	24.7	20	11.5	14.2	23
SA Water				11.4	13.9	22
WC (Perth)	12.7	12.5	13.3	13.4	15	12
South East Water	30.4	30.1	31.3	30.8	32.2	5
Logan			10.8	6.6	6.5	-2
Qld Urban Utilities	21.4	17.7	26.6	29	28	-3
Hunter Water	31.2	25.2	31.9	30.2	28.9	-4
Barwon Water	31	34	44	31	29	-6
City West Water	41.1	33	52.2	39.9	37.1	-7
Sydney Water	27.5	22.3	29	30	26	-13
Yarra Valley Water	45.9	40.4	52.3	50.5	39.3	-22
Gold Coast			10.5	12	7.1	-41
Unitywater				5.6	3.3	-41
Median	30.4	25.2	29	29	26	-4
Mean	29.8	26.7	29.3	23.2	21.6	-6
50,000–100,000 group						
Toowoomba		23	18.5	13.8	20.7	50
Townsville	35.4	23.3	17.7	24.6	28.6	16
P&W (Darwin)	42.4	40.7	16.9	20.2	21.1	4
Central Gippsland Water	23.2	22.6	33.6	25.2	25.1	0
Wyang	9.6	7.8	10.2	17.1	17	-1
Cairns	13.7	12.1	13	14.1	13.3	-6
Western Water	12.9	13.9	18.8	13.3	12.2	-8
Coliban Water	24.4	28.4	26.7	28.6	26.1	-9
Central Highlands Water	21	22.2	23.4	22.8	20.7	-9
Goulburn Valley Water	18.2	22.2	29.4	27.5	22.6	-18
Gosford	29.3	26.6	23.2	22.2	16.7	-25
Median	22.1	22.6	18.8	22.2	20.7	-6
Mean	23	22.1	21	20.9	20.4	0
20,000–50,000 group						
East Gippsland Water	9.6	7.5	7.9	7.5	17.3	131
Tamworth	6.1	12.6	7.5	6.6	13.9	111
Port Macquarie Hastings	2.6	1.6	3	2.4	3.1	29
Lower Murray Water	31.1	44.1	45	30	35.4	18
MidCoast Water	4.3	5	7.5	8.3	9.2	11
WC (Mandurah)	5.2	6.8	6.3	4.2	4.2	0
North East Water	13.2	18	21.3	13.3	12.5	-6
Wannon Water	12	10.9	12.7	10.5	9.7	-8
GWMWater	35.6	56.2	51.5	60.3	55.4	-8
Mackay Water	4	9.3	10.4	11.8	10.3	-13
Clarence Valley	13.6	10.3	12	12.5	10.7	-14
Shoalhaven	10.2	9.8	10.1	9.5	7.9	-17
Coffs Harbour	12	8.6	10	3.3	2.7	-18
Wide Bay Water	8.9	7.7	4.5	6.2	3.6	-42
Fitzroy River Water	11.5	14.2	18.7	24.9	12.9	-48
Tweed	7.7	4.6	4.4	8	4.1	-49
Albury	7.4	6	7.7	10.3	4.7	-54

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Riverina Water (W)	13.6	14	14.3	19	6.9	–64
Bundaberg					3.9	
Gladstone					141	
Redland					3.4	
Median	9.9	9.6	10.1	9.9	9.2	–10
Mean	11.6	13.7	14.2	13.8	17.8	–2
10,000– 20,000 group						
Queanbeyan	18.2	22.7	5.3	1.8	6.3	250
Goldenfields Water (R)	19.2	20.7	20.6	10.3	13.1	27
WC (Kal–Boulder) (W)	19.9	16.7	13.1	16.8	20.8	24
Dubbo	5.6	2.9	4.4	3.8	4.7	24
Aqwest–Bunbury (W)	10.3	10.2	12	10.4	12.4	19
WC (Geraldton)	28.9	20	27.7	23.4	26.9	15
Busseton (W)	5	3.3	6.6	7.5	8.3	11
WC (Albany)	12	8.1	13.8	11.6	11.3	–3
Eurobodalla			11.4	13.4	13	–3
Byron	8	7.2	7.2	9.3	8.8	–5
Goulburn Mulwaree			10.7	10.7	9.6	–10
Ballina	7.5	2.2	12.1	6.3	5.4	–14
WC (Australind/Eaton)		7.1	5.2	5.5	4.7	–15
Essential Energy			24.1	16.5	14.1	–15
Orange			9.2	8.5	7.1	–16
Bathurst	12.1	7.6	4.9	8.2	6.8	–17
South Gippsland Water	39.3	32.1	41.7	47.8	39.5	–17
Westernport Water	16.7	22.7	28.2	16.6	13.6	–18
Kempsey	10	8.5	7.3	9.8	7.3	–26
Bega Valley	5.9	3.8	7.9	8.8	6.3	–28
Lismore	13.8	10.2	25.1	36.7	20.1	–45
Gympie				9.6	4.8	–50
Wingecarribee	5	5.9	5.5	11.8	5.3	–55
P&W (Alice Springs)	41.4	41.7	17.6	26.7	2.2	–92
Western Downs					24.6	
Southern Downs					16.6	
Whitsunday					19.4	
Cassowary Coast					18	
Livingstone					3.9	
Central Highlands Regional Council					42.5	
Median	12.1	8.5	11.4	10.4	10.4	–14
Mean	15.5	13.4	14	13.8	13.2	–3

Table A17 A10—Real losses (L/service connection/d), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Logan			44.2	32.7	78.8	141
Icon Water	64	59	52	38	58	53
Hunter Water	84	75	75	82	91	11
City West Water	62	65	69	67	70	4
WC (Perth)	78	91	81.1	77.9	79.7	2
SA Water				89	90	1
Qld Urban Utilities	79	96	84	69	69	0
Unitywater				58	55.9	-4
South East Water	60.5	74	81	70.3	67	-5
Sydney Water	79	85	87	81	74	-9
Yarra Valley Water	51	50	65	70	60	-14
Gold Coast			80.9	110	77	-30
Barwon Water	52	61	64	39	25	-36
Median	64	74	75	70	70	0
Mean	67.7	72.9	71.2	68	68.9	9
50,000–100,000 group						
Western Water	42	50	53	33	47	42
Goulburn Valley Water	71	62	75	82	111	35
Coliban Water	18	121	85	54	65	20
Wyong	31	30	33	34	33	-3
P&W (Darwin)	415	293	416	268	229	-15
Central Gippsland Water	56	52	87	98	78	-20
Toowoomba		100.4	100	111.6	84.5	-24
Central Highlands Water	61	53	59	40	30	-25
Gosford	61	36	32	116	64	-45
Cairns	147	120	78	50.6	24	-53
Median	61	57.5	76.5	68	64.5	-17
Mean	100.2	91.7	101.8	88.7	76.5	-9
20,000–50,000 group						
North East Water	56.6	55	60	60	120	100
Shoalhaven	45	37	43	57	92	61
Wide Bay Water	49.2	49.2	68	53	84	58
Port Macquarie Hastings	71	62	37	37	45	22
East Gippsland Water	95.9	76	67.7	42.5	51.4	21
MidCoast Water	79	84	57	57	61	7
Riverina Water (W)	47	64	81	81	86	6
Albury	44	50	56	57	55	-4
Tweed	58	56	58	61	56	-8
Mackay Water	215.5	146.9	167.7	118.4	106.5	-10
Clarence Valley			104	127	111	-13
Wannon Water	132	125	110	82	71	-13
Coffs Harbour	50	60	75	63	50	-21
Fitzroy River Water	219	145	185	227.7	180	-21
Tamworth	186	74	83	91	69	-24
WC (Mandurah)	55	43	44.5	74.1	54.5	-26
Lower Murray Water			56.5	68	45.7	-33
GWMWater	68.1	136.2	185.7	215	110	-49

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Bundaberg					50.3	
Gladstone					860.2	
Redland					44.1	
Median	63.1	63	67.8	65.5	69	–9
Mean	92	79	85.5	87.3	114.4	3
10,000–20,000 group						
Gympie				75	190	153
WC (Albany)	91	84	82	90	174.5	94
WC (Australind/Eaton)		105	83.3	88.6	139.8	58
WC (Geraldton)	140	108	156.3	220.4	262.4	19
Ballina	194	121	156	145	156	8
Lismore	40	46	37	39	40	3
Orange			64	60	61	2
Kempsey	49	48	50	96	97	1
Bega Valley	54	54	143	50	50	0
Goldenfields Water (R)	67	74	91	92	91	–1
Eurobodalla	99	59	50	50	48	–4
Dubbo	69	65	101	124	118	–5
Aqwest–Bunbury (W)	110	115.3	95	115	106	–8
Essential Energy	65	98	102	90	82	–9
Goulburn Mulwaree			68	82	70	–15
Busselton (W)	96.9	88.4	87.8	95.9	79.8	–17
Queanbeyan	88	87	123	102	81	–21
Byron	104	63	78	68	53	–22
South Gippsland Water	69.7	77	95	138	103.5	–25
P&W (Alice Springs)	243	300	428	291	200	–31
Westernport Water	14.5	30	15	24.5	13	–47
WC (Kal–Boulder) (W)	56	58	44.8	63	30.1	–52
Wingecarribee	79	74	122	133	61	–54
Southern Downs					182	
Whitsunday					537.2	
Cassowary Coast					356	
Median	79	75.5	89.4	90	94	–5
Mean	91	87.7	103.3	101.4	130.1	1

Table A18 A14—Sewerage mains breaks and chokes (no. per 100-km sewer main), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Qld Urban Utilities	15.8	15.1	21.1	22.9	30.1	31
Unitywater				20.4	25	23
Barwon Water	29.6	24.5	25.2	29	35.4	22
Yarra Valley Water	40.7	26.3	25.4	27.6	31.6	14
Sydney Water	57	48.2	46.2	61.4	68.7	12
City West Water	20.5	15.4	15	16.2	17	5
SA Water				46	48	4
Logan			12.1	12.1	12.6	4
WC (Perth)	19.3	18.6	16.1	17	17.6	4
Hunter Water	59.8	46.6	42.3	53.6	53.6	0
South East Water	17.3	11.7	12.3	14.8	14.3	–3
Icon Water	78	42	42	57	51.6	–9
Gold Coast					3.9	
Median	29.6	24.5	23.2	25.2	30.1	5
Mean	37.5	27.6	25.8	31.5	31.5	9
50,000–100,000 group						
Gosford	42	36	38	37	39	5
Central Highlands Water	15	12.4	16.9	18.8	19.7	5
P&W (Darwin)	22.8	23.8	15.7	8.5	8.9	5
Western Water	21.7	15.6	12.7	15.7	15.5	–1
Toowoomba		18	16.1	30.7	29	–6
Central Gippsland Water	13.6	7.9	7.8	8.6	8	–7
Wyang	57	55	46	54	49	–9
Coliban Water	40.8	42.6	53.7	62.9	48.1	–24
Townsville	3	5.5	2.7	5.4	2.8	–48
Cairns	25.5	22.1	14.6	14.7	7.6	–48
Goulburn Valley Water	20.5	17.7	22.4	20.4	10.1	–50
Median	22.2	18	16.1	18.8	15.5	–7
Mean	26.2	23.3	22.4	25.2	21.6	–16
20,000–50,000 group						
Fitzroy River Water	94.5	70.5	70.3	12.1	24.4	102
Shoalhaven	12	13	14	8	11	38
Coffs Harbour	51	43	65	76	89	17
Wannon Water	10.4	8.3	10.7	11.5	13.4	17
GWMWater	24.9	22	33.2	38.7	45	16
Clarence Valley	41	29	43	45	52	16
East Gippsland Water	8.8	2.7	3.6	5.3	6.1	15
Lower Murray Water	16.5	11.8	16.1	16.7	17.1	2
MidCoast Water	6	6	6	6	6	0
Wagga Wagga	78	75	88	80	80	0
WC (Mandurah)	11.1	8.1	9.4	8.1	7.5	–7
North East Water	11	9.1	5.7	9.7	8.8	–9
Albury			67	75	65	–13
Tamworth	89	79	77	74	50	–32
Wide Bay Water	22.7	29.1	23.7	8.5	5.4	–36
Mackay Water	3.1	3.5	4.3	19.3	4.1	–79
Tweed	11	8	2	1	0	–100

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Bundaberg					9.1	
Gladstone					6.9	
Redland					7.2	
Median	14.3	12.4	16.1	12.1	10.1	0
Mean	30.7	26.1	31.7	29.1	25.4	–3
10,000–20,000 connected group						
Kempsey	2	11	24	16	33	106
Gympie				21.3	40.9	92
WC (Australind/Eaton)		6.1	6.5	6.4	10.4	62
South Gippsland Water	14.9	21.4	17	14.8	23.6	59
WC (Geraldton)	6.7	8.8	14.3	7	10.8	54
Orange	32	19	15	24	33	38
WC (Albany)	18.2	25.6	30.7	19.5	23.7	22
Bathurst	32	64	58	84	99	18
WC (Busselton) (S)			8.4	3.1	3.5	13
Essential Energy	129	102	128	115	129	12
Queanbeyan	75	57	52	55	61	11
Dubbo	38	36	43	42	46	10
Eurobodalla			29	30	32	7
WC (Bunbury) (S)	11.6	12.2	14.6	12.1	12.4	2
Lismore	120	101	55	49	50	2
Byron	26	20	32	11	11	0
Westernport Water	8.6	4.7	4.6	2.8	2	–29
P&W (Alice Springs)	11.6	9.7	9.6	1.4	0.9	–36
Kal–Boulder (S)	73.1	63.6	24.4	30.3	17.7	–42
Wingecarribee	36	25	44	46	22	–52
Bega Valley	18	10	9	22	9	–59
Ballina	28	10	8	20	3	–85
Western Downs					9.6	
Southern Downs					13.2	
Whitsunday					0.3	
Cassowary Coast					3.5	
Livingstone					3.6	
Central Highlands Regional Council					24.9	
Median	27	20	24	20.6	15.4	10
Mean	37.8	32	29.9	28.8	26	9

Table A19 A15—Property connection sewer breaks and chokes (no. per 1,000 properties), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Barwon Water	0	0	0	0	1.8	
Unitywater				0.7	1.5	114
Logan			1.2	1	1.8	80
Qld Urban Utilities	3	2.6	2.9	2.9	3.8	31
City West Water	6.2	11.2	4.2	4.2	5	19
Yarra Valley Water	10.6	10.2	5.8	6.5	6.7	3
Hunter Water	12.6	9.3	8.6	10.1	10.2	1
Sydney Water	0.1	0.1	0.2	0.2	0.2	0
SA Water				30	29	–3
South East Water	6.4	6.7	7.2	4.9	4.7	–4
Icon Water	11	8	8	10	9.4	–6
Gold Coast					1.2	
Median	6.3	7.4	4.2	4.2	4.2	3
Mean	6.2	6	4.2	6.4	6.3	24
50,000–100,000 group						
Central Gippsland Water				0	1.8	
Wyong	1.4	1.4	1	1.4	1.5	7
Cairns	4.8	9.4	1.3	3.2	3.2	0
Western Water	6.8	4.2	4.1	5.2	5	–4
P&W (Darwin)	0.8	0.8	2.2	3.3	3.1	–6
Gosford	4.2	4	3.9	4.9	4.6	–6
Townsville	2.7	2.6	3.1	4.1	3	–27
Central Highlands Water	1.6	0	1.9	2.6	1	–62
Coliban Water			14.5	18	4.5	–75
Goulburn Valley Water			8.2	5.2	0	–100
Median	2.7	2.6	3.1	3.7	3	–6
Mean	3.2	3.2	4.5	4.8	2.8	–30
20,000–50,000 group						
GWMWater	0.2	0	4.8	0	25.1	
Wannon Water				0	4.6	
Mackay Water	2.3	1.6	0.1	0.3	1.7	467
East Gippsland Water	0.9	6	1.3	0.4	0.6	50
Albury			11.6	10.3	13.4	30
Coffs Harbour	8.1	9.7	12.8	2.7	3.5	30
Shoalhaven	1.4	0.4	0.5	0.2	0.2	0
Fitzroy River Water	13	11.3	11.4	11.5	9.7	–16
Tweed	0.8	1.2	0.4	0.4	0.3	–25
Wagga Wagga	25.4	17.5	17.2	20.8	14.7	–29
Wide Bay Water	4.9	1.5	0.8	1.9	1.3	–32
North East Water	2.2	2.4	2.4	4.5	1.8	–60
Clarence Valley	4.6	15.8	10.7	10.2	3.6	–65
Tamworth	4	1.2	3.1	8.7	2.4	–72
Lower Murray Water	0	0	0	0	0	
Bundaberg					0.2	
Gladstone					0.8	
Redland					0.3	

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
Median	2.3	1.6	2.7	1.9	1.8	–8
Mean	5.2	5.3	5.5	4.8	4.7	23
10,000–20,000 group						
Westernport Water	0	0	0	0	0.6	
South Gippsland Water	0	0	0	0	4.5	
Orange	0.9	7	0.6	4.5	9.9	120
Goulburn Mulwaree			12.9	5.2	6.6	27
Wingecarribee	15.8	7.8	9.1	6.9	8.5	23
Eurobodalla			5.9	5	5.7	14
Essential Energy	36.7	40.1	36.2	36.9	41.3	12
Lismore	15.9	12.3	6.3	9.3	10.1	9
Byron	10.9	9.4	9.9	7.7	7.9	3
P&W (Alice Springs)	2.4	3.3	1.6	0.2	0.2	0
Kempsey			10	13.6	9.6	–29
Bathurst	10	2.9	2.8	2.5	1.7	–32
Dubbo	15.3	10.9	14.5	12.7	7.9	–38
Kal–Boulder (S)	10.1	8.9		4.2	2.5	–40
Gympie				2.3	0.8	–65
Bega Valley			3	3.3	0.9	–73
Ballina	0.5	0.7	1.6	2.1	0.1	–95
Queanbeyan	0	0	0	0	0	
Western Downs					1.6	
Southern Downs					8.4	
Whitsunday					1.7	
Livingstone					2.3	
Cassowary Coast					0.9	
Median	10	7	4.5	4.3	2.5	3
Mean	9.1	7.9	7.1	6.5	5.8	–11

Table A20 H3—Percentage of population where microbiological compliance was achieved (%), 2010–11 to 2014–15, by utility group

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
100,000+ group						
Icon Water	100	100	100	100	100	0
Hunter Water	100	100	100	100	100	0
Sydney Water	100	100	100	100	100	0
Barwon Water	100	100	100	100	100	0
City West Water	100	100	100	100	100	0
South East Water	100	100	100	100	100	0
Yarra Valley Water	100	100	100	100	100	0
WC (Perth)	100	100	100	100	100	0
SA Water				100	100	0
Qld Urban Utilities	100	100	100	100	100	0
TasWater				99	98.6	0
Median	100	100	100	100	100	0
Mean	100	100	100	99.9	99.9	0
50,000–100,000 group						
Coliban Water	98.7	100	99.8	99.4	100	1
Gosford	100	100	100	100	100	0
Wyong	100	100	100	100	100	0
P&W (Darwin)	100	100	100	100	100	0
Cairns	98.6	99.9	100	100	100	0
Central Gippsland Water	100	99.7	100	100	100	0
Goulburn Valley Water	100	100	100	100	100	0
Western Water	100	100	100	100	100	0
Central Highlands Water	98.1	100	100	100	100	0
Median	100	100	100	100	100	0
Mean	99.5	100	100	99.9	100	0
20,000–50,000 group						
Albury	100	100	100	100	100	0
Clarence Valley	99	99	73	100	100	0
Coffs Harbour	100	100	100	100	100	0
MidCoast Water	100	100	100	100	100	0
Port Macquarie Hastings	100	100	100	100	100	0
Shoalhaven	99	100	100	100	100	0
Tamworth	99	100	99	100	100	0
Tweed	100	100	100	100	100	0
East Gippsland Water	100	100	100	100	100	0
GWMWater	100	100	100	100	100	0
Lower Murray Water	100	100	100	100	100	0
North East Water	100	100	100	100	100	0
Wannon Water	100	99.3	100	100	100	0
WC (Mandurah)	100	100	100	100	100	0
Median	100	100	100	100	100	0
Mean	99.8	99.9	98	100	100	0
10,000–20,000 group						
Ballina	100	100	100	100	100	0
Queanbeyan	100	100	100	100	100	0
Goulburn Mulwaree	100	100	100	100	100	0

Utility	2010–11	2011–12	2012–13	2013–14	2014–15	Change from 2013–14 %
WC (Geraldton)	100	100	100	100	100	0
WC (Albany)	100	100	100	100	100	0
Westernport Water	100	100	100	100	100	0
South Gippsland Water	100	100	100	100	100	0
P&W (Alice Springs)	100	100	100	100	100	0
Wingecarribee	100	100	100	100	100	0
Orange	100	100	100	100	100	0
Bathurst	100	100	100	100	100	0
Lismore	100	100	100	100	100	0
Kempsey	100	100	100	100	100	0
Eurobodalla	100	100	100	100	100	0
Dubbo	100	100	100	100	100	0
Essential Energy	100	100	100	100	100	0
Byron	100	100	100	100	100	0
Bega Valley	99	100	100	100	100	0
WC (Australind/Eaton)		100	100	100	100	0
Median	100	100	100	100	100	0
Mean	99.9	100	100	100	100	0

Appendix B Audit framework

Auditing is intended to provide enhanced confidence in the accuracy, completeness, and reliability of reported information. Auditing promotes transparency and consistency in the process of collecting and reporting data across all urban water utilities, in order to report performance results that are relevant and useful and enable meaningful comparisons between utilities over time.

The National Water Commission, the Water Services Association of Australia, and representative National Water Initiative (NWI) parties established the National Framework for Reporting on Performance of Urban Water Utilities Deed, which sets out how the parties will report on the performance of urban water utilities in accordance with the NWI. The deed requires parties to use all reasonable endeavours to ensure that a comprehensive audit of the data collected by each urban water utility under the National Performance Framework is undertaken at least once every three years.

The National Performance Framework 2014–15 auditing requirements and audit report template provide further detail about the requirements that a water utility must meet in order to report its results in the 2015 Urban NPR.

The audit requirements state that:

- audits are to be conducted at a minimum of 3-year intervals;
- indicators that have failed an audit will not be published (they need to be re-audited before they are published);
- audits must be carried out by suitably qualified and independent auditors;
- the level of assurance to be provided is generally 'reasonable' assurance (although there are some instances in which 'limited' assurance is appropriate);
- audits must be conducted under Australian Standard ASAE 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information; and
- auditable indicators are those with the indicator codes W7, W8, W11, W11.1–W11.3, W12, W14, W18, W18.5, W19, W26, W27, A2, A3, A5, A6, A8–A11, A14, A15, E1–E3, E8, E12, E12.1, E13, C2, C4, C8, C13, C14–C19, H3, H4, F1–F8, F11–F16, F20–F30, P7, and P8.

Appendix C Utilities reporting

Jurisdiction	Utility name	Type or size group
Australian Capital Territory	Icon Water	100,000+
New South Wales	Albury City Council	20,000–50,000
New South Wales	Ballina Shire Council	10,000–20,000
New South Wales	Bathurst Regional Council	10,000–20,000
New South Wales	Bega Valley Shire Council	10,000–20,000
New South Wales	Byron Shire Council	10,000–20,000
New South Wales	Clarence Valley Council	20,000–50,000
New South Wales	Coffs Harbour City Council	20,000–50,000
New South Wales	Dubbo City Council	10,000–20,000
New South Wales	Essential Energy	10,000–20,000
New South Wales	Eurobodalla Shire Council	10,000–20,000
New South Wales	Fish River Water	Bulk utility
New South Wales	Goldenfields Water (B)	Bulk utility
New South Wales	Goldenfields Water (R)	10,000–20,000
New South Wales	Gosford City Council	50,000–100,000
New South Wales	Goulburn Mulwaree Council	10,000–20,000
New South Wales	Hunter Water Corporation	100,000+
New South Wales	Kempsey Shire Council	10,000–20,000
New South Wales	Lismore City Council	10,000–20,000
New South Wales	MidCoast Water	20,000–50,000
New South Wales	Orange City Council	10,000–20,000
New South Wales	Port Macquarie Hastings Council	20,000–50,000
New South Wales	Queanbeyan City Council	10,000–20,000
New South Wales	Riverina Water (W)	20,000–50,000
New South Wales	Rous Water	Bulk utility
New South Wales	Shoalhaven City Council	20,000–50,000
New South Wales	Water NSW	Bulk utility
New South Wales	Sydney Water Corporation	100,000+
New South Wales	Tamworth Regional Council	20,000–50,000
New South Wales	Tweed Shire Council	20,000–50,000
New South Wales	Wagga Wagga Council (S)	20,000–50,000
New South Wales	Wingecarribee Shire Council	10,000–20,000
New South Wales	Wyong Shire Council	50,000–100,000
Northern Territory	Power and Water – Alice Springs	10,000–20,000
Northern Territory	Power and Water – Darwin	50,000–100,000
Queensland	Bundaberg	20,000–50,000
Queensland	Cassowary Coast	10,000–20,000
Queensland	Central Highlands Regional Council	10,000–20,000
Queensland	Cairns Regional Council	50,000–100,000
Queensland	Fitzroy River Water	20,000–50,000
Queensland	Gladstone Area Water Board	Bulk utility
Queensland	Gladstone Regional Council	20,000–50,000
Queensland	City of Gold Coast	100,000+
Queensland	Gympie Regional Council	10,000–20,000
Queensland	Livingstone Shire Council	10,000–20,000
Queensland	Logan City Council	100,000+

Jurisdiction	Utility name	Type or size group
Queensland	Mackay Water	20,000–50,000
Queensland	Queensland Urban Utilities	100,000+
Queensland	Redland City Council	20,000–50,000
Queensland	Seqwater	Bulk utility
Queensland	Southern Downs Regional Council	10,000–20,000
Queensland	Townsville Regional Council	50,000–100,000
Queensland	Toowoomba Regional Council	50,000–100,000
Queensland	Unitywater	100,000+
Queensland	Wide Bay Water	20,000–50,000
Queensland	Western Downs Regional Council	20,000–50,000
Queensland	Whitsunday Regional Council	10,000–20,000
South Australia	SA Water	100,000+
Tasmania	TasWater	100,000+
Victoria	Barwon Water	100,000+
Victoria	Central Gippsland Water	50,000–100,000
Victoria	Central Highlands Water	50,000–100,000
Victoria	City West Water	100,000+
Victoria	Coliban Water	50,000–100,000
Victoria	East Gippsland Water	20,000–50,000
Victoria	Goulburn Valley Water	50,000–100,000
Victoria	GWMWater	20,000–50,000
Victoria	Lower Murray Water	20,000–50,000
Victoria	Melbourne Water	Bulk utility
Victoria	North East Water	20,000–50,000
Victoria	South East Water	100,000+
Victoria	South Gippsland Water	10,000–20,000
Victoria	Wannon Water	20,000–50,000
Victoria	Western Water	50,000–100,000
Victoria	Westernport Water	10,000–20,000
Victoria	Yarra Valley Water	100,000+
Western Australia	Aqwest–Bunbury Water Board (W)	10,000–20,000
Western Australia	Busselton Water (W)	10,000–20,000
Western Australia	City of Kalgoorlie–Boulder (S)	10,000–20,000
Western Australia	Water Corporation—Albany	10,000–20,000
Western Australia	Water Corporation—Australind-Eaton	10,000–20,000
Western Australia	Water Corporation—Bunbury (S)	10,000–20,000
Western Australia	Water Corporation—Busselton (S)	10,000–20,000
Western Australia	Water Corporation—Geraldton	10,000–20,000
Western Australia	Water Corporation—Kalgoorlie–Boulder (W)	10,000–20,000
Western Australia	Water Corporation—Mandurah	20,000–50,000
Western Australia	Water Corporation—Perth	100,000+

Appendix D Urban performance indicators

Indicator category	Indicator subcategory	Indicator code	Indicator name
Water resources	Sources of water	W1	Volume of water sourced from surface water (ML)
Water resources	Sources of water	W2	Volume of water sourced from groundwater (ML)
Water resources	Sources of water	W3.1	Volume of water sourced from desalination of marine water
Water resources	Sources of water	W4	Volume of water sourced from recycling (ML)
Water resources	Sources of water	W5	Volume of water received from bulk supplier (ML)
Water resources	Sources of water	W5.1	Volume of potable water received from bulk supplier
Water resources	Sources of water	W5.2	Volume of nonpotable water received from bulk supplier
Water resources	Sources of water	W6	Volume of bulk recycled water purchased (ML)
Water resources	Uses of water supplied	W8	Volume of water supplied: residential (ML)
Water resources	Uses of water supplied	W8.1	Volume of potable water supplied: residential
Water resources	Uses of water supplied	W8.2	Volume of nonpotable water supplied: residential
Water resources	Uses of water supplied	W9	Volume of water supplied: commercial, municipal and industrial (ML)
Water resources	Uses of water supplied	W9.1	Volume of potable water supplied: commercial, municipal and industrial (ML)
Water resources	Uses of water supplied	W9.2	Volume of nonpotable water supplied: commercial, municipal and industrial (ML)
Water resources	Uses of water supplied	W10	Volume of water supplied: other (ML)
Water resources	Uses of water supplied	W10.1	Volume of Non-revenue water
Water resources	Uses of water supplied	W10.2	Volume of nonpotable water supplied: other
Water resources	Uses of water supplied	W10.3	Volume of water supplied: managed aquifer recharge
Water resources	Uses of water supplied	W10.4	Volume of water supplied: agricultural irrigation
Water resources	Uses of water supplied	W11.1	Total urban potable water supplied
Water resources	Uses of water supplied	W11.2	Total urban nonpotable water supplied
Water resources	Uses of water supplied	W11.3	Total volume of potable water produced
Water resources	Uses of water supplied	W13	Volume of water supplied: environmental (ML)
Water resources	Uses of water supplied	W14.1	Volume of potable bulk water exports
Water resources	Uses of water supplied	W14.2	Volume of nonpotable bulk water exports
Water resources	Uses of water supplied	W15	Volume of bulk recycled water exports (ML)
Water resources	Sewage collected	W16	Volume of waste collected: residential sewage, non-residential sewage and non-trade waste (ML)
Water resources	Sewage collected	W17	Volume of waste collected: trade waste (ML)
Water resources	Sewage collected	W18.1	Volume of sewage supplied to other infrastructure operators
Water resources	Sewage collected	W18.2	Volume of sewage taken from other infrastructure operators
Water resources	Sewage collected	W18.3	Volume of sewage taken from sewer mining
Water resources	Sewage collected	W18.4	Volume of sewage measured at inlet to treatment works
Water resources	Sewage collected	W18.5	Volume of sewage treated effluent
Water resources	Uses of recycled water and stormwater	W20	Volume of recycled water supplied: residential (ML)
Water resources	Uses of recycled water and stormwater	W21	Volume of recycled water supplied: commercial, municipal and industrial (ML)
Water resources	Uses of recycled water and stormwater	W22	Volume of recycled water supplied: agricultural (ML)
Water resources	Uses of recycled water and stormwater	W23	Volume of recycled water supplied: environmental (ML)
Water resources	Uses of recycled water and stormwater	W24	Volume of recycled water supplied: on-site (ML)
Water resources	Uses of recycled water and stormwater	W25	Volume of recycled water supplied: other (ML)

Indicator category	Indicator subcategory	Indicator code	Indicator name
Water resources	Uses of recycled water and stormwater	W25.1	Volume of recycled water supplied: managed aquifer recharge
Water resources	Uses of recycled water and stormwater	W28.1	Volume of urban stormwater supplied to other infrastructure operators
Water resources	Uses of recycled water and stormwater	W28.4	Volume of urban stormwater used
Water resources	Uses of recycled water and stormwater	W29	Total volume of treated and untreated sewage discharges from a sewage discharge point
Water resources	Uses of water supplied	W11	Total urban water supplied (ML)
Water resources	Uses of water supplied	W12	Average annual residential water supplied (kL/property)
Water resources	Uses of water supplied	W14	Volume of bulk water exports (ML)
Water resources	Sewage collected	W18	Total sewage collected (ML)
Water resources	Sewage collected	W19	Sewage collected per property (kL/property)
Water resources	Uses of recycled water and stormwater	W26	Total recycled water supplied (ML)
Water resources	Uses of recycled water and stormwater	W27	Recycled water (per cent of effluent recycled)
Water resources	Sources of water	W7	Total sourced water (ML)
Asset	Other water assets	A3	Properties served per km of water main (No./km)
Asset	Sewerage assets	A6	Properties served per km of sewer main (No./km)
Asset	Water main breaks	A8	Water main breaks (no. per 100 km of water main)
Asset	Water treatment plants	A1	Number of water treatment plants providing full treatment
Asset	Other water assets	A2	Length of water mains (km)
Asset	Other water assets	A4	Number of sewage treatment plants (No.)
Asset	Other water assets	A5	Length of sewerage mains and channels (km)
Asset	Water main breaks	IA8	Total number of water main breaks
Asset	Water losses	A9	Infrastructure leakage index (ILI)
Asset	Water losses	A10	Real losses (L/service connection/d)
Asset	Water losses	A11	Real losses (kL/km water main/d)
Asset	Sewerage breaks and chokes	A14	Sewerage mains breaks and chokes (no. per 100 km sewer main)
Asset	Sewerage breaks and chokes	A15	Property connection sewer breaks and chokes (no. per 1,000 properties)
Customers	Water service complaints	C10	Water service complaints (no. per 1,000 properties)
Customers	Sewerage service complaints	C11	Sewerage service complaints (no. per 1,000 properties)
Customers	Billing and account complaints	C12	Billing and account complaints: water and sewerage (no. per 1,000 properties)
Customers	Total water and sewerage complaints	C13	Total water and sewerage complaints (no. per 1,000 properties)
Customers	Water interruption frequency	C17	Incidence of unplanned interruptions: water (no. per 1,000 properties).
Customers	Restrictions or legal action for non-payment of water bill	C18	Customers to which restrictions applied for non-payment of water bill (no. per 1,000 properties)
Customers	Restrictions or legal action for non-payment of water bill	C19	Customers to which legal actions applied for non-payment of water bill (no. per 1,000 properties)
Customers	Connected properties and population	C4	Total connected properties: water supply (000s)
Customers	Connected properties and population	C1	Population receiving water supply services (000s)
Customers	Connected properties and population	C2	Connected residential properties: water supply (000s)
Customers	Customers	C3	Connected non-residential properties: water supply (000s)

Indicator category	Indicator subcategory	Indicator code	Indicator name
Customers	Connected properties and population	C8	Total connected properties: sewerage (000s)
Customers	Connected properties and population	C5	Population receiving sewage services (000s)
Customers	Connected properties and population	C6	Connected residential properties: sewerage (000s)
Customers	Connected properties and population	C7	Connected non-residential properties: sewerage (000s)
Customers	Water quality complaints	C9	Water quality complaints (no. per 1,000 properties)
Customers	Water quality complaints	IC9	Total number of water quality complaints
Customers	Water service complaints	IC10	Total number of water service complaints
Customers	Sewerage service complaints	IC11	Total number of sewerage service complaints
Customers	Billing and account complaints	IC12	Total number of billing and account complaints: water and sewerage
Customers	Total water and sewerage complaints	IC13	Total number of water and sewerage complaints for the reporting period
Customers	Connect time to a telephone operator	C14	Percentage of calls answered by an operator within 30 seconds (%)
Customers	Average duration of unplanned water supply interruptions	C15	Average duration of an unplanned interruption: water (minutes)
Customers	Average Sewerage interruption	C16	Average sewerage interruption (minutes)
Customers	Water interruption frequency	IC17	Total number of unplanned interruptions
Customers	Restrictions or legal action for non-payment of water bill	IC18	Total number of customers to which restrictions applied for non-payment of water bill
Customers	Restrictions or legal action for non-payment of water bill	IC19	Total number of customers to which legal action applied for non-payment of water bill
Environment	Comparative sewage treatment levels	E1	Percentage of sewage treated to a primary level (%)
Environment	Net greenhouse gas emissions	E10	Greenhouse gas emissions: sewerage (tonnes CO ₂ -equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	E11	Net greenhouse gas emissions: other (net tonnes CO ₂ -equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	E12	Total net greenhouse gas emissions (net tonnes CO ₂ -equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	E12.1	Total net greenhouse gas emissions: bulk utility (net tonnes CO ₂ -equivalents per ML)
Environment	Sewer overflows	E13	Sewer overflows reported to the environmental regulator (no. per 100 km of main)
Environment	Comparative sewage treatment levels	E2	Percentage of sewage treated to a secondary level (%)
Environment	Comparative sewage treatment levels	E3	Percentage of sewage treated to a tertiary or advanced level (%)
Environment	Net greenhouse gas emissions	E9	Greenhouse gas emissions: water (tonnes CO ₂ -equivalents per 1,000 properties)
Environment	Comparative sewage treatment levels	IE2	Total volume of sewage treated to a secondary level but not to a tertiary level (ML)
Environment	Comparative sewage treatment levels	IE3	Total volume of sewage treated to a tertiary level (ML)
Environment	Biosolids reuse	E8	Percent of biosolids reused (%)
Environment	Net greenhouse gas emissions	IE9	Greenhouse gas emissions: water (tonnes CO ₂ -equivalents)

Indicator category	Indicator subcategory	Indicator code	Indicator name
Environment	Net greenhouse gas emissions	E9.1	Greenhouse gas emissions: bulk utility water (tonnes CO ₂ -equivalents per ML)
Environment	Net greenhouse gas emissions	IE10	Greenhouse gas emissions: sewerage (tonnes CO ₂ -equivalents)
Environment	Net greenhouse gas emissions	E10.1	Greenhouse gas emissions: bulk utility sewerage (tonnes CO ₂ -equivalents per ML)
Environment	Comparative sewage treatment levels	IE1	Total volume of sewage treated only to a primary level (ML)
Environment	Net greenhouse gas emissions	IE11	Net greenhouse gas emissions: other (net tonnes CO ₂ -equivalents)
Environment	Net greenhouse gas emissions	E11.1	Net greenhouse gas emissions: other: bulk utility (net tonnes CO ₂ -equivalents per ML)
Environment	Net greenhouse gas emissions	IE12	Total net greenhouse gas emissions (net tonnes CO ₂ -equivalents)
Environment	Sewer overflows	IE13	Total number of sewer overflows reported to the environmental regulator
Pricing	Residential tariff structure	P1	Tariff structure: water (text)
Pricing	Residential tariff structure	P1.1	Free water allowance (kl): water
Pricing	Residential tariff structure	P1.2	Fixed charge: water (\$)
Pricing	Residential tariff structure	P1.3	Usage charge 1st step (\$/kl)
Pricing	Residential tariff structure	P1.4	Usage charge 2nd step (\$/kl)
Pricing	Residential tariff structure	P1.5	Usage charge 3rd step (\$/kl)
Pricing	Residential tariff structure	P1.6	Usage charge 4th step (\$/kl)
Pricing	Residential tariff structure	P1.7	Usage charge 5th step (\$/kl)
Pricing	Residential tariff structure	P1.8	Usage charge 6th step (\$/kl)
Pricing	Residential tariff structure	P1.9	Usage charge 7th step (\$/kl)
Pricing	Residential tariff structure	P1.10	Usage charge 8th step (\$/kl)
Pricing	Residential tariff structure	P1.11	Usage charge 9th step (\$/kl)
Pricing	Residential tariff structure	P1.12	Special levies: water (\$)
Pricing	Residential tariff structure	P1.13	Income from special levies reported by utility: water (yes/no)
Pricing	Residential tariff structure	P2.1	Average annual residential water supplied (kL/property)
Pricing	Residential tariff structure	P4	Tariff structure: sewerage (text)
Pricing	Residential tariff structure	P4.1	Fixed charge: sewerage (\$)
Pricing	Residential tariff structure	P4.2	Usage charge: sewerage (\$/kL)
Pricing	Residential tariff structure	P4.3	Special levies: sewerage (\$)
Pricing	Residential tariff structure	P4.4	Income from special levies reported by utility: sewerage (yes/no):
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P2	Annual bill based on 200kL/a: water (\$)
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P3	Typical residential bill: water (\$)
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P5	Annual bill based on 200 kL/a: sewerage
Pricing—annual bill	Annual bill (based on average residential annual water supplied)	P6	Typical residential bill: sewerage
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P7	Annual bill based on 200 kL/a (water and sewerage)
Pricing—annual bill	Annual bill (based on average residential annual water supplied)	P8	Typical residential bill (water and sewerage)
Finance	Revenue	F1	Total revenue: water (\$000)

Indicator category	Indicator subcategory	Indicator code	Indicator name
Finance	Written down replacement costs of fixed assets	F10	Nominal written-down replacement cost of fixed sewerage assets (\$000s)
Finance	Costs	F11	Operating cost: water (\$/property)
Finance	Costs	F11.1	Operating cost: water (\$/ML): bulk utility
Finance	Costs	F12	Operating cost: sewerage (\$/property)
Finance	Costs	F12.1	Operating cost: sewerage (\$/ML): Bulk utility
Finance	Costs	F13	Combined operating cost: water and sewerage (\$/property)
Finance	Costs	F13.1	Combined operating cost: Water and sewerage, bulk utility (\$/ML)
Finance	Capital expenditure	F14	Total capital expenditure: water (\$000s)
Finance	Capital expenditure	F15	Total capital expenditure: sewerage (\$000s)
Finance	Capital expenditure	F16	Total capital expenditure for water and sewerage (\$000s)
Finance	Economic real rate of return	F17	Economic real rate of return: water
Finance	Economic real rate of return	F18	Economic real rate of return: sewerage
Finance	Economic real rate of return	F19	Economic real rate of return: water and sewerage
Finance	Revenue	F2	Total revenue: sewerage (\$000)
Finance	Dividends	F20	Dividend (\$000s)
Finance	Dividends	F21	Dividend payout ratio (%)
Finance	Net debt to equity	F22	Net debt to equity (%)
Finance	Interest cover	F23	Interest cover
Finance	Net profit after tax	F24	Net profit after tax (\$000s)
Finance	Community service obligations (CSOs)	F25	Community service obligations (\$000s)
Finance	Capital works grants	F26	Capital works grants: water (\$000s)
Finance	Capital works grants	F27	Capital works grants: sewerage (\$000s)
Finance	Capital expenditure	F28	Water supply capital expenditure (\$/property)
Finance	Capital expenditure	F28.1	Water supply capital expenditure: bulk utility (\$/ML)
Finance	Capital expenditure	F29	Sewerage capital expenditure (\$/property)
Finance	Capital expenditure	F29.1	Sewerage capital expenditure: bulk utility (\$/ML)
Finance	Revenue	F3	Total Income for whole of utility (\$000)
Finance	Net profit after tax	F30	NPAT ratio (%)
Finance	Revenue	F4	Residential revenue from usage charges: water (%)
Finance	Revenue	F5	Revenue per property for water supply services (\$/property)
Finance	Revenue	F5.1	Revenue for water supply services: bulk utility (\$/ML)
Finance	Revenue	F6	Revenue per property for sewerage services (\$/property)
Finance	Revenue	F6.1	Revenue for sewerage services: bulk utility (\$/ML)
Finance	Revenue	F7	Income per property for whole of utility (\$/property)
Finance	Revenue	F7.1	Income for whole of utility: bulk utility (\$/ML)
Finance	Revenue from community service obligations (CSOs)	F8	Revenue from CSOs (%)
Finance	Written-down replacement costs of fixed assets	F9	Nominal written-down replacement cost of fixed water supply assets (\$000s)
Finance	Costs	IF11	Operating cost: water (000s)
Finance	Costs	IF12	Operating cost: sewerage (000s)
Health	Water quality compliance	H1	Water quality guidelines
Health	Water quality compliance	H3	Percentage of population where microbiological compliance was achieved
Health	Water quality compliance	H4	No. of zones where chemical compliance was achieved (e.g., 23/24)
Health	Water quality compliance	H5	Risk-based drinking water management plan externally assessed

Appendix E Jurisdictional summaries

Jurisdictional summaries are provided here to document the institutional arrangements within each State and Territory for the planning and management of water supply and wastewater services. These summaries are written by the States and Territories and updated annually.

E1 Australian Capital Territory

E1.1 Introduction

The ACT Government's Environment and Planning Directorate has several roles in water management within the ACT. It manages strategic water policy, including local implementation of national water reform, and national issues relating to water access, pricing, and trading. The directorate also regulates the ACT's water resources and monitors and reports on water quality in the Territory.

Reporting and compliance obligations for the ACT water sector are imposed by national legislation including the Australian Government's *Water Act 2007*, *Corporations Act 2001*, and the *Privacy Act 1988*, and ACT legislation including the *Independent Competition and Regulatory Commission Act 1997*, *Territory-Owned Corporations Act 1990*, *Work Safety Act 2008*, *Utilities Act 2000*, the *Water Resources Act 2007*, *Environment Protection Act 1997*, *Water and Sewerage Act 2000*, and *Public Health Act 1997*.

The ACT Independent Competition and Regulatory Commission (ICRC) determines price directions for water utilities and regulates access agreements. *The Utilities Act 2000* provides for the commission to issue licences and determine industry codes. A new price direction incorporating biennial reviews was issued in June 2013 for the next price path period up to 30 June 2019 (a 6-year period instead of an 8-year period), with a price path set for 2013–14 and 2014–15, and with major biennial reviews to take place in 2014–15 and 2016–17. Prices for water and sewerage services are to be increased in line with the consumer price index.

In September 2013, ACTEW Corporation Ltd submitted an application for a review by an industry panel of the price direction for regulated water and sewerage services (1 July 2013 – 30 June 2019) set by the ICRC. An industry panel under the *Independent Competition and Regulatory Commission Act 1997* examined the price direction that had been determined by the ICRC and decided to substitute a new price direction for water and sewerage services that spans the entire remaining regulatory period until 30 June 2018. This determination removed the uncertainty about future pricing changes.

The ICRC announced in June 2015 the maximum prices that Icon Water Limited can charge for its regulated water and sewerage services from 1 July 2015. Water prices will fall by about 1.5 per cent and the price of sewerage services will increase by 3.5 per cent in 2015–16. The price changes will see the annual water and sewerage bill for a typical Canberra household consuming 200 kilolitres of water per year rise by less than 1 per cent in 2015–16. This translates to an annual increase of about \$8. The increase is less than that advised in the final report of the industry panel because the panel projected the change in the CPI at 2.5 per cent but it came in at 2.1 per cent.

In November 2015, the ICRC released an issues paper as the first step in its review of Icon Water's water and sewerage services tariff.

Among other functions, the *Utilities Act* provides for the Essential Services Consumer Council.

E1.2 Water utilities in the ACT

ACTEW Corporation Limited, which was established as a corporation in 1995, is owned by the ACT Government and is subject to the *Territory-Owned Corporations Act 1990*.

In late 2011, the ACTEW board approved the reintegration of the water and sewerage business into ACTEW. This change came into effect from 1 July 2012, when ACTEW resumed the management, operations, and maintenance of the ACT's water and sewerage assets and business. ActewAGL had previously undertaken this on behalf of ACTEW. The services were provided under the business name ACTEW Water. The change was carried out so as to give ACTEW the opportunity to transform the business in a way that more closely aligns with the objectives of ACTEW Corporation. The ACTEW organisation expanded from 38 personnel to almost 400.

On 31 October 2014, the Board of ACTEW Water announced a change in name for the water utility from ACTEW Water to Icon Water. The new branding of the utility and also the corporate name came into effect in May 2015.

Icon Water has two subsidiary companies, Icon Retail Investments Limited and Icon Distribution Investments Limited. Icon Water owns and manages the water and sewerage business assets and owns 50 per cent of ActewAGL through its two subsidiary companies.

Icon Water provides water services to 166,000 connected properties with over 3,200 km of water mains and sewerage services to 165,000 connections.

The ACT Auditor-General is ACTEW's auditor. Private firms provided internal audit services. Icon Water reports regularly to the ACT Government. In April 2014, the ACT Auditor-General concluded a performance audit that examined the governance and administrative arrangements for the ICRC review of water and sewerage prices in the ACT.

Strategic planning for the sewage treatment plants culminated in the release of the *Lower Molonglo Water Quality Control Centre Strategic Plan*.

In 2014–15, the ACT received an amount (416.2 mm at the airport reading) less than its average annual rainfall (616 mm), marked by good rainfall in the second half of the period. Water consumption remained similar to that of recent years.

E1.3 Operation of water utilities

ACT Health regulates water quality under the *Public Health Act 1997*, in accordance with the *Australian drinking water guidelines 2004*. Testing of the quality of water was undertaken in accordance with these guidelines. Icon Water achieved 100 per cent compliance with the Drinking Water Utility Licence and the Public Health (Drinking Water) Code of Practice (2007) in 2014–15. Icon Water also published its *Annual drinking water quality report 2013–14* in accordance with the code in October 2014.

Icon Water also provides water services to Queanbeyan City Council under the updated Queanbeyan Water Supply Agreement 2008.

The enlargement of the Cotter Dam was completed in August 2013. The Murrumbidgee–Googong pipeline (M2G) was completed in August 2012. Icon Water has incorporated the pipeline's operations and maintenance into its standard operating practices and it will be used when required. Following significant amendments to the New South Wales Pipeline Regulations, the M2G pipeline management plan has also been updated. Upgrading works commenced on the Googong Water Treatment Plant for a combined carbon- and fluoride-dosing facility.

E1.4 Performance reporting

Icon Water's commercial and business objectives, activities, and priorities, as agreed by voting shareholders, are detailed in its annual 'Statement of corporate intent'. Icon Water released its statement for 2015–16 to 2018–19 in May 2015.

The *Icon Corporation annual report 2014–15* was provided to the ACT Government in September 2015. Quarterly reports of progress on the priorities outlined in the Statement of Corporate Intent and for financial and operational matters as well as reports and briefings on key and emerging issues were provided to the voting shareholders during the year.

E2 New South Wales

E2.1 Introduction

In NSW, urban water supply and sewerage services are provided by three State-owned metropolitan water utilities and 105 regional local water utilities (LWUs).

Various regulatory agencies have responsibility for the establishment and operation of the water utilities. The Independent Pricing and Regulatory Tribunal (IPART) is the licence-compliance regulator for the three major metropolitan water utilities in New South Wales: Sydney Water, Water NSW, and Hunter Water. IPART also determines maximum prices that Gosford City Council, Wyong Shire Council, and Essential Energy can charge their customers for the provision of bulk water, water, and sewerage services.

The NSW Department of Primary Industries (DPI Water) manages the State Government's Country Towns Water Supply and Sewerage Program, oversees and monitors utility performance, and is the primary regulator for the State's 105 regional LWUs, which serve a total urban population of 1.83 million (with coverage of 98.0 per cent for water supply and 96 per cent for sewerage). The infrastructure current replacement cost is \$28.4 billion, and annual revenue is \$1.42 billion.

A number of other agencies, including NSW Health, the Office of Environment and Heritage (NSW), and Dam Safety NSW, are each responsible for aspects of the regulation of NSW water utilities.

The State's water utilities have obligations under several pieces of Australian and New South Wales legislation, including the Australian Government's *Corporations Act 2001*, *Privacy Act 1988*, and *Water Management Act 2000*, and the following NSW legislation: *Water Act 1912*, *Protection of the Environment Operations Act 1997*, *Independent Pricing and Regulatory Tribunal Act 1992*, *Environmental Planning and Assessment Act 1979*, *State Owned Corporations Act 1989*, *Dams Safety Act 2015*, *Local Government Act 1993*, *Fisheries Management Act 1994*, *Public Health Act 2010*, *Fluoridation of Public Water Supplies Act 1957*, *Work Health and Safety Act 2011*, *Public Finance and Audit Act 1983*, *Water Industry Competition Amendment (Review) Act 2014*, *Hunter Water Act 1991*, *Sydney Water Act 1994*, and the *Sydney Water Catchment Management Act 1998*.

E2.2 Establishment of water utilities

Sydney Water, Water NSW, and Hunter Water are created by and derive their responsibilities and areas of operations from their respective Acts (the *Sydney Water Act 1994*, the *Water NSW Act 1998*, and the *Hunter Water Act 1991*).

The 105 regional urban LWUs derive their responsibilities from and operate mainly under the *Local Government Act 1993*. Five LWUs (Gosford, Wyong, Essential Energy, Fish River, and Cobar Water Board) operate as water supply authorities under the *Water Management Act 2000*.

E2.3 Operation of water utilities

The regulatory oversight of water utilities in NSW is shared between different agencies.

IPART regulates operating licences that have been issued to Sydney Water (under section 12 of the *Sydney Water Act 1994*), Hunter Water (under Part 5 of the *Hunter Water Act 1991*), and Water NSW (under Part 4 of the *Water NSW Act 1998*). The operating licences include obligations relating to water quality, asset management, water quantity, environmental/catchment management, compliance, and performance reporting.

IPART conducts major operating audits each year, which identify any areas of non-compliance and make recommendations to improve performance. It also undertakes end-of-term reviews of operating licences and makes recommendations to the relevant minister on the terms for renewal of the licences.

DPI Water is the primary regulator of the 105 LWUs, under the NSW Government's comprehensive Best-Practice Management of Water Supply and Sewerage Framework (www.water.nsw.gov.au). The framework is the key driver for the reform of planning, management, pricing, and continuing performance improvement of the LWUs. Eligibility for government financial assistance towards the capital cost of backlog infrastructure (as at 1996) and for dividend payments to councils' general revenue is conditional on the implementation of the 19 requirements of the framework.

Each LWU needs to prepare a 30-year strategic business plan, total asset management plan (TAMP), and financial plan,³ which are reviewed by DPI Water.⁴ Each LWU also needs to undertake extensive community consultation (DPI Water 2012) and has to prepare and implement a risk-based drinking water management system (NSW Health and DPI Water 2013), in accordance with the *Australian drinking water guidelines 2011*. The water-quality management systems need to be independently audited.

Each LWU also needs to prepare and implement a 30-year integrated water-cycle management (IWCM) strategy⁵ for water supply, sewerage, and stormwater that 'right sizes' any necessary infrastructure projects and provides the best value for money on the triple bottom line (TBL) basis of social, environmental, and economic considerations. DPI Water reviews each LWU's IWCM strategy (Element 1 of the NSW Best-Practice Management Framework) and provides confirmation to each utility that its final IWCM strategy is sound.

The NSW Government has developed guidelines on assuring future urban water security. These guidelines build on the 'NSW Security of Supply Basis' (the robust NSW methodology used for determining the appropriate size of a regional water supply headworks system) and a pilot study for 11 urban water supplies in regional NSW.

Each NSW regional water utility will need to assess the impact of climate variability on the secure yield of its water supply system in accordance with the water security guidelines. Secure yield assessments will therefore become an integral part of the utility's IWCM strategy.

A proposal for the construction or modification of a dam, water, or sewage treatment works or for the development of a water-recycling system requires approval under section 60 of the *Local Government Act 1993*. This involves an independent and objective review that allows DPI Water to share its insights and expertise in overseeing 536 LWU water and sewage treatment works and 119 LWU dams. The review provides assurance to the community that the proposed infrastructure will be fit for purpose and provides a robust, safe, cost-effective, and sound solution, without wasteful 'gold-plating'. Similarly, the acceptance of a high- or medium-risk trade waste discharge to the sewerage system requires a DPI Water section 90(1) concurrence.

Under section 61 of the *Local Government Act 1993*, DPI Water conducts regular inspections of LWU treatment works and provides feedback and mentoring to the LWU operators. Each operator in charge of a water or sewage treatment works in regional NSW is required to have appropriate qualifications and experience.

DPI Water conducts nationally certificated operator-training courses for LWU water and sewage treatment works operators; 348 LWU operators have met the requirements of the National Certification Framework for Water Treatment Works Operators. In addition, 419 LWU operators are fully qualified wastewater treatment operators with a Certificate III in Water Operations (Wastewater Treatment) or equivalent. The performance of each of the 536 LWU treatment works is publicly disclosed in appendices D1 and D2 of the annual 'NSW water supply and sewerage benchmarking report'. The water recycling performance of each treatment works is disclosed in Appendix D4 of the report.

NSW Health regulates water quality in NSW and administers functions relating to water suppliers (Sydney Water, Hunter Water, and the LWUs) under the *Public Health Act 2010*. NSW Health also enters into memorandums of understanding with the metropolitan water utilities (including Water NSW) to facilitate interaction between the agencies and to establish the scope of drinking water management plans and procedures for communicating the results of water quality programmes. NSW Health also conducts the NSW Drinking Water Quality Program,⁶ which tests and monitors the water quality of samples collected by the LWUs in accordance with the *Australian drinking water guidelines 2011*.

3 Strategic business plans, TAMPs, and financial plans need to be in accordance with the July 2014 Strategic Business Planning Check List (www.water.nsw.gov.au).

4 The strategic business plan is an LWU's peak planning document for water supply and sewerage. The plan must disclose the utility's levels of service, total asset management plan, and projected typical residential bills and should be made available on the utility's website. All of the LWUs serving more than 3,000 properties have completed a sound 20- to 30-year strategic business plan and financial plan that demonstrates the long-term financial sustainability of their water and sewerage businesses. The plans cover 94 per cent of LWUs and over 99 per cent of the urban population in regional New South Wales.

5 IWCM strategies, TAMPs, and financial plans need to be in accordance with the July 2014 IWCM Check list (www.water.nsw.gov.au)

6 See Appendixes B (p. 235), D1 (p. 281) and H (p. 344) of the NSW Office Water 2015.

The Office of Environment and Heritage regulates the environmental impact of water utilities' operations through environmental protection licences issued under the *Protection of the Environment Operations Act 1997* and through memorandums of understanding with the utilities. Annual reports of compliance performance, required by the licences, are publicly available on the NSW Environment Protection Authority website.

Dams Safety NSW regulates the water utilities with respect to dam safety. The *Dams Safety Act 1978* enables the committee to direct the utilities to undertake works, surveillance, and emergency planning to ensure the safety of dams in New South Wales.

DPI Water also licenses the extraction of water from natural surface water and groundwater sources for supply to Hunter Water and LWU customers.

E2.4 Water utilities in New South Wales

Sydney Water, a statutory corporation wholly owned by the NSW Government, is Australia's largest water utility, with an area of operations covering 12,700 km². It provides drinking water, recycled water, wastewater services, and some stormwater services to more than 4 million people in Sydney, the Illawarra, and the Blue Mountains. Drinking water is sourced from a network of dams managed by Water NSW and from the Kurnell desalination plant before it is treated and delivered to customers.

Water NSW is a State-owned corporation established in 2015 by the *Water NSW Act 2014* through the merger of the Sydney Catchment Authority and State Water Corporation. Water NSW supplies raw water in bulk across NSW. The urban component of Water NSW reporting is based on the former Sydney Catchment Authority area of operations as defined in its operating licence and includes catchments in the Blue Mountains, Shoalhaven, Warragamba, upper Nepean, and Woronora areas.

Hunter Water is a wholly State-owned corporation responsible for the provision of water and wastewater services to over half a million people in the lower Hunter region. The Hunter Water area of operations covers the local Government areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, and Dungog and parts of Singleton.

The 105 regional LWUs in NSW range in area from 130 km² (Deniliquin) to over 50,000 km² (Central Darling), while the population served ranges from under 1,000 (Jerilderie) to approximately 165,000 (Gosford).

All of the 29 regional NSW LWUs serving 10,000 or more connected properties have reported annually for the Urban NPR.

The comprehensive final report of the Independent Local Government Review Panel has been released and the NSW Government has provided its response to it (www.olg.nsw.gov.au). Councils were required to prepare a submission by June 2015 on how they proposed to be 'Fit for the Future' (NSW Office of Local Government 2016) and to address the recommendations in the panel's report. An independent expert panel has assessed the councils' submissions and the NSW Government has proposed council amalgamations which would reduce the number of LWUs in regional NSW to approximately 85. Public hearings into the proposed council amalgamations were undertaken in February 2016.

Performance monitoring and reporting are considered important for public accountability and have been strongly endorsed by the NSW Government, IPART, and the Productivity Commission (Productivity Commission 2011).

The metropolitan water utilities are required to report on the performance indicators in their operating licences in accordance with the reporting manual. The reporting of indicators is audited each year through the annual operating licence audit, and the audit results are presented to the responsible minister: the NSW Minister for Natural Resources, Lands and Water.

Sydney Water and Hunter Water also report the NWI performance indicators required for release in the Urban NPR, as outlined in the *National Performance Framework: 2013–14 urban water performance report indicators and definitions handbook*.

With the exception of the financial indicators, IPART audits one third of the auditable NWI indicators each year. The audit is conducted concurrently with the annual operating licence audits. The Audit Office of NSW audits the financial NWI indicators once every three years.

Because Water NSW is a bulk water supplier, it reports only a subset of the NWI indicators (29 of approximately 130 indicators).

LWUs are required to annually report the fair value⁷ and the current replacement cost depreciation of their water supply and sewerage assets in their audited annual financial statements.

DPI Water annually reports the performance of all the New South Wales utilities. The LWU data is audited as follows:

- All of the 30 NWI financial performance indicators are independently audited annually for each of the 105 regional LWUs.
- All of the auditable non-financial performance indicators are independently audited every three years for each of the 29 regional NSW utilities that are required to report nationally.⁸

The remainder of the information reported in the NSW Performance Monitoring System is not independently audited; however, in order to assure data reliability, the data is subject to the comprehensive data validation processes detailed in Appendix G of the *2013–14 NSW water supply and sewerage performance monitoring report* (NSW Office of Water 2015a).⁹

E3 Northern Territory

E3.1 Establishment of service providers

The *NT Water Supply and Sewerage Services Act 2009* provides the regulatory framework for the Territory's water and sewerage industry. The NT Department of Treasury and Finance is responsible for administering this Act in so far as it relates to price regulation; the Minister for Essential Services in terms of its relationship to licensed supply and service; and the Department of Health in terms of its relationship to water quality standards.

The objects of the *Water Supply and Sewerage Services Act 2009 Act* are:

- to promote the safe and efficient provision of water supply and sewerage services;
- to establish and enforce standards of service in water supply and sewerage services;
- to facilitate the provision of financially viable water supply and sewerage services; and
- to protect the interests of customers.

Among other things, this Act provides for the following:

- that the supply of water and sewerage services be licensed, and that licences issued by the Utilities Commission are for defined, gazetted, geographical areas; and
- that the Minister for Essential Services be responsible for the declaration of water supply and sewerage service licence areas (by notice in a government gazette).

Power and Water Corporation (the licensed utility) is subject to water-quality monitoring programmes and emergency directions issued by the Chief Health Officer (Department of Health).

⁷ The *NSW Reference Rates Manual—Valuation of Water Supply, Sewerage and Stormwater Assets* (NSW Office of Water 2014) provides current unit rates and guidance on the valuation and depreciation of such assets. Available at www.water.nsw.gov.au.

⁸ These utilities serve 74 per cent of the connected properties in regional NSW. Independent audits were conducted in 2006–07, 2009–10, and 2012–13.

⁹ The NSW Performance Monitoring System is shown on page 3 of the *2013–14 NSW Water Supply and Sewerage Benchmarking Report* (NSW Office of Water 2015). The system involves a 'one-stop shop', which minimises red tape and avoids duplication in reporting. It provides the required LWU data to the Bureau annually (for the Urban NPR) and the Australian Bureau of Statistics, as well as for NSW State reporting, including: the State of the environment reporting; NSW 2021 plan reporting; the annual NSW performance monitoring and benchmarking reports; and a Triple Bottom Line performance report for each LWU.

The Northern Territory Utilities Commission is the independent industry regulator. It has responsibility for the licensing functions conferred by the *Water Supply and Sewerage Services Act 2009*.

Statutory conditions of water and sewerage licences issued under this Act include:

- that the licensee monitors and reports to the Utilities Commission on compliance with the licence; and
- that the licensee procures an audit, if required by the Utilities Commission, of its compliance with the terms of the licence.

The NT *Water Act 1992* is another major piece of legislation pertaining to the regulation of the supply of water and sewerage services in the Territory. This Act provides for the investigation, allocation, use, control, protection, management, and administration of water resources, and for related purposes.

The *Water Act 1992* also allows for the issue of waste discharge licences and water extraction licences by the Controller of Water Resources (Department of Land Resource Management).

E3.2 Operation of water utilities

Power and Water Corporation is responsible for monitoring the quality of drinking water in line with its Drinking Water Operational and Verification Monitoring Program and reports the results to the Chief Health Officer. The program is based on the *2004 Australian drinking water guidelines*.

While Power and Water Corporation has primary responsibility for providing safe drinking water through the *Water Supply and Sewerage Services Act 2009*, a number of government agencies are also involved. The Department of Health applies the guidelines and monitors compliance with them in the interest of public health, and the Department of Land Resource Management and the Environmental Protection Authority of the Northern Territory (EPA) also have roles in protecting water quality, including the regulation and management of water resources and the regulation of pollution control.

The NT Department of Infrastructure has a major role in protecting water quality through land-use planning in the Territory. In addition, legislation such as the *Water Act 1992* and the NT *Land Acquisition Act 1978* contain provisions for infrastructure and land use relating to water supply.

A condition of the waste discharge licences issued to Power and Water Corporation is the submission to the EPA of annual audit and compliance reports related to environmental impacts that discharged water may cause, and the assessment of water-recycling schemes. The corporation also investigates and reports to the EPA on pollution incidents under the NT *Waste Management and Pollution Control Act 2012*.

Water and sewerage tariffs and charges are regulated by the NT Government via a Water and Sewerage Pricing Order issued by the Treasurer as regulatory minister. The Utilities Commission monitors compliance with the pricing order and enforces it under section 23 of the NT *Utilities Commission Act 2000*. The commission is also required to investigate any complaints made to it by customers about non-compliance with the prices outlined in the order.

E3.3 Water utilities in the Northern Territory

In the NT, Power and Water Corporation's water and sewerage business is licensed and is responsible for the supply of water and sewerage services to the Territory's five major centres (Darwin, Katherine, Tennant Creek, Alice Springs, and Yulara) and 13 minor centres.

No significant distinction between urban and rural areas is made under the legislation or the licensing framework under which Power and Water Corporation operates. Geographical coordinates (latitude and longitude) define the declared water supply and sewerage service licence.

E3.4 Performance reporting

Urban NPR data is gathered within Power and Water Corporation by a central coordinator, who collates the report, while other areas in the organisation supply information. Some key NPR indicators are provided to Power and Water Corporation's executive management, board, and shareholders on a regular basis. Performance data that is publicly available is reviewed and/or signed off at the senior management level. NPR data is signed off at the senior management level. Many of the NPR indicators are audited in accordance with NPR auditing requirements.

E4 South Australia

E4.1 Establishment of utilities

The SA Department of Environment, Water and Natural Resources and SA Water are the main agencies responsible for managing this State's urban and rural water delivery.

Regional natural resources management boards are responsible for the development of water allocation plans for prescribed water resource areas as required by the *SA Natural Resources Management Act 2004*.

The *SA Water Industry Act 2012* establishes the regulatory framework for the water and sewerage industry covering economic regulation, technical regulation, water planning, and customer complaint handling. The *Water Industry Act 2012* commenced on 1 July 2012 and governs all water industry entities providing 'retail services' to SA customers.

On 1 January 2013, the Essential Services Commission of South Australia (ESCOSA) became the independent economic regulator of water and sewerage retail services in the State, with the primary objective of protecting the long-term interests of SA consumers with respect to the price, quality, and reliability of those services.

ESCOSA is responsible for the economic regulation of water and sewerage services in the State. This role includes industry licensing, consumer protection, retail pricing, and performance monitoring.

E4.2 Water utilities in South Australia

Any person or entity providing 'water retail services' to SA customers is required to be licensed by ESCOSA. ESCOSA has determined separate regulatory obligations for major retailers (those providing retail services to 50,000 or more connections) and other retailers (with less than 50,000 connections). SA Water is the only major retailer in SA and there are currently 64 other retailers (mainly council-run operations).

SA Water is a government entity and, as the State's main supplier of urban water, is required under the *SA Water Corporation Act 1994* to deliver, monitor, and report on its primary functions concerning:

- supply of water by reticulated systems;
- storage, treatment and supply of bulk water; and
- removal and treatment of wastewater.

SA Water provides drinking water to approximately 750,000 customers, servicing around 95 per cent of the State's population. SA Water also provides sewerage services to approximately 590,000 customers, servicing around 76 per cent of the State's population.

The 64 other water and sewerage retailers provide drinking water to approximately 6,000 customers and sewerage services to around 85,000.

E4.3 Operation of water utilities

Section 35 of the *Water Industry Act 2012* empowers ESCOSA to make a determination under the *SA Essential Services Commission Act 2002* regulating prices, conditions relating to prices, and price-fixing factors for water retail services.

ESCOSA made its first independent revenue determination for SA Water in May 2013, setting maximum allowed revenues for drinking water and sewerage retail services for the 3-year period from 1 July 2013 – 30 June 2016.

A more light-handed approach to price regulation has been applied to other water retailers for the Initial Regulatory Period (1 July 2013 – 30 June 2017) through a combination of pricing principles and a price monitoring framework.

Pursuant to Part 4 of the *Essential Services Commission Act 2002*, ESCOSA is empowered to make industry codes and rules regulating the conduct or operations of a regulated industry or regulated entities. ESCOSA has devised a Water Retail Code for major retailers that sets out the minimum requirements to be complied with by SA Water when dealing with its customers, and it includes obligations relating to customer connections and the quality, safety, and reliability of water and sewerage supply. SA Water is required to meet a number of operational service standards relating to customer service, service interruptions, and new connections.

A similar code has been devised for other retailers, but there are currently no service standards.

E4.4 Performance reporting

ESCOSA produces an annual performance report on the water and sewerage industry. The report covers prices charged, customer service, financial assistance offered by retailers to customers, infrastructure reliability, and financial performance.

SA Water reports against customer service and water quality indicators in its annual report. The indicators include:

- compliance with the *Australian drinking water guidelines 2011*;
- the Water Quality Management Index;
- compliance with water and sewerage services targets; and
- the Incident Response Index.

E5 Tasmania

E5.1 Introduction

Since 1 July 2013 the Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater) has owned, controlled and operated water supply and sewerage systems in Tasmania. TasWater manages all aspects of the water supply chain from dams and reservoirs to customer property connections and from customer sewer connections to wastewater treatment and disposal. TasWater is subject to various public health, environmental, and customer service regulatory requirements.

The key piece of legislation governing the water and sewerage industry is the Tasmanian *Water and Sewerage Industry Act 2008* (the Industry Act). The Industry Act requires any persons or entities owning and/or operating water and/or sewerage infrastructure, or supplying water and/or sewerage services to others, to be licensed, unless exempted.

The licences place a number of regulatory obligations on licensees through reference to various regulatory instruments such as codes and guidelines, as well as requiring the preparation of management plans in relation to matters such as asset and emergency management and compliance.

E5.2 Establishment of water utilities

In July 2009, Tasmania's urban water and sewerage industry was reformed and restructured. Three regional water and sewerage entities took over the operation of the water and sewerage services previously provided by 28 local councils and three bulk water authorities.

Two pieces of legislation were enacted to enable the implementation of the reforms:

- the *Tasmanian Water and Sewerage Corporations Act 2008*, to address the structural elements of the reforms, and
- the *Water and Sewerage Industry Act 2008*, to address the economic regulatory elements.

The *Tasmanian Water and Sewerage Corporation Act 2012* was subsequently enacted to provide the legislative basis for the amalgamation of these three regional corporations to form the Tasmanian Water and Sewerage Corporation Pty Ltd, known as TasWater, which commenced operations on 1 July 2013.

TasWater's objectives include ensuring that infrastructure planning occurs on a statewide basis, service is delivered consistently, governance arrangements between council owners and TasWater are streamlined and opportunities are created for cost savings.

E5.3 Operation of water utilities

The *Water and Sewerage Industry Act 2008* provides for the establishment of an economic regulatory framework for the provision of water and sewerage services. It also provides for a number of transitional arrangements to apply until all elements of the regulatory framework are fully implemented.

The economic regulatory framework is focused on ensuring competitive market outcomes from the sector in relation to both price and service, ensuring the financial sustainability of the water and sewerage industry and providing sufficient funding to meet other regulatory obligations.

Industry regulators for the sector include the Tasmanian Economic Regulator, Director of the Environment Protection Authority (EPA), Director of Public Health, and Secretary for the Tasmanian Department of Primary Industries, Parks, Water and Environment.

The Tasmanian Economic Regulator is responsible for administering the licensing system, establishing and maintaining the Customer Service Code, and regulating prices and terms and conditions for regulated services.

The Tasmanian Environment Protection Authority administers and enforces the provisions of the *Tasmanian Environmental Management and Pollution Control Act 1994* and is principally concerned with the prevention, reduction, and remediation of environmental harm.

The Director of Public Health is responsible for drinking water quality and safety through the application of drinking water guidelines and for the fluoridation of drinking water.

The Department of Primary Industries, Parks, Water and Environment is responsible for the administration of the *Tasmanian Water Management (Safety of Dams) Regulations 2011*.

Independent regulation of water and sewerage prices in Tasmania commenced on 1 July 2012.

Price reform of the industry is designed to transition customers to a single set of tariffs across the whole State by the statutory due date of 1 July 2020 (i.e., customers are required to be paying the same price for the same service irrespective of where they live in Tasmania by this date). Price reform has also introduced two-part pricing for water (a fixed charge based on the size of the connection and a variable charge reflecting metered water consumption) and for sewerage charges to be determined based on the assessed equivalent tenements of each property.

E5.4 Performance reporting

The Tasmanian Economic Regulator may on its own initiative, or if directed by the Tasmanian Minister for Primary Industries and Water and the Tasmanian Treasurer, prepare an annual report on the state of the water and sewerage industry (the State of the industry report). The report covers affordability, customer service, financial performance, network reliability and efficiency, drinking water quality, and environmental performance, and also identifies future priority projects for the industry. The indicators reported upon in the report are based on the National Performance Reporting Framework with some additional Tasmanian-based measures.

The Economic Regulator's *Tasmanian water and sewerage industry performance and information reporting guideline 2015* outlines the data and contextual information that TasWater must provide to the Economic Regulator so that its performance can be measured in a number of areas.

The Economic Regulator's reporting guideline sets out how the Economic Regulator will exercise its powers to provide for regulatory reporting, the scope of the reporting, and how the reporting is to be conducted. Under the guideline, licensees are required to engage an independent reporter or appraiser, approved by the Economic Regulator, to conduct a review according to terms of reference issued by the Economic Regulator. In developing the terms of reference for these reviews, the Economic Regulator consults with the Director of Public Health and the Director of the EPA to determine the practicality of joint reporting.

The report to the Economic Regulator covers compliance with and the adequacy of management and compliance plans and/or the quality, reliability, and conformity of regulatory information, including performance information. Regulatory reporting for Tasmania's water corporations began in 2012–13. The auditing of performance information commenced during 2013–14, while reviews of TasWater's *Emergency Management Plan and Compliance Plan* were undertaken during 2014–15. A review of TasWater's *Asset Management Plan* was also commenced during 2014–15 (completed on 22 August 2015).

The Tasmanian Department of Health and Human Services ensures compliance with regulatory obligations under the Tasmanian *Public Health Act 1997* and the Tasmanian Drinking Water Quality Guidelines 2005. Under these guidelines, any laboratory tests of drinking water must be performed by an accredited laboratory. If results obtained from drinking water tests indicate that there is or is likely to be a threat to public health, then the laboratory that performed those tests must notify the Director of Public Health.

E6 Queensland

E6.1 Introduction

In Queensland, the regulation of the urban water and sewerage services sector is undertaken by a number of Queensland Government departments, with the aim of providing the State's urban communities with access to safe and reliable water and sewerage services and ensuring efficient business operations, efficient water use, water security, protection of the environment, competition, and the prevention of monopoly pricing.

E6.2 Establishment of water utilities

Chapter 2 of the Queensland *Water Supply (Safety and Reliability) Act 2008* provides a framework for the delivery of water and sewerage services throughout Queensland. It sets out certain requirements relating to water and sewerage service providers and the provision of services (water, sewerage, and irrigation). Chapter 3 provides a framework for the use and provision of recycled water.

The Queensland *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* provides for council-owned distributor–retailers and the operation of council water businesses in South East Queensland (SEQ). The Queensland Department of Energy and Water Supply (DEWS) administers this Act.

Chapter 4 of the Queensland *Water Act 2000* provides the administrative and reporting framework for Category 1 water authorities. The Queensland *South East Queensland Water (Restructuring) Act 2007* provides for bulk water service providers in SEQ. DEWS jointly administers this Act with Queensland Treasury.

Water utilities are referred to as 'water service providers' in Queensland's legislative framework.

E6.3 Operation of water utilities

Water service providers (or ‘utilities’) in Queensland operate within the following framework of regulation:

Water quality—health

- *Water Supply (Safety and Reliability) Act 2008* (administered by DEWS); and
- *Public Health Act 2005* and *Regulations*, *Water Fluoridation Act 2008* and the *Water Fluoridation Regulation 2008* (administered by the Queensland Department of Health).

Water quality—discharges to the environment

- *Environmental Protection Act 1994* and *Regulations* (administered by the Queensland Department of Environment and Heritage Protection).

Infrastructure

- *Water Supply (Safety and Reliability) Act 2008*, *South East Queensland Water (Distribution and Retail Restructuring) Act 2009*, *South East Queensland Water (Restructuring) Act 2007*, and *Queensland Water Act 2000* (administered by DEWS);
- *Environmental Protection Act 1994* and *Regulations* (administered by the Queensland Department of Environment and Heritage Protection);
- *Local Government Act 2009* and *Regulations* (administered by the Queensland Department of Infrastructure, Local Government, and Planning);
- *Plumbing and Drainage Act 2002* and *Queensland Development Code* (administered by the Queensland Department of Housing and Public Works); and
- *Sustainable Planning Act 2009* (administered by the Queensland Department of Infrastructure, Local Government, and Planning).

Pricing

- *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* and *Water Act 2000* (administered by DEWS);
- *Local Government Act 2009* and *Regulations* (administered by the Queensland Department of Infrastructure, Local Government, and Planning); and
- *Queensland Competition Authority Act 1997* (administered by Queensland Treasury).

The regulatory framework for water service providers in Queensland in the *Water Supply (Safety and Reliability) Act 2008* was amended in May 2014 to focus on outcomes rather than process.

The regulatory approach aligns with the NPR framework and uses mandatory reporting on key performance indicators and public and comparative performance reporting. It is anticipated to drive service improvement and improved planning and infrastructure management by fostering a reputational incentive for better performance, and enhancing accountability to customers by opening provider performance to public scrutiny. Transparency for customers should be improved as service providers are now required to consult on and publish customer service standards as well as publish annual reports.

The Department of Environment and Heritage Protection licenses wastewater treatment plant discharges and requires monitoring and environment reporting.

The Queensland Competition Authority is responsible for monitoring retail and distribution pricing in South East Queensland and for investigating and recommending pricing for bulk supply from Seqwater and SunWater.

E6.4 Water utilities in Queensland

Queensland has a total of 174 registered water service providers (or 'utilities'), of which 86 are potable water and sewerage service providers and 88 are nonpotable water service providers.

With the exception of Mt Isa in the northwest of the State, all residential water service providers with more than 5,000 connections are concentrated in South East Queensland and along the east coast north to Douglas Shire.

The smaller providers commonly service small populations over a large and/or remote location, such as Indigenous council areas and rural towns. The majority (68 per cent) of residential water service providers in Queensland have less than 5,000 residential connections. In many cases, these connections are spread over a number of isolated supply schemes within the council water supply area.

In South East Queensland, there are five distribution and retail providers: the two local government-owned distributor–retailers (Queensland Urban Utilities and Unitywater); and three local governments that provide water and sewerage services directly (Gold Coast, Logan, and Redland city councils). Seqwater now performs all bulk production and transport services in South East Queensland.

E6.5 Performance reporting

The Queensland Water Supply Regulator is part of DEWS. It is responsible for issuing notices to relevant service providers that require them to report on particular key performance indications. It receives annual performance reports, undertakes data validation, administers compliance with the *Water Supply (Safety and Reliability) Act 2008*, and incident or quarterly reporting requirements under this Act, including managing the systems that store information.

Key performance indicators

Since 1 July 2014, all service providers have been required to report to DEWS on their performance against a set of key performance indicators for each year, for analysis and compliance purposes. This annual reporting requirement only applies to drinking water and sewerage service providers, and larger providers (those with over 10,000 connections) are required to report to Urban NPR against a wider set of indicators.

Monitoring and compliance

The *Water Supply Act* outlines a process for the Water Supply Regulator to monitor performance, trigger investigations, and require improvement plans or, in crisis situations, to direct providers to undertake actions to address an imminent threat to water security or continuity of supply (including for a sewerage service).

Comparative report

DEWS will publish an annual comparative report on water industry performance statewide in consultation with industry. Performance information including water security, customer service, and financial sustainability will be published. The first comparative report will be published in 2016. All service provider performance data will also be made publicly available as part of the open data requirements.

DEWS administers the Urban NPR process for Queensland.

E7 Victoria

E7.1 Introduction

The Victorian Department of Environment, Land, Water and Planning (DELWP) has overall governance oversight, on behalf of the Minister for Environment, Climate Change and Water, for the establishment of water utilities and their performance in this State. This responsibility pertains to certain aspects of water utility performance and is also shared with the Victorian departments of Treasury and Finance (DTF) (regarding business financial risks) and Health and Human Services (DHHS) (regarding water quality), as well as the Victorian Environment Protection Authority (regarding environmental performance) and the Essential Services Commission (ESC) of Victoria (regarding price regulation and service standards).

Reporting and compliance obligations are imposed by Victorian legislation including the *Water Act 1989*, the *Water Industry Act 1994*, the *Financial Management Act 1994*, the *Safe Drinking Water Act 2003*, and the *Environment Protection Act 1970*. In addition, regulatory instruments such as the Statement of Obligations (2012), the Water Industry Regulatory Order 2014, and the State Environment Protection Policy (Waters of Victoria) also impose some compliance and reporting obligations.

E7.2 Establishment of water utilities

The Victorian water sector is made up of 19 water utilities constituted under the *Water Act 1989*. The key aspects of the frameworks governing drinking water quality, environmental protection, price regulation, and consumer protection are the same across all 19 water utilities.

Under sections 41 of the *Water Industry Act 1994*, water utilities are subject to statements of obligations, issued by the Victorian Minister for Environment, Climate Change and Water following consultation with the Treasurer and the ESC, that impose obligations in relation to the performance of their functions and the exercise of their powers.

E7.3 Operation of water utilities

Apart from DEWLP, four other agencies jointly oversee the regulation of water utility operation in Victoria.

The DTF oversees governance of the water corporations' proposed strategic directions and business management activities in terms of their potential for financial risk to the business and its implications for the Government, focusing on the State's budget, net debt position, and credit rating.

The DHHS oversees governance of water quality under the *Safe Drinking Water Act 2003* and the *Safe Drinking Water Regulations 2005*. This provides a framework for drinking water quality that includes risk management obligations, a set of standards for key water quality parameters, and information disclosure requirements for water businesses. The Regulations establish an auditing framework.¹⁰ Under the legislation, the DHHS is required to publish an annual water quality report that is tabled in parliament by the Victorian Minister for Health.

The Environmental Protection Authority Victoria (EPA) regulates the environmental performance of the water utilities, particularly as it relates to treated wastewater quality, through a corporate licence (previously, each wastewater treatment plant was licensed). The level of wastewater treatment required usually depends on the type of waterway into which the treated wastewater is discharged. Under the licence provisions, water businesses must regularly sample and monitor wastewater quality and advise the EPA if there are specific incidents of noncompliance. A corporate licence also includes a requirement to submit an annual performance statement to the EPA.

Most wastewater treatment plants operated by the water businesses are subject to the State Environment Protection Policy (Waters of Victoria) schedules, which are developed and administered by the EPA. The schedules require wastewater treatment plant operators to ensure that the sustainable reuse of treated effluent and biosolids is maximised wherever possible.

¹⁰ Details of the drinking water regulatory framework, the audit arrangements and the annual drinking water quality report are available at www.health.vic.gov.au/water/drinkingwater/annualreport.htm.

Water businesses are also subject to EPA works approval permits before constructions of new treatment plants or major alterations can begin.¹¹

The ESC is responsible for price regulation and setting service standards for water services in Victoria under Part 1A of the *Water Industry Act 1994*, the *Essential Services Commission Act 2001* and the Water Industry Regulatory Order. The legislative framework provides the ESC with powers and functions to:

- make price determinations;
- regulate standards and conditions of service and supply; and
- require regulated businesses to provide information.

E7.4 Water utilities in Victoria

The Victorian Government owns all 19 water utilities in the State. There are four water utilities in metropolitan Melbourne: Melbourne Water, City West Water, South East Water, and Yarra Valley Water. The three retailers (City West Water, South East Water, and Yarra Valley Water) deliver retail water supply and sewerage services to customers in the Melbourne metropolitan area.

Melbourne Water provides bulk water and bulk sewerage services in the Melbourne metropolitan area and manages rivers, creeks, and major drainage systems in the Port Phillip and Westernport regions. Melbourne Water also controls the catchment for most of its supply.

Outside Melbourne, 13 regional urban water utilities provide water and sewerage services (Barwon Water, Central Highlands Water, Coliban Water, East Gippsland Water, Gippsland Water, Goulburn Valley Water, Grampians Wimmera Mallee Water (GWMWater), Lower Murray Water, North East Water, South Gippsland Water, Wannon Water, Western Water,¹² and Westernport Water).

GWMWater and Lower Murray Water are hybrid water utilities that provide both urban water services and rural water services.

Additionally, two rural water utilities (Goulburn–Murray Water and Southern Rural Water) provide irrigation and rural water services.

Most water utilities in regional Victoria have their own bulk water supplies. Goulburn–Murray Water, Southern Rural Water, and GWMWater also provide both wholesale (bulk) and retail services. In metropolitan Melbourne, Melbourne Water provides both bulk water and sewerage services, and three separate retail water utilities deliver retail water supply and some localised sewerage services.

Although owned by the Government, all 19 water utilities act as stand-alone entities and are responsible for their own management and performance. Each water utility has a chairperson and a board of directors appointed by the Victorian Minister for Environment, Climate Change and Water. The board has a range of responsibilities, including:

- steering the entity;
- setting objectives and performance targets; and
- ensuring compliance with legislation and government policy.

Public sector directors must comply with the statutory directors' duties in the Victorian *Public Administration Act 2004*, the Directors' Code of Conduct, and common law directors' duties. In addition, directors of water utilities must also comply with requirements as set out in the *Water Act 1989*.

Each utility board appoints a managing director who is responsible for the day-to-day management of the water utility under delegation from the board.

¹¹ Details of the environmental regulatory framework and how it applies to water businesses are available from www.epa.vic.gov.au/water/EPA/controls.asp

¹² Whilst Western Water provides its own bulk and retail services, it also draws on Melbourne Water's bulk water services.

Each managing director sits on the board and is the primary link between the board and the water utility staff. The directors are responsible for communicating board priorities and policies to staff and for presenting reports, submissions, and budgets to the board. The board of each water utility reports to the Victorian Minister for Environment, Climate Change and Water via DELWP. In turn, the Minister is responsible for reporting to parliament on the performance of each water utility. To assist with the management of the water industry, the Minister is supported by the Water and Catchments Group within DELWP.

The *Financial Management Act 1994* is the principal legislation governing financial reporting by water. The Victorian Minister for Finance (through DTF) issues financial reporting directions under the *Financial Management Act 1994* for the preparation of annual reports. This Minister issues ministerial reporting directions to water utilities for performance reporting as part of their annual reports. DELWP is responsible for reviewing the annual reports of the water utilities and advising the Minister for tabling the reports in parliament.

The Victorian Auditor-General's Office is responsible for the auditing of the annual financial statements and the performance report of water utilities before their annual reports are tabled in parliament. Some data reported in the NPRs is either taken directly from the published annual reports or derived from the annual reports.

In accordance with the *Water Act 1989*, each water utility must submit an annual corporate plan that provides a statement of corporate intent, lists expected activities, and provides a financial forecast for the following 5 years. The Victorian Minister for Environment, Climate Change and Water (through DELWP) issues guidelines to the water utilities for the preparation of the plans. DELWP and DTF are responsible for reviewing the corporate plans (and also business cases for major capital projects above a threshold value) and for advising the Minister and the Treasurer, respectively.

Price submissions (previously called water plans) are generally required every 5 years.¹³ They include details about proposed revenue requirements and tariff and pricing structures and are assessed by the ESC.

E7.5 Performance reporting

One of the ESC's regulatory functions is to monitor and report publicly on the performance of the Victorian water utilities. The ESC's annual water performance reports are available on its website (www.esc.vic.gov.au/Water/Performance-reports/).

Under the Water Industry Regulatory Order, the ESC has the function of auditing:

- the compliance of a regulated water utility with the standards and conditions of service and supply specified by the ESC in any code or set out in the utility's price determination, and the systems and processes established by the water utility to ensure such compliance;
- the reliability and quality of information reported by a water utility to the ESC, and the conformity of that information with any specification issued by the ESC; and
- the compliance of a water utility with asset management obligations imposed in any statement of obligations issued to it.

The annual audits are an important element of the regulatory framework. They verify that the information collected and reported by water utilities is accurate and reliable and provide evidence to customers and other stakeholders that regulatory obligations are being complied with. Most Victorian data reported in the NPRs is audited under those arrangements.

The audit approach is set out in the ESC's guideline for approving, conducting, and reporting audits, which is available from the ESC's website (www.esc.vic.gov.au/Water/Codes-and-Guidelines/).

¹³ Melbourne Water and Goulburn-Murray Water's current price determinations are for three years.

E8 Western Australia

E8.1 Introduction

The WA Department of Water has prime responsibility for water resource policy, planning, management, and regulation, as well as the administration of water entitlements and water rights within the State. The reporting of water utility performance is the responsibility of the Economic Regulation Authority (ERA); however, the WA departments of Health and Environment Regulation as well as the Western Australian Environmental Protection Authority also have some reporting responsibilities.

Reporting and compliance obligations are imposed by Australian Government legislation including the *Corporations Act 2001* and the *Privacy Act 1988*, and by WA legislation including the *Water Services Act 2012*,¹⁴ the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the *Health Act 1911*, the *Environmental Protection Act 1986*, *Financial Management Act 2006*, and the *Planning and Development Act 2005*.

E8.2 Establishment of utilities

Water utilities are referred to as ‘water service providers’ in Western Australia’s legislative framework.

Under the *Water Services Act 2012*, the ERA is the independent regulator responsible for administering the licensing scheme for water services and for reporting on industry performance. To obtain a licence, a water service provider has to demonstrate that it has the financial and technical capacity to provide the service or services that are to be covered by a licence, and that the grant of the licence is not contrary to the public interest.

The *Water Services Code of Conduct (Customer Service Standards) 2013* prescribes the customer service standards applicable to water and sewerage licensees.

The licence terms and conditions for licensees who supply drinking water require the licensee to enter into a memorandum of understanding, which specifies drinking water quality standards, with the Department of Health, which also audits compliance. The memorandum of understanding is reviewed every three years, unless agreed otherwise.

E8.3 Operation of water utilities

The ERA and other agencies jointly oversee the operation of water providers in Western Australia.

The Department of Health sets standards for drinking water quality and regulates the public health aspects of water supply (both potable and non-potable), pursuant to the *Health Act 1911*. The Department also supports the Advisory Committee for the Purity of Water, which advises the WA ministers for Health and Water on issues associated with protecting public drinking water.

The Department of Water’s responsibilities include the collection and analysis of water resources information, the protection of water quality and water resources, and water industry planning and policy, management, and regulation.

The Department of Environment Regulation regulates the environmental impacts of water service providers through the *Environmental Protection Act 1986*. The Act prescribes an environmental registration and licensing scheme, which sets limits on the type and volume of waste that can be discharged from a site. In some circumstances, the water service providers may be required to arrange for audits of their compliance with the conditions attached to their registration and provide a copy of the audit report to the department. The water providers must notify the department if there is an unauthorised discharge of waste from registered premises.

¹⁴ The WA *Water Services Act 2012*, which commenced in November 2013, repealed and replaced the water services licensing provisions in the WA *Water Services Licensing Act 1995*.

The Environmental Protection Authority is an independent adviser to WA Government on a broad range of environmental matters. The functions of the authority include conducting environmental impact assessments, preparing statutory policies for environmental protection, publishing guidelines for managing environmental impacts, and providing strategic advice to the WA Minister for Environment.

The Western Australian Planning Commission, a statutory authority that operates with the support of the Department of Planning, oversees the land-use planning implications of the operations of the water service providers, according to requirements of the *Planning and Development Act 2005*.

The ERA does not have water price-setting powers, but was previously requested by WA Government to undertake an independent review of pricing for the Water Corporation, Aqwest, and Busselton Water. The ERA's reports on its reviews of water pricing have included recommendations to the WA Government on the pricing of water supply and sewerage services supplied by these service providers; however, the final decision on pricing rests with the Minister for Water.

The *Water Services Act 2012* requires licensees to arrange for an operational audit and a review of asset management system effectiveness at least once every two years (or longer, at the ERA's discretion). Independent auditors appointed by the ERA conduct the audit and review. The ERA approves the final audit and review reports, arranges for their publication on its website, and provides a copy of each report to the WA Minister for Water.

E8.4 Water utilities in Western Australia

A number of water service providers are involved in delivering urban water and sewerage services in Western Australia. They include the Water Corporation, Aqwest, Busselton Water, and the City of Kalgoorlie–Boulder.

The Water Corporation is a statutory State-owned corporation that provides potable and nonpotable water, bulk water, sewerage services, and drainage services to most areas of Western Australia. It also undertakes catchment management activities under delegation from the Department of Water according to an operational agreement for catchment management between the two organisations. The Water Corporation is the principal supplier of water, sewerage, and drainage services to hundreds of thousands of homes, businesses, and farms, and provides bulk water to farms and growers' cooperatives for irrigation. Its services, projects, and activities span more than 2.5 million km². It has regional offices in Perth, Bunbury, Albany, Karratha, Geraldton, Northam, and Kalgoorlie.

Bunbury Water Corporation is a Government-trading enterprise operating under the *WA Water Corporations Act 1995*, trading as Aqwest. The Aqwest licence permits the supply of potable and non-potable water to the regional centre of Bunbury, approximately 190 km south of Perth.

Busselton Water Corporation is a Government-trading enterprise operating under the *Water Corporations Act 1995*, trading as Busselton Water. The Busselton Water licence permits the supply of potable and nonpotable water to the regional centre of Busselton, approximately 250 km south of Perth. Busselton Water also supplies bulk water to the Water Corporation in Dunsborough.

The State-owned corporations (Aqwest, Busselton Water and the Water Corporation) are subject to performance-reporting requirements under the *WA Financial Management Act 2006*. The annual reports prepared by Aqwest, Busselton Water, and the Water Corporation include non-financial performance indicators that are independently audited by the WA Office of the Auditor-General.

The City of Kalgoorlie–Boulder provides sewerage and nonpotable water services to Kalgoorlie–Boulder, located 600 km east of Perth in the Goldfields district. The nonpotable water supplied to customers is sourced from recycled effluent.

There are also a number of small licensed and unlicensed water service providers in the State. The licensed service providers include Aquasol, Hamersley Iron, Moama Lifestyle Villages, the Rottne Island Authority, Robe River Mining Company, and 19 small regional local governments.

E8.5 Performance reporting

Licensees are required to provide the ERA with data for performance-monitoring purposes, as set out in the licence and the ERA's *Water, sewerage and irrigation licence performance reporting handbook*. Licensees are required to submit completed performance reports to the ERA for each year ending 30 June. Where possible, the performance indicators for licensees who are not required to report under the National Water Initiative Agreement have been aligned with the NPR indicator set for consistency.

The ERA's *Water compliance reporting manual* requires licensees to report to the ERA on their compliance with the terms and conditions of their licence for each year ending 30 June. The ERA uses the compliance reports to monitor the overall level of compliance by licensees; the content of each report is confidential to the licensee and the ERA.

The ERA produces the annual '*Water, sewerage and irrigation performance report*', which presents performance data provided by licensed urban service providers, including those that report under the Urban NPR, with more than 1,000 connected properties, and two of WA's largest rural water service providers. Most of the urban performance indicators are consistent with those of the NPR. With the exception of the licensees that report under the Urban NPR, licensees are not subject to the data audit requirements of the NPRs. Those licensees not reporting under the NPR are required to undertake operational audits to confirm the accuracy of the performance data they report to the ERA.

An aerial photograph showing a lush green golf course with several sand traps and a winding path. A large, dark, irregularly shaped pond or lake is situated in the center-right of the image. To the right of the pond, there is a residential area with several houses featuring red-tiled roofs, swimming pools, and a tennis court. The background shows more houses and a road. The foreground is dominated by the green grass of the golf course and the dark water of the pond.

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