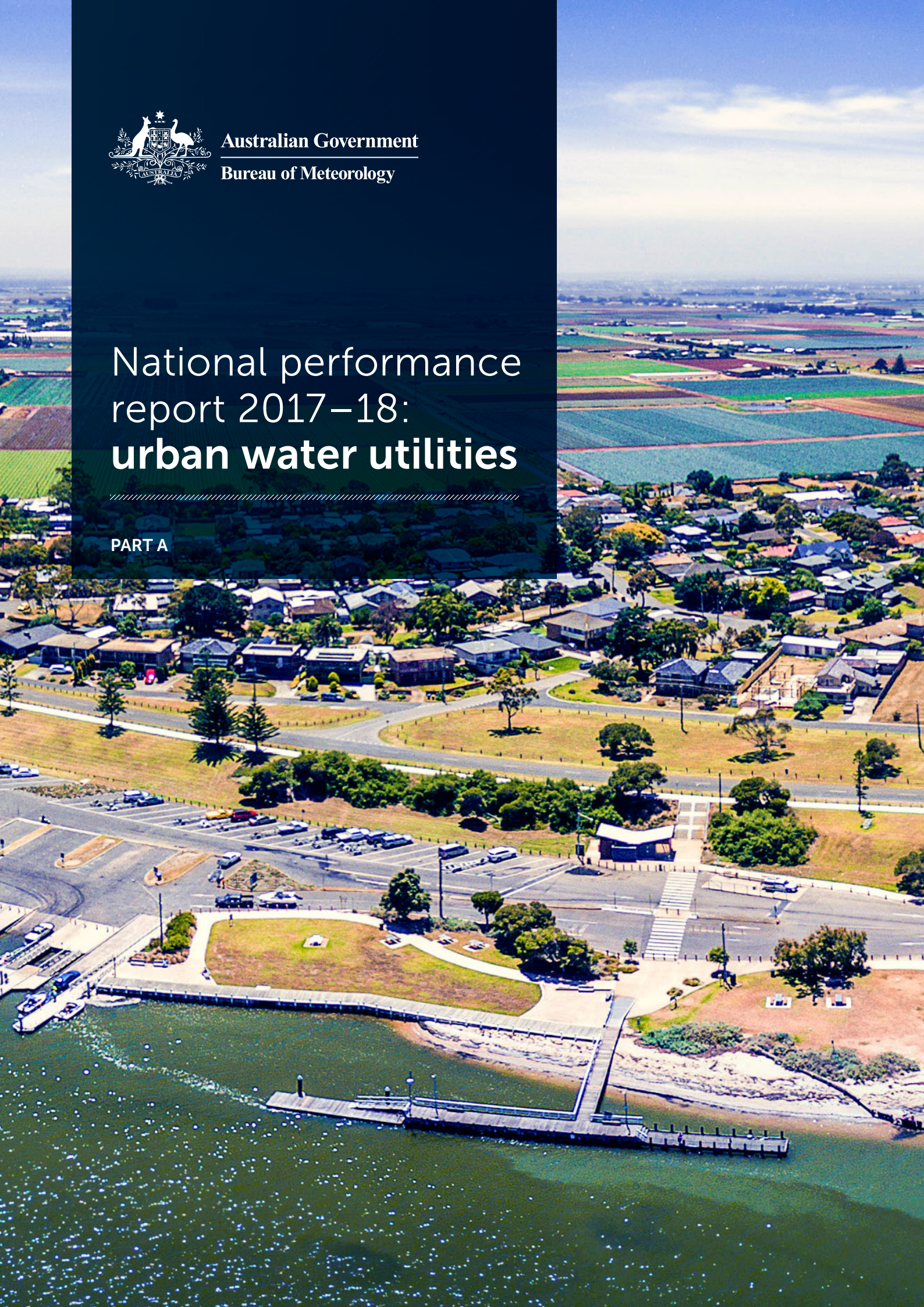




Australian Government
Bureau of Meteorology

National performance report 2017–18: **urban water utilities**

PART A



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Cover image: Aerial view of Werribee irrigation district, Melbourne

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Australian Government
Bureau of Meteorology

National performance report 2017–18: urban water utilities

PART A



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A guide to this report

The following explanatory notes are provided to assist you to read and interpret the report.

Key terms and abbreviations

Utilities which form part of a city, shire or regional council, or a similar local government entity, are reported under the town or city name within the tables and charts in the report. For example, Dubbo Regional Council is referred to as 'Dubbo' 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:

- Aqwest–Bunbury Water Corporation (W) = Aqwest–Bunbury (W);
- Busselton Water (W) = Busselton (W);
- City of Kalgoorlie–Boulder (S) = Kal–Boulder (S); and
- Queanbeyan–Palarang Regional Council = Queanbeyan.

Abbreviations used in utility names include:

- P&W = Power and Water; and
- WC = Water Corporation.

The majority of utilities in this report provide both water and sewerage services. Where a utility provides only a single service (for example, only water supply), it is denoted by the use of a code after the utility's name. The codes are:

- (W) = water supply only; and
- (S) = sewerage only.

Bulk water authorities

Bulk water authorities operate in a number of jurisdictions across Australia and provide wholesale water and wastewater services. These authorities do not have direct relationships with retail customers. For example, Melbourne Water supplies bulk water and wastewater services to the eight retail utilities in and surrounding the Melbourne metropolitan region.¹

Utility groups

For the purpose of this report, the contributing utilities are grouped by number of connected properties. The utility groups used are:

- Major—100,000+ connected properties;
- Large—50,000–100,000 connected properties;
- Medium—20,000–50,000 connected properties; and
- Small—10,000–20,000 connected properties.

Bulk water authorities are grouped separately and are not included in the analysis unless explicitly stated.

¹ City West Water, South East Water, Yarra Valley Water, Western Water, Gippsland Water, Barwon Water, South Gippsland Water, and Westernport Water

Reporting year

References to the 'reporting year'; or '2017–18' refer to the reporting year between 1 July 2017 and 30 June 2018 inclusive.

Missing or unavailable data

Missing or unavailable data, or where a utility did not exist, are denoted in a table by a blank cell.

Interpreting 'overview of results' tables

Example Figure 1 shows how to interpret the 'Overview of results' table provided for each indicator.

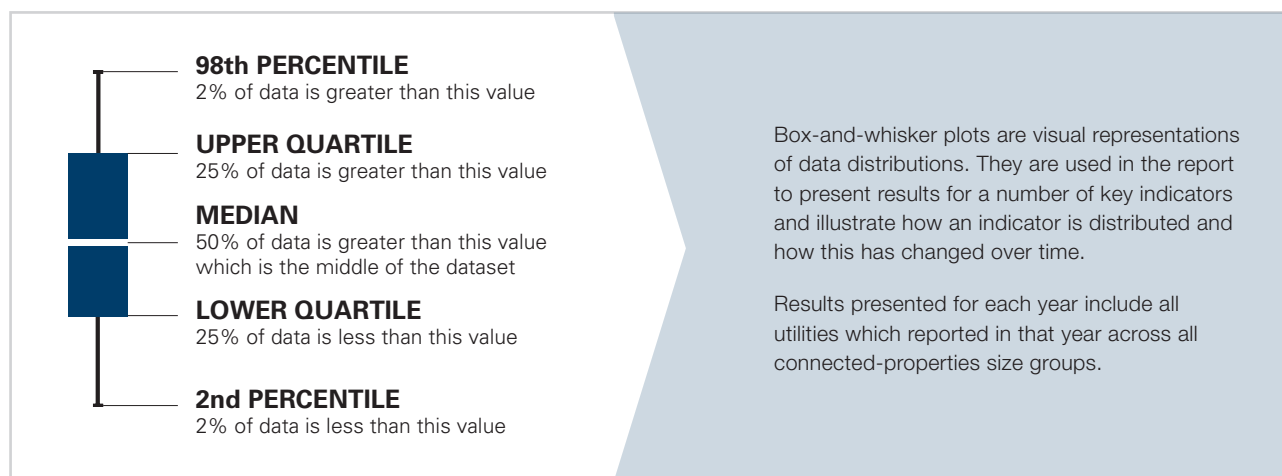
Size group	Range		Number of utilities with increase/decrease from previous year		Median or Total		Change from previous year (%)
	High	Low	Increase	Decrease	Previous year	Current year	
Major	249	140	10	1	158	162	3
	WC (Perth)	Logan					
Large	454	130	9	1	164	181	10
	P&W (Darwin)	Toowoomba					
Medium	479	143	17	1	175	201	15
	Lower Murray Water	MidCoast Water					
Small	450	80	19	5	174	179	3
	Multiple utilities	Ballina					
All size groups	479	80	55	8	166	177	7
	Lower Murray Water	Ballina					

- 1 The range shows the utilities with the highest and lowest result in the current reporting year for each utility group.
- 2 These columns show the number of utilities reporting an increase or decrease from the previous year's results for each utility group. Utilities who did not report in both years are not included in this column.
- 3
 - The median value is the middle number in the range of results. For example, if five utilities reported for this indicator and their results are 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 (for example, average duration of water interruptions), or are divided by the number of properties (per property), the summary tables presents the sum (or total) of the results.
 - The total is the sum of all results.
 - Utilities who did not report in both years are not included in this column.
- 4 This column shows the percentage change between the current and previous years and is rounded to the nearest integer.
- 5 'Multiple utilities' is used when more than one utility recorded the same value.

Example Figure 1 How to interpret an 'Overview of results' table

Interpreting box-and-whisker plots

The report utilises box-and-whisker plots to show trends in the annual distribution of key indicators as shown in Example Figure 2.



Example Figure 2 How to interpret a box-and-whisker plot

Interpreting data and commentary

When interpreting data and commentary in the report, it is important to consider:

- The indicator codes are noted in the titles of each section (for example, W12, F3, P7) and can be cross-referenced with the *National Performance Framework: urban water performance report indicators and definitions handbook*.
- The median is the preferred metric for the reporting dataset, as outlier results can affect the average, which 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. Where average results are presented in addition to the median, they are to be interpreted together with the full dataset.
- Many factors can influence the performance of a utility, and individual performance indicators need to be interpreted in context. A low ranking for one indicator may not accurately reflect the overall performance of a utility. 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' is often omitted to improve the flow of the commentary about indicators. 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'. In this case, it is not the absolute number of water main breaks, rather, the number of breaks per 100 km from the water main.
- Single-service utilities are only included in the analysis of an indicator when a comparison on a like-for-like basis with utilities that provide both water and sewerage services can be made. 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.
- Financial time series information is given in real 2017–18 dollars; the impact of inflation is removed to ensure that years can be compared on a like-for-like basis. Consumer price index (CPI) figures can be found in Appendix E (CPI Indexation).
- The percentage (%) change is calculated from 2016–17 reporting year to 2017–18 with figures rounded to the nearest integer, except in cases where additional precision is required.

Executive summary

The *National performance report 2017–18: urban water utilities* (2018 Urban NPR) compares the performance of 80 utilities and councils (utilities) and five bulk water authorities providing urban water services to over 20 million people across Australia. The 2018 Urban NPR is published by the Bureau of Meteorology (the Bureau) with information provided by utilities across Australia's States and Territories. The report is the thirteenth in the series, and the fifth to be produced by the Bureau.

Part A of the report provides commentary and analysis for key indicators. Part B of the report contains data for the full set of 166 indicators reported on by utilities and bulk water authorities for all reporting years.

Residential water use stable despite dry and warm conditions

Residential water use across the nation was relatively stable, with only a 4 per cent increase compared to 2016–17, and only a 0.03 per cent increase over the long-term average. However, some regions, especially New South Wales, reported a greater increase in residential water use due to drier and warmer weather. In contrast, the southwest of Western Australia experienced above-average rainfall for **some months** of the year, resulting in lower residential water use in Water Corporation regions of southwest Western Australia.

Typical water bills steady

While nationally the typical residential bill was steady, dry and warm conditions were reflected in the typical residential water bills for New South Wales utilities: only two New South Wales utilities reported median bills lower than previous years. Only three New South Wales utilities reported median bills lower than their four-year average.

Also notable was the increase in typical residential bills for all Western Australian Water Corporation services areas, despite the decrease in consumption. This increase is most likely due to the State Government's decision to increase water, sewerage and drainage charges for the Water Corporation, Aqwest–Bunbury Water Corporation (W) and Busselton Water (W) by 6 per cent.

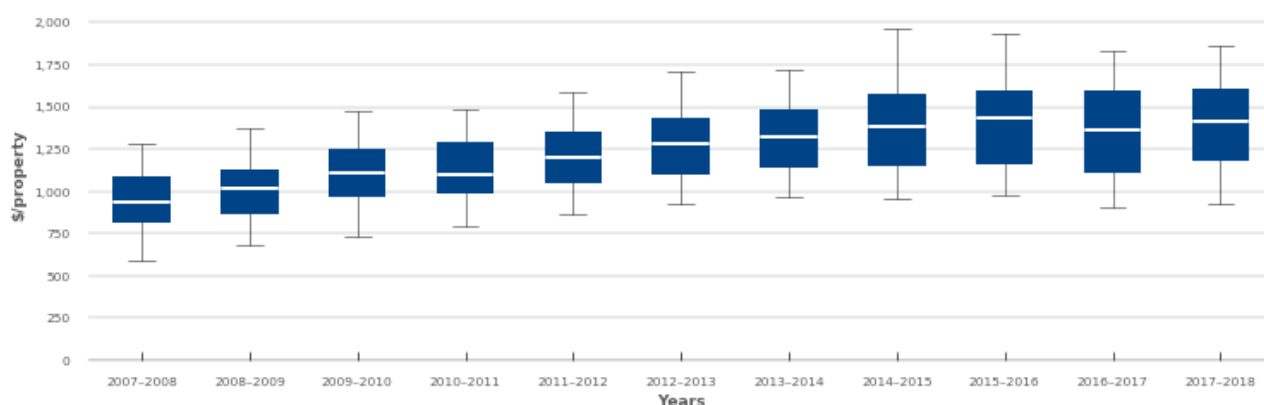


Figure 1 Typical residential bill: water supply and sewerage (\$), 2007–08 to 2017–18.

For more about bills see Chapter 4 Pricing and Tables A3 and A4, Appendix A.

Surface water relied on to meet increased demand in all major urban centres

The total water supplied to urban systems increased by 9 per cent for the major urban areas. In all major urban areas, increased surface water abstraction was necessary to meet increased demand. In Sydney, this increase in surface water abstraction combined with low rainfall resulted in a 25 per cent drop in storage levels at 30 June 2018 compared to 30 June 2017.

Recycled water production increased significantly in Melbourne, from 33 to 42 GL, due to recent investments by Melbourne Water and South East Water in their recycled water production capacities. Melbourne reported a large drop in desalination production, from 46 GL in 2016–17 to the minimum order of 15 GL in 2017–18. This minimum is in place to allow an ongoing supplemental source of water for Melbourne's storages and a buffer against drought.

Perth relied on surface water sources to meet the majority of its increased water supply demand, with groundwater and desalination sources supplying roughly the same as last year. However, due to increased rainfall, Perth storages increased by 299 GL.

Water main leaks and breaks stable

Nationally, the number of water main breaks per 100 km of mains was stable, with a 1 per cent decrease compared to last year. Despite the warm and dry conditions centred on New South Wales, only 50 per cent of New South Wales utilities reported an increase in main leaks and breaks compared to their 4-year average.

Notably, 12 out of 19 Queensland utilities reported a decrease compared to 2016–17, and 17 out of 19 Queensland utilities reported a decrease in breaks and leaks per 100 km compared to their four-year average. This result probably reflects a gradual pay-off from ongoing investments in renewals and leakage management.

1 Introduction

1.1 Context and overview

This *National performance report 2017–18: urban water utilities* (2018 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.²

The 2018 Urban NPR compares the performance of 80 utilities and councils (utilities) and five bulk water authorities providing urban water and sewerage services to over 20 million people across Australia. It is produced by the Bureau of Meteorology (the Bureau), in conjunction with State and Territory governments and the Water Services Association of Australia.

Part A of this report provides commentary and analysis for key indicators that apply to retail and distribution utilities (the major urban centre analysis in Chapter 2 includes performance data for bulk water suppliers). Part B of this report contains data for the full set of 166 indicators that are reported on by urban water utilities and bulk water authorities for all reporting years.

The analysis and commentary provide a context for each indicator, discuss changes in reporting methodologies, and highlight trends within and/or between different utility groups. The utilities are grouped according to the number of properties they are connected to, as explained in ‘A guide to this report’.

The commentary and analysis in this 2018 Urban NPR are not intended to be a comprehensive explanation of every reported indicator. They present some of the more apparent trends or differences between years and utilities. Most of the information is sourced from publicly available sources, such as annual reports, regulatory decisions, and utility websites.

1.2 Reporting

The 85 utilities contributing data to the 2018 Urban NPR (including five bulk water authorities) are listed in Appendix C. A summary of utility type by jurisdiction is shown in Table 1.1.

Seventy one of the 85 utilities included in this report provide both reticulated water supply and sewerage services. The remaining utilities provide only water supply or sewerage services. In summary, the report includes data for:

- 71 utilities providing water supply and sewerage services;
- five utilities providing only water supply services;
- four utilities providing only sewerage services; and
- five bulk water authorities.

² National Water Initiative Clauses 75–76

Table 1.1 Utilities reporting in the 2017–18 Urban NPR by size group and jurisdiction.

Jurisdiction	Bulk	Major	Large	Medium	Small	Total
Australian Capital Territory		1				1
New South Wales	2	3		12	13 ^a	30
Northern Territory			1		1	2
Queensland	2	4	3	6	7	22
South Australia		1				1
Tasmania		1				1
Victoria	1	4	5	5	2	17
Western Australia		1		1	9	11
Total	5	15	9	24	32	85

^a Armidale reported for the first time in 2017–18 and is included in this summary. Armidale data are only reported in Part B, since two consecutive years of data are required to feature in Part A results.

1.3 Locations of utilities

The administrative boundaries of all utilities reporting data for the 2018 Urban NPR are shown in Figure 1.1. Further details about the utilities are available from their respective websites.

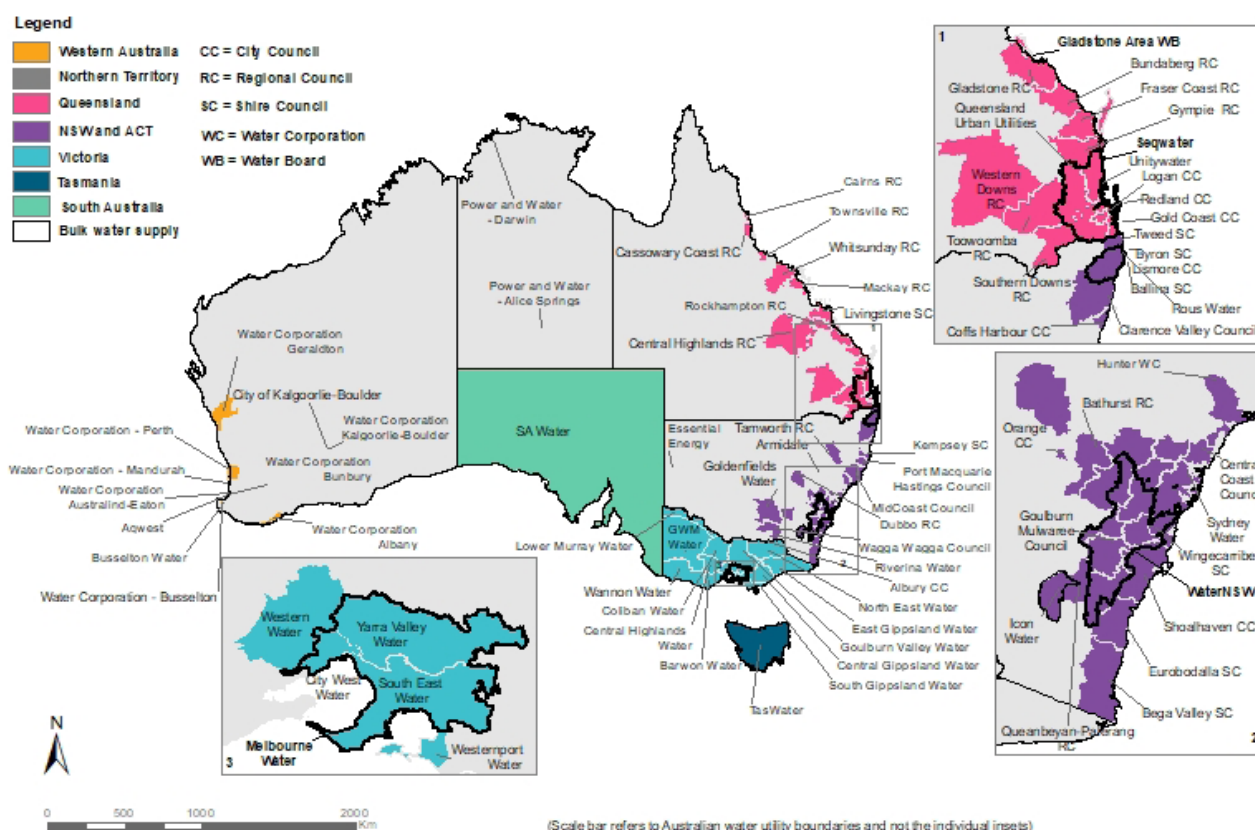


Figure 1.1 The administrative boundaries of all utilities reporting data for 2017–18.

1.4 Key drivers

Key drivers of water utility performance presented in the 2018 Urban NPR include rainfall, temperature, utility size, and sources of water.

Other factors—network density, soil types, the age and condition of infrastructure, and government policy and regulation—also affect performance but are not discussed.

1.4.1 Rainfall

Rainfall can affect utility performance in many ways.

- Significant droughts with prolonged periods of low rainfall can stress urban water supply systems. Depending on the severity of the drought, security of the system and availability of climate-resilient water sources (for example, desalinated or recycled water), the utility may impose water restrictions 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 the volume of urban water and recycled water supplied to residents, councils, and parklands used for outdoor leisure activities such as golf courses (Water resource indicators W12, W26). Changes in water consumption affect the revenue collected by utilities, their profitability, and the strength of their water-usage pricing signal.
- Wet or dry conditions can affect decisions about water sources used (Water resource indicators W1–W7). Persistent dry conditions can trigger thresholds for production from desalination plants and the use of particular groundwater and recycled water sources, which affect operating costs of utilities (Finance indicators F11–F13).
- Increased rainfall can result in infiltration of water into sewer systems, which can increase the volume of sewage to be pumped and treated, increasing the operating costs of utilities (Finance indicators F12, F13) and also greenhouse gas emissions from sewage (Environment indicator E12). Additional rainfall and sewer infiltration can also result in additional sewer overflows—especially during heavy rainfall.
- Extreme wet or dry conditions can cause expansion and shrinking of reactive clay soils in some parts of Australia. This can result in ground movement causing an increase in water or sewer main breaks (Asset indicators A8, A14)—especially when conditions fluctuate rapidly from wet to dry or dry to wet. In periods of more consistent rainfall, the soils maintain more even moisture levels, resulting in less ground movement.

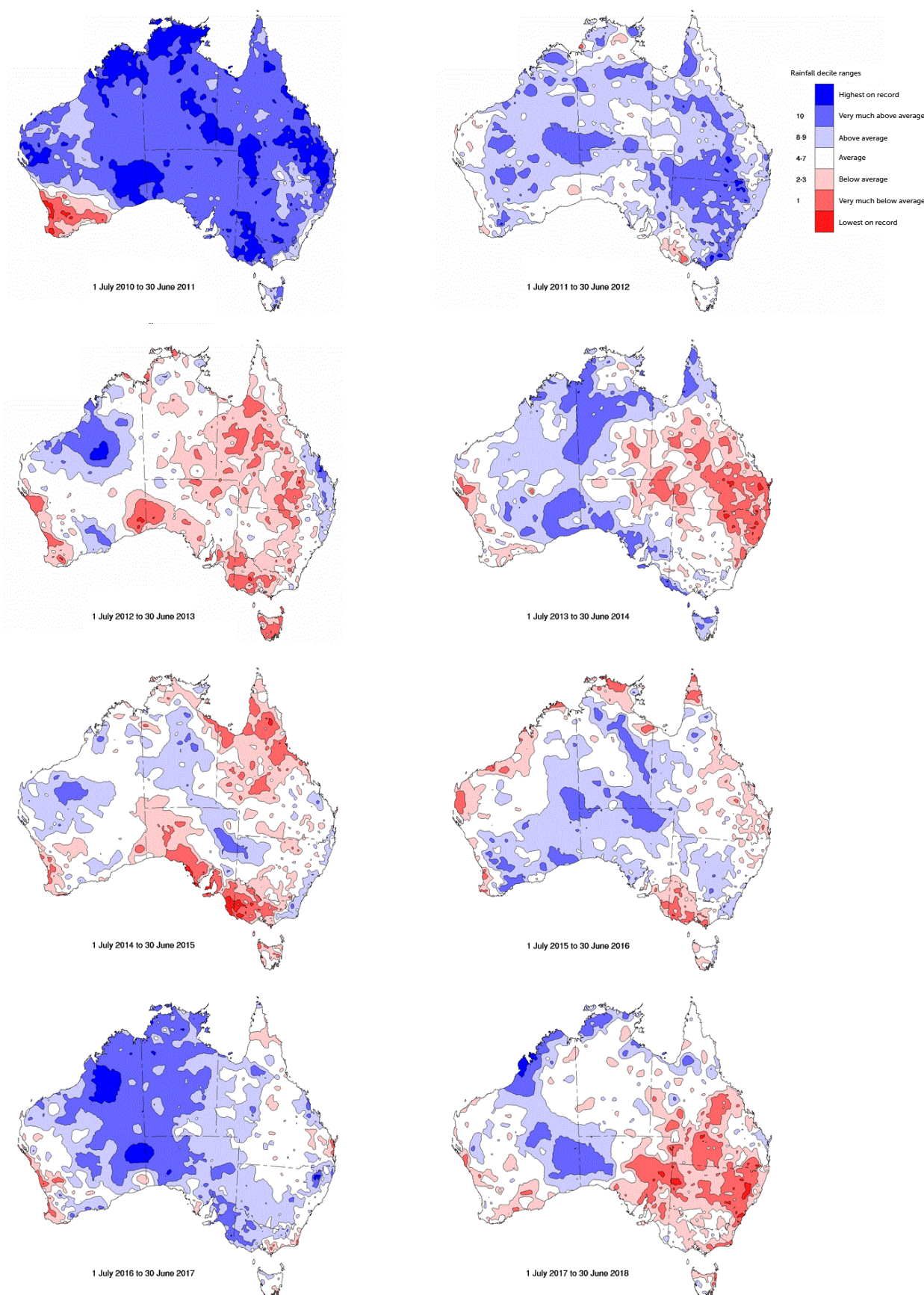


Figure 1.2 Australian 12-month rainfall deciles from 2010–11 to 2017–18.

Note: Decile 1 is the group with 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.

Winter 2017

Australia's ninth-lowest winter rainfall, the lowest since 2002, saw an average national rainfall of 36.7 mm—43 per cent lower than the long-term average. Queensland, New South Wales and Western Australia reported the lowest rainfalls, recording 62 per cent, 49 per cent and 43 per cent below the long-term average, respectively. The highest average rainfall, still 17 per cent below its long-term average, was recorded in Tasmania (363.8 mm).

Above-average winter rainfall was restricted to an area of the central Northern Territory, where out-of-season rainfall during the second week of July brought totals in excess of 25 mm over a broad area during what is typically the dry season.

Spring 2017

The average national rainfall for spring was 87.8 mm, 21 per cent above the long-term average. Notable high rainfalls were experienced in South Australia, Queensland and the Northern Territory, who recorded 46 per cent, 38 per cent and 38 per cent above the long-term average, respectively. Drier conditions were observed in Victoria, New South Wales and Tasmania, with rainfalls 14–18 per cent below the long-term average.

The highest spring rainfall was observed in Tasmania (312.4 mm) and the lowest in Western Australia (53.1 mm).

Summer 2017–18

The average national rainfall for summer was 221 mm, 6 per cent above the long-term average.

Summer rainfall was in the lowest 10 per cent of historical observations for much of central inland and western Queensland, with below-average rainfall over most of the region during each month. Summer was the driest on record for some stations in western Queensland, and a number of stations recorded their lowest summer rainfall in several decades.

Autumn 2018

The average national rainfall for autumn was 80.9 mm, 33 per cent below the long-term average.

Rainfall for the season was in the lowest 10 per cent of historical observations for much of the southern mainland. For southern Australia as a whole, autumn rainfall was the second lowest on record. Rainfalls in South Australia, Western Australia and New South Wales were 66 per cent, 62 per cent and 60 per cent below their long-term average, respectively.

Northern Queensland experienced above-average rainfall, while southeast Queensland experienced below-average rainfall.

Winter 2018

Winter rainfall was below average nationally; it was the fourteenth-driest winter on record and the eighth lowest on record for New South Wales. Rainfall for the season was below average for northeastern parts of Western Australia, much of the Northern Territory, the northern and eastern areas of South Australia, most of Queensland and New South Wales, and northern and eastern Victoria.

1.4.2 Temperature

There are many relationships between temperature and utility performance.

- Temperature can influence demand, particularly residential and non-residential outdoor demand. Prolonged periods of above-average temperatures can result in increased potable and recycled water (Water resource indicators W12, W26, W27) supply to residents, councils, and parklands used for outdoor leisure activities such as golf courses. Changes in water consumption affect the revenue collected by water utilities, their profitability (Finance indicators F3, F24), and the strength of their water-usage pricing signal (Finance indicator F4).

- Hot weather can increase the risk of bushfires, resulting in resources being deployed to protect water supply catchments and mitigate the impacts of a bushfire. Emergency deployments can affect operating expenditure (Finance indicators F11–F13). When responding to a bushfire, temporary water restrictions may be put in place to ensure the availability of supply and to meet firefighting requirements during extreme fire weather. These restrictions can affect the volume of water supplied by a utility and its operating cost and revenue. Poor water quality in a burnt catchment can affect water supply; for example, water storage may need to be suspended for some time.
- Extended periods of heat or cold can affect the quality of water sources and supply and thus decisions about water sources used (Water resource indicators W1–W7) and the level of the treatment required. For example, a heatwave contributes to the decline in dissolved oxygen levels in a waterbody and can trigger the need to supply water from an alternative source, or increase water treatment, which affects the operating costs of utilities (Finance indicators F11–F13).
- Changes in temperature can affect the quality of treated water. Biological processes are particularly sensitive to extremes of heat or cold and rapid fluctuations in temperature. These events can have consequences for the quality of water supplied (Health indicators H1–H5) and the need for treatment, which affects the operational costs of a utility (Finance indicators F11–F13).
- Extended hot conditions cause dry soil conditions. Consequently, many trees will seek out moisture and their roots can enter the sewer system, causing blockages and breaks (Asset indicators A14, A15), as well as increasing the number of water main breaks (Asset indicator A8).

Winter 2017

National mean maximum temperatures for winter were the highest on record. More than 90 per cent of Australia reported daytime temperatures in the highest 10 per cent of historical observations. The winter mean temperature was very much above average, being the fifth warmest on record.

Winter mean temperatures were the second warmest on record for Queensland, third warmest for Western Australia, and ninth warmest for the Northern Territory.

Spring 2017

All regions, with the exception South Australia and the Northern Territory, observed mean temperatures for the season among the ten warmest on record. Australia's mean temperature was the sixth warmest on record. Both maximum and minimum temperatures were above to very much above average over the majority of Australia. Much of the southeast was in the highest 10 per cent of historical observations.

Summer 2017–18

All regions except Western Australia observed mean daily temperatures for the season among the tenth warmest on record. Australia's mean temperature was the second-warmest summer on record. Both maximum and minimum temperatures were also very much above average for Australia. Cooler than average summer mean maxima were observed over Western Australia, associated with the very much above average rainfall in this region.

Autumn 2018

The mean temperature for autumn was among the tenth warmest on record for all regions except Tasmania, Queensland, and the Northern Territory. Australia's mean temperature was the fourth warmest on record. Both maximum and minimum temperatures were warmer than average for Australia, particularly maxima, which were the fourth warmest on record. Mean monthly maxima were the warmest on record for much of New South Wales, including Sydney.

Winter 2018

All regions observed above-average mean temperatures. The Northern Territory, South Australia, Queensland and New South Wales were among the ten warmest on record for the season. For Australia as a whole, it was the fifth-warmest winter on record.

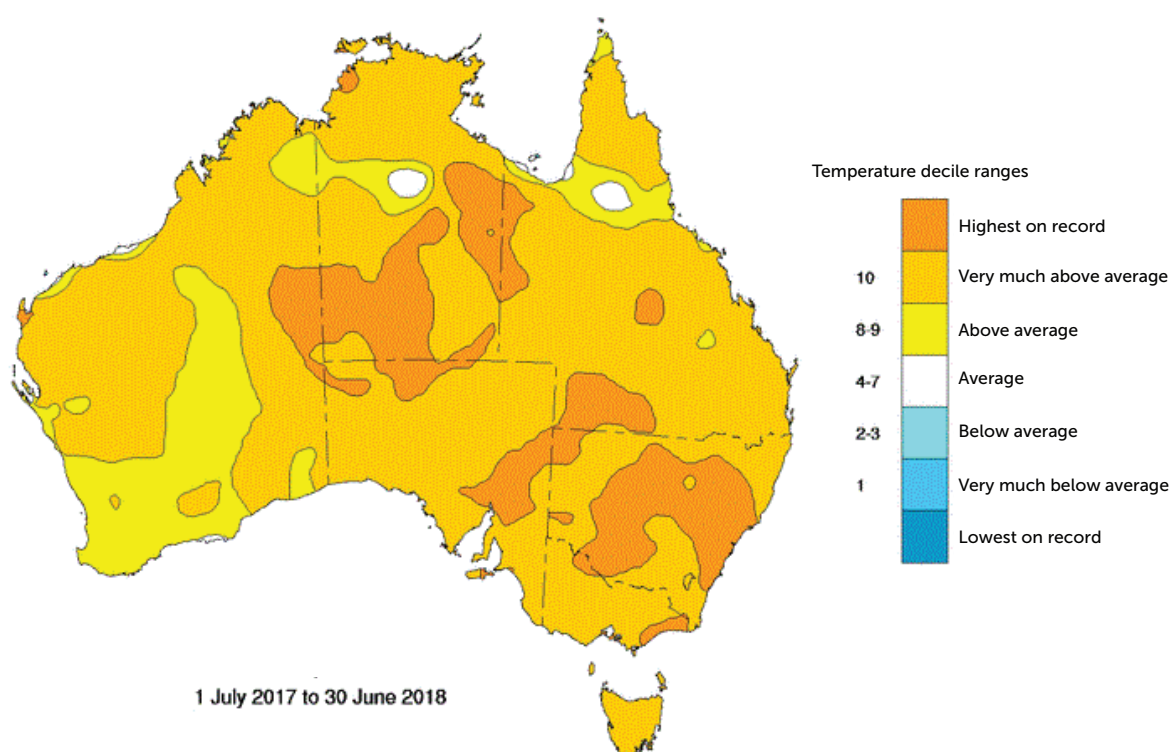


Figure 1.3 Australian 12-month maximum temperature deciles for 2017–18.

1.4.3 Utility size

The size of the utility's customer base influences its performance on a range of indicators. This relationship may be causal, coincidental, or due to a related matter (for example, larger utilities are subject to price regulation, unlike smaller utilities).

1.4.4 Sources of water

Two important drivers of performance are the sources of water used by a utility and the geographical relationship between the source and the urban centre it supplies. The combination and interaction of these drivers serve to create wide variations in engineering, operations, 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 affects the revenue collected by water utilities, their profitability (Finance indicators F3, F24), and the strength of their water-usage pricing signal (Finance indicator F4).

Traditionally, Australians have relied on surface water, and to a lesser extent groundwater, to meet their urban consumption needs. The increased demand for urban water—resulting in a need to further develop and maintain ongoing water supply—is driven by many factors, including population growth and the reliability and security of existing sources (predominantly driven by water quality and climatic variability). Financial, environmental, and social factors reduce the feasibility of developing additional traditional sources of water. In response to this situation, utilities and bulk water authorities across the country are developing non-traditional supply sources—such as desalinated and recycled water—while continuing to explore options for harvesting stormwater and rainwater.

The diversification of water sources affects the performance of utilities by increasing the cost to treat water to an acceptable standard (meeting regulatory requirements) and to supply multiple water types to end users. For example, water from a 'protected' or 'closed' storage catchment is usually higher quality than water from an 'open' storage catchment and requires less treatment, which reduces the cost of supply.

The quality of water from groundwater sources varies greatly depending on the type and depth of an aquifer, and has a significant impact on the extraction and treatment processes used and subsequent infrastructure and operational costs. Urban water supplied from recycled sources typically requires dual-pipe supply systems to separate recycled water from potable water, incurring greater infrastructure costs.

Figures 1.4a and 1.4b show the annual supply from different sources of water, and the total supply, for utilities in each State and Territory from 2012–13 to 2017–18. Care should be taken when comparing the total source of water volumes between years, due to the varied interpretations of water sourced from recycling (W4), which has probably led to under-reporting these volumes.

- Water sourced from surface water (that is, rivers, streams, and dams; Water resource indicator W1) is the dominant water source in all States and Territories except Western Australia, where most of the water is sourced from the desalination of marine water (Water resource indicator W3.1) and groundwater (Water resource indicator W2).
- Surface water extraction has increased proportionally against other sources with increase in water supplied.
- Recycled water is represented by W26 in 2017–18, which is not directly comparable to Water resource indicator W4 used in previous years, as W26 includes environmental flows and does not explicitly include recycled water to agriculture.
- In 2017–18, New South Wales reported lower total water sourced compared to previous years, probably reflecting the drier conditions throughout the region.
- Desalination in New South Wales and Queensland remains minimal, with plants operating in maintenance or 'standby' modes.

Table 1.2 Water source breakdown (W1, W2, W3.1, W4/W26) in each State and Territory, 2012–13 to 2017–18.

2012–13	W1	W2	W3.1	W4	Total water sourced
Australian Capital Territory	47,838	-	-	4,416	52,254
New South Wales	1,037,198	26,252	-	49,239	1,112,689
Northern Territory	37,804	14,113	-	1,027	52,944
Queensland	445,342	16,807	2,805	35,833	500,787
South Australia	110,184	3,153	36,472	5,767	155,576
Tasmania	-	-	-	-	-
Victoria	625,961	9,317	24,850	31,148	691,276
Western Australia	47,490	168,050	-	9,891	225,430

2013–14	W1	W2	W3.1	W4	Total water sourced
Australian Capital Territory	48,731	-	-	4,372	53,103
New South Wales	1,015,485	27,361	-	51,258	1,094,104
Northern Territory	34,396	15,538	-	666	50,600
Queensland	491,938	16,790	1,435	30,275	540,438
South Australia	140,935	11,968	61,023	7,417	221,343
Tasmania	-	-	-	-	-
Victoria	614,514	8,810	-	27,855	651,178
Western Australia	49,732	154,682	-	9,966	214,380

2014–15	W1	W2	W3.1	W4	Total water sourced
Australian Capital Territory	47,114	-	-	4,352	51,466
New South Wales	1,064,788	26,481	-	48,423	1,139,692
Northern Territory	40,530	13,797	-	883	55,210
Queensland	513,371	24,743	1,312	29,753	569,179
South Australia	184,243	11,907	22,830	7,290	226,270
Tasmania	-	-	-	-	-
Victoria	616,385	10,469	-	25,393	652,247
Western Australia	48,075	153,069	119,457	9,871	330,473

2015–16	W1	W2	W3.1	W4	Total water sourced
Australian Capital Territory	50,403	-	-	4,056	54,459
New South Wales	1,127,403	35,487	-	48,784	1,211,674
Northern Territory	38,034	14,199	-	522	52,755
Queensland	523,770	21,820	1,927	32,316	579,833
South Australia	207,541	12,515	7,774	6,972	234,802
Tasmania	77,548	248	-	-	77,796
Victoria	646,109	11,240	-	34,905	692,254
Western Australia	20,445	167,845	138,645	10,771	337,706

2016–17	W1	W2	W3.1	W4	Total water sourced
Australian Capital Territory	49,916	-	-	4,313	54,229
New South Wales	1,054,195	24,661	-	43,954	1,122,810
Northern Territory	34,818	13,252	-	1,002	49,072
Queensland	501,287	23,247	2,000	30,134	556,668
South Australia	186,837	11,767	4,185	6,247	209,036
Tasmania	77,476	237	-	-	77,713
Victoria	655,395	9,339	46,209	15,537	726,480
Western Australia	-8,175	168,476	149,823	9,789	319,913

2017–18	W1	W2	W3.1	W26 ^a	Total water sourced
Australian Capital Territory	52,157	-	-	30,296	82,453
New South Wales	948,053	32,321	-	79,198	1,059,572
Northern Territory	38,292	12,780	-	1,597	52,669
Queensland	543,247	28,072	3283	35,025	609,627
South Australia	208,133	12,150	4,332	29,292	253,907
Tasmania	86,893	273	-	5,605	92,771
Victoria	665,311	8,446	14,972	31,485	720,214
Western Australia	86,005	162,558	148,905	16,767	414,235

^a W26 replaces W4 to represent recycled water sources as W4 was discontinued. Please refer to the reporting handbook for details on difference in indicator definitions between the two.

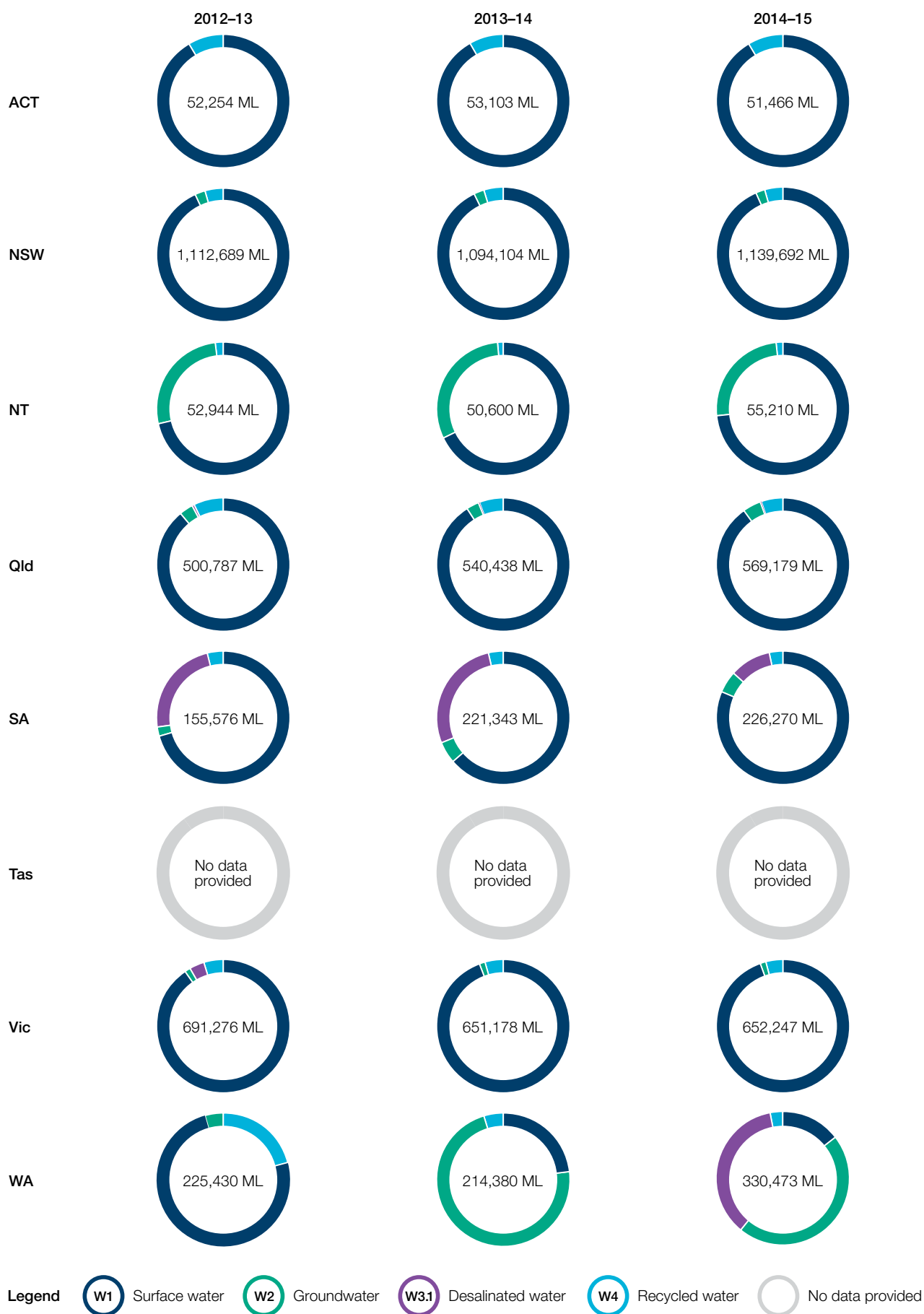


Figure 1.4a Water source breakdown (W1, W2, W3.1, W4) in each State and Territory, 2012–13 to 2014–15.

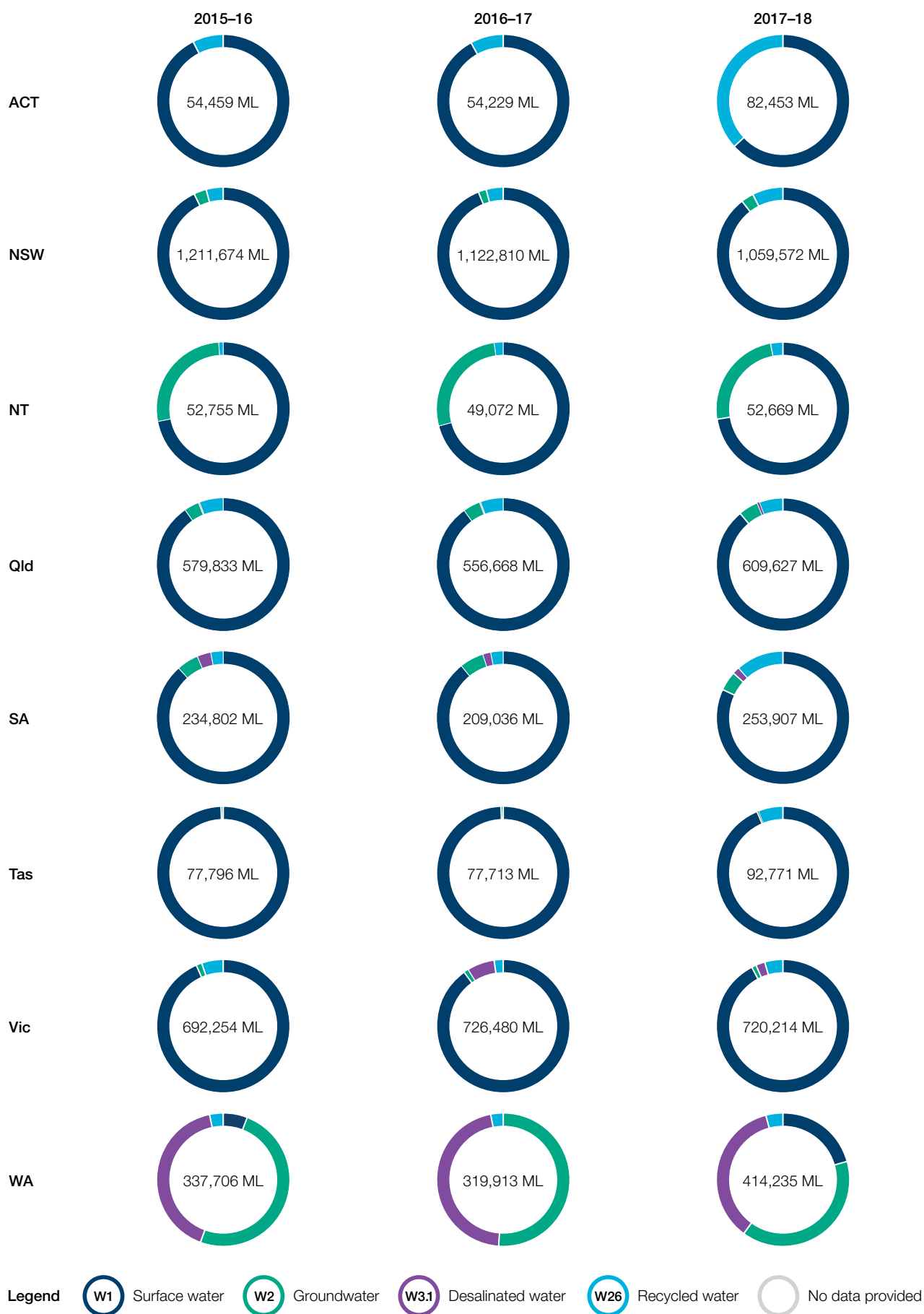


Figure 1.4b Water source breakdown (W1, W2, W3.1, W4/W26) in each State and Territory, 2015-16 to 2017-18.

2 Major urban centres

This chapter provides comparative tables and figures for a selection of key indicators for major urban centres, aligned with a capital city and the surrounding area.

The figures and tables are compiled using data supplied by the utilities detailed in Table 2.1; exceptions are indicated in the table notes.

Utilities' structures vary, and the figures in this chapter should be treated with some caution and read in conjunction with the notes for each of the tables. For example, to provide figures which represent Sydney, Melbourne, and South East Queensland, it may be necessary to aggregate the numbers for both bulk water authorities and utilities servicing those areas. The historical values for all financial indicators have been adjusted using consumer price index (CPI) data to facilitate comparisons in real terms.

Table 2.1 Data source for capital city analysis.

Major urban centre	Utility (B denotes bulk supplier)
Perth	Water Corporation—Perth
Adelaide	SA Water
Canberra	Icon Water Limited
South East Queensland	Seqwater (B), Queensland Urban Utilities, Unitywater, Gold Coast City Council, Redland City Council, Logan City Council
Sydney	WaterNSW (B), Sydney Water Corporation
Melbourne	Melbourne Water (B), City West Water, South East Water, Yarra Valley Water
Hobart	No data—Tasmania Water and Sewerage services this area; performance data are available only on an aggregated basis for the entire State of Tasmania
Darwin	Power and Water—Darwin

2.1 Water resources

2.1.1 Volume of water sources—W1, W2, W3.1, W26

The volume of water sourced from surface water (W1), groundwater (W2), desalination (W3.1), and recycled water (W26) for each city is shown in Table 2.2.

Nationally, there was an average 9 per cent increase in the total volume of water sourced between 2016–17 and 2017–18. Perth reported the largest increase (27 per cent) by volume, sourcing an additional 79,595 ML in 2017–18. The second largest increase was reported in Adelaide with an 11 per cent (16,947 ML) increase in its total volume of water sourced.

Melbourne and Canberra are the only regions which reported a decrease (0.2 per cent and 0.8 per cent, respectively) in the total volume of water sourced in 2017–18. In the case of Melbourne, the decrease in total water sourced was mostly due to the decrease in desalination (68 per cent). The decrease in total water sourced in Canberra was due to a decrease in recycled water sourced (9 per cent).

Table 2.2 Volume of water sourced in each urban centre (ML).

Major urban centre	Surface water (W1)		Groundwater (W2)		Desalination (W3.1)		Recycled water (W26)		Total	
	2016–17	2017–18	2016–17	2017–18	2016–17	2017–18	2016–17	2017–18	2016–17	2017–18
Adelaide	131,741	143,284	0	0	4,112	4,268	21,316	26,564	157,169	174,116
Canberra	49,916	52,157	0	0	0	0	33,210	30,296	83,126	82,453
Darwin	34,818	38,292	5,396	4,449	0	0	541	451	40,755	43,192
Melbourne ^a	428,407	448,864	0	0	46,209	14,972	32,442	42,085	507,058	505,921
Perth	0	1,135 ^b	139,598	131,948	149,823	148,905	9,568	12,100	298,989	378,584
South East Queensland ^c	299,372	325,370	7,686	13,368	1,562	2,803	14,755	13,056	323,375	354,597
Sydney	558,226	601,069 ^d	0	0	0	0	38,340	42,833	596,566	643,902

Table notes

^a Melbourne's surface water is that sourced by Melbourne Water and South East 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). Note that Melbourne Water did not report this volume (W26).

^b Perth's volume of surface water reflects the Water Corporation transferring more water into surface water storages than it extracted. In gross terms, Water Corporation abstracted 85,631 ML of water from surface water storages in the Perth region in 2017–18.

^c The volume of South East Queensland's surface water, groundwater, and desalinated water is sourced from Seqwater. The volume of South East Queensland's recycled water is sourced from Seqwater and the retailers (Queensland Urban Utilities, Unitywater, Gold Coast and Redland City Councils).

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

2.1.2 Average annual residential water supplied—W12

Table 2.3 reports the average volume (kL/property) of residential water supplied to customers in each major urban centre.

The volume of residential water supplied increased from 2016–17 to 2017–18 for Adelaide, Canberra, Darwin and Sydney regions, and decreased for Melbourne, Perth and South East Queensland regions.

Adelaide reported the largest increase from 2016–17 (14 per cent) in residential water supplied, which can be explained by drier summer periods with low rainfall.

Melbourne utilities reported the lowest average residential water supply in 2017–18, reflecting ongoing water saving measures.

See Section 3.1 for annual residential water supplied by all utilities.

Table 2.3 Average annual residential water supplied (kL/property).

Major urban centre ^a	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	183	186	206	171	195	14
Canberra	203	188	195	190	197	4
Darwin	407	409	405	361	368	2
Melbourne ^b	150	149	154	149	148	–1
Perth	254	244	240	223	219	–2
South East Queensland ^b	164 ^c	160	159	158	155	–2
Sydney	206	201	201	206	215	4

Table notes

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

^b Melbourne and South East Queensland figures are the weighted averages for their respective retailers (i.e. W8/C2—Total connected residential properties: water supply).

^c Redland City Council did not report against this indicator in 2013–14.

2.1.3 Total recycled water supplied—W26

Table 2.4 reports the total volume of recycled water supplied to customers, aggregated for the major urban centres (W26). Unlike W4 (volume of water sourced from recycling plants), W26 includes all recycled water supplied to various uses.

Total recycled water supply across the major urban centres increased by 11 per cent from the previous year, representing the fourth consecutive year of recycled water supply increase. Large increases in recycled water production were reported for Adelaide, Melbourne and Perth. Supply increases in these urban centres follow a drop in supply in 2016–17 compared to 2015–16. Melbourne has continued with a trend of increased recycled water supply, bolstered in 2017–18 by increased production capacity.

See Section 3.2 for recycled water supplied by all utilities.

Table 2.4 Total recycled water supplied (ML).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	25,515	29,177	28,481	21,316	26,564	25
Canberra	4,372	4,352	4,053	33,210	30,296	–10
Darwin	347	492	80	541	451	–17
Melbourne ^a	27,890	36,428	34,892	32,442	42,085	30
Perth	10,029	9,354	10,212	9,568	12,100	26
South East Queensland ^a	23,082 ^b	18,774 ^c	19,822 ^c	14,755	13,056	–12
Sydney	46,943	43,075	43,342	38,340	42,833	12

Table notes

Data for 2016–17 and earlier years are sourced from last year's published report, since the definition of W26 has changed this year.

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

^b Redland City Council did not report against this indicator in 2013–14.

^c Seqwater did not report against this indicator in 2014–15 and 2015–16.

2.2 Pricing

2.2.1 Typical residential bill—P8

Table 2.5 reports the typical residential bill for water supply and sewerage in each major urban centre.

Typical residential bills across the major urban centres remained relatively stable, with a 1 per cent increase from 2016–17. Water and sewerage service customers in Adelaide experienced a 7 per cent increase in typical residential bills from the previous year, attributable to increased water usage by residential customers due to lower-than-average rainfall over the dry summer period.

Customers in Melbourne had the lowest typical residential bill across all regions, while those in Darwin had the highest, continuing the pattern seen in previous years in Table 2.5.

See Section 4.1 for the typical bills charged by all utilities.

Table 2.5 Typical residential bill: water supply and sewerage (\$).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	1,371	1,393	1,420	1,188	1,271	7
Canberra	1,175	1,153	1,175	1,158	1,169	1
Darwin	1,908	1,967	1,951	1,831	1,820	–1
Melbourne ^a	1,164	1,029	1,065	1,023	1,016	–1
Perth	1,376	1,404	1,420	1,413	1,465	4
South East Queensland ^a	1,368 ^b	1,444	1,437	1,435	1,401	–2
Sydney	1,221	1,215	1,212	1,106	1,127	2

Table notes

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

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

^b Redland did not report against this indicator in 2013–14.

2.3 Environment

2.3.1 Total net greenhouse gas emissions—E12

The contribution of the utilities' operations to greenhouse gas (GHG) emissions, aggregated by major urban centre, is reported in Table 2.6.

Total net GHG emissions fluctuated widely across major urban centres. Emissions increased for most of the regions, with the highest increase in emissions (91 per cent) reported for South East Queensland. Melbourne, Perth and Sydney all reported a decrease in greenhouse emissions from the previous year.

See Section 8.1 for total net greenhouse gas emissions by all utilities.

Table 2.6 Total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	258	299	421	250	285	14
Canberra	260	257	255	242	268	10
Darwin	205	165	154	179	229	28
Melbourne ^a	229	215	291	268	243	–9
Perth	731	738	817	828	754	–9
South East Queensland ^b	55 ^c	89 ^d	131	75	143	91
Sydney	85	84	145	176	173	–2

Table notes

^a Melbourne figures are the weighted average of the three retailers (i.e. E12/C4—Total connected properties). Melbourne Water's emissions are expressed on a per-connection basis.

^b South East Queensland figures are the weighted average of the retailers (i.e. E12/C4—Total connected properties).

^c Qld Urban Utilities, Gold Coast, Logan and Redland City did not report against this indicator in 2013–14.

^d Gold Coast, Unitywater, Logan and Redland City did not report against this indicator in 2014–15.

2.4 Finance

2.4.1 Combined operating cost of water supply and sewerage—F13

Table 2.7 reports the combined operating cost of the utilities' water and sewerage operations, aggregated by urban centre.

In real terms, combined operating costs decreased or remained constant across all major urban centres. Darwin reported the highest decrease (6 per cent) in combined operating costs of water and sewerage services.

See Section 5.3 for combined operating for all utilities.

Table 2.7 Combined operating cost: water supply and sewerage (\$/property).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	641	581	598	555	547	1
Canberra ^a	791	803	951 ^a	999 ^a	996	0
Darwin	1,074		1,162	979	920	-6
Melbourne	1,073	955	1,003	917	890	-3
Perth	626	608	619	598	600	0
South East Queensland	1,139 ^a	1,136	1,123	1,129	1,112	-2
Sydney ^c	711	698	714	684	664	-3

Table notes

^a Canberra figures for the 2015–16 and 2016–17 years include a water abstraction charge and a utilities network facility tax.

^b Redland did not report against this indicator in 2013–14

^c Sydney figures are for Sydney Water and include the bulk water purchases from WaterNSW.

2.4.2 Total capital expenditure for water supply and sewerage—F16

Table 2.8 reports the combined capital expenditure related to the utilities' water and sewerage operations, aggregated by major urban centre.

Most major urban centres reported an increase in their total capital expenditure for water and sewerage services, with the exception of Adelaide and Canberra, which reported decreases of 23 per cent and 6 per cent, respectively. Darwin reported a significant increase (101 per cent) in capital expenditure from the previous year, the largest increase across all major urban centres. However, Darwin still has lower total capital expenditure than the other major centres.

Melbourne reported the largest capital expenditure among all major urban centres in the year 2017–18, consistent with values seen in the past five years. Melbourne's capital expenditure in 2017–18 included construction of recycled water transfer mains, upgrade of water recycling plants, and extension of its water and sewer networks.

See Section 5.1 for combined capital expenditure for all utilities.

Table 2.8 Total capital expenditure: water supply and sewerage (\$000).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	200,919	159,885	189,365	271,282	209,819	-23
Canberra	62,431	51,434	86,762	93,591	87,891	-6
Darwin ^a	26,910		50,331	22,673	45,498	101
Melbourne ^b	640,949	721,141	753,988	807,264	876,377	9
Perth	275,961	369,677	304,672	443,520	473,102	7
South East Queensland ^b	544,132 ^c	512,514	503,699	574,076	594,926	4
Sydney ^b	661,501	674,422	688,375	660,792	809,133	22

Table notes

^a P&W (Darwin) did not report against this indicator in 2014–15.

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

^c Redland did not report against this indicator in 2013–14.

2.5 Customers

2.5.1 Total water and sewerage complaints—C13

Table 2.9 reports the total number of complaints for water and sewerage services received by utilities, aggregated by major urban centre.

In Adelaide, the total number of complaints from customers for water and sewerage services remained unchanged from 2016–17. There was a 50 per cent increase in total complaints for Perth. Canberra, Darwin and Melbourne experienced improved customer satisfaction (based on complaints as an indicator of satisfaction) with a decrease in the number of complaints they received in 2017–18 compared with 2016–17.

Power and Water–Darwin experienced a considerable reduction (20 per cent) in the number of customer complaints, mainly due to the introduction of smart water meters which helped to reduce water loss and excessive usage charges.

See Section 6.2 for water and sewerage complaints for all utilities.

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

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide			1.6	2.5	2.5	0
Canberra	4.0	4.3	3.8	4.3	3.7	-14
Darwin	49.9	39.5	86.2	85.1	68.4	-20
Melbourne	5.3	4.1	4.8	6.3	6.2	-2
Perth	1.0	0.8	0.8	0.8	1.2	50
South East Queensland	6.6 ^a	3.8	4.3	4.7	5.2	10
Sydney	3.2	2.7	2.6	2.1	2.2	5

Table notes

^a 2013–14 only includes data from Queensland Urban Utilities, Gold Coast, and Unitywater.

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

Table 2.10 reports the average duration of unplanned interruptions to water supply in a utility's operation, aggregated by major urban centre.

South East Queensland reported the largest decrease (13 per cent) in duration of unplanned interruptions to water supply. Adelaide, Perth and Sydney all reported an increase in the duration of unplanned interruption to water supply. Melbourne reported the shortest duration of unplanned interruption to water supply among all major urban centres, at 101 minutes, which is comparable with its performance over the past five years, as well as a 5 per cent decrease in average duration of unplanned interruptions since last year.

See Section 6.1 for unplanned interruption to water supply for all utilities.

Table 2.10 Average duration of an unplanned interruption: water (minutes).

Major urban centre	2013–14	2014–15	2015–16	2016–17	2017–18	Change from 2016–17 (%)
Adelaide	153	165	189	195	237	22
Canberra	104	120	135	135	125	-7
Darwin ^a		94				
Melbourne	99	99	106	106	101	-5
Perth	117	96	108	103	112	9
South East Queensland	104 ^b	137	128	144	125	-13
Sydney	151	147	136	133	155	17

Table notes

^a No data are available for Darwin in the years 2013–14, 2015–16, 2016–17 and 2017–18.

^b 2013–14 data for South East Queensland is based on data from Queensland Urban Utilities, Gold Coast City Council, and Logan City Council.

3 Water resources

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

The average annual residential water supplied indicator (W12) reports the average volume (kL/property) of metered and estimated non-metered potable and non-potable water supplied to residential properties during the reporting year. It is derived by dividing the total volume of residential water supplied (W8) by the number of connected residential water properties (C2). The average volume is influenced by a number of factors, including:

- climate;
- rainfall;
- water conservation measures (for example, water restrictions);
- availability of water supply;
- housing density; and
- water prices.

Rainfall is the most influential factor affecting residential consumption. An increase in rainfall should reduce demand, and a decrease in rainfall should increase demand. A decrease in rainfall can result in a significant decrease in runoff into storages and trigger demand-management measures such as water restrictions.

Average annual residential water supply (W12) data for all utilities reporting in 2017–18 are given in Table A1, Appendix A.

3.1.1 Key findings

A summary of the median average annual volume of water supplied to residential customers, by utility group, is presented in Table 3.1.

Nationally, the median volume remained consistent with 2016–17, increasing by 4 per cent.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	219	142	8	7	161	163	1
	WC (Perth)	City West Water					
Large	368	152	7	2	185	201	9
	P&W (Darwin)	Toowoomba					
Medium	490	132	14	9	198	176	-11
	Lower Murray Water	Gladstone					
Small	487	85	18	10	191	208	9
	Central Highlands	Westernport Water					
All utility groups (national)	490	85	47	28	179	186	4
	Lower Murray Water	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 2016–17 and 2017–18 reporting years.

An increase was reported in 57 per cent of water utility regions during the 2017–18 period. Variability in the average annual water supplied between years is greatest in the Medium utility group, with changes ranging from a decrease of 41 per cent in the Gladstone region (132 kL/property in 2017–18), to an increase of 51 per cent reported in GWM Water region (316 kL/property in 2017–18).

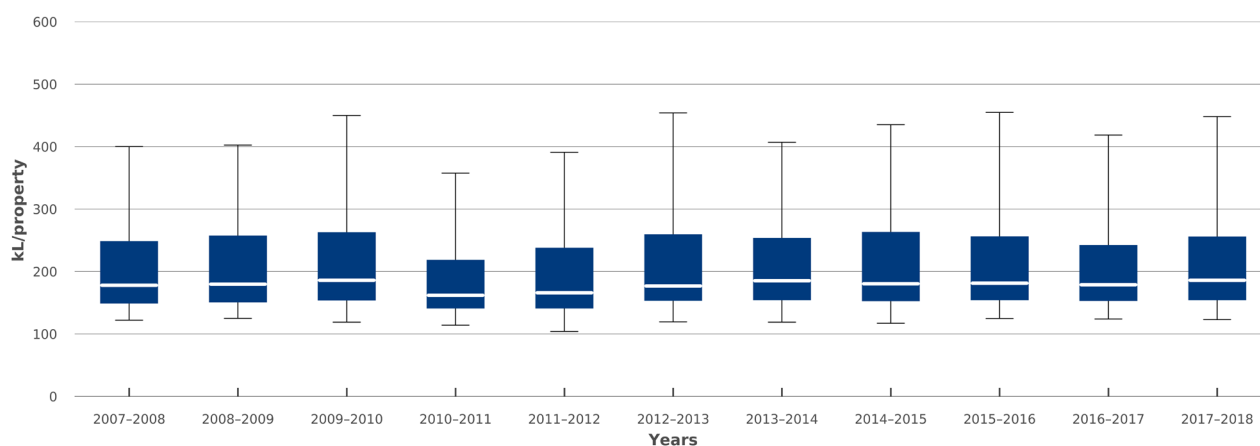


Figure 3.1 Average annual residential water supplied (kL/property).

Figure 3.1 shows a box-and-whisker plot of the average annual volume of residential water supplied for all utilities reporting W12. Across all utilities, the 2017–18 median residential water supply remains consistent with historical trends, reflecting the recent consecutive years (2012–13 to 2017–18) of warmer-than-average conditions across most of Australia.

3.1.2 Results and analysis—Major utility group

A ranked breakdown of the average residential water supplied for each utility in the Major utility group (2013–14 to 2017–18) is shown in Figure 3.2.

The largest volume supplied to residential customers occurred in the Perth and Sydney regions (219 and 215 kL/property, respectively). The highest increase from 2016–17 to 2017–18 (15 per cent) was reported by SA Water. Above-average temperatures and below-average rainfalls in this region throughout 2017–18 would have contributed to the increase in the volume of water supplied to residential customers (see Chapter 1 for climate details).

Apart from SA Water, Major group utilities supplied an average annual volume of water in 2017–18 that was consistent with 2016–17. Variations ranged from a 6 per cent decrease in the Logan region to an 8 per cent increase in Tasmania.

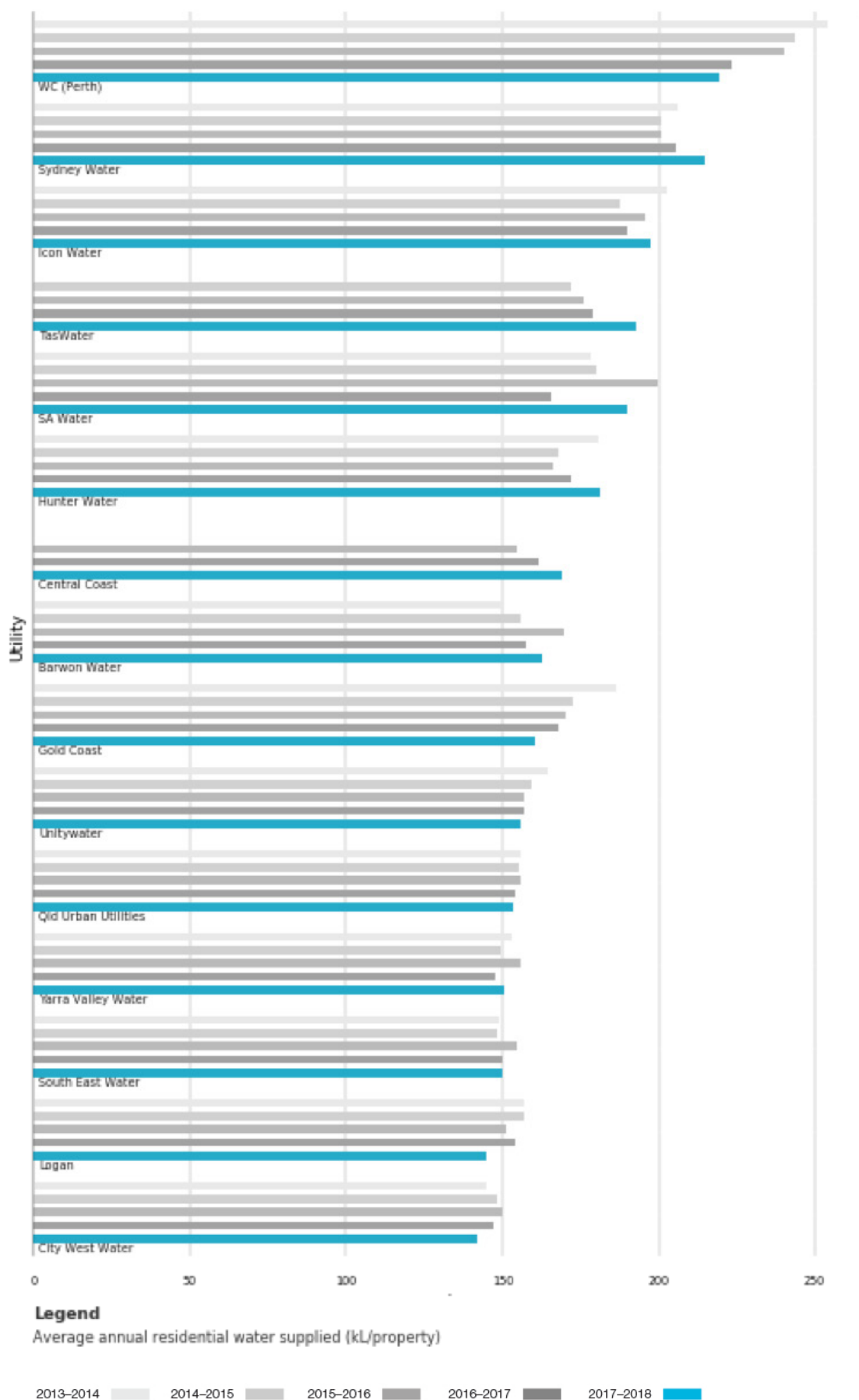


Figure 3.2 Average annual residential water supplied (kL/property)—Major utility group.

3.2 Total recycled water supplied (ML)—W26

Total recycled water supplied is the sum of all treated sewage effluent used by the utility and its customers. It includes residential, commercial, industrial, agricultural, and environmental use as well as onsite use by the utility.

The volume of recycled water supplied is affected by a number of factors, including:

- availability of potable water;
- size of the utility;
- the utility's proximity to potential customers (for example, agricultural users, major industrial customers, and recreational facilities);
- fluctuations in sewage received and effluent available for recycling; and
- government policy.

Total recycled water supply (W26) data for all utilities reporting in 2017–18 are presented in Table A2, Appendix A.

3.2.1 Key findings

A summary of the total recycled water supplied, by utility group, is shown in Table 3.2.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Total		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	42,833	461	7	7	137,155	151,747	11
	Sydney Water	Logan					
Large	7,244	314	2	7	27,273	18,547	-32
	Western Water	Goulburn Valley Water					
Medium	8,432	70	13	9	49,929	55,102	10
	North East Water	Queanbeyan					
Small	2,172	0	12	14	17,678	18,549	5
	WC (Albany)	Multiple utilities					
All utility groups (national)	42,833	0	34	47	232,036	243,945	5
	Sydney Water	Multiple utilities					

Table note

The total recycled water supplied (ML) is calculated using data from all utilities reporting for W26 in both the 2016–17 and 2017–18 reporting years. Data for 2016–17 and earlier years are sourced from last year's published report, since the definition of W26 has changed this year.

Nationally, the total volume of recycled water supplied increased by 5 per cent in 2017–18. The largest increase is seen in the Major group. The significant decrease in the Large group reflects high interannual variability in recycled water production, where last year's total was above the long-term average.

3.2.2 Results and analysis—Major utility group

In 2016–17, the Major utility group reported an increase of 11 per cent in the total volume of recycled water supplied. This increase is attributed to increased recycled water production capacity by Melbourne Water³ and South East Water in the reporting year.

³ Melbourne Water is a bulk supplier and not included in Table A2

4 Pricing

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

The typical residential bill for water supply and sewerage (P8) is the sum of fixed charges and volumetric-usage charges for water and sewage billed to a residential customer. The typical bill is based on each utility's average annual volume of residential water supplied (W12) and its pricing structure (P1, P1.1–P1.7, P4.1–P4.3). Prices are set by government or, in some jurisdictions, by a regulator, council, or utility.

Water bills are influenced by a number of factors, including:

- the size of the utility's customer base;
- geographical location;
- distribution of the customer base;
- local topography;
- climate;
- available sources of water; and
- government policy and legislation.

The mix of fixed and usage charges, and the level of water consumption, affects the typical residential bill.

When drawing comparisons between utilities, it is important to note that changes in a typical bill may result from both changes to average consumption and changes to the price of water.

Historically, residential water bill pricing models have varied across the nation. The majority of utilities now have a water supply pricing model based on a two-part structure: a fixed component and a component based on volumetric usage.

Townsville Regional Council remains an exception: ratepayers have a choice between a flat charge and a tiered structure.⁴

Unlike residential water supply pricing, the majority of utilities have a fixed price model for sewerage services. The exceptions are the Melbourne utilities⁵, Byron Shire Council and Unitywater. These utilities have both a fixed and volumetric component in their sewerage charges.

Billing data are indexed using the consumer price index (CPI) to facilitate comparison in real terms.

Typical residential bill (P8) data for all utilities reporting in 2017–18 are presented in Table A3, Appendix A.

4.1.1 Key findings

A summary of the median typical residential bills, by utility group, is shown in Table 4.1.

49 utilities reported an increase in their typical residential bills; however, the majority of these were in the Small and Medium groups. Nationally the median typical residential bill remained stable in 2017–18 with a median increase of \$12 per annum from 2016–17 reported.

⁴ www.townsville.qld.gov.au/payments-rates-and-permits/rates

⁵ Western Water, Yarra Valley Water, South East Water, and City West Water.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	1,577 Logan City West Water	930	9	6	1,158	1,169	1
Large	1,820 P&W (Darwin) Goulburn Valley Water	926	8	1	1,328	1,348	2
Medium	1,760 MidCoast Council North East Water	894	15	7	1,434	1,446	1
Small	1,974 P&W (Alice Springs) South Gippsland Water	983	17	7	1,578	1,637	4
All utility groups (national)	1,974 P&W (Alice Springs) North East Water	894	49	21	1,412	1,424	1

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 2016–17 and 2017–18 reporting years.

Figure 4.1 shows a box-and-whisker plot of typical residential bills for all utilities reporting data in a given year.

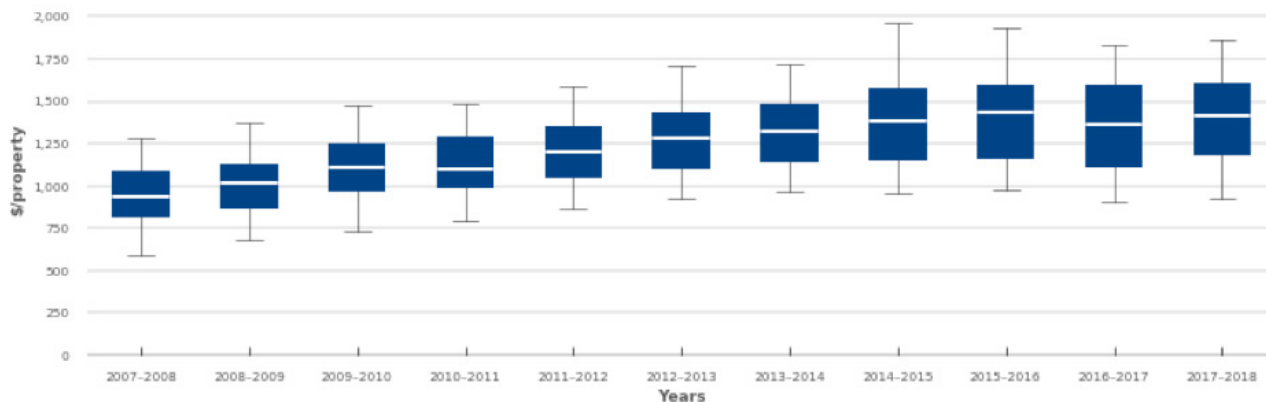


Figure 4.1 Typical residential bill: water supply and sewerage (\$), 2007–08 to 2017–18.

Following the decrease in typical residential bill in 2016–17 that reversed the upward trend of the past 9 years, the typical residential bill stabilised in 2017–18.

While nationally the typical residential bill was steady, dry and warm conditions are reflected in the typical residential water bills for NSW utilities where only two NSW utilities reported median bills lower than previous years. Only three NSW utilities reporting lower than their four-year average.

Victorian utilities remain among those charging the lowest typical residential bills in each utility group. This is due to a combination of the State's typically lower residential water use and downward pressure on bills through the Victorian State Government's Fairer Water Bills Initiative. Temperature and rainfall, as well as demand management, are key factors in the State's typically lower residential water usage.

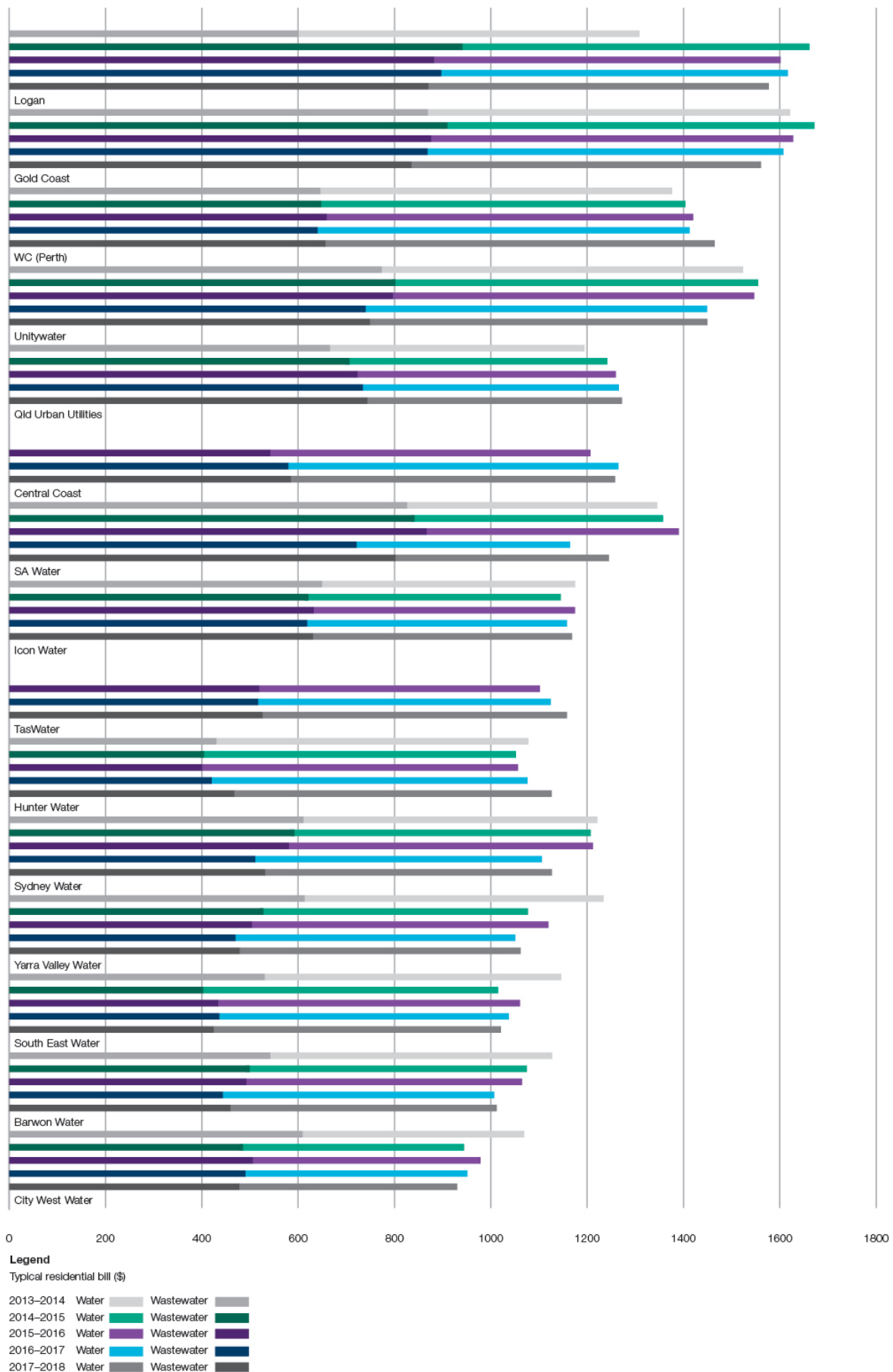


Figure 4.2 Typical residential bill: water supply and sewerage (wastewater) (\$)—Major utility group.

4.1.2 Results and analysis—Major utility group

A ranked breakdown of the typical residential bill for the Major utility group is presented in Figure 4.2. The figure highlights the water (P3) and sewerage (P6) components of the bill for each utility.

Gold Coast City Council have continued a trend of consecutive yearly reductions in their typical residential bills, although they remain the second most expensive retailers in the Major utility group.

The significant increase in typical residential bill for SA Water (7 per cent, or \$81 per annum), aligns with a significant increase in its average residential water supply (14.60 per cent), the largest increase across all utility groups, reflecting below-average summer rainfall recorded in 2017–18. Water demand for SA Water residential customers is driven by the summer rainfall.

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

The annual bill based on 200 kL for water and sewerage services (P7) is the sum of the annual bill for the supply of 200 kL of water (P2) and the annual bill for the provision of sewerage services for a residential customer using 200 kL of water (P5).

While the typical residential bill (P8) is the best guide to determining the impact of pricing on customers, the annual bill based on 200 kL aids comparisons between utilities. Adopting a consistent 200 kL as the basis for the bill partially normalises the data, correcting for differences in the volumes of water supplied and providing insight into price variations.

Billing data are indexed using the consumer price index (CPI) to facilitate comparison in real terms.

Annual bill based on 200 kL (water supply and sewerage) data for all utilities reporting in 2017–18 are presented in Table A4, Appendix A.

4.2.1 Key findings

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

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	1,793	1,096	9	5	1,277	1,278	0
	Logan	Sydney Water					
Large	1,536	850	6	3	1,364	1,366	0
	Toowoomba	Goulburn Valley Water					
Medium	1,951	771	11	10	1,425	1,430	0
	MidCoast Council	Lower Murray Water					
Small	1,949	1,121	15	7	1,526	1,537	1
	Eurobodalla	Bathurst					
All utility groups (national)	1,951	771	42	24	1,391	1,401	1
	MidCoast Council	Lower Murray Water					

Table note

The 200 kL residential bill data for water supply and sewerage are calculated using data from all utilities reporting against the P2 and P5 indicators in both 2016–17 and 2017–18.

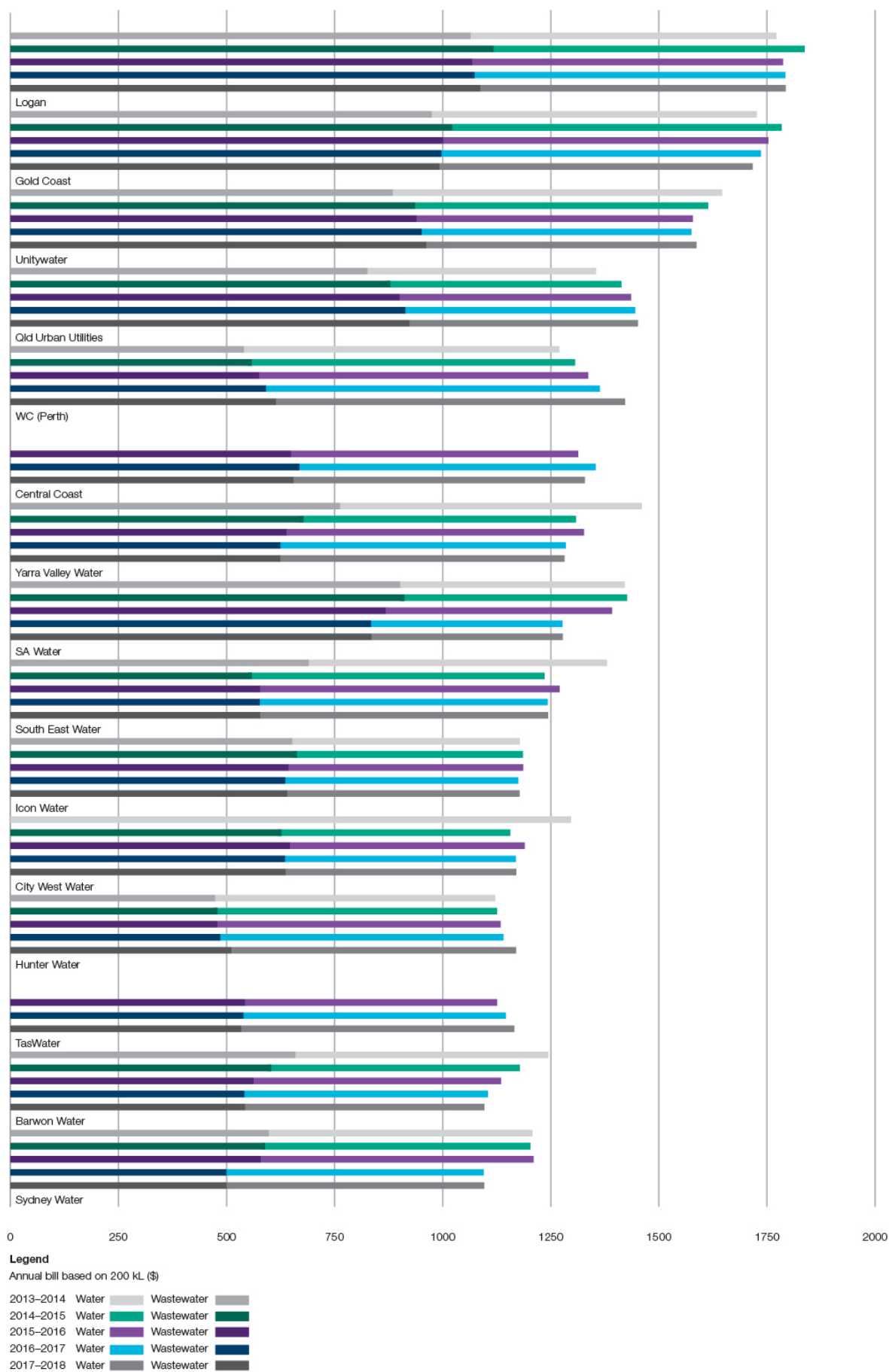


Figure 4.3 Annual bill based on 200 kL: water supply and sewerage (wastewater) (\$)—Major utility group.

On a 200 kL/annum basis, the national median bill remained essentially unchanged from 2016–17. Similarly, each utility size group remained unchanged from the previous year.

National medians for both typical residential bill and annual bill based on 200 kL were unchanged from 2016–17, reflecting the overall stability in pricing across each size utility group.

4.2.2 Results and analysis—Major utility group

A ranked breakdown of the annual residential bill based on 200 kL for the Major utility group is presented in Figure 4.3. The figure highlights the water (P2) and sewerage (P5) components of the bill for each utility. The figure reinforces the higher volumetric pricing of water by Queensland's Major utilities.

Water Corporation—Perth had the highest increase in annual residential bill based on 200 kL in the Major utility group (4.3 per cent) and similarly had one of the highest increases in typical residential bill (3.7 per cent). However, there was no significant change in residential water supply, with a minor reduction from 2016–17 (1.7 per cent). The increases in pricing indicators for Water Corporation—Perth are probably due to the Western Australian State Government's decision to increase water, sewerage and drainage charges.

5 Finance

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

Total capital expenditure on water supply and sewerage (F16) provides a measure of the total level of capital investment by each utility and the size of the utility and its capital responsibilities.

Capital expenditure programs often affect operational expenditure, and are influenced by several factors, including:

- the age of a utility's infrastructure;
- the stage of each asset's lifecycle; and
- the time and duration of a project.

Capital expenditure data are indexed using the consumer price index (CPI) to facilitate comparison in real terms. Total capital expenditure for water supply and sewerage data for all utilities reporting in 2017–18 are presented in Table A5, Appendix A.

5.1.1 Key findings

A summary of the data for total capital expenditure for water and sewerage, by utility size group, is presented in Table 5.1. In real terms, total capital expenditure increased by 13 per cent (\$469 million) from 2016–17 to 2017–18. The majority of this (\$350 million) was associated with capital expenditure in the Major size group. The other size groups all featured increases and similar total expenditure increases in the range \$21–61 million.

A summary of the data for total capital expenditure for water and sewerage, by utility group, is shown in Table 5.1.

Table 5.1 Overview of results: Total capital expenditure: water and sewerage (\$ million).

Utility group	Range		No. utilities with increase/decrease from 2016–17		Total		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	786	25	10	5	2,729	3,079	13
	Sydney Water	Central Coast					
Large	79	17	4	5	316	353	12
	Townsville	Central Highlands Water					
Medium	126	1.2	12	10	389	410	5
	Shoalhaven	Dubbo					
Small	30	0	12	10	190	251	32
	South Gippsland Water	Orange					
All utility groups (national)	786	0	38	30	3,625	4,094	13
	Sydney Water	Orange					

Table note

Total capital expenditure for water and sewerage services is calculated using data from all utilities reporting against F14 and F15 in both 2016–17 and 2017–18.

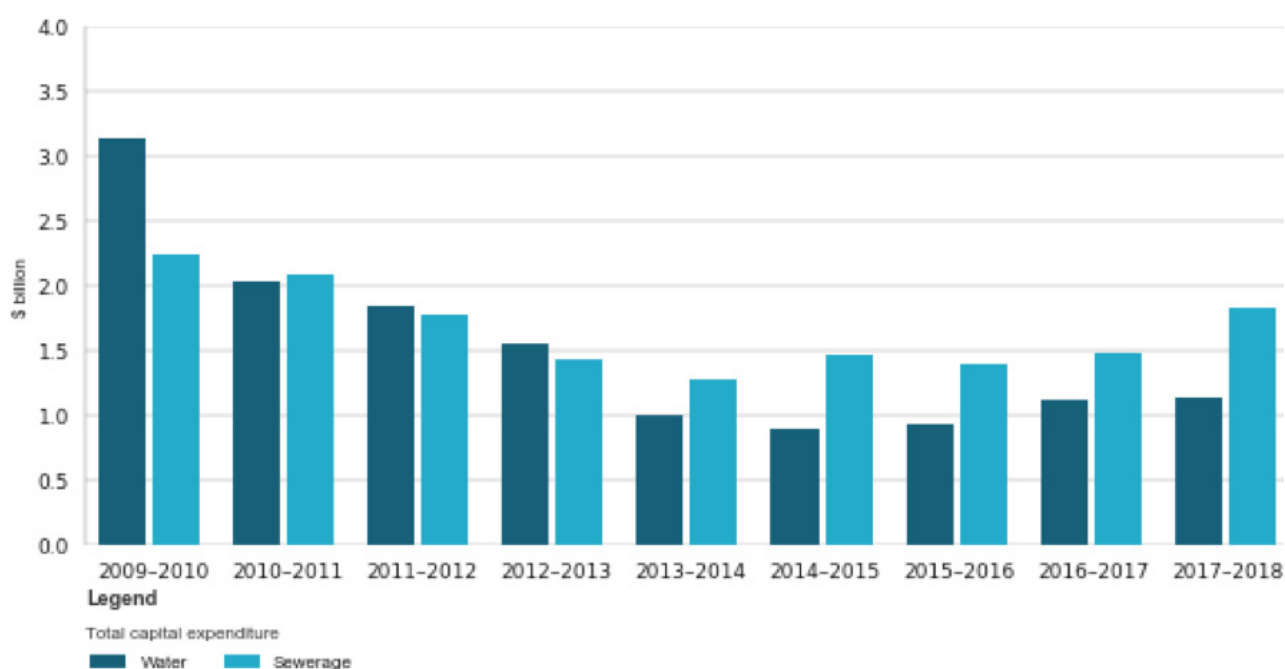


Figure 5.1 Total capital expenditure: water supply and sewerage (\$ billion).^a

^a Total is for utilities that reported all ten years and excludes bulk water utilities.

5.1.2 Results and analysis—Major utility group

With the exception of Icon Water Limited, South East Water, Gold Coast City Council, Central Coast Council and Barwon Water, all other utilities in the Major utility size group reported increases in capital expenditure across their water and sewerage operations. Icon Water Limited, South East Water and Gold Coast City Council all reported moderate decreases, at 6 per cent, 11 per cent and 17 per cent, respectively. Central Coast Council and Barwon Water reported the highest percentage decreases in its total capital expenditure, at 59 per cent and 22 per cent, respectively.

Tasmanian Water and Sewerage Corporation reported the largest increase in its total capital expenditure (45.9 per cent). These expenses are part of a program Tasmanian Water and Sewerage Corporation is implementing to achieve business and regulatory objectives.⁶

SA Water and Logan City Council both reported a 35 per cent increase in their total capital expenditure. This was probably due to an increase in the capital expenditure on the sewerage networks for both utilities.

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

Capital expenditure on water supply (F28) and sewerage (F29), on a per connected property basis, provides a measure of capital investment by each utility relative to its customer base. The normalisation on a per connected property basis facilitates a comparison between utilities.

Capital expenditure data are indexed using the consumer price index (CPI) to facilitate comparison in real terms.

Capital expenditure data per connected property, for water and sewerage services, provided by all utilities reporting in 2017–18 are presented in Tables A6 and A7, Appendix A.

⁶ TasWater annual report 2017-18 page 4

5.2.1 Key findings

Tables 5.2 and 5.3 summarise the median capital expenditure of utilities providing water and sewerage services, respectively.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	481	17	8	7	142	151	6
	TasWater	Central Coast					
Large	391	162	5	4	238	269	13
	Townsville	Central Highlands Water					
Medium	777	16	11	11	134	208	55
	Gladstone	Redland City					
Small	1,362	0	15	7	253	293	16
	South Gippsland Water	Orange					
All utility groups (national)	1,362	0	39	29	203	228	12
	South Gippsland Water	Orange					

Table note

Median capital expenditure: water (\$/property) is calculated using data from all utilities that reported against F28 in both 2016–17 and 2017–18.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	511	101	9	6	216	216	0
	Logan City Council	City West Water					
Large	877	103	4	5	264	213	-19
	Western Water	Central Highlands Water					
Medium	2,437	20	10	12	200	161	-19
	Shoalhaven	Dubbo					
Small	1,716	0	9	13	298	214	-28
	Goulburn Mulwaree	Orange					
All utility groups (national)	2,437	0	32	36	233	213	-9
	Shoalhaven	Orange					

Table note

Median capital expenditure: sewerage (\$/property) is calculated using data from all utilities that reported against F29 in both 2016–17 and 2017–18.

In 2017–18, the national median per property capital expenditure on water services increased by 12 per cent (Table 5.2). This result reflects the increases reported by 39 utilities in the reporting year.

In 2017–18, the national median per property capital expenditure on sewerage services decreased by 9 per cent, (Table 5.3). The Large, Medium and Small size groups all reported a moderate to significant decrease in capital expenditure of 19 per cent, 19 per cent and 28 per cent, respectively.

5.2.2 Results and analysis—Major utility group

A ranked breakdown of capital expenditure on a per connected property basis is shown in Figure 5.2.

The figure highlights the water (F28) and sewerage (F29) components of the total expenditure and reinforces the year-to-year variation.

Tasmanian Water and Sewerage Corporation and Logan City Council reported significant increases in capital expenditure on both water and sewerage services from 2016–17 to 2017–18 compared with other utilities. Capital expenditure on sewerage services increased by 40 per cent and 37 per cent, respectively, and capital expenditure on water supply increased by 46 per cent and 23 per cent, respectively.

Hunter Water Corporation reported the highest increase in capital expenditure on water supply (53 per cent).

City West Water reported the largest comparative increase in capital expenditure for sewerage services, as compared to 2016–17 (58 per cent), but a 2 per cent decrease in capital expenditure on water supply.

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

Combined operating costs for water supply and sewerage on a per property basis (F13) provides a measure of a utility's operation, maintenance, and administration costs in relation to the number of properties serviced. Operating costs are influenced by:

- utility size;
- government policy;
- climate and rainfall;
- distance and method by which water is transported (for example, piped);
- sources of water (for example, purchased from a bulk utility, or sourced from dams or alternative sources such as desalination plants);
- input costs (for example, fuel, chemicals, and labour);
- level of water and sewage treatment required; and
- capital procurement strategies (for example, public–private partnerships or build–own–operate–transfer [BOOT] schemes).

Operating costs are increasing, particularly for larger utilities; however, operating costs per property can fall as the size of the utility increases, due to economies of scale.

Operating cost data are indexed using the consumer price index (CPI) to facilitate comparison in real terms.

Combined operating cost (water supply and sewerage) data for all the utilities reporting in 2017–18 are presented in Table A8, Appendix A.

5.3.1 Key findings

Figure 5.3 is a box-and-whisker plot of combined operating cost (water supply and sewerage) data for all utilities reporting F13 for a given reporting year from 2007–08 to 2017–18. A summary of the median combined operating costs on a per property basis is shown in Table 5.4.

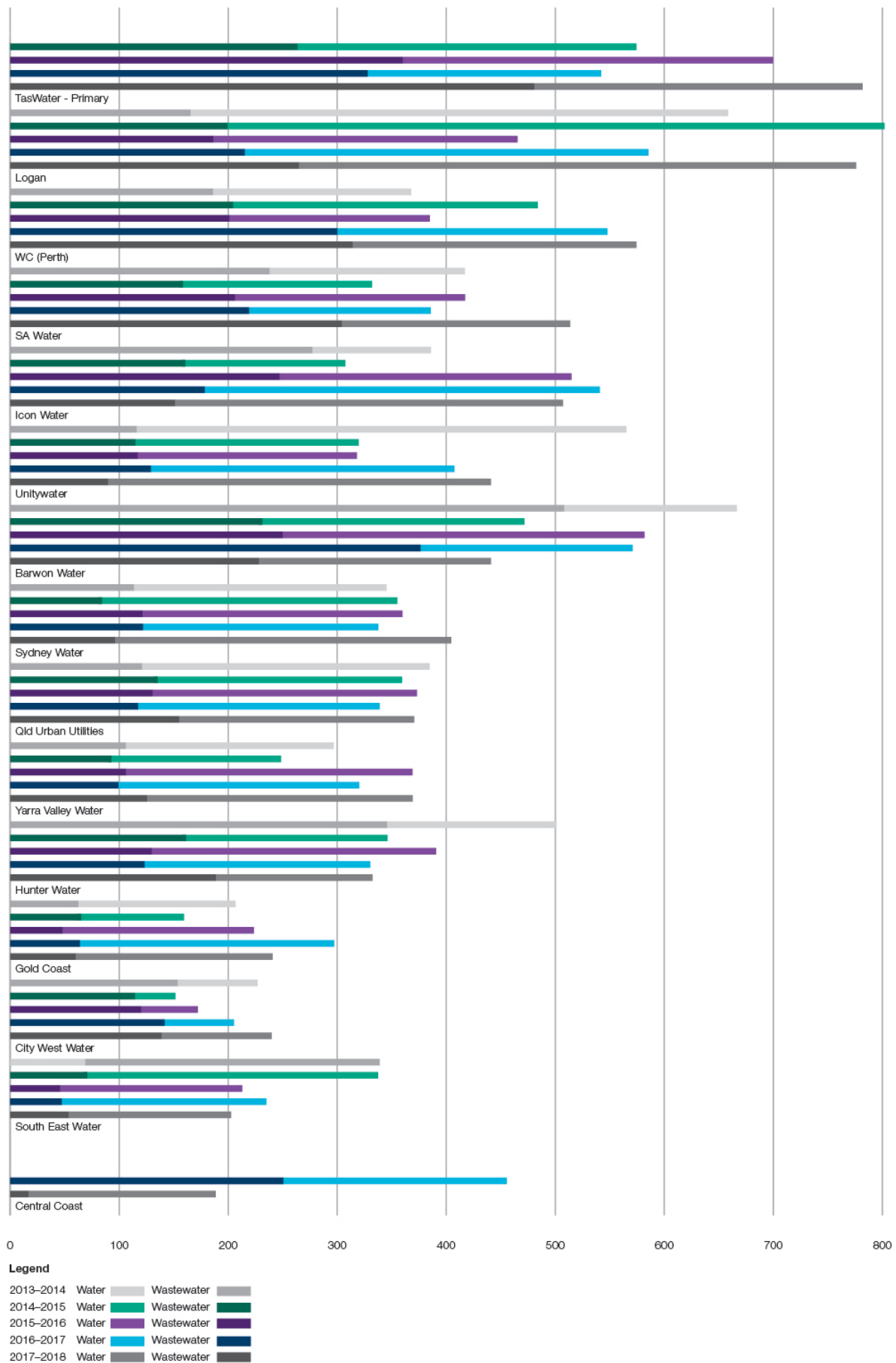


Figure 5.2 Capital expenditure: water supply and sewerage (wastewater) (\$/property)—Major utility group.

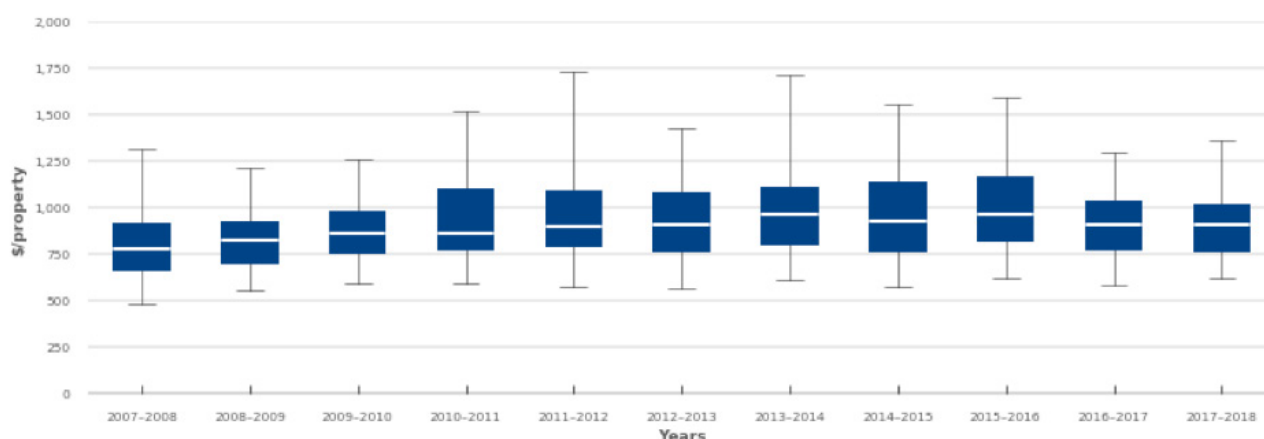


Figure 5.3 Combined operating cost: water and sewerage (\$/property).

The national 2017–18 median operating cost (on a per property basis for utilities delivering both water and sewerage services) was \$921; very close to the 2016–17 cost (Table 5.4).

The Major and Large size groups reported decreases, whereas the Medium and Small groups reported increases in their median costs. Nationally, 35 utilities across all size groups reported increases in their operating expenditure per property, while 33 utilities reported decreases.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	1,176	600	5	9	880	858	-3
	Gold Coast	WC (Perth)					
Large	1,218	690	5	4	887	886	0
	Gippsland Water	Cairns					
Medium	1,540	623	13	9	925	952	3
	Gladstone	WC (Mandurah)					
Small	1,500	338	12	11	981	1,000	2
	Byron	Gympie					
All utility groups (national)	1,540	338	35	34	913	920	0.8
	Gladstone	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 2016–17 and 2017–18. 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 and depends 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.

5.3.2 Results and analysis—Major utility group

A ranked breakdown of operating expenditure for water supply and sewerage services on a connected property basis is presented in Figure 5.4. The figure highlights the component of operating expenditure for water (F11) and sewerage (F12) expenditure for each utility in the Major size group from 2013–14 to 2017–18.

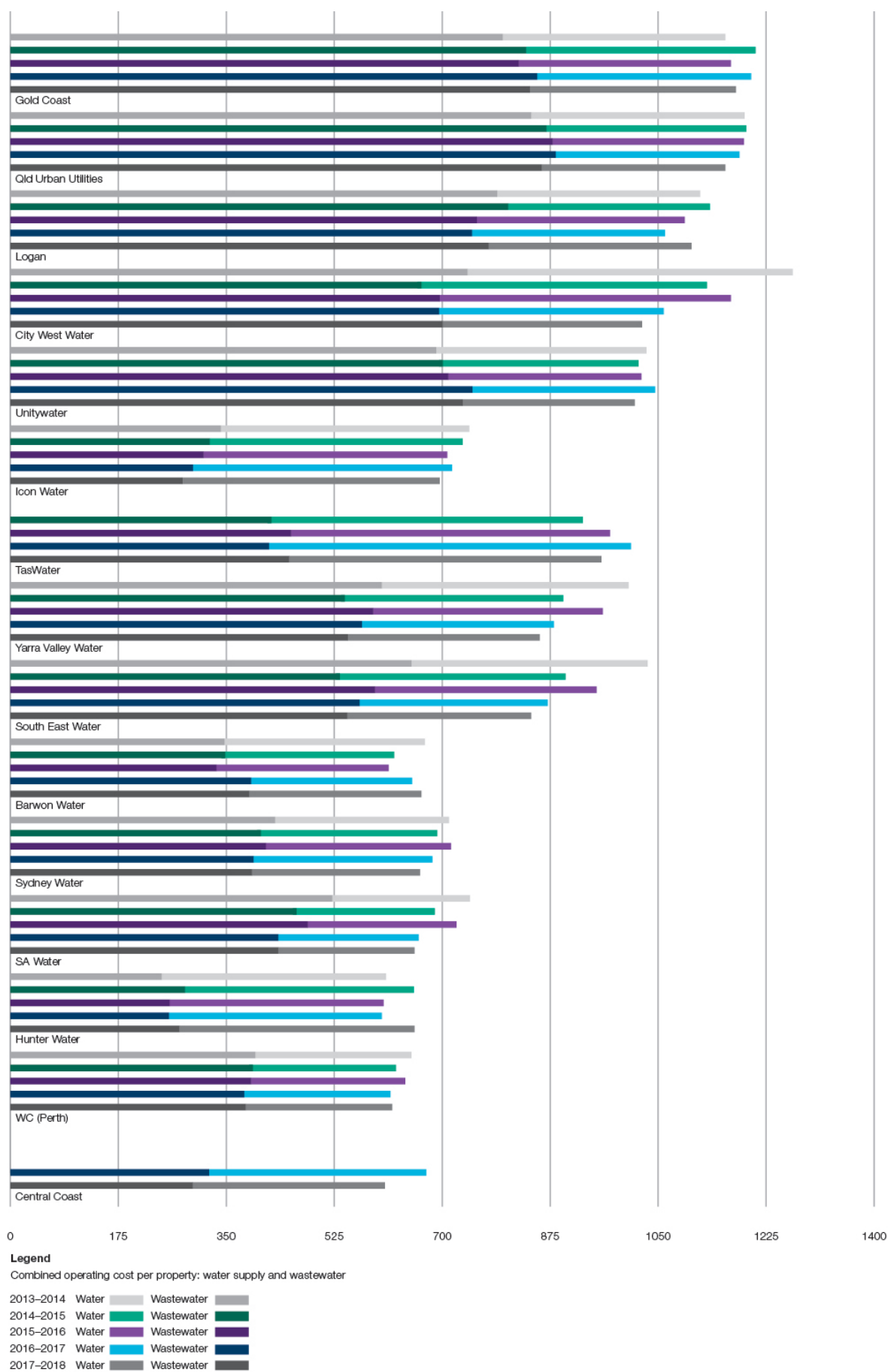


Figure 5.4 Combined operating cost: water and sewerage (wastewater) (\$/property)—Major utility group.

5.4 Revenue from community service obligations (%)—F8

Revenue from community service obligations (CSOs) as a percentage of a utility's total income (F8) is a measure of the extent to which activities undertaken by a utility are subsidised.

Payments for CSOs (F25) to a utility by a State or Territory government are made when a utility is directed to undertake activities that they would not perform on a solely commercial basis. CSOs in the water sector may be provided to:

- allow reductions on bills to certain disadvantaged customer groups (for example, pensioners);
- allow utilities to charge common tariffs across all 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.

CSO data for all utilities reporting in 2017–18 are presented in Table A9, Appendix A.

5.4.1 Key findings

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

In 2017–18, 12 utilities reported increases and 34 utilities reported decreases, and 12 utilities reported no change in the revenue received from CSOs. This resulted in a 15 per cent decrease in the national median between 2016–17 and 2017–18.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	10.6	0.0	2	7	3.3	3.4	3
	SA Water	Multiple utilities					
Large	5.5	0.0	3	4	4.2	3.5	-17
	Multiple utilities	Toowoomba					
Medium	6.5	-40.8	3	12	1.1	0.9	-9
	GWMWater	WC (Mandurah)					
Small	59.2	-131.7	4	11	0.8	0.8	0
	Western Downs	WC (Geraldton)					
All utility groups (national)	59.2	-131.7	12	34	1.3	1.1	-15
	Western Downs	WC (Geraldton)					

Table note

Median percentage of revenue from CSOs is calculated for all utilities reporting data in both 2016–17 and 2017–18.

5.4.2 Results and analysis—Major utility group

Despite the majority of the Major size group utilities reporting a decrease in CSO payments, the median remained steady.

SA Water and Water Corporation—Perth continued to have the highest proportions of revenue from CSOs with 10.6 per cent and 6.2 per cent respectively. For these utilities, CSO payments are used to subsidise non-profitable water services, to provide water services in country areas at metropolitan water prices.

The median percentage revenue from CSOs increased by 3 per cent; however, seven utilities reported a decrease in CSOs as a percentage of revenue from 2016–17 to 2017–18. Icon Water Limited reported the highest decrease, with its CSO revenue decreasing from 3.3 per cent in 2016–17 to 2.0 per cent in 2017–18.

6 Customer

6.1 Average duration of an unplanned interruptions: water—C15

The average duration of unplanned interruptions (C15) is the average time a customer is without water supply due to an unforeseen interruption that requires attention by the utility.

Unplanned interruptions include scheduled interruptions which exceeded the time limit in the original notification. The indicator is a measure of customer service, the condition of the water network, and how effectively the network is managed.

The average duration is influenced by:

- the scale of the event causing the interruption;
- the location of the interruption—for example, the proximity to a repair crew and the depth of the burst pipe;
- the utility's response policy for outlying areas; and
- the number of maintenance and repair staff at the utility's disposal.

Note that a single event affecting a small number of properties for a long duration can cause large annual variations in this indicator, especially for smaller utilities.

The average duration of unplanned interruptions (water supply) data for all utilities reporting in 2017–18 are presented in Table A10, Appendix A.

6.1.1 Key findings

A summary of the data for unplanned interruption, by utility group, is shown in Table 6.1.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	227	87	4	10	133.8	122.3	-9
	SA Water	South East Water					
Large	1,198	49	3	5	102.8	96.2	-6
	Toowoomba	Cairns					
Medium	266	2	8	9	104	79.3	-24
	Albury	Queanbeyan					
Small	270	19	12	7	120	120	0
	Wingecaribee	Livingstone					
All utility groups (national)	1,198	2	27	31	116.1	116.6	0
	Toowoomba	Queanbeyan					

Table note

Median average duration of an unplanned interruption: water (minutes) is calculated for all utilities reporting data for C15 in both 2016–17 and 2017–18.

Nationally, the median average duration of unplanned interruptions remained consistent with 2016–17. Toowoomba had the highest duration of unplanned interruption of all groups (1,198 minutes); it also recorded the highest duration in 2016–17. Kempsey reported the largest percentage increase (662 per cent).

6.1.2 Results and analysis—Major utility group

A ranked breakdown of the average duration of an unplanned interruption for this utility group from 2013–14 to 2017–18 is presented in Figure 6.1. The figure highlights the large year-to-year variation in the indicator for some utilities that can result from a single major mains break.

SA Water reported the highest median, and both SA Water and Sydney Water Corporation reported increases of 16 per cent compared to 2016–17.

The results reported by SA Water are explained by the procedures followed to mitigate the safety hazards associated with the repair of cast iron mains. Cast iron pipes have been used extensively in South Australia and are more likely to fail from pressure issues. As reported in the 2017 Urban NPR, these pipes were previously repaired under pressure; however, new work, health, and safety measures require the water supply to be shut down and the area excavated before the pipe is repaired.

Central Coast Council reported a third consecutive year of an average duration well above the national and group medians, and only comparable to SA Water. This result in part reflects the more distributed nature of the area served by the utility.

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

The total number of water and sewerage complaints per 1,000 properties (C13) is a measure of a utility's customer satisfaction and operational performance. A complaint can be a written or verbal expression of dissatisfaction made about an action, a proposed action or a failure to act by the water utility, its employees, or contractors.

Complaints from different customers about the same issue are counted as separate complaints.

Total water and sewerage complaints data for all utilities reporting in 2017–18 are presented in Table A11, Appendix A.

6.2.1 Key findings

A summary of data for total water and sewerage complaints by utility group is shown in Table 6.2. Nationally, there was a 28 per cent decrease in the median number of complaints; this arose from decreases for all utility size groups.

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	11.1	1.2	7	6	3.6	3.3	-8
	Yarra Valley Water	WC (Perth)					
Large	68.4	0.5	1	7	5.4	3.3	-39
	P&W (Darwin)	Townsville					
Medium	93.4	0.0	12	9	5	4.8	-4
	Mackay	Coffs Harbour					
Small	110.7	1.0	11	13	6.2	5.3	-15
	P&W (Alice)	Kempsey					
All utility groups (national)	110.7	0.0	31	35	5.0	3.7	-28
	P&W (Alice)	Coffs Harbour					

Table note

Median total complaints: water and sewerage (per 1,000 properties) are calculated for all utilities reporting data for C13 in both 2016–17 and 2017–18.

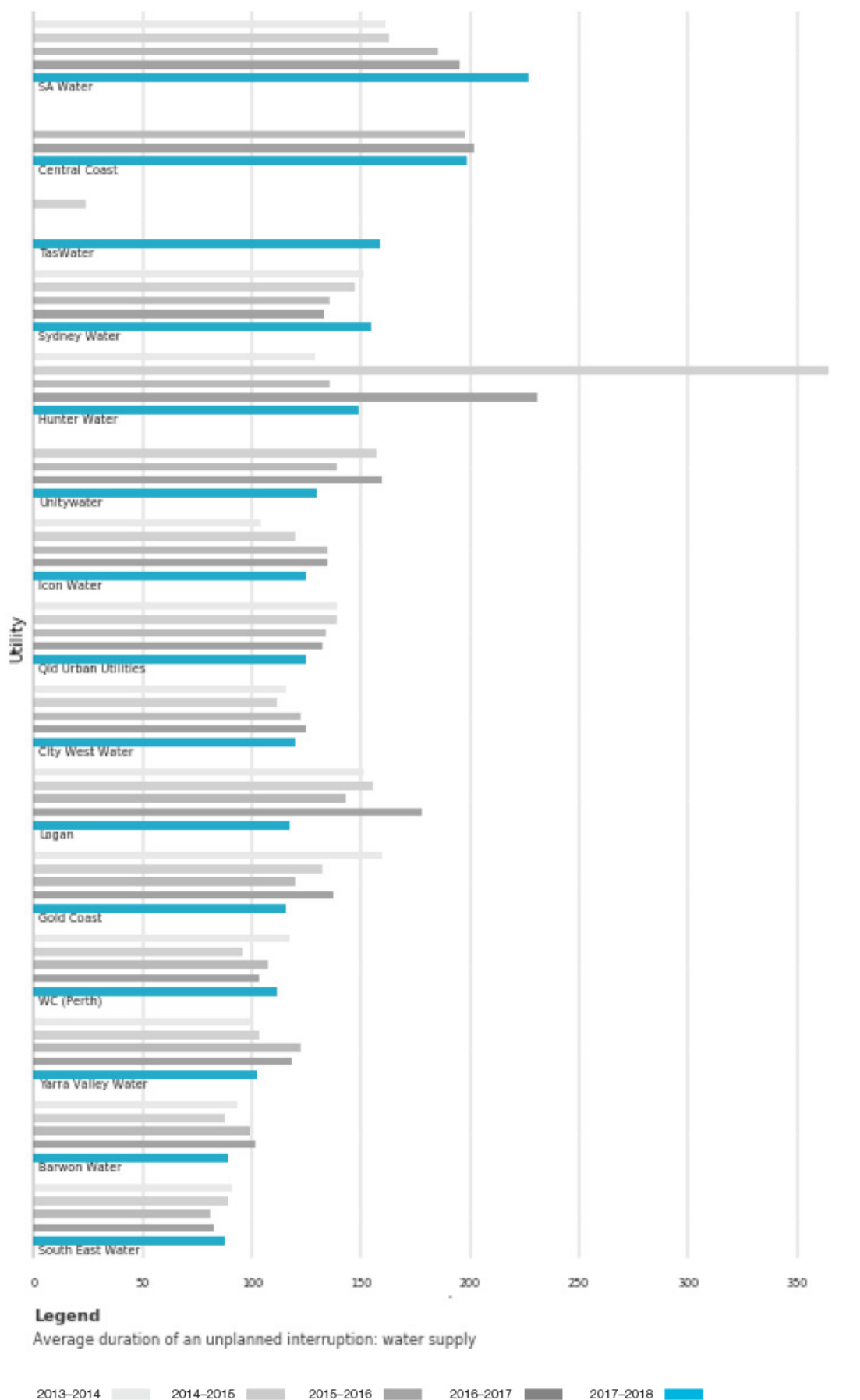


Figure 6.1 Average duration of unplanned interruption: water (minutes)—Major utility group.

6.2.2 Results and analysis—Major utility group

A ranked breakdown of the total water and sewerage complaints from 2013–14 to 2017–18 is shown in Figure 6.2. Notably, Gold Coast City Council and Logan City Council reported significant decreases compared to last year and values below their long-term averages.

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

The percentage of calls answered by an operator within 30 seconds (C14) measures the number of calls answered within 30 seconds after the ‘operator’ option is selected. It is a measure of the efficiency of a utility’s customer service centre and is affected by:

- the ratio of customer service staff to customers; and
- severe events, such as storms or floods, that result in a large increase of customer calls.

Data on the percentage of calls answered by an operator within 30 seconds for all utilities reporting in 2017–18 are presented in Table A12, Appendix A.

Table 6.3 Overview of results: Percentage of calls answered within 30 seconds.

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	85.4	52.6	3	4	67	73.1	9
	SA Water	South East Water					
Large	98.6	75.0	1	4	89.4	83.5	-7
	Goulburn Valley Water	Western Water					
Medium	100	50.0	3	1	94	96	2
	Multiple Utilities	Tweed					
Small	100	45.0	3	3	80	80	0
	Multiple Utilities	Kempsey					
All utility groups (national)	100	45.0	10	12	85.7	82.3	-4
	Multiple Utilities	Kempsey					

Table note

Median percentage of calls answered by an operator within 30 seconds (%) is calculated for all utilities reporting data in both 2016–17 and 2017–18.

6.3.1 Key findings

Nationally, the median percentage of calls answered within 30 seconds remained consistent with 2016–17, decreasing by 4 per cent, to 82 per cent in 2017–18. The challenge faced by Major utilities in managing call volumes and Major and Small utilities in supporting effective customer service staff to customer ratios is highlighted by the variation in median response times of the groups.

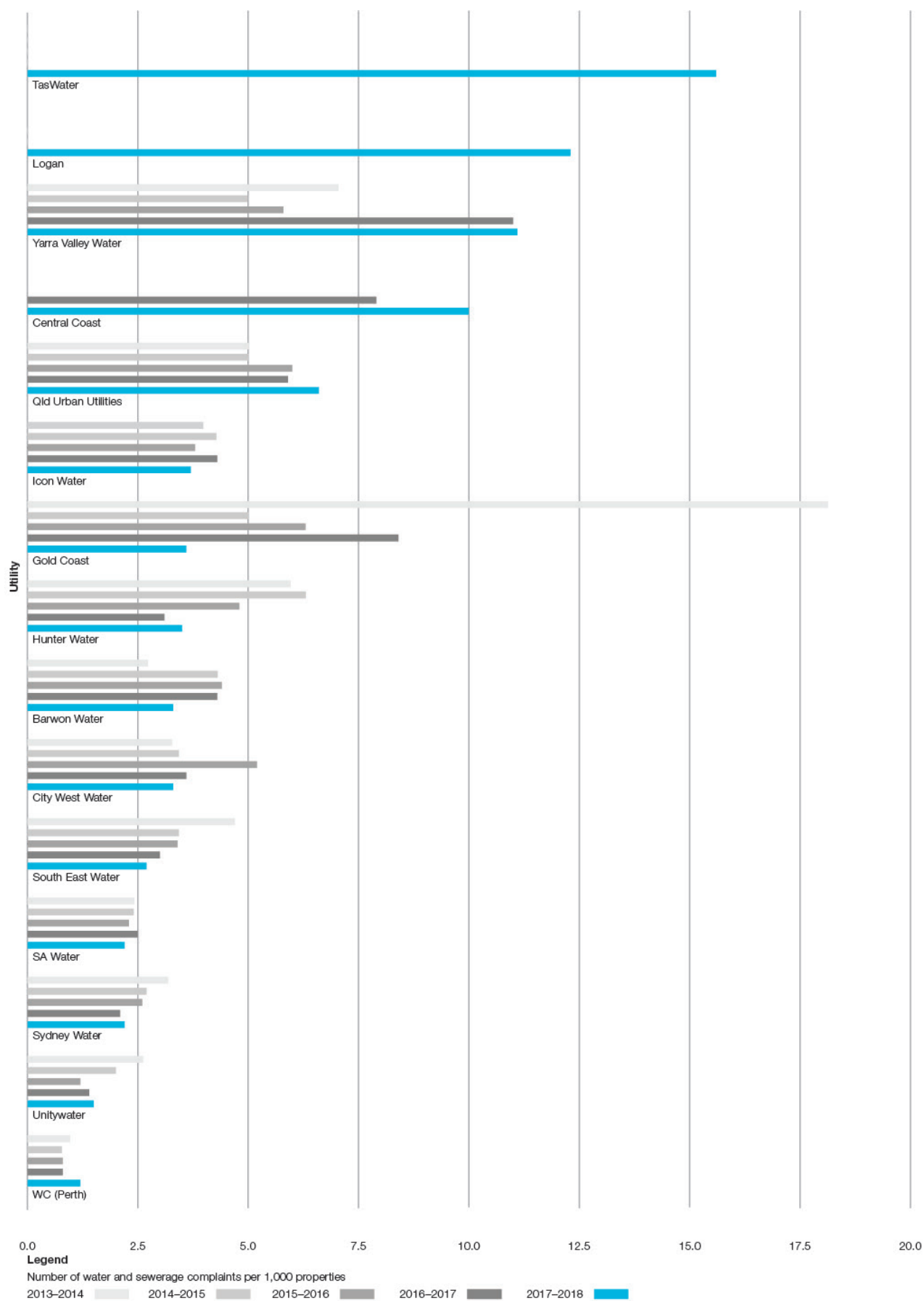


Figure 6.2 Total complaints: water and sewerage (per 1,000 properties)—Major utility group.

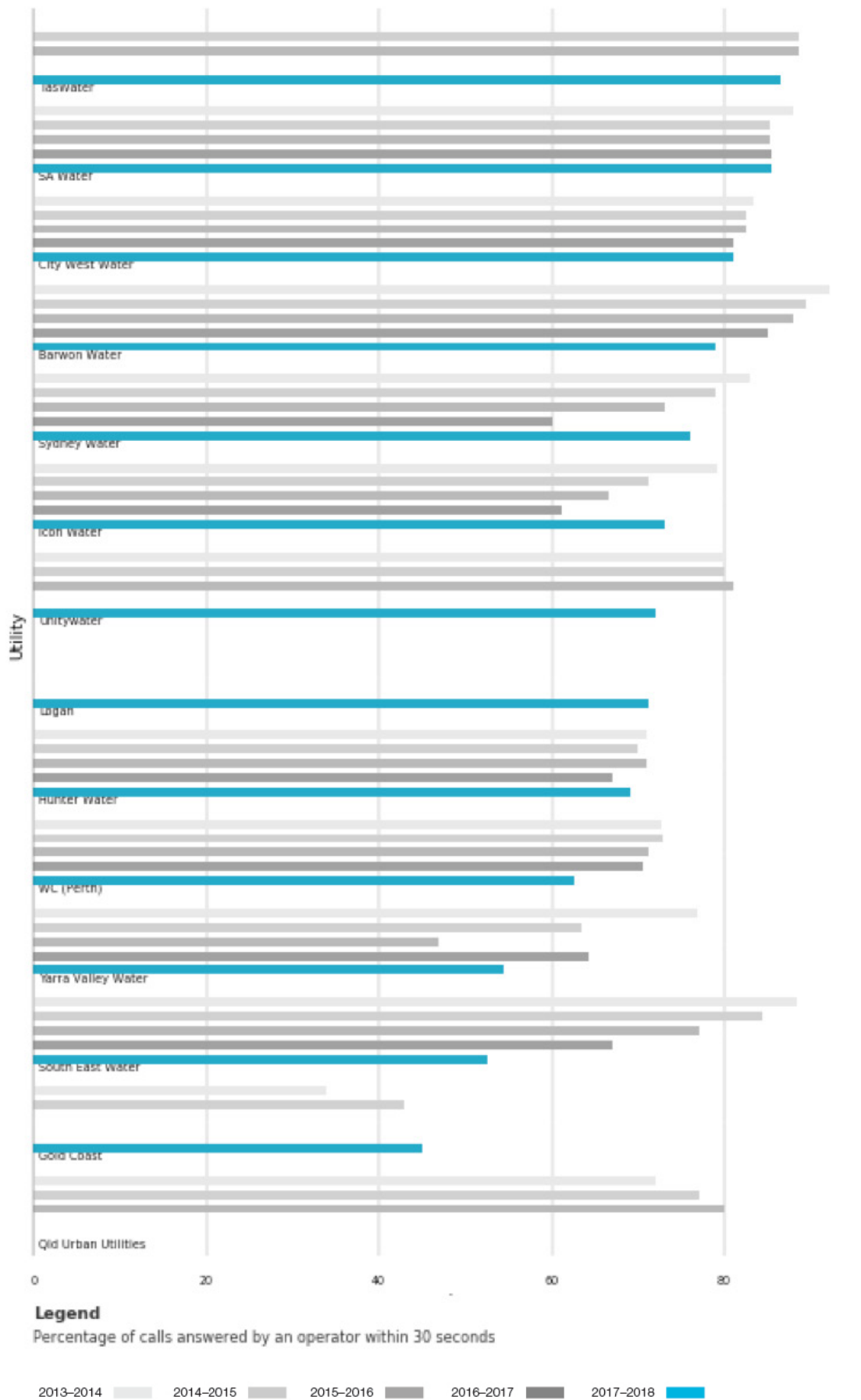


Figure 6.3 Percentage of calls answered by an operator within 30 seconds—Major utility group.

6.3.2 Results and analysis—Major utility group

A ranked breakdown of the percentage of calls answered by an operator within 30 seconds from 2013–14 to 2017–18 is shown in Figure 6.3.

Tasmanian Water and Sewerage Corporation reported the highest percentage at 86.6, but was not included in Table 6.3, as they did not report this indicator last year for comparison. Sydney Water Corporation reported the largest increase compared to last year, bringing it back in line with its long-term average.

South East Water reported the biggest decrease in performance (21 per cent) for this indicator.

7 Asset

7.1 Water main breaks per 100 km of water main—A8

The number of water main breaks per 100 km of water main (A8) is the total number of breaks, bursts, and leaks in all distribution system mains⁷, excluding breaks associated with headworks and transfer mains. It provides an indication of both customer service and the condition of the network. The number of main breaks is influenced by various factors, including:

- soil type;
- rainfall;
- pipe material; and
- age and condition of the network.

Data on the number of water main breaks per 100 km of water mains for all utilities reporting in 2017–18 are presented in Table A13, Appendix A.

7.1.1 Key findings

The downward trend in water main breaks data for all utilities reporting A8 from 2007–08 to 2017–18 is shown in Figure 7.1.

A summary of the number of water main breaks per 100 km of water main, by utility size group, is presented in Table 7.1.

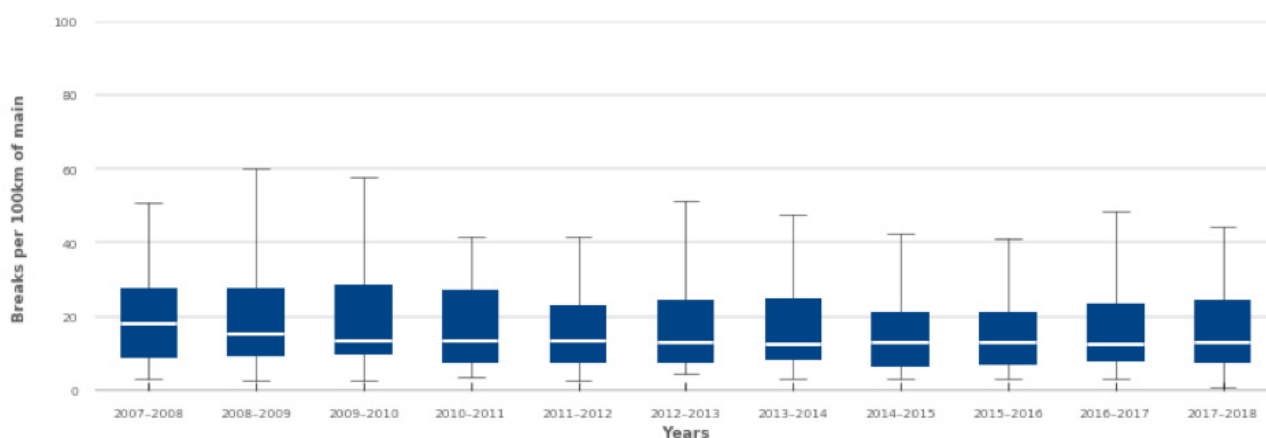


Figure 7.1 Water main breaks per 100 km of water main.

Despite modest reductions in the median number of water main breaks for the Major group, the national median remained steady—down 1 per cent from 2016–17 to 12.5 breaks per 100 km.

⁷ The figure includes both potable and non-potable water mains.

Table 7.1 Overview of results: Water main breaks per 100 km of water main.

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	46.3	4.1	8	6	19.6	19.4	-1
	Yarra Valley Water	Unitywater					
Large	29.0	10.7	5	4	16.3	23.0	41
	Toowoomba	P&W (Darwin)					
Medium	58.5	2.8	9	13	8.3	7.5	-10
	GWMWater	WC (Mandurah)					
Small	44.3	1.0	16	11	13.7	15	9
	P&W (Alice Springs)	Livingstone					
All utility groups (national)	58.5	1.0	37	34	12.8	12.7	-1
	GWMWater	Livingstone					

Table note

The median for water main breaks per 100 km of water main was calculated using data from all utilities (dual- and single-service providers) reporting data against A8 in both 2016–17 and 2017–18.

7.1.2 Results and analysis—Major utility group

A ranked breakdown of the water main breaks for each utility in the Major utility group from 2013–14 to 2017–18 is presented in Figure 7.2. The figure highlights both the variance within the utility group and a broad downward trend for some utilities (for example, Water Corporation—Perth and Queensland Urban Utilities).

Eight utilities, including South East Water, Hunter Water Corporation and Icon Water Limited, reported an increase in water main breaks from 2016–17 to 2017–18. Sydney Water Corporation reported the largest relative increase with a 37 per cent increase in breaks and leaks compared to 2016–17. However, this is partly explained by the utility having relatively few breaks and leaks in 2016–17, when it recorded 10 per cent below the long-term average.

7.2 Sewerage mains breaks and chokes—A14 and property connection sewer breaks and chokes—A15

Indicator A14 reports the number of breaks and chokes per 100 km of sewerage main, and 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, as utilities have sewer networks with various configurations. For example:

- Some utilities 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 (that is, 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 own⁸ or maintain the property connections and therefore do not report on 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.

⁸ For such utilities, the property owner is responsible for the property’s sewer connections.

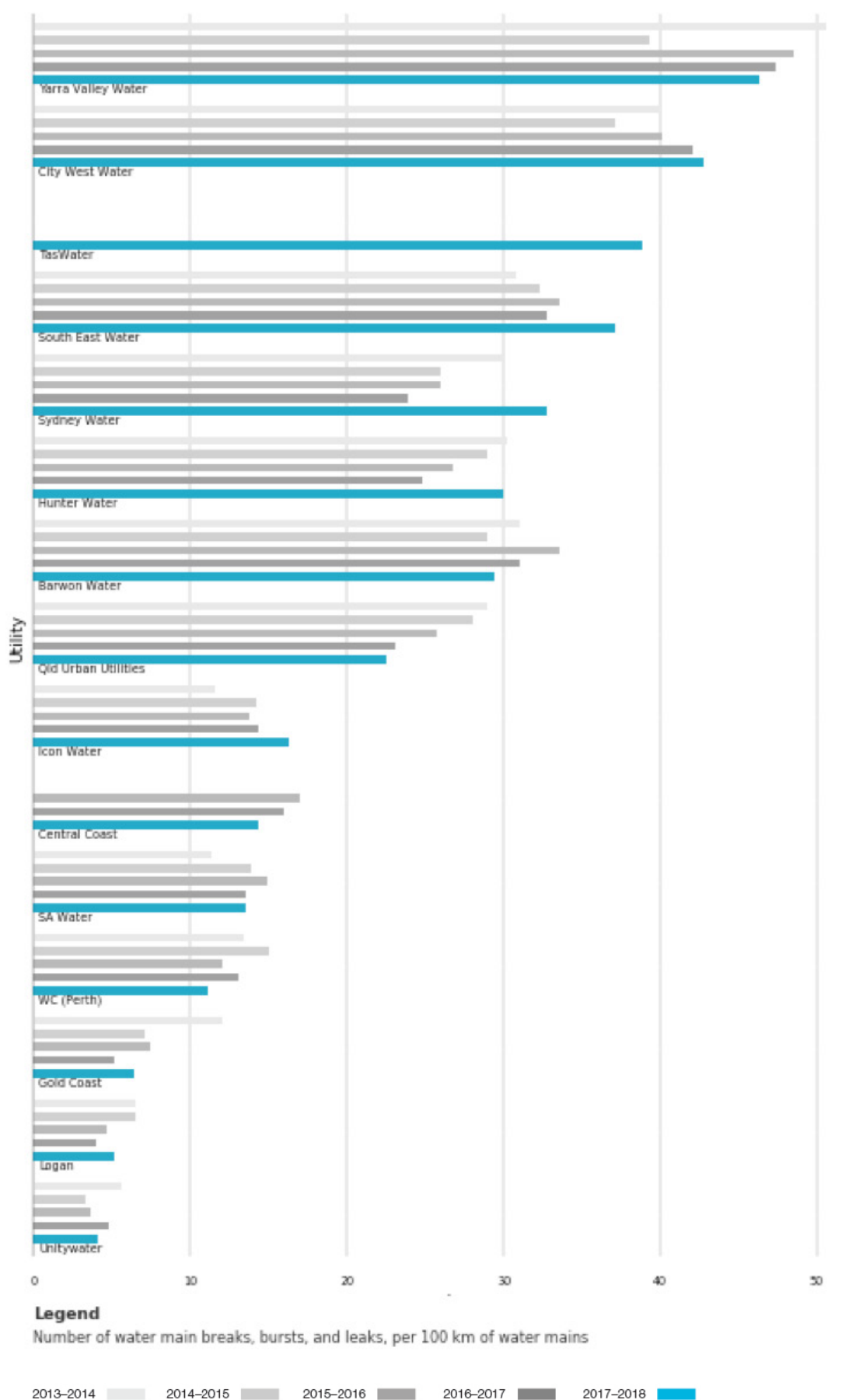


Figure 7.2 Water main breaks per 100 km of water main—Major utility group.

The performance of a sewerage system is influenced by:

- soil type;
- pipe material;
- sewerage configuration;
- age;
- tree root intrusion;
- management of trade waste;
- volume of sewage inflows; and
- rainfall.

Results reflect both the condition of the network and the level of customer service. For the reasons given above, care should be taken in comparing the performance of utilities against each other using these indicators.

Sewerage mains breaks and chokes data for all utilities reporting in 2017–18 are presented in Table A14, Appendix A. Property connection sewer breaks and chokes data for all utilities reporting in 2017–18 are presented in A15, Appendix A.

7.2.1 Key findings

A summary of the number of sewerage mains breaks and chokes per 100 km of sewer main, by utility size group, is presented in Table 7.2.

A summary of the property connection sewer breaks and chokes, by utility size group, is presented in Table 7.3.

In 2017–18, there were 14.3 sewerage main breaks and chokes per 100 km of sewer, which was a 21 per cent decrease in the national median from 2016–17 (Table 7.2). There was a 3 per cent increase in the sewer breaks and chokes per 1,000 properties (Table 7.3). Two of the four size groups reported increases in sewerage mains breaks and chokes, with the Major size group reporting a 10 per cent decrease.

The Major size group reported a 29 per cent decrease in property connection sewer breaks and chokes. The Large and Small size groups reported an increase and the Medium size group reported a 3 per cent increase.

Table 7.2 Overview of results: Sewerage mains breaks and chokes per 100 km of sewer main.

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	70.0	5.1	7	5	28.9	26	-10
	Sydney Water	Gold Coast					
Large	64.6	2.8	5	4	11.8	14.3	21
	Toowoomba	Townsville					
Medium	84.0	0.0	7	16	18	11	-39
	Coffs Harbour	Tweed					
Small	122.0	0.0	15	10	10	13.4	34
	Essential Energy	Ballina					
All utility groups (national)	122.0	0.0	34	35	18	14.3	-21
	Essential Energy	Tweed					

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) reporting data against A14 in both 2016–17 and 2017–18.

Table 7.3 Overview of results: Property connection sewer breaks and chokes per 1,000 properties.

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	28.0	0.3	5	6	4.5	3.2	-29
	SA Water	Sydney Water					
Large	5.0	2.0	4	5	2.4	3.2	33
	Goulburn Valley Water	P&W (Darwin)					
Medium	35.1	0.0	10	10	2.9	3.0	3
	GWMWater	Multiple utilities					
Small	51.3	0.8	13	7	3.2	4.7	44
	Essential Energy	Cassowary Coast					
All utility groups (national)	51.3	0.0	32	28	3.2	3.3	3
	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) reporting data against A15 in both 2016–17 and 2017–18.

7.2.2 Results and analysis—Major utility group

A ranked breakdown of the sewerage mains breaks and chokes for each utility from 2013–14 to 2017–18 is shown in Figure 7.3, and a ranked breakdown for property connection sewer breaks and chokes is shown in Figure 7.4.

Yarra Valley Water, Logan City Council, Queensland Urban Utilities and Unitywater all reported a decrease in sewerage main breaks and chokes per 100 km sewer main and in sewer breaks and chokes per 1,000 properties from 2016–17. This is consistent with these utilities experiencing consistent above-average temperatures and average rainfall in 2016–17 and 2017–18; the good conditions gradually reducing the number of breaks and chokes. This can result in less ground movement and fewer sewerage main breaks (see Section 1.4 Key drivers).

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

‘Real’ losses (A10) are leakages and overflows from potable water mains, service reservoirs, and service connections before the customer meter. This indicator excludes metering errors, unauthorised consumption (apparent losses), and unbilled authorised consumption (for example, water used for firefighting). Performance of this indicator may be influenced by the condition of mains, infrastructure and 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, and may not be as accurate as other indicators (such as water main breaks), when comparing utilities.

Real loss data for all utilities reporting in 2017–18 are presented in Table A16, Appendix A.

7.3.1 Key findings

A summary of the real losses, by utility size group, is presented in Table 7.4.

In 2017–18, the national median across all size groups increased by 4 per cent since 2016–17 to 80.3 L/service connection/day. Tasmanian Water and Sewerage Corporation reported the highest value of 277, but is not included in Table 7.4, as they did not report this indicator last year for comparison.

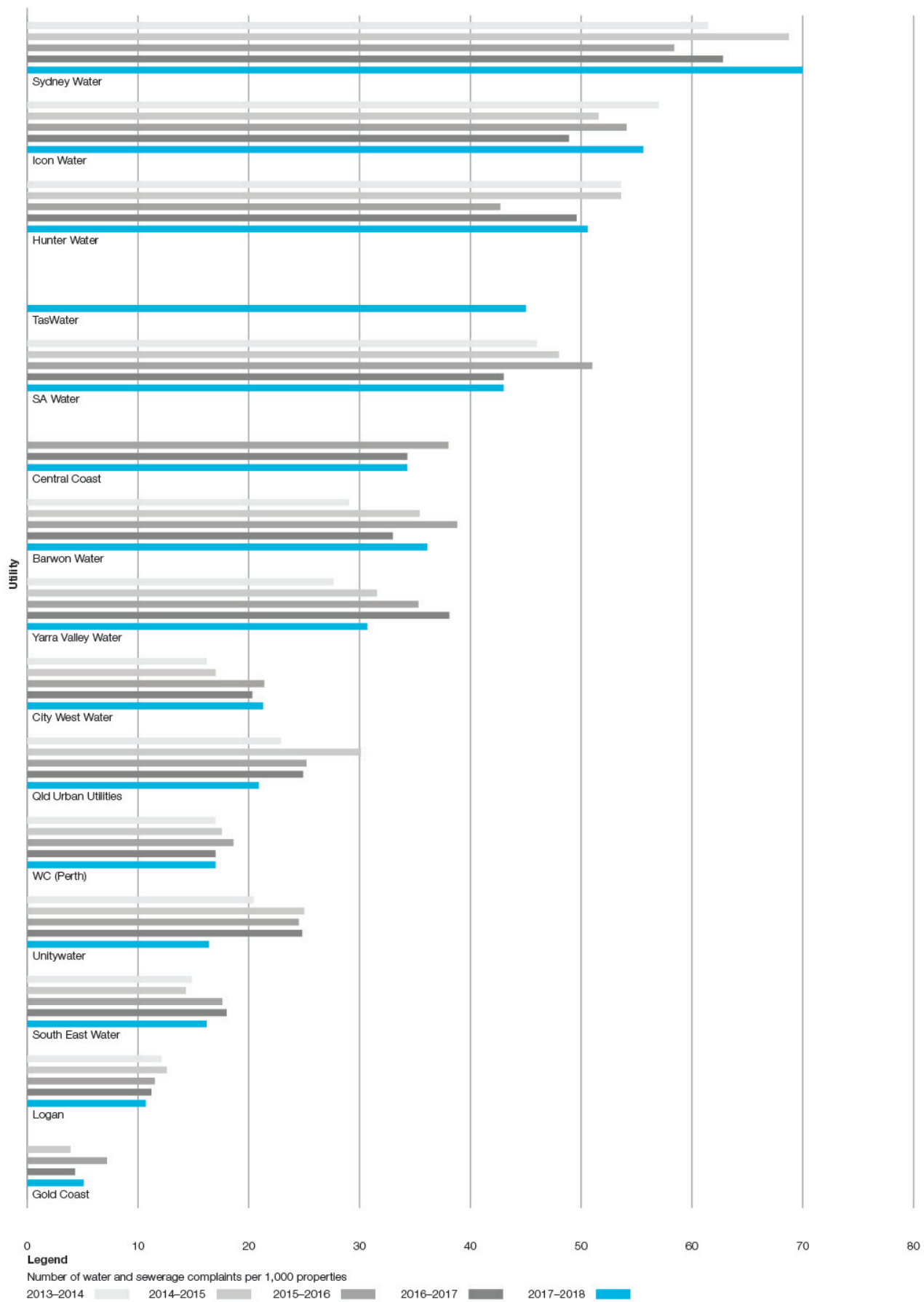


Figure 7.3 Sewerage mains breaks and chokes per 100 km of sewer main—Major utility group.

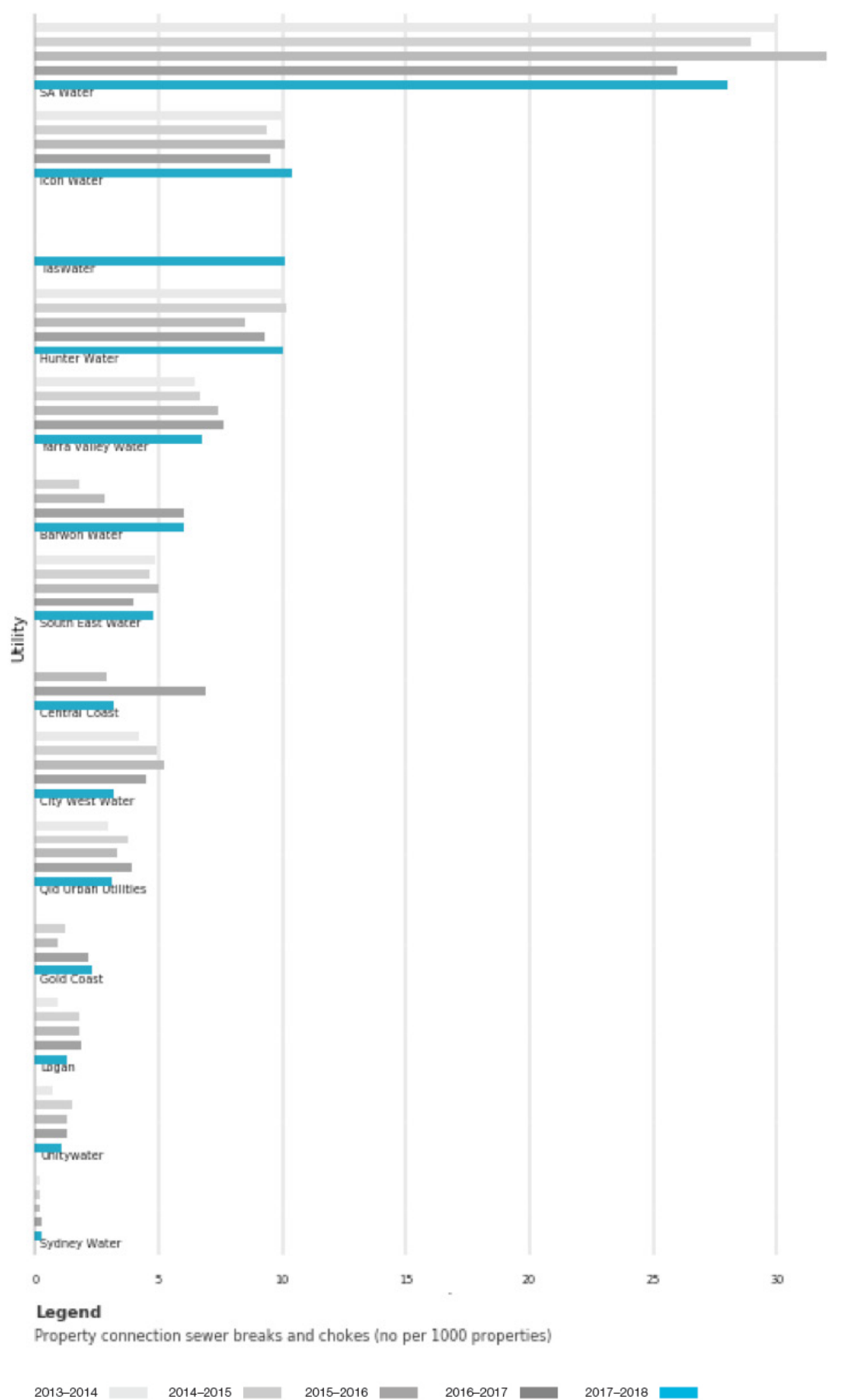


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties—Major utility group.

As it did in 2016–17, Cassowary Coast Regional Council reported the highest real losses among the utilities (459 L/service connection/day in 2017–18). Bundaberg Regional Council reported the highest increase in real losses since 2016–17 (325 per cent).

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	93.0	35.3	9	5	73.0	76.2	4
	Sydney Water	Central Coast					
Large	306.4	21.4	6	2	63.0	80.0	27
	Townsville	Cairns					
Medium	215.5	4.0	13	10	77.0	62.0	-19
	Bundaberg	Dubbo					
Small	458.8	0.0	15	11	88.5	109.5	24
	Cassowary Coast	Livingstone					
All utility groups (national)	458.8	0.0	43	28	77.5	80.3	4
	Cassowary Coast	Livingstone					

Table note

The median real losses (L/service connection/day) are calculated using data from all utilities (dual- and single-service providers) reporting data against A10 in both 2016–17 and 2017–18.

Figure 7.5 shows a box-and-whisker plot of the real losses for all utilities reporting A10 for a given reporting year from 2007–08 to 2017–18.

The figure highlights the consistency of the estimated loss values—this is in part an artefact of the broad use of consistent assumptions in the estimation of the losses.

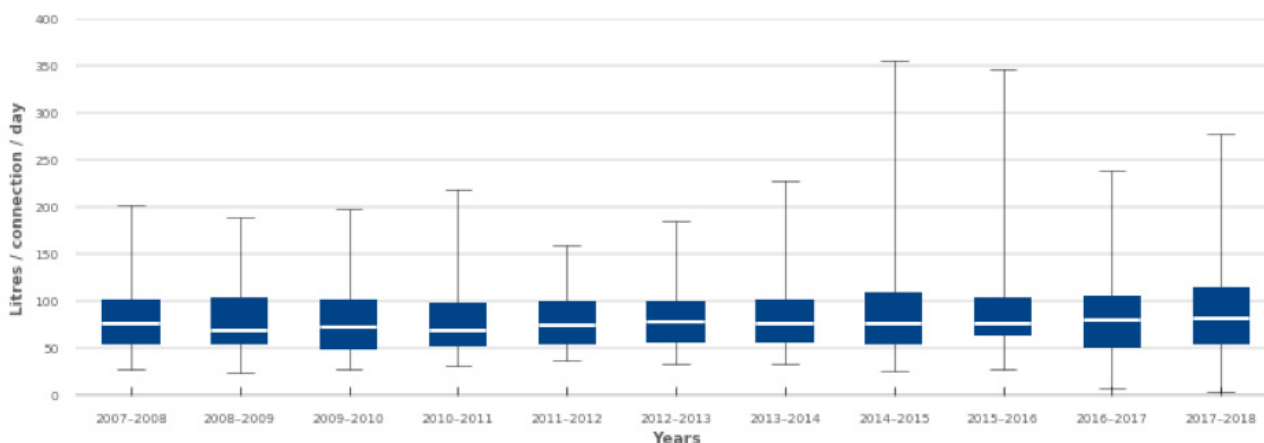


Figure 7.5 Real losses (L/service connection/day).

7.3.2 Results and analysis—Major utility group

Figure 7.6 presents a ranked breakdown of the real losses per annum for each utility from 2013–14 to 2017–18. Nine utilities reported an increase in real losses between 2016–17 and 2017–18. City West Water reported the highest increase of 27 per cent from 70 L/service connection/day in 2016–17 to 89 L/service connection/day in 2017–18.

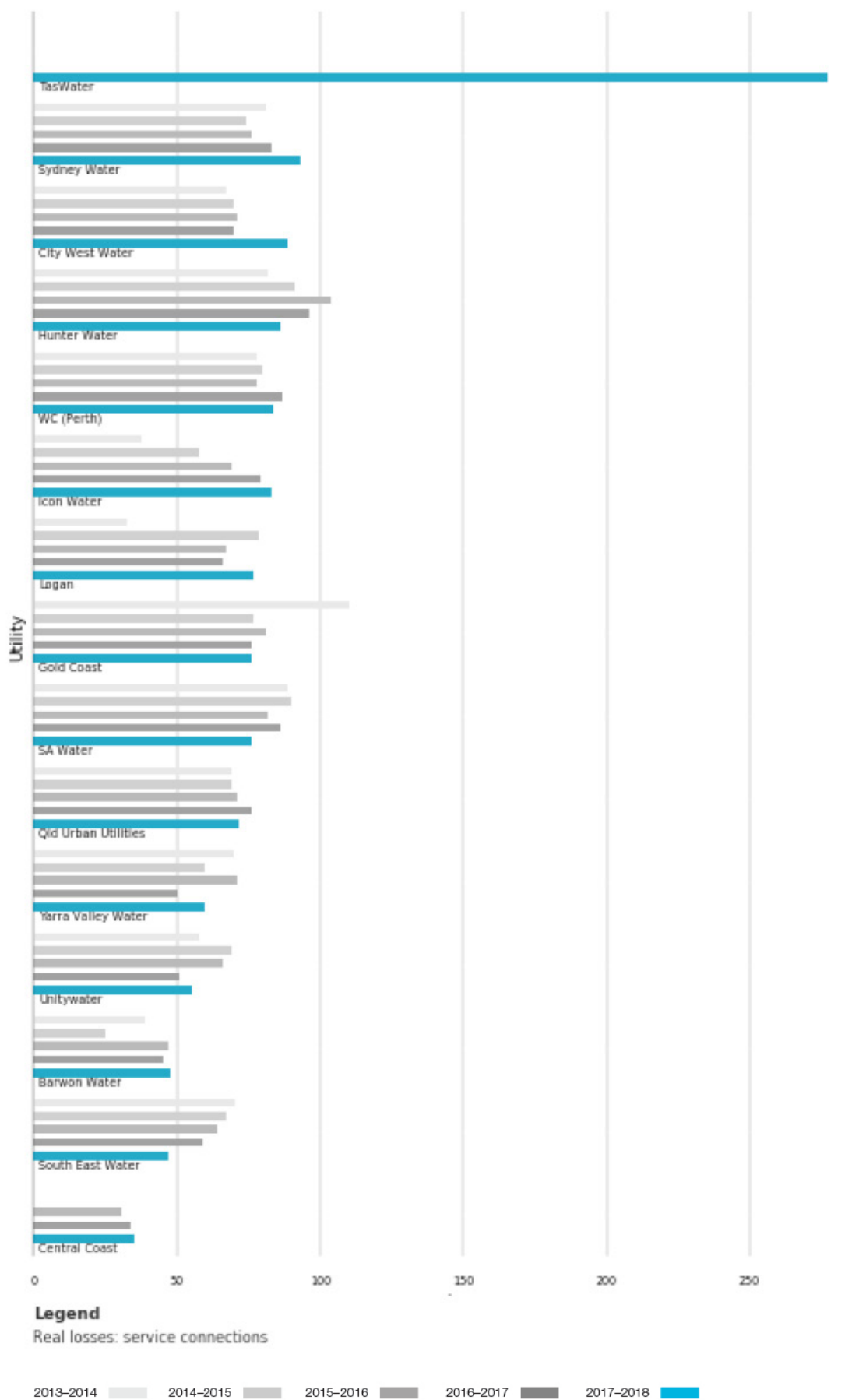


Figure 7.6 Real losses (L/service connection/day)—Major utility group.

8 Environment

8.1 Total net greenhouse gas emissions—E12

The total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties) indicator (E12) reports the contribution of the utility's operations to greenhouse gas (GHG) emissions. Utilities' calculations are required to refer to the National Greenhouse Accounts (NGA) Factors issued by the Department of the Environment and Energy and be updated annually. GHG emissions are reported in net terms—any quantity of carbon sequestered through activities, such as the purchase of carbon offsets, is deducted.

The NGA 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 (that is, the impact of burning fuels—coal or gas—at the power station); and
- various emission factors (Scope 3), including the impact of various activities—disposal of waste, employee business travel, and the transportation of products.

Comparing different utilities' net GHG emissions is a difficult exercise and should be undertaken with caution due to the number of variables affecting emissions, including:

- sources of water;
- gravity versus pumped networks;
- geographical conditions (influencing the need for pumping);
- the number of large-volume customers;
- the extent of industry within the customer base;
- the prevailing greenhouse policy in the jurisdiction; and
- the method of calculation.

Total net GHG emissions data for 2017–18 are presented in Table A17, Appendix A.

8.1.1 Key findings

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

Table 8.1 Overview of results: Total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties).

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	754	30	4	6	172	178	3
	WC (Perth)	City West Water					
Large	543	208	2	4	447	327	-27
	Gippsland Water	Central Highlands Water					
Medium	702	200	10	6	424	443	4
	Tweed	Queanbeyan					
Small	822	64	9	7	382	391	2
	P&W (Alice Springs)	Lismore					
All utility groups (national)	822	30	25	23	382	380	-1
	P&W (Alice Springs)	City West Water					

Table note

The median total net GHG emissions is calculated using data from all utilities supplying both water and sewerage services reporting data for E12 for both 2016–17 and 2017–18.

Nationally, across all utility groups, the median total net GHG emissions decreased by 1 per cent in 2017–18. This represents a reduction by 3 net tonnes of CO₂ equivalents per 1,000 properties from 2016–17.

8.1.2 Results and analysis—Major utility group

The Major utility group reported a 3 per cent increase in median net GHG emissions from 2016–17 to 2017–18. The notable changes from 2016–17 include moderate reductions in emissions by WC (Perth) (9 per cent) and City West Water (5 per cent) and moderate increases by South East Water (12.6 per cent) and SA Water (11.8 per cent).

The increase of net GHG emissions by South East Water resulted from year-to-year fluctuations in sludge management.⁹ This is seasonal in nature and overall only a moderate increase.

While Water Corporation—Perth reported the largest proportional decrease in net GHG emissions from 2016–17, they recorded the highest net GHG emissions with 754 tonnes of CO₂ equivalents, due to electricity consumption at their desalination plants.

City West Water's decrease in emissions is attributed to their investment in renewable energy generation and energy efficiency to reduce greenhouse gas emissions¹⁰ towards their target of reducing their GHG emissions by 80 per cent from 2018 to 2025.

SA Water's increase in emissions is related to a 14 per cent increase in water supplied. Below-average rainfall resulted in increased pumping due to increased usage. This also decreased the availability of surface water in the region's surface water stores, requiring additional pumping from the River Murray pipelines.

⁹ South East Water 2017–18 Annual Report, Greenhouse gas emissions and energy consumption, page 30

¹⁰ City West Water 2017–18 Annual Report

9 Health

9.1 Percentage of population for whom microbiological compliance was achieved—H3

This indicator reports the percentage of the population serviced by the utility for whom microbiological compliance was achieved.

Compliance is assessed against the *Australian Drinking Water Guidelines 2011*¹¹, or licence conditions imposed on the utility by their regulator. Typically, utilities record very high compliance; however, unforeseen events may deliver a lower compliance result, with the cause of non-compliance not always traceable.

Microbiological compliance data for 2017–18 are presented in Table A20, Appendix A.

9.1.1 Key findings

A summary of the percentage of population for which microbiological compliance was achieved, by utility group, is shown in Table 9.1.

In 2017–18, nationwide and across all utility groups, most utilities achieved 100 per cent microbiological compliance, the exceptions being Tasmanian Water and Sewerage Corporation (99.8 per cent), Central Highlands Water (99.7 per cent), Coliban Water (99.5 per cent), and GWMWater (99.4 per cent).

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

Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	100.0	99.8	1	0	100	100	0
	Multiple utilities	TasWater					
Large	100.0	99.5	1	2	100	100	0
	Multiple utilities	Coliban Water					
Medium	100.0	99.4	1	1	100	100	0
	Multiple utilities	GWM Water					
Small	100.0	100.0	0	0	100	100	0
	Multiple utilities	Multiple utilities					
All utility groups (national)	100.0	99.4	3	3	100	100	0
	Multiple utilities	GWM Water					

Table note

The median percentage of population for which microbiological compliance was achieved was calculated using data from all utilities supplying both water services reporting data against H3 for both 2016–17 and 2017–18.

9.1.2 Results and analysis—Major utility group

Tasmanian Water and Sewerage Corporation identified remoteness, open catchments and ageing reticulation networks as contributing to its less than 100 per cent compliance. During the reporting year, permanent public health alerts were removed for a number of towns, and Tasmanian Water and Sewerage Corporation is seeking to remove the remaining permanent alerts by early 2018–19.

¹¹ www.nhmrc.gov.au/guidelines/publications/eh52, updated October 2017

Appendix A Individual utility group tables

- Tables A1 to A18 present a summary of key indicators by utility group for the period 2013–14 to 2017–18.
- Utilities are sorted in descending order based on their changes in values from 2016–17 within each utility size group.
- Unlike the summary tables contained within the body of this report, median and average values presented at the end of each utility group are based on all utilities reporting within the past two reporting years.

Table A1 W12—Average annual residential water supplied, by utility size group (kL/property), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
SA Water	178	180	200	166	190	14.6
TasWater		172	176	179	193	7.7
Hunter Water	181	168	166	172	181	5.4
Central Coast			155	161	169	5.0
Sydney Water	206	201	201	206	215	4.6
Icon Water	203	188	196	190	197	4.0
Barwon Water	151	156	170	158	163	3.3
Yarra Valley Water	153	150	156	148	151	2.1
South East Water	149	149	154	150	150	-0.2
Qld Urban Utilities	156	155	156	154	153	-0.5
Unitywater	164	159	157	157	156	-1.0
WC (Perth)	254	244	240	223	219	-1.7
City West Water	145	148	150	147	142	-3.8
Gold Coast	187	173	170	168	161	-4.3
Logan	157	157	151	154	145	-5.8
Median	164	164	166	161	163	
Mean	176	171	173	169	172	
Large						
Goulburn Valley Water	266	265	287	242	264	9.1
Coliban Water	190	192	210	185	201	8.6
Central Highlands Water	150	149	163	150	157	4.9
Western Water	182	178	193	179	186	4.0
P&W (Darwin)	407	409	405	361	368	2.1
Gippsland Water	171	164	170	166	168	1.1
Cairns	243	263	244	251	253	0.7
Townsville	404	435	369	243	242	-0.5
Toowoomba	144	146	145	155	152	-1.5
Median	190	192	210	185	201	
Mean	240	244	243	214	221	
Medium						
GWMWater	226	237	254	210	316	50.7
Dubbo			322	300	386	28.7
Tamworth	287	188	251	230	291	26.4
Albury	232	205	223	204	237	16.2
Lower Murray Water	450	475	504	428	490	14.5

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Port Macquarie Hastings	157	151	158	152	172	12.8
Queanbeyan			163	150	167	11.1
East Gippsland Water	151	140	146	148	157	6.5
North East Water	206	197	214	198	208	5.1
Riverina Water (W)	324	311	333	298	311	4.4
Shoalhaven	148	143	150	151	157	4.0
Mackay	216	214	196	175	180	3.2
Coffs Harbour	169	167	167	167	170	1.7
Fitzroy River Water	348	317	363	345	343	-0.6
Tweed	184	178	165	178	176	-1.1
MidCoast Council	150	142	139	144	142	-1.0
WC (Mandurah)	241	238	234	221	216	-2.4
Clarence Valley	161	147	158	162	155	-4.1
Redland City		168	166	172	164	-4.7
Bundaberg		230	236	234	218	-7.2
Fraser Coast	197	181	181	201	164	-18.4
Gladstone		245	243	224	132	-40.7
Median	202	188	196	198	176	
Mean	222	210	223	210	222	
Small						
Whitsunday		281	292	238	319	34.2
Byron	181	180	169	156	199	27.4
Essential Energy	281	257	233	242	277	14.5
Wingecarribee	200	178	186	190	216	13.4
Kempsey	157	155	149	141	159	12.8
Goldenfields Water (W)				261	287	10.0
Central Highlands		632	520	445	487	9.8
Bathurst	227	225	235	231	254	9.6
Orange	174	170	173	173	186	7.8
Busselton (W)	287	284	288	275	294	7.2
P&W (Alice Springs)	466	382	455	418	448	7.1
Livingstone		260	294	281	296	5.4
Western Downs		176		181	188	3.6
Westernport Water	80	80	77	84	85	0.8
Gympie	215	300	182	170	171	0.7
WC (Albany)	188	188	178	176	176	0.5
WC (Kal–Boulder) (W)	306	320	295	279	280	0.4
WC (Australind/Eaton)	337	329	315	288	288	0.2
Bega Valley	134	137	135	150	149	-0.3
Southern Downs		210	145	158	157	-0.7
Eurobodalla	119	114	117	124	123	-0.8
South Gippsland Water	118	117	125	120	118	-1.4
Aqwest–Bunbury (W)	267	265	261	248	242	-2.3
WC (Geraldton)	321	306	306	298	289	-2.8
Goulburn Mulwaree	165	139	162	156	149	-4.8

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Lismore	155	155	156	155	147	-5.2
Cassowary Coast		298	294	251	237	-5.7
Ballina	194	181	168	192	179	-6.8
Median	194	210	184	191	208	
Mean	218	234	227	217	229	

Table A2 W26—Total recycled water supplied, by utility size group (ML), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
South East Water	2,967	3,891	2,465	3,233	7,433	129.9
Central Coast			587	724	1,042	43.9
Sydney Water	46,943	43,075	23,225	30,321	42,833	41.3
WC (Perth)	10,029	9,354		9,568	12,100	26.5
SA Water	28,048	31,666	4,918	23,890	29,292	22.6
Barwon Water	5,008	10,157	2,360	5,541	5,655	2.1
City West Water	138	140	2,436	2,581	2,605	0.9
Qld Urban Utilities	9,760	9,322	3,815	4,188	4,037	-3.6
Hunter Water	4,895	4,600	4,106	5,384	4,923	-8.6
Gold Coast	8,931	7,269	5,750	8,256	7,439	-9.9
Icon Water	4,372	4,352	4,053	37,163	30,296	-18.5
Unitywater	1,737	1,215	954	1,461	1,030	-29.5
Yarra Valley Water	3,134	3,817	786	4,107	2,601	-36.7
Logan	1,372	681	-	738	461	-37.5
Median	4,895	4,600	2,465	4,786	5,289	
Mean	9,795	9,965	4,266	9,797	10,839	
Large						
Central Highlands Water	1,683	1,530	431	957	1,593	66.5
Gippsland Water	1,104	1,701	680	1,553	2,291	47.5
Cairns	2,300	2,212	1,281	2,184	2,119	-3.0
P&W (Darwin)	347	492	80	541	451	-16.6
Western Water	5,701	5,747	1,098	9,073	7,244	-20.2
Townsville	2,740	2,877	1,520	1,719	1,283	-25.4
Toowoomba	1,683	2,864	2,493	2,854	1,743	-38.9
Coliban Water	2,658	3,198	1,618	2,694	1,509	-44.0
Goulburn Valley Water	6,594	7,687	588	5,698	314	-94.5
Median	2,300	2,864	1,098	2,184	1,593	
Mean	2,757	3,145	1,088	3,030	2,061	
Medium						
Albury	2,468	2,398	1,427	1,344	3,885	189.1
East Gippsland Water	2,902	2,754	1,286	1,670	2,774	66.1
Mackay	4,412	5,076	238	2,602	4,263	63.8
Shoalhaven	2,352	1,705	315	1,576	2,289	45.2
WC (Mandurah)	119	131		168	226	34.5
Coffs Harbour	1,436	1,013	372	1,229	1,650	34.3
Dubbo			0	2,327	3,043	30.8
MidCoast Council	1,439	1,327	459	1,033	1,290	24.9
Clarence Valley	176	195	337	329	376	14.3
Gladstone		3,521	3,397	2,899	3,166	9.2
Wannon Water	1,251	1,979	255	1,656	1,779	7.4
North East Water	1,895	2,561	280	7,897	8,432	6.8
Tweed	604	551	667	824	852	3.4
Tamworth	4,128	4,278	147	4,188	4,060	-3.1
Fraser Coast	4,794	3,830	196	4,893	4,739	-3.1

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Wagga Wagga (S)	5,523	5,620		5,227	5,008	-4.2
Lower Murray Water	3,202	3,855	2791	3,759	3,546	-5.6
Fitzroy River Water	681	696	536	801	755	-5.7
Port Macquarie Hastings	363	386	256	481	400	-16.8
Bundaberg		642	115	452	352	-22.1
GWMWater	2,302	2,233	676	4,416	2,147	-51.4
Queanbeyan			30	158	70	-55.7
Median	2,098	2,106	326	1,616	2,218	
Mean	2,225	2,238	689	2,270	2,508	
Small						
Bathurst	3,942	3,712	0	0	674	
Orange	2,947	2,826	2,051	786	2,020	157.0
Kempsey	110	77	84	123	158	28.5
Bega Valley	626	446	377	535	680	27.1
Eurobodalla	216	243	173	186	228	22.6
WC (Bunbury) (S)	148	102		114	139	21.9
WC (Busselton) (S)	245	230		221	247	11.8
P&W (Alice Springs)	835	910	1,121	1,078	1,146	6.3
WC (Albany)	2,114	2,009		2,145	2,172	1.3
Kal-Boulder (S)	1,410	1,607	1,449	946	955	1.0
Livingstone		458	0	786	789	0.4
Central Highlands			495	1,619	1,621	0.1
Western Downs		1,025		1,097	1,073	-2.2
WC (Geraldton)	237	227		220	214	-2.7
Wingecarribee	124	163	0	187	179	-4.3
Byron	478	444	242	661	629	-4.8
Essential Energy	709	776	669	704	662	-6.0
Gympie	1,243	549	160	118	108	-8.5
Ballina	273	517	461	701	623	-11.1
Goulburn Mulwaree	1,593	1,806	179	1,843	1,618	-12.2
Whitsunday		727	474	460	403	-12.4
Southern Downs		1,545	211	1,524	1,298	-14.8
South Gippsland Water	108	146	17	136	108	-20.6
Lismore	34	5	0	8	6	-25.0
WC (Australind/Eaton)	1,378	1,433		1,181	714	-39.5
Westernport Water	273	261	66	299	85	-71.6
Aqwest-Bunbury (W)			0	0	0	
Busselton (W)				0	0	
Cassowary Coast			0	0	0	
WC (Kal-Boulder) (W)				0	0	
Median	478	517	176	380	513	
Mean	907	890	374	589	618	

Table A3 P8—Typical annual bill, by utility size group (\$), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
SA Water	1,346	1,365	1,390	1,164	1,245	7.0
Hunter Water	1,078	1,060	1,056	1,076	1,127	4.7
WC (Perth)	1,376	1,404	1,420	1,413	1,465	3.7
TasWater			1,102	1,124	1,158	3.0
Sydney Water	1,221	1,215	1,212	1,106	1,127	1.9
Yarra Valley Water	1,234	1,085	1,120	1,051	1,062	1.0
Icon Water	1,175	1,153	1,175	1,158	1,169	0.9
Barwon Water	1,127	1,083	1,065	1,007	1,012	0.5
Qld Urban Utilities	1,195	1,250	1,260	1,266	1,272	0.5
Unitywater	1,524	1,563	1,547	1,449	1,450	0.0
Central Coast			1,207	1,265	1,258	-0.6
South East Water	1,146	1,015	1,061	1,038	1,021	-1.6
City West Water	1,069	952	979	951	930	-2.2
Logan	1,309	1,662	1,602	1,617	1,577	-2.5
Gold Coast	1,621	1,672	1,628	1,607	1,561	-2.9
Median	1,221	1,215	1,207	1,158	1,169	
Mean	1,263	1,268	1,255	1,225	1,229	
Large						
Goulburn Valley Water	929	936	959	901	926	2.8
Coliban Water	1,319	1,349	1,393	1,330	1,366	2.7
Western Water	1,097	1,013	1,076	974	996	2.3
Cairns	1,317	1,341	1,283	1,328	1,348	1.5
Toowoomba	1,393	1,379	1,377	1,411	1,425	1.0
Central Highlands Water	1,302	1,245	1,271	1,231	1,243	1.0
Gippsland Water	1,328	1,302	1,296	1,320	1,326	0.5
Townsville	1,575	1,563	1,553	1,527	1,530	0.2
P&W (Darwin)	1,908	1,967	1,951	1,831	1,820	-0.6
Median	1,319	1,341	1,296	1,328	1,348	
Mean	1,352	1,344	1,351	1,317	1,331	
Medium						
Dubbo			1,636	1,565	1,755	12.1
Tamworth	1,471	1,338	1,447	1,416	1,503	6.1
Queanbeyan			1,487	1,470	1,547	5.2
Lower Murray Water	932	968	994	923	968	4.9
Port Macquarie Hastings	1,341	1,371	1,439	1,451	1,521	4.8
Albury	973	1,044	1,162	1,156	1,209	4.6
MidCoast Council	1,588	1,613	1,649	1,687	1,760	4.3
GWMWater	1,349	1,384	1,410	1,321	1,366	3.4
WC (Mandurah)	1,426	1,477	1,582	1,584	1,630	2.9
Shoalhaven	1,102	1,113	1,140	1,154	1,178	2.1
Mackay	1,610	1,531	1,478	1,404	1,434	2.1
North East Water	974	886	916	877	894	1.9
Fitzroy River Water	1,182	1,193	1,243	1,246	1,269	1.8

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Wannon Water	1,218	1,157	1,165	1,090	1,097	0.6
East Gippsland Water	1,193	1,158	1,174	1,212	1,219	0.6
Tweed	1,330	1,383	1,437	1,504	1,502	-0.1
Coffs Harbour	1,445	1,459	1,447	1,427	1,424	-0.2
Bundaberg		1,780	1,528	1,442	1,426	-1.1
Clarence Valley	1,426	1,472	1,613	1,623	1,600	-1.4
Fraser Coast	1,558	1,563	1,580	1,633	1,565	-4.2
Gladstone		1,367	1,632	1,542	1,468	-4.8
Redland City		1,460	1,525	1,546	1,457	-5.8
Median	1,341	1,377	1,447	1,434	1,446	
Mean	1,301	1,336	1,395	1,376	1,400	
Small						
Bathurst	1,025	1,052	1,119	1,150	1,229	6.9
Kempsey	1,393	1,441	1,497	1,561	1,662	6.5
Central Highlands		2,126	1,938	1,763	1,865	5.8
Essential Energy	1,304	1,331	1,286	1,299	1,362	4.8
WC (Albany)	1,393	1,452	1,552	1,595	1,661	4.1
Whitsunday		1,674	1,665	1,665	1,729	3.8
WC (Geraldton)	1,613	1,653	1,751	1,780	1,834	3.0
Wingecarribee	1,267	1,263	1,291	1,322	1,362	3.0
Orange	967	1,037	1,123	1,155	1,189	2.9
WC (Australind/Eaton)	1,689	1,742	1,748	1,736	1,782	2.6
Westernport Water	1,137	1,127	1,120	1,131	1,154	2.0
Southern Downs		1,413	1,510	1,512	1,536	1.6
P&W (Alice Springs)	2,023	2,008	2,042	1,944	1,974	1.5
Lismore	1,437	1,511	1,600	1,654	1,667	0.8
South Gippsland Water	1,061	1,006	1,006	975	983	0.8
Eurobodalla	1,577	1,611	1,639	1,665	1,676	0.7
Byron	1,721	1,752	1,768	1,856	1,859	0.2
Cassowary Coast		1,591	1,644	1,634	1,632	-0.1
Bega Valley	1,712	1,734	1,767	1,800	1,789	-0.6
Western Downs		1,137		1,396	1,394	-0.1
Ballina	1,372	1,431	1,461	1,562	1,536	-1.7
Goulburn Mulwaree	1,472	1,417	1,464	1,394	1,350	-3.2
Livingstone		1,622	1,587	1,732	1,642	-5.2
Gympie	1,243	1,438	1,265	1,521	1,297	-14.7
Median	1,393	1,446	1,552	1,578	1,637	
Mean	1,411	1,482	1,515	1,533	1,548	

Table A4 P7—Annual bill based on 200 kL, by utility size group (\$), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
WC (Perth)	1,270	1,314	1,336	1,364	1,422	4.3
Hunter Water	1,121	1,134	1,134	1,141	1,170	2.5
TasWater			1,126	1,147	1,166	1.7
Qld Urban Utilities	1,355	1,421	1,436	1,445	1,451	0.4
Icon Water	1,178	1,194	1,186	1,174	1,178	0.3
Sydney Water	1,208	1,211	1,210	1,095	1,096	0.1
City West Water	1,297	1,165	1,190	1,169	1,170	0.1
South East Water	1,380	1,244	1,270	1,243	1,244	0.1
SA Water	1,421	1,435	1,391	1,277	1,278	0.1
Logan	1,772	1,837	1,787	1,793	1,793	0.0
Yarra Valley Water	1,461	1,317	1,326	1,284	1,282	-0.2
Unitywater	1,656	1,722	1,715	1,708	1,701	-0.4
Barwon Water	1,244	1,187	1,134	1,105	1,097	-0.7
Gold Coast	1,727	1,784	1,753	1,736	1,717	-1.1
Central Coast			1,314	1,354	1,328	-1.9
Median	1,355	1,314	1,314	1,277	1,278	
Mean	1,392	1,382	1,354	1,336	1,340	
Large						
Western Water	1,132	1,058	1,091	1,006	1,048	4.2
Cairns	1,267	1,268	1,270	1,268	1,287	1.5
Toowoomba	1,529	1,503	1,503	1,519	1,536	1.1
Gippsland Water	1,387	1,376	1,356	1,388	1,391	0.2
Townsville	1,575	1,563	1,553	1,527	1,530	0.2
Coliban Water	1,343	1,373	1,369	1,364	1,366	0.1
Central Highlands Water	1,379	1,352	1,347	1,333	1,332	-0.1
Goulburn Valley Water	852	860	856	851	850	-0.1
P&W (Darwin)	1,505	1,551	1,543	1,516	1,495	-1.4
Median	1,379	1,373	1,356	1,364	1,366	
Mean	1,330	1,323	1,321	1,308	1,315	
Medium						
Gladstone		1,282	1,501	1,496	1,575	5.3
MidCoast Council	1,725	1,779	1,834	1,867	1,951	4.5
WC (Mandurah)	1,345	1,400	1,510	1,539	1,594	3.6
Fitzroy River Water	1,048	1,094	1,103	1,122	1,146	2.1
Port Macquarie Hastings	1,453	1,502	1,558	1,581	1,600	1.2
Shoalhaven	1,192	1,210	1,225	1,240	1,252	1.0
Mackay	1,467	1,484	1,464	1,439	1,449	0.7
Redland City		1,460	1,545	1,560	1,570	0.6
Lower Murray Water	761	772	774	770	771	0.1
GWMWater	1,304	1,320	1,315	1,314	1,315	0.1
Bundaberg		1,326	1,371	1,411	1,411	0.0
Tweed	1,367	1,440	1,535	1,572	1,570	-0.1

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Fraser Coast	1,553	1,595	1,644	1,634	1,630	-0.2
Clarence Valley	1,496	1,571	1,695	1,714	1,709	-0.3
Dubbo			1,393	1,394	1,388	-0.4
Tamworth	1,343	1,356	1,369	1,372	1,366	-0.4
North East Water	959	893	886	881	876	-0.6
Wannon Water	1,347	1,278	1,267	1,224	1,216	-0.7
East Gippsland Water	1,290	1,282	1,287	1,323	1,313	-0.8
Albury	929	1,038	1,131	1,129	1,129	-1.9
Median	1,345	1,341	1,428	1,425	1,430	
Mean	1,301	1,332	1,390	1,400	1,410	
Small						
Kempsey	1,486	1,539	1,613	1,687	1,760	4.3
WC (Geraldton)	1,370	1,436	1,527	1,567	1,634	4.3
WC (Albany)	1,417	1,476	1,599	1,649	1,714	3.9
Bathurst	977	1,009	1,056	1,092	1,121	2.7
WC (Australind/Eaton)	1,411	1,473	1,503	1,546	1,585	2.5
Lismore	1,568	1,654	1,748	1,820	1,856	2.0
Livingstone		1,429	1,486	1,532	1,561	1.9
Southern Downs		1,457	1,570	1,585	1,608	1.5
Eurobodalla	1,873	1,920	1,940	1,937	1,949	0.6
Ballina	1,383	1,471	1,529	1,583	1,593	0.6
Cassowary Coast		1,526	1,575	1,592	1,602	0.6
Gympie	1,197	1,293	1,309	1,325	1,329	0.3
South Gippsland Water	1,207	1,157	1,140	1,121	1,124	0.3
Westernport Water	1,374	1,367	1,365	1,384	1,387	0.2
Orange	1,019	1,103	1,186	1,220	1,223	0.2
Essential Energy	1,160	1,228	1,226	1,223	1,223	0.0
Whitsunday		1,512	1,508	1,513	1,513	0.0
Wingecarribee	1,267	1,304	1,317	1,335	1,334	-0.1
Bega Valley	1,881	1,899	1,948	1,941	1,934	-0.4
Central Highlands		1,347	1,354	1,321	1,306	-1.1
P&W (Alice Springs)	1,505	1,551	1,543	1,516	1,495	-1.4
Western Downs		1,162	1,205	1,388	1,367	-1.5
Goulburn Mulwaree	1,575	1,596	1,575	1,521	1,492	-1.9
Byron	1,811	1,834	1,882	1,898	1,862	-1.9
Median	1,397	1,464	1,518	1,526	1,537	
Mean	1,416	1,448	1,488	1,512	1,524	

Table A5 F16—Total capital expenditure: water and sewerage (\$000s), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
TasWater	79,280	107,709	133,369	105,677	154,168	45.9
SA Water	284,117	225,270	285,267	271,282	366,777	35.2
Logan	62,751	78,450	47,678	61,538	83,064	35.0
Sydney Water	627,000	659,733	671,971	643,783	786,222	22.1
City West Water	91,236	62,609	73,725	91,102	109,777	20.5
Yarra Valley Water	210,621	182,562	271,181	238,388	282,256	18.4
Qld Urban Utilities	208,858	200,226	208,444	197,186	221,926	12.5
Unitywater	151,052	88,757	90,413	118,683	130,550	10.0
WC (Perth)	275,961	369,677	304,672	443,520	473,102	6.7
Hunter Water	116,422	81,346	91,623	78,856	81,496	3.3
Icon Water	62,431	51,434	86,762	93,591	87,891	-6.1
South East Water	227,214	233,286	149,868	169,133	150,410	-11.1
Gold Coast	46,948	37,718	53,399	72,297	60,285	-16.6
Barwon Water	94,311	66,736	82,827	84,899	66,104	-22.1
Central Coast				61,043	24,978	-59.1
Median	133,737	98,233	112,496	105,677	130,550	
Mean	181,300	174,680	182,228	182,065	205,267	
Large						
P&W (Darwin)	26,910		50,331	22,673	45,498	100.7
Townsville	26,409	49,440	53,927	52,211	78,593	50.5
Gippsland Water	48,058	50,129	33,348	31,344	39,489	26.0
Cairns	38,450	30,724	18,052	33,656	36,274	7.8
Central Highlands Water	15,073	16,042	18,400	19,188	17,425	-9.2
Coliban Water	44,234	20,831	35,036	22,628	20,400	-9.8
Western Water	27,958	27,703	16,302	70,856	62,732	-11.5
Toowoomba	21,105	27,352	40,575	29,300	24,853	-15.2
Goulburn Valley Water	23,753	32,054	31,617	34,113	27,994	-17.9
Median	26,910	29,214	33,348	31,344	36,274	
Mean	30,217	31,784	33,065	35,108	39,251	
Medium						
Lower Murray Water	10,249	8,155	10,006	5,052	12,575	148.9
GWMWater	16,972	11,378	6,659	6,833	16,066	135.1
Shoalhaven	25,309	23,783	22,504	60,451	125,917	108.3
North East Water	20,662	10,300	14,199	8,981	18,193	102.6
MidCoast Council	12,063	7,135	14,863	9,416	15,397	63.5
Coffs Harbour	11,017	14,687	5,659	5,495	7,024	27.8
Clarence Valley	11,595	26,805	19,138	3,511	4302	22.5
Tweed	13,983	7,354	8,768	6,985	8,307	18.9
Gladstone		10,596	13,118	22,901	26,668	16.4
Mackay	50,337	27,683	16,656	11,261	12,237	8.7
Fitzroy River Water	23,798	16,652	19,531	16,676	17,026	2.1
Wannon Water	15,837	13,385	14,837	18,774	18,782	0.0
Fraser Coast	18,928	11,974	18,567	21,836	19,469	-10.8
WC (Mandurah)	30,564	22,749	14,559	21,682	18,503	-14.7

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Bundaberg		22,888	16,200	32,389	26,938	-16.8
East Gippsland Water	10,572	7,994	7,513	11,345	8,357	-26.3
Port Macquarie Hastings	9,521	16,672	19,597	26,757	19,256	-28.0
Tamworth	22,055	9,495	5,896	15,828	10,294	-35.0
Albury	6,142	4,341	8,744	9,367	5,366	-42.7
Redland City		16,228	19,036	15,120	6,010	-60.3
Dubbo				4,587	1,285	-72.0
Queanbeyan				55,240	12,073	-78.1
Median	15,837	12,680	14,698	13,232	13,986	
Mean	18,212	14,513	13,802	17,749	18,638	
Small						
South Gippsland Water	10,522	12,765	8,382	5,445	29,543	442.6
Ballina	11,646	8,639	4,796	3,689	16,062	335.4
Central Highlands		28,595	915	5,451	16,529	203.2
Southern Downs		3,397	2,642	3,643	8,444	131.8
Lismore	5,287	6,242	8,618	11,307	20,888	84.7
Goulburn Mulwaree	4,108	8,874	5,626	14,335	22,550	57.3
WC (Albany)	8,584	5,112	10,064	13,739	20,158	46.7
Whitsunday		760	5,387	6,696	9,596	43.3
Cassowary Coast		5,976	7,645	8,294	11,575	39.6
Eurobodalla	7,207	6,841	13,647	16,496	20,021	21.4
Livingstone			1,796	5,631	6,777	20.4
Wingecarribee	3,119	6,237	6,216	15,861	16,713	5.4
P&W (Alice Springs)	10,361		5,340	6,760	6,448	-4.6
Kempsey	6,956	7,339	6,598	8,869	8,165	-7.9
WC (Geraldton)	8,783	13,853	11,514	9,985	9,151	-8.4
WC (Australind/Eaton)	3,633	4,869	6,866	6,846	5,851	-14.5
Westernport Water	3,649	4,966	4,350	5,925	4,610	-22.2
Byron	2,086	1,258	4,152	2,683	1,852	-31.0
Gympie	6,904	5,681	9,340	5,189	3,072	-40.8
Bathurst	7,078	13,679	7,927	14,858	8,336	-43.9
Western Downs		17,716	11,688	16,317	4,420	-72.9
Bega Valley	8,730	8,571	5,648	2,358	727	-69.2
Orange	30,058	22,972	12,134	0	0	
Median	7,078	6,841	6,598	6,760	8,444	
Mean	8,159	9,254	7,013	8,277	10,934	

Table A6 F28—Capital expenditure: water (\$/property), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Hunter Water	346	161	130	123	189	53.4
TasWater		264	360	328	481	46.6
SA Water	238	158	206	219	304	38.8
Qld Urban Utilities	121	135	131	117	155	32.0
Yarra Valley Water	106	93	106	99	125	26.2
Logan	165	199	187	215	265	23.3
South East Water	69	71	46	47	54	13.8
WC (Perth)	186	205	201	300	314	4.8
City West Water	154	114	120	142	139	-1.8
Gold Coast	63	65	48	64	61	-5.3
Icon Water	277	161	247	179	151	-15.4
Sydney Water	113	84	121	122	96	-21.2
Unitywater	116	115	117	129	90	-30.5
Barwon Water	508	231	250	376	228	-39.4
Central Coast				250	17	-93.2
Median	154	147	130	142	151	
Mean	189	147	162	181	178	
Large						
Gippsland Water	155	154	203	198	317	60.0
Cairns	281	220	55	262	329	25.6
P&W (Darwin)	261		640	238	269	13.0
Toowoomba	224	202	171	203	221	8.8
Townsville	103	333	470	381	391	2.5
Central Highlands Water	118	133	146	176	162	-8.2
Goulburn Valley Water	237	447	276	357	300	-15.9
Coliban Water	437	122	199	207	170	-17.9
Western Water	187	204	81	438	170	-61.3
Median	224	203	199	238	269	
Mean	222	227	249	273	259	
Medium						
GWMWater	464	188	138	100	388	286.3
Lower Murray Water	183	172	254	81	266	227.2
Coffs Harbour	72	56	50	50	158	213.4
Riverina Water	223	417	1,145	587	351	167.2
Gladstone		143	214	395	777	96.6
Mackay	356	458	169	121	226	86.4
Queanbeyan				84	147	75.3
MidCoast Council	208	84	220	191	323	68.7
North East Water	235	138	204	132	211	59.6
WC (Mandurah)	265	180	134	131	205	56.5
Bundaberg		92	109	96	149	54.4
Clarence Valley	108	95	162	95	127	34.2
Tweed	290	64	101	118	110	-6.9

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Fitzroy River Water	391	307	377	294	274	-6.7
East Gippsland Water	229	117	113	240	217	-9.7
Shoalhaven	242	229	289	356	293	-17.8
Wannon Water	172	154	232	248	203	-18.1
Redland City		27	13	21	16	-22.4
Port Macquarie Hastings	87	342	213	336	247	-26.5
Fraser Coast	304	271	362	446	296	-33.7
Albury	110	92	111	254	126	-50.4
Tamworth	546	320	191	378	195	-48.4
Dubbo				136	41	-69.8
Median	232	154	191	136	351	
Mean	249	187	228	212	232	
Small						
South Gippsland Water	102	140	86	177	1,362	668.4
Ballina	158	226	112	85	247	191.8
Byron	41	32	252	52	136	161.4
Eurobodalla	126	138	154	160	399	149.2
Southern Downs		289	175	289	576	99.5
Livingstone			87	164	279	70.2
Goldenfields				517	311	69.3
P&W (Alice Springs)	375		287	311	501	60.9
WC (Geraldton)	271	515	410	256	400	56.2
Cassowary Coast		321	371	466	655	40.5
WC (Australind/Eaton)	108	226	180	278	363	30.7
Lismore	171	91	328	253	290	14.6
Wingecarribee	42	153	116	293	328	11.8
Whitsunday		2	154	216	241	11.4
Goulburn Mulwaree	262	579	244	279	283	1.6
WC (Albany)	174	221	326	422	424	0.3
Gympie	159	166	217	146	145	-0.5
Kempsey	432	450	333	316	293	-7.2
Westernport Water	111	48	90	185	144	-22.4
Central Highlands		2,417	35	171	96	-43.7
Bathurst	249	497	340	668	347	-48.0
Western Downs		647	331	1,418	337	-76.2
Bega Valley	193	298	269	113	21	-81.1
Orange	1,692	1,109	566	0	0	
Median	171	226	244	255	311	
Mean	274	408	238	301	359	

Table A7 F29—Capital expenditure: Sewerage (\$/property), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
City West Water	73	37	52	64	101	58.3
Sydney Water	232	274	238	216	308	42.9
TasWater		311	340	214	301	40.7
Logan	493	603	279	371	511	37.9
Unitywater	449	205	201	278	351	26.2
SA Water	179	177	211	167	210	25.7
Yarra Valley Water	191	159	263	221	244	10.4
Barwon Water	158	244	332	195	213	9.4
WC (Perth)	182	280	184	248	260	5.0
Icon Water	109	150	268	362	356	-1.8
Qld Urban Utilities	264	228	243	222	216	-2.7
Central Coast				205	172	-16.3
South East Water	270	270	167	188	149	-20.7
Gold Coast	144	98	176	233	180	-22.8
Hunter Water	155	188	261	207	143	-30.8
Median	182	216	240	216	216	
Mean	223	230	230	226	248	
Large						
P&W (Darwin)	251		220	152	502	230.0
Townsville	255	303	198	271	609	124.6
Western Water	340	300	211	774	877	13.2
Coliban Water	208	185	309	108	112	3.3
Gippsland Water	662	682	324	288	278	-3.4
Central Highlands Water	133	128	150	122	103	-15.3
Cairns	276	223	198	220	177	-19.6
Goulburn Valley Water	214	136	314	264	201	-23.9
Toowoomba	178	331	640	353	213	-39.6
Median	251	262	220	264	213	
Mean	280	286	285	284	341	
Medium						
North East Water	217	80	92	52	160	211.2
Shoalhaven	332	310	208	1,007	2,437	142.1
Lower Murray Water	153	87	55	79	122	54.6
Fraser Coast	256	76	175	171	261	52.9
Wagga Wagga	192	169	152	93	187	49.7
Tweed	157	172	176	99	147	48.0
Wannon Water	243	192	137	224	273	21.8
MidCoast Council	115	111	173	51	61	19.8
Fitzroy River Water	410	238	255	244	269	10.2
Clarence Valley	634	1,685	1,061	99	106	7.0
GWMWater	97	216	89	140	145	3.9
Bundaberg		811	528	1,124	979	-12.9
Albury	161	82	243	109	88	-19.0
Tamworth	535	129	85	347	277	-20.1

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Port Macquarie Hastings	252	226	465	550	415	-24.6
Coffs Harbour	392	560	186	176	121	-31.0
East Gippsland Water	287	278	252	292	162	-44.5
WC (Mandurah)	520	385	210	381	204	-46.5
Gladstone		333	349	607	268	-55.8
Redland City		287	360	260	91	-64.9
Mackay	907	208	222	152	43	-71.8
Dubbo				89	20	-77.1
Queanbeyan				2,562	420	-83.6
Median	254	216	208	176	162	
Mean	326	316	261	387	315	
Small						
Ballina	668	383	214	163	822	404.1
Southern Downs		14	72	43	214	393.7
Central Highlands		44	52	354	1,570	343.7
Western Downs		1,114	875	21	61	188.9
Lismore	222	386	315	599	1,250	108.8
WC (Albany)	506	136	400	560	1,067	90.7
Whitsunday		63	218	294	507	72.3
Goulburn	131	223	264	1,020	1,716	68.3
Cassowary Coast		306	474	367	493	34.5
Wingecarribee	149	209	244	616	610	-0.9
South Gippsland Water	514	590	389	107	100	-6.1
Eurobodalla	263	229	576	724	644	-11.0
Kempsey	160	174	267	515	445	-13.7
Livingstone			63	346	294	-15.1
Westernport Water	132	295	202	197	149	-24.6
Bathurst	207	370	153	242	154	-36.3
Bega Valley	487	351	144	59	35	-41.3
Gympie	424	298	517	298	105	-64.9
WC (Australind/Eaton)	284	257	516	349	120	-65.5
WC (Geraldton)	326	349	304	410	114	-72.2
Byron	155	84	116	203	38	-81.4
P&W (Alice Springs)	562		158	258	17	-93.5
Orange	59	214	115	0	0	
Median	263	257	244	298	214	
Mean	309	290	289	337	458	

Table A8 F13—Combined operating cost: water and sewerage (\$/property), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Hunter Water	609	654	605	585	638	9.0
Logan	1,119	1,134	1,093	1,033	1,104	6.9
Barwon Water	672	627	613	652	666	2.1
Icon Water	791	802	951	990	996	0.6
WC (Perth)	626	608	619	598	600	0.2
Unitywater	1,031	1,024	1,023	1,015	1,011	-0.4
Qld Urban Utilities	1,190	1,193	1,189	1,168	1,158	-0.8
Gold Coast	1,159	1,208	1,169	1,187	1,176	-0.9
SA Water	744	694	723	663	655	-1.1
Central Coast				618	607	-1.9
Yarra Valley Water	1,002		960	880	858	-2.5
South East Water	1,034	906	949	870	844	-3
Sydney Water	711	698	714	686	664	-3.2
City West Water	1,268	1,135	1,167	1,102	1,024	-7.1
TasWater		934	973	1,005	896	-10.9
Median	1,002	906	955	880	858	
Mean	920	894	911	870	860	
Large						
Toowoomba	680	1,223	715	620	752	21.2
Central Highlands Water	849	802	830	855	949	11.0
Gippsland Water	1,287	1,255	1,211	1,165	1,218	4.5
Cairns	726	706	673	673	690	2.6
Coliban Water	837	809	852	811	816	0.6
Goulburn Valley Water	845	842	877	905	886	-2.1
Townsville	1,106	1,045	1,025	1,029	1,003	-2.6
P&W (Darwin)	1,074		1,163	980	920	-6.1
Western Water	883	729	957	887	831	-6.3
Median	849	825	877	887	886	
Mean	921	926	923	881	896	
Medium						
Gladstone		2,480	1,472	1,048	1,540	47.0
Bundaberg		804	808	679	821	20.8
Redland City		906	908	832	944	13.4
Mackay	1,577	1,334	1,146	913	1,001	9.7
Port Macquarie Hastings	941	923	906	887	961	8.3
Fraser Coast	932	882	911	936	1,003	7.1
Tamworth	1,077	989	950	945	1,011	5.0
WC (Mandurah)	612	576	679	601	623	3.6
Wannon Water	1,028	1,027	991	941	967	2.8
Coffs Harbour	1,075	1,066	1,007	981	1,003	2.3
GWMWater	1,002	974	1,026	978	993	1.6
Clarence Valley	936	893	836	806	819	1.5
Tweed	993	991	968	992	993	0.1

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Fitzroy River Water	603	739	685	655	649	-1.0
Albury	786	704	699	700	691	-1.2
Queanbeyan				1,384	1,361	-1.6
North East Water	851	844	864	897	874	-2.5
MidCoast Council	964	1,073	1,008	1,007	980	-2.6
Shoalhaven	804	815	771	804	781	-2.9
Lower Murray Water	644	686	690	812	755	-7.1
Dubbo				1,030	906	-12.0
East Gippsland Water	995	861	944	1,059	922	-12.9
Median	941	900	910	925	952	
Mean	931	978	913	905	936	
Small						
Cassowary Coast		972	1,023	579	1,027	77.5
Southern Downs		1,554	1,424	791	1,056	33.4
Whitsunday		1,264	1,264	1,150	1,343	16.8
Byron	1,341	1,349	1,299	1,371	1,500	9.4
Bathurst	1,013	1,030	1,084	1,119	1,217	8.7
Westernport Water	3,778	467	995	981	1,000	1.9
WC (Geraldton)	733	720	665	606	618	1.9
Bega Valley	1,326	1,346	1,501	1,314	1,339	1.9
WC (Albany)	712	694	788	715	723	1.2
Goulburn Mulwaree	840	796	877	751	754	0.4
Wingecarribee	969	851	840	890	892	0.2
Eurobodalla	1,055	950	996	1,057	1,059	0.2
Kempsey	1,095	1,093	1,056	1,003	1,002	-0.1
Orange	808	786	773	820	799	-2.6
Ballina	1,374	1,358	1,278	1,287	1,227	-4.6
Lismore	1,157	1,120	1,158	1,153	1,088	-5.6
South Gippsland Water	1,095	1,110	1,159	934	881	-5.7
P&W (Alice Springs)	1,817		1,853	1,295	1,179	-9.0
Western Downs		1,168	1,263	867	770	-11.1
WC (Australind/Eaton)	824	988	872	779	684	-12.2
Gympie	938	301	711	409	338	-17.3
Central Highlands		1,737	1,591	1,157	903	-21.9
Livingstone			1,222	1,782	830	-53.4
Median	1,055	1,030	1,084	981	1,000	
Mean	1,228	1,031	1,117	992	967	

Table A9 F8—Revenue from community service obligations (%), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
City West Water	3.6	3.9	3.5	3.3	3.4	3.0
SA Water	9.7	9.4	9.1	10.5	10.6	1.0
Gold Coast	0	0	0	0	0	0.0
Qld Urban Utilities	2.0	1.8	1.6	0	0	0.0
Central Coast				1.3	1.3	0.0
Unitywater	1.0	0.9	0.9	0.8	0.8	0.0
Yarra Valley Water	4.8	5.3	5.0	5.2	5.0	-3.8
WC (Perth)	7.9		6.2	6.5	6.2	-4.6
South East Water	4.6	4.9	4.4	4.6	4.3	-6.5
Hunter Water	4.6	4.6	4.4	4.5	4.2	-6.7
TasWater	2.8	2.7	2.7	2.7	2.5	-7.4
Sydney Water	6.2	6.1	5.9	5.5	5.0	-9.1
Icon Water	3.3	3.7	3.2	3.3	2.0	-39.4
Median	4.1	3.9	4	3.3	3.4	
Mean	4.2	3.9	3.9	3.7	3.5	
Large						
Central Highlands Water	0	0	5.3	4.3	5.5	27.9
Cairns	3.1	2.7	2.9	2.8	2.9	3.6
Gippsland Water	4.0	4.2	3.9	4.3	4.4	2.3
Townsville	1.7	1.6	1.2	1.0	1.0	0.0
Toowoomba	0.8	0	0.7	0	0	
Goulburn Valley Water	5.6	5.5	5.6	5.7	5.5	-3.5
Coliban Water	4.0	4.4	4.1	4.2	4.0	-4.8
P&W (Darwin)	3.3		3.6	2.8	2.6	-7.1
Western Water	4.6	4.6	4.0	4.3	3.5	-18.6
Median	3.3	3.5	3.9	4.2	3.5	
Mean	3.0	3.5	3.5	3.3	3.3	
Medium						
Fraser Coast	0.4	0.4	0.4	0.4	0.9	125.0
Tamworth	0.9	1.0	0.9	0.8	0.9	12.5
Bundaberg		1.8	1.7	3.3	3.6	9.1
Coffs Harbour	1.1	1.0	1.0	0.9	0.9	0.0
East Gippsland Water	5.2	6.1	6.2	6.2	6.2	0.0
Mackay	0.1	0.2	0.2	0.2	0.2	0.0
Redland City		0.4	0.3	0.3	0.3	0.0
Fitzroy River Water	0.7	1.3	0.9	1.1	1.1	0.0
Wannon Water	4.4	4.3	4.5	4.8	4.8	0.0
Gladstone	0	0	0	0	0	0.0
North East Water	6.1	6.6	6.1	6.5	6.2	-4.6
GWMWater	7.1	6.5	6.6	6.9	6.5	-5.8
Wagga Wagga	1.0	0.8	0.9	0.8	0.7	-7.5
Clarence Valley	1.4	1.4	1.3	1.3	1.2	-7.7
Shoalhaven	1.6	1.5	1.5	1.3	1.2	-7.7
Lower Murray Water	5.9	5.7	5.7	6.0	5.5	-8.3

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Tweed	1.1	1.2	1.2	1.1	1.0	-9.1
Albury	0.9	0.9	0.8	0.8	0.7	-12.5
Riverina Water	0.8	0.6	0.7	0.7	0.6	-15.7
MidCoast Council	1.4	1.4	1.3	1.2	1.0	-16.7
Dubbo				0.6	0.5	-16.7
Queanbeyan				0.5	0.4	-20.0
Port Macquarie Hastings	1.2	1.4	1.0	1.1	0.8	-20.3
WC (Mandurah)	19.9		6.3	10.4	-40.8	-492.3
Median	1.2	1.3	1.1	1.1	0.9	
Mean	3.2	2.1	2.3	2.4	0.2	
Small						
WC (Australind/Eaton)	25.1		13.8	-1.1	14.3	1400.0
Western Downs				4.8	59.2	1133.3
WC (Albany)	36.5	34.6	22.5	-8.2	3.8	150.0
Whitsunday		1.7	2.5	3.2	4.5	40.6
Goldenfields				0.4	0.5	25.0
Bathurst	0.8	0.8	0.8	0.6	0.6	0.0
Byron	0.6	0.6	0.6	0.5	0.5	0.0
Orange	0.9	0.8	0.9	0.8	0.8	0.0
South Gippsland Water	5.3	5.5	5.5	6.0	6.0	0.0
Cassowary Coast		0.0	0.0	0.0	0.0	0.0
Central Highlands		0.0	0.0	0.0	0.0	0.0
Livingstone		0.0	0.0	0.0	0.0	0.0
Southern Downs		1.0		0.0	0.0	0.0
P&W (Alice Springs)	7.5		9.3	14.3	14.0	-2.1
Eurobodalla	1.2	1.1	1.0	1.0	0.9	-10.0
Bega Valley	1.0	1.0	1.0	0.9	0.8	-11.1
Wingecarribee	1.2	1.2	1.0	0.8	0.7	-12.5
Goulburn Mulwaree	0.9	0.2	0.8	0.7	0.6	-14.3
Westernport Water	4.3	3.7	3.9	3.9	3.3	-15.4
Kempsey	1.5	1.3	1.3	1.4	1.1	-21.4
Ballina	1.1	1.9	1.0	1.1	0.8	-27.3
Lismore	1.2	1.0	1.0	1.5	0.9	-40.0
Gympie	4.4	4.4	2.5	4.2	2.2	-47.6
WC (Geraldton)	14.5	657.7	6.2	-65.3	-131.7	-101.7
Median	1.2	1.0	1.0	0.8	0.8	
Mean	6.4	32.7	3.4	-1.2	-0.7	

Table A10 C15—Average duration of an unplanned interruption: water (minutes), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Sydney Water	151	147	136	133	155	16.5
SA Water	161	163	185.7	195	226.9	16.4
WC (Perth)	117.4	96	107.9	103	112	8.7
South East Water	91	89	81.3	83	87.4	5.3
Central Coast			198	202	198	-2.0
City West Water	115.4	112	122.2	125.3	119.6	-4.5
Qld Urban Utilities	139	139	134	132	125	-5.3
Icon Water	104	119.5	135	134.7	125.1	-7.1
Barwon Water	93.1	88	99.5	102	89	-12.7
Yarra Valley Water	99.4	103.2	122.5	118.2	102.9	-12.9
Gold Coast	160	132.4	119.7	137.5	116	-15.6
Unitywater		157	139	160	129.5	-19.1
Logan	151.4	155.6	143	177.6	117.2	-34.0
Hunter Water	129	364	136	231	149	-35.5
Median	123.2	132.4	134.5	133.8	122.3	
Mean	126	143.5	132.8	145.3	132.3	
Large						
Toowoomba				648	1,198	84.9
Central Highlands Water	103.8	69	109.2	107.3	137.7	28.3
Goulburn Valley Water	100	113	107.5	98.2	102.7	4.6
Gippsland Water	74.4	89	76.2	87.4	85.2	-2.5
Townsville	3.2	67.3	63.9	77	70	-9.1
Coliban Water	170.2	115	118.4	132	102.5	-22.3
Cairns	49.7	44.1	92	65.1	49.3	-24.3
Western Water	76.9	95.3	92.8	214.8	90	-58.1
Median	76.9	89	92.8	102.8	96.2	
Mean	82.6	84.7	94.3	178.7	229.4	
Medium						
Albury	124	137	137	119	266	123.5
Fraser Coast	38.9	129.5	127.8	105.6	230.3	118.1
Shoalhaven	220	135	202	104	147	41.3
Riverina Water (W)	173	185	206	183	242	32.2
Redland City		20.5	23.9	114	148	29.8
GWMWater	73.2	85.2	105.7	94.4	103.4	9.5
Tweed	149	134	112	136	141	3.7
Lower Murray Water	43.1	57	54.1	57	59	3.5
Coffs Harbour				120	120	0.0
Port Macquarie Hastings	174	210	121	30	30	0.0
Mackay	121	92	115	66.5	63.6	-4.4
WC (Mandurah)	68	61	49.9	71	65	-8.5
North East Water	101.7	104.7	107.7	111.5	99.4	-10.9
Fitzroy River Water	4.1	98.2	33	39.8	34.4	-13.6
Wannon Water	100.9	91.2	104.9	93.5	79.3	-15.2

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
East Gippsland Water	75.8	64	71.5	92	76	-17.4
Bundaberg				138	77	-44.2
Gladstone		15.9	46	47.6	23.2	-51.3
Queanbeyan				161	2	-98.8
Median	101.3	95.1	106.7	104	79.3	
Mean	104.8	101.3	101.1	99.2	105.6	
Small						
Kempsey	127	215	155	26	198	661.5
Gympie	240	97.2	85	81.6	197.3	141.8
Wingecarribee	108	122		120	270	125.0
Bega Valley				141	234	66.0
Busselton (W)	77.1	197.5	85.7	63.5	93.7	47.6
Lismore	120	140	214	129	180	39.5
WC (Albany)	123.3	124	132	121	147	21.5
Southern Downs		120	120	87.1	102	17.1
Eurobodalla	190	220	214	213	237	11.3
South Gippsland Water	138.6	160	95.6	91	101	11.0
WC (Kal-Boulder) (W)	55.9	45	62.4	44	46	4.5
WC (Australind/Eaton)	78.2	75	56	85	87	2.4
Orange	238	255	135	135	135	0.0
Whitsunday		120	120	120	120	0.0
Central Highlands		45	30	30	30	0.0
Bathurst				120	120	0.0
Byron				120	120	0.0
Goulburn Mulwaree				180	180	0.0
Westernport Water	92.3	103	80.2	109	108.6	-0.4
WC (Geraldton)	110.2	102	120	137	135	-1.5
Western Downs		62		61	53	-13.1
Cassowary Coast		418	375	218	185	-15.1
Dubbo (City)	75	131		162	129	-20.4
Livingstone		22.9	26	25.7	19	-26.1
Aqwest-Bunbury (W)	47.5	43.6	61	49	34	-30.6
Median	110.2	120	107.8	120	120	
Mean	121.4	134.2	120.4	106.8	130.5	

Table A11 C13— Total complaints: water and sewerage (per 1,000 properties), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
WC (Perth)	1.0	0.8	0.8	0.8	1.2	50.0
Central Coast				7.9	10.0	26.6
Hunter Water	6.0	6.3	4.8	3.1	3.5	12.9
Qld Urban Utilities	5.0	5.0	6.0	5.9	6.6	11.9
Unitywater	2.6	2.0	1.2	1.4	1.5	7.1
Sydney Water	3.2	2.7	2.6	2.1	2.2	4.8
Yarra Valley Water	7.0	5.0	5.8	11.0	11.1	0.9
City West Water	3.3	3.4	5.2	3.6	3.3	-8.3
South East Water	4.7	3.4	3.4	3.0	2.7	-10.0
SA Water	2.4	2.4	2.3	2.5	2.2	-12.0
Icon Water	4.0	4.3	3.8	4.3	3.7	-14.0
Barwon Water	2.7	4.3	4.4	4.3	3.3	-23.3
Gold Coast	18.1	5.0	6.3	8.4	3.6	-57.1
TasWater*					15.6	
Median	3.6	3.9	4.1	3.6	3.3	
Mean	5.0	3.7	3.9	4.5	4.2	
Large						
Central Highlands Water	8.3	3.2	5.0	6.9	8.4	21.7
Western Water	4.7	4.0	5.5	3.3	3.3	0.0
P&W (Darwin)	49.9	39.5	86.2	85.1	68.4	-19.6
Gippsland Water	9.2	9.5	9.4	10.9	8.7	-20.2
Toowoomba	5.8	2.0	2.6	4.1	3.2	-22.0
Cairns		3.0	2.9	3.6	2.4	-33.3
Townsville	10.7	10.0	0.7	0.8	0.5	-37.5
Coliban Water	5.6	6.3	6.5	8.6	5.3	-38.4
Goulburn Valley Water	5.9	4.3	6.6	5.4	2.6	-51.9
Median	7.1	4.3	5.5	5.4	3.3	
Mean	12.5	9.1	13.9	14.3	11.4	
Medium						
Bundaberg		2.0	2.8	12.8	59.7	366.4
Riverina	10.0	7.0	6.0	8.4	13.0	154.8
WC (Mandurah)	0.7	0.4	0.4	0.3	0.6	100.0
Mackay	131.8	30	33.4	57.0	93.4	63.9
Redland City		4.0	3.6	2.6	3.2	23.1
Tamworth	78.0	59.0	54.5	39.5	48.0	21.5
North East Water	0.8	2.6	1.7	2.9	3.4	17.2
Wannon Water	3.5	3.6	6.1	5.3	6.0	13.2
Shoalhaven	1.0	2.0	1.5	1.8	2.0	11.1
GWMWater	11.0	7.3	7.4	7.6	8.3	9.2
Queanbeyan				52.0	55.0	5.8
Clarence Valley	101.0	109.0	0.0	0.0	19.0	0.0
Tweed	40.0	29.0			1.0	0.0

*TasWater has reported for the 2017-18 reporting period only and is not included in the comparison analysis, Median and Mean calculations or summary tables.

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Gladstone		0.0	0.0	0.3	0.3	0.0
Dubbo			23.1	18.3	17.0	-7.1
East Gippsland Water	0.6	1.0	1.8	4.0	3.7	-7.5
Fitzroy River Water	56.0	51.0	48.0	47.2	39.9	-15.5
Fraser Coast		4.0	7.7	20.5	15.1	-26.3
MidCoast Council	7.0	11.0	8.2	4.4	3.0	-31.8
Port Macquarie Hastings	31.0	32.0	31.2	15.5	6.0	-61.3
Lower Murray Water	1.4	1.8	2.9	4.8	1.7	-64.6
Albury	5.0	6.0	7.0	11.2	1.9	-83.0
Coffs Harbour		1.0	0.4	1.6	0.0	-100.0
Median	7.0	4.0	6.1	5.3	6.0	
Mean	28.2	17.3	12.4	13.8	17.4	
Small						
Goulburn Mulwaree			98.5	0.0	69.0	
Lismore	19.0	4.0	0.3	0.5	2.0	300.0
Ballina	12.0	3.0	0.9	0.6	2.0	233.3
Essential Energy	1.0	1.0	2.5	1.0	2.0	100.0
Eurobodalla	3.0	1.0	1.9	2.0	4.0	100.0
WC (Geraldton)	1.3	1.3	1.2	1.5	2.3	53.3
Bega Valley	17.0	16.0	7.2	7.5	11.0	46.7
South Gippsland Water	5.9	6.1	5.2	6.2	8.9	43.5
Byron	7.0	5.0	4.5	6.1	8.1	32.8
WC (Albany)	0.8	0.6	1.0	0.9	1.1	22.2
P&W (Alice Springs)	9.6	3.0	45.2	101.3	110.7	9.3
Gympie	11.3		2.3	5.5	5.2	-5.5
Orange	92.0	104.0	123.1	111.6	102.0	-8.6
Kempsey	3.0	2.0	2.4	1.1	1.0	-9.1
Wingecarribee	103.0	74.0	87.9	90.0	81.0	-10.0
WC (Australind/Eaton)	0.7	0.7	0.8	1.5	1.2	-20.0
Bathurst	82.0	91.0	89.3	69.4	51.0	-26.5
Cassowary Coast		128.0	115.4	16.6	10.3	-38.0
Westernport Water	3.6	4.9	6.8	4.8	2.5	-47.9
Western Downs		5.0		9.2	2.8	-69.6
Central Highlands		182.0	184.2	146.0	24.1	-83.5
Whitsunday		150.0	106.2	84.7	9.3	-89.0
Southern Downs		49.0	48.5	95.6	5.4	-94.4
Livingstone		140.0	7.1	61.6	3.3	-94.6
Median	7.0	5.0	6.8	6.2	5.3	
Mean	21.9	42.2	41.0	34.4	21.7	

Table A12 C14—Percentage of calls answered by an operator within 30 seconds (%), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Sydney Water	83.0	79.0	73.0	60.0	76.0	26.7
Icon Water	79.1	71.3	66.7	61.1	73.1	19.6
Hunter Water	71.0	70.0	71.0	67.0	69.0	3.0
City West Water	83.3	82.6	82.5	81.0	81.0	0.0
SA Water	88.0	85.3	85.3	85.4	85.4	0.0
Barwon Water	92.1	89.5	88.0	85.0	79.0	-7.1
WC (Perth)	72.6	72.8	71.1	70.6	62.6	-11.3
Yarra Valley Water	76.9	63.5	46.9	64.3	54.4	-15.4
South East Water	88.3	84.4	77.2	67.0	52.6	-21.5
TasWater*					86.5	
Median	83.0	79.0	73.0	67.0	73.1	
Mean	81.6	77.6	73.5	71.3	70.3	
Large						
Goulburn Valley Water	98.9	99.0	97.2	97.3	98.6	1.3
Gippsland Water	83.1	82.7	88.8	83.8	83.5	-0.3
Coliban Water	84.8	91.3	90.9	91.8	86.5	-5.8
Central Highlands Water	90.4	92.0	88.2	89.4	79.7	-10.8
Western Water	97.8	94.4	88.3	86.0	75.0	-12.8
Median	90.4	92.0	88.8	89.4	83.5	
Mean	91.0	91.9	90.7	89.7	84.7	
Medium						
North East Water	89.5	89.9	90.8	90.0	96.0	6.7
Albury				47.0	49.6	5.5
Lower Murray Water	85.7	87.6	86.4	94.0	95.0	1.1
Coffs Harbour	99.0	99.0		99.0	99.0	0.0
East Gippsland Water	99.8	99.8	99.5	99.0	99.0	0.0
Port Macquarie Hastings	75.0	84.0	98.0	96.0	96.0	0.0
Shoalhaven	96.0	96.0	98.0	98.0	98.0	0.0
Tweed	56.0	48.0	49.0	50.0	50.0	0.0
Wagga Wagga (S)	100.0	100.0	100.0	94.0	94.0	0.0
Wannon Water	99.2	99.0	99.3	98.8	98.8	0.0
GWMWater	94.4	94.0	93.1	92.3	91.4	-1.0
Median	95.2	95.0	98.0	94.0	96.0	
Mean	89.5	89.7	90.5	87.5	87.9	
Small						
Kempsey	48.0	45.0	42.0	40.0	45.0	12.5
South Gippsland Water	99.5	99.7	99.5	94.0	98.8	5.1
Wingecarribee	79.0	53.0	66.0	96.0	97.0	1.0
Ballina				100.0	100.0	0.0
Bathurst				100.0	100.0	0.0
Bega Valley	79.0	87.0		50.0	50.0	0.0

*TasWater has reported for the 2017-18 reporting period only and is not included in the comparison analysis, Median and Mean calculations or summary tables.

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Essential Energy	78.0	78.0	78.0	78.0	78.0	0.0
Lismore	80.0	80.0	77.0	80.0	80.0	0.0
Orange			65.0	77.0	76.0	-1.3
Westernport Water	97.8	97.7	97.6	99.7	98.2	-1.5
Eurobodalla		100.0	72.0	68.0	65.0	-4.4
Median	79.0	83.5	74.5	80.0	80.0	
Mean	80.2	80.0	74.6	80.2	80.7	

Table A13 A8—Water main breaks (no. per 100 km of water main), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Sydney Water	30.0	26.0	26.0	23.9	32.8	37.2
Logan	6.6	6.5	4.7	4.0	5.1	27.5
Gold Coast	12.0	7.1	7.4	5.1	6.4	25.5
Hunter Water	30.2	28.9	26.8	24.8	30.0	21.0
Icon Water	11.5	14.2	13.8	14.3	16.3	14.0
South East Water	30.8	32.2	33.5	32.7	37.1	13.5
City West Water	39.9	37.1	40.1	42.1	42.8	1.7
SA Water	11.4	13.9	14.9	13.5	13.6	0.7
Yarra Valley Water	50.5	39.3	48.5	47.4	46.3	-2.3
Qld Urban Utilities	29.0	28.0	25.7	23.1	22.5	-2.6
Barwon Water	31.0	29.0	33.5	31.0	29.4	-5.2
Central Coast			17.0	16.0	14.4	-10.0
Unitywater	5.6	3.3	3.7	4.8	4.1	-14.6
WC (Perth)	13.4	15.0	12.0	13.1	11.1	-15.3
Median	29.0	26.0	21.4	19.6	19.4	
Mean	23.2	21.6	22.0	21.1	22.3	
Large						
Cairns	14.1	13.3	12.4	10.5	23.0	119.0
Toowoomba	13.8	20.7	13.3	16.3	29.0	77.9
Central Highlands Water	22.8	20.7	18.8	18.2	25.4	39.6
Goulburn Valley Water	27.5	22.6	19.9	12.9	16.2	25.6
Gippsland Water	25.2	25.1	24.5	23.0	25.1	9.1
Coliban Water	28.6	26.1	29.1	28.7	28.5	-0.7
Western Water	13.3	12.2	13.3	12.3	12.2	-0.8
P&W (Darwin)	20.2	21.1	17.2	11.2	10.7	-4.5
Townsville	24.6	28.6	31.6	33.5	18.3	-45.4
Median	22.8	21.1	18.8	16.3	23	
Mean	21.1	21.2	20	18.5	20.9	
Medium						
Port Macquarie Hastings	2.4	3.1	2.6	1.8	4.2	133.3
Gladstone		141.0	33.9	6.7	10.8	61.2
East Gippsland Water	7.5	17.3	12.9	12.8	17.1	33.6
MidCoast Council	8.3	9.2	1.7	6.9	8.9	29.0
Dubbo			6.5	7.8	9.7	24.4
Tamworth	6.6	13.9	8.9	5.5	6.8	23.6
Albury	10.3	4.7	4.1	3.3	3.9	18.2
Shoalhaven	9.5	7.9	8.0	5.7	6.5	14.0
GWMWater	60.3	55.4	55.5	56.6	58.5	3.4
Redland City		3.4	3.2	3.1	3.1	0.0
Coffs Harbour	3.3	2.7	7.1	10.0	9.7	-3.0
Lower Murray Water	30.0	35.4	32.0	28.6	26.2	-8.4
Wannon Water	10.5	9.7	11.1	9.6	8.3	-13.5
Fraser Coast	6.2	3.6	3.0	4.2	3.6	-14.3

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Tweed	8.0	4.1	7.5	9.1	7.5	-17.6
Fitzroy River Water	24.9	12.9	16.7	16.2	12.3	-24.1
North East Water	13.3	12.5	8.7	13.7	10.3	-24.8
Queanbeyan			7.5	8.3	6.4	-29.6
Mackay	11.8	10.3	11.8	9.4	6.6	-29.8
WC (Mandurah)	4.2	4.2	3.6	4.0	2.8	-30.0
Riverina Water (W)	19.0	6.9	18.6	11.6	8.1	-30.2
Bundaberg		3.9	4.2	8.0	3.9	-51.2
Clarence Valley	12.5	10.7	12.3	15.4	5.9	-61.7
Median	9.9	9.2	8.0	8.3	7.5	
Mean	13.8	17.8	12.2	11.2	10.2	
Small						
Whitsunday		19.4	15.0	10.4	19.4	86.5
Essential Energy	16.5	14.1	20.9	16.2	24.6	51.9
Cassowary Coast		18.0	7.6	8.8	12.7	44.3
P&W (Alice Springs)	26.7	2.2	8.3	30.7	44.3	44.3
Bathurst	8.2	6.8	14.8	10.8	15.0	38.9
WC (Albany)	11.6	11.3	11.4	10.9	15.1	38.5
Bega Valley	8.8	6.3	4.5	9.5	13.1	37.9
Busselton (W)	7.5	8.3	7.2	7.1	9.7	36.6
Lismore	36.7	20.1	35.8	29.5	39.9	35.3
WC (Kal–Boulder) (W)	16.8	20.8	20.3	15.5	19.7	27.1
Byron	9.3	8.8	7.1	13.7	17.1	24.8
Orange	8.5	7.1	8.8	7.3	8.7	19.2
WC (Geraldton)	23.4	26.9	25.2	27.4	32.5	18.6
South Gippsland Water	47.8	39.5	40.9	29.5	34.3	16.3
Westernport Water	16.6	13.6	22.0	18.2	20.0	9.9
Goulburn Mulwaree	10.7	9.6		19.0	19.7	3.7
Goldenfields Water (W)				16.3	15.0	-8.0
Eurobodalla	13.4	13.0	12.7	10.0	9.1	-9.0
Gympie	9.6	4.8	3.8	11.1	9.8	-11.7
Central Highlands		42.5	40.4	48.6	42.1	-13.4
WC (Australind/Eaton)	5.5	4.7	7.4	9.2	6.9	-25.0
Western Downs		24.6	20.5	28	18.2	-35.0
Aqwest–Bunbury (W)	10.4	12.4	13.5	17.5	9.9	-43.4
Wingecarribee	11.8	5.3	12.0	15.0	8.1	-46.0
Kempsey	9.8	7.3	5.5	12.6	5.1	-59.5
Livingstone		3.9	3.2	2.9	1.0	-65.5
Southern Downs		16.6	3.7	4.5	1.1	-75.6
Median	11.2	11.9	12	13.7	15	
Mean	15.5	14.1	14.9	16.3	17.5	

Table A14 A14—Sewerage mains breaks and chokes, by utility size group (no. per 100 km sewer main), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
Gold Coast		3.9	7.2	4.3	5.1	18.6
Icon Water	57.0	51.6	54.1	48.9	55.6	13.7
Sydney Water	61.4	68.7	58.4	62.8	70.0	11.5
Barwon Water	29.0	35.4	38.8	33.0	36.1	9.4
Central Coast			38.0	34.3	37.0	7.9
City West Water	16.2	17.0	21.4	20.3	21.3	4.9
Hunter Water	53.6	53.6	42.7	49.6	50.6	2.0
SA Water	46.0	48.0	51.0	43.0	43.0	0.0
WC (Perth)	17.0	17.6	18.6	17.0	17.0	0.0
Logan	12.1	12.6	11.5	11.2	10.7	-4.5
South East Water	14.8	14.3	17.6	18.0	16.2	-10.0
Qld Urban Utilities	22.9	30.1	25.2	24.9	20.9	-16.1
Yarra Valley Water	27.6	31.6	35.3	38.1	30.7	-19.4
Unitywater	20.4	25.0	24.5	24.8	16.4	-33.9
TasWater*					45	
Median	25.3	30.1	30.2	28.9	26.0	
Mean	31.5	31.5	31.7	30.7	30.8	
Large						
Cairns	14.7	7.6	7.2	11.8	14.5	22.9
Toowoomba	30.7	29	64.8	56.9	64.6	13.5
Western Water	15.7	15.5	14.1	11.5	12.7	10.4
Gippsland Water	8.6	8.0	8.0	8.4	9.1	8.3
Townsville	5.4	2.8	3.9	2.7	2.8	3.7
Central Highlands Water	18.8	19.7	22.6	19.3	19.1	-1.0
P&W (Darwin)	8.5	8.9	22.2	19.0	14.3	-24.7
Coliban Water	62.9	48.1	53.7	40.5	29.8	-26.4
Goulburn Valley Water	20.4	10.1	9.5	9.1	6.1	-33.0
Median	15.7	10.1	14.1	11.8	14.3	
Mean	20.6	16.6	22.9	19.9	19.2	
Medium						
Shoalhaven	8.0	11.0	13.0	8.0	11.0	37.5
East Gippsland Water	5.3	6.1	5.2	5.9	7.6	28.8
Wagga Wagga (S)	80.0	80.0	72.0	62.0	73.0	17.7
Clarence Valley	45.0	52.0		31.0	36.0	16.1
Bundaberg		9.1	11.4	10.1	11.5	13.9
MidCoast Council	6.0	6.0	8.0	20.0	22.0	10.0
Dubbo			46.0	35.7	38.0	6.4
Port Macquarie Hastings			27.0	15.0	14.0	-6.7
GWMWater	38.7	45.0	50.5	46.3	42.1	-9.1
Redland City		7.2	7.2	4.0	3.6	-10.0
Lower Murray Water	16.7	17.1	15.6	18.0	16.0	-11.1

*TasWater has reported for the 2017-18 reporting period only and is not included in the comparison analysis, Median and Mean calculations or summary tables.

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Coffs Harbour	76.0	89.0	97.0	95.0	84.0	-11.6
Fraser Coast	8.5	5.4	6.2	8.1	7.1	-12.3
North East Water	9.7	8.8	9.6	11.8	10.3	-12.7
WC (Mandurah)	8.1	7.5	9.0	10.0	7.0	-30.0
Wannon Water	11.5	13.4	18.2	18.0	12.5	-30.6
Queanbeyan			33.0	86.0	58.6	-31.8
Fitzroy River Water	12.1	24.4	25.9	28.1	17.0	-39.5
Mackay	19.3	4.1	5.1	3.8	2.2	-42.1
Gladstone		6.9	10.9	12.4	5.6	-54.8
Tamworth	74.0	50.0	20.0	41.0	8.0	-80.5
Albury	75.0	65.0	76.0	78.0	9.2	-88.2
Tweed	1.0	0.0	1.0	1.0	0.0	-100.0
Median	12.1	10.1	14.3	18.0	11.0	
Mean	29.1	25.4	25.8	28.2	19.0	
Small						
Gympie	21.3	40.9	3.8	3.0	8.7	190.0
Kempsey	16.0	33.0	25.0	10.0	22.0	120.0
Bega Valley	22.0	9.0	20.0	14.0	27.0	92.9
P&W (Alice Springs)	1.4	0.9	1.8	3.6	6.3	75.0
Whitsunday		0.3	8.9	8.9	15.5	74.2
WC (Geraldton)	7.0	10.8	8.7	7.1	12.0	69.0
Lismore	49.0	50.0	28.0	16.0	26.0	62.5
WC (Bunbury) (S)	12.1	12.4	12.8	9.2	14.0	52.2
Westernport Water	2.8	2.0	4.2	4.1	6.0	46.3
Eurobodalla	30.0	32.0	23.0	25.0	33.0	32.0
Kal-Boulder (S)	30.3	17.7	27.0	30.0	39.0	30.0
Livingstone		3.6	6.0	3.3	4.2	27.3
WC (Australind/Eaton)	6.4	10.4	7.9	7.4	9.0	21.6
Orange	24.0	33.0	42.0	78.0	83.0	6.4
Essential Energy	115.0	129.0		120.7	122.0	1.1
Byron	11.0	11.0	21.0	7.0	7.0	0.0
Cassowary Coast		3.5	1.3	4.8	4.4	-8.3
Wingecarribee	46.0	22.0	10.0	31.0	26.0	-16.1
WC (Albany)	19.5	25.0	30.6	20.9	17.0	-18.7
Goulburn Mulwaree				106.7	69.0	-35.3
Bathurst	84.0	99.0	162.0	91.0	55.0	-39.6
Western Downs		9.6	4.8	4.8	2.8	-41.7
WC (Busselton) (S)	3.1	3.5	3.7	3.8	2.0	-47.4
Central Highlands		24.9	39.4	32.9	7.6	-76.9
South Gippsland Water	14.8	23.6	29.9	110.0	13.4	-87.8
Southern Downs		13.2	35.7	12.0	0.3	-97.5
Ballina	20.0	3.0		0.0	0.0	
Median	19.7	12.8	16.4	10.0	13.4	
Mean	26.8	24	23.2	28.3	23.4	

Table A15 A15—Property connection sewer breaks and chokes, by utility size group (no. per 1,000 properties), 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
South East Water	4.9	4.7	5.0	4.0	4.8	20.0
Icon Water	10.0	9.4	10.1	9.5	10.4	9.5
SA Water	30.0	29	32.0	26.0	28.0	7.7
Hunter Water	10.1	10.2	8.5	9.3	10.0	7.5
Gold Coast		1.2	0.9	2.2	2.3	4.5
Barwon Water	0.0	1.8	2.8	6.0	6.0	0.0
Sydney Water	0.2	0.2	0.2	0.3	0.3	0.0
Yarra Valley Water	6.5	6.7	7.4	7.6	6.7	-11.5
Unitywater	0.7	1.5	1.3	1.3	1.1	-15.4
Qld Urban Utilities	2.9	3.8	3.3	3.9	3.1	-20.5
City West Water	4.2	5.0	5.2	4.5	3.2	-28.9
Logan	1.0	1.8	1.8	1.9	1.3	-31.6
Central Coast			2.9	6.9	3.2	-53.6
Median	4.2	4.2	3.3	4.5	3.2	
Mean	6.4	6.3	6.3	6.4	6.2	
Large						
P&W (Darwin)	3.3	3.1	3.1	0.8	2.0	150.0
Goulburn Valley Water	5.2	0.0	4.3	2.3	5.0	117.4
Central Highlands Water	2.6	1.0	1.7	2.2	3.8	72.7
Cairns	3.2	3.2	1.4	2.2	2.7	22.7
Gippsland Water	0.0	1.8	1.8	2.4	2.2	-8.3
Western Water	5.2	5.0	5.6	4.8	4.2	-12.5
Townsville	4.1	3.0	4.3	4.2	3.2	-23.8
Toowoomba			0.6	4.3	2.5	-41.9
Coliban Water	18.0	4.5	5.2	8.9	4.3	-51.7
Median	3.7	3.1	3.1	2.4	3.2	
Mean	5.2	2.7	3.1	3.6	3.3	
Medium						
Bundaberg		0.2	0.2	0.6	8.7	1350.0
Clarence Valley	10.2	3.6		5.9	20.4	245.8
East Gippsland Water	0.4	0.6	0.8	1.2	1.8	50.0
Mackay	0.3	1.7	0.6	1.7	2.2	29.4
GWMWater	0.0	25.1	31.4	29.2	35.1	20.2
Tamworth	8.7	2.4	10.8	8.6	10.2	18.6
Lower Murray Water	0.0	0.0	6.2	6.0	7.0	16.7
Dubbo				6.1	6.9	13.1
Fraser Coast	1.9	1.3	1.3	2.7	2.8	3.7
North East Water	4.5	1.8	2.0	2.9	3.0	3.4
Wannon Water	0.0	4.6	3.5	3.0	3.0	0.0
Fitzroy River Water	11.5	9.7	9.8	10.6	9.7	-8.5
Port Macquarie Hastings				1.1	1.0	-9.1
Redland City		0.3	0.6	1.3	1.1	-15.4

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Wagga Wagga (S)	20.8	14.7	13.4	6.7	5.0	-25.4
Tweed	0.4	0.3	1.2	1.2	0.8	-33.3
Gladstone		0.8	0.7	1.2	0.6	-50.0
Albury	10.3	13.4	12.5	10.7	4.5	-57.9
Coffs Harbour	2.7	3.5	1.5	2.8	0.5	-82.1
Queanbeyan				10.6	0.0	-100.0
Shoalhaven	0.2	0.2	0.1	0.1	0.0	-100.0
Median	1.9	1.7	1.5	2.9	3.0	
Mean	4.8	4.7	5.7	5.4	5.9	
Small						
Orange	4.5	9.9	1.4	0.3	3.2	966.7
Central Highlands			2.3	1.1	10.2	827.3
Wingecarribee	6.9	8.5	3.7	4.6	16.9	267.4
Southern Downs		8.4	6.3	2.1	7.6	261.9
Lismore	9.3	10.1	8.2	5.9	21.3	261.0
Bega Valley	3.3	0.9	2.0	1.5	4.4	193.3
Kal-Boulder (S)	4.2	2.5	0.0	1.0	1.8	80.0
Whitsunday		1.7	0.3	0.9	1.4	55.6
Bathurst	2.5	1.7	3.1	3.2	4.9	53.1
Westernport Water	0.0	0.6	2.3	2.3	3.3	43.5
Eurobodalla	5.0	5.7	4.4	4.6	5.8	26.1
Essential Energy	36.9	41.3	44.0	43.3	51.3	18.5
Goulburn Mulwaree	5.2	6.6	17.0	17.4	18	3.4
Byron	7.7	7.9	10.3	11.3	9.6	-15.0
Western Downs		1.6	2.8	2.9	2.0	-31.0
P&W (Alice Springs)	0.2	0.2	0.2	2.0	1.3	-35.0
Livingstone		2.3		3.4	1.4	-58.8
Cassowary Coast		0.9	3.2	3.1	0.8	-74.2
Kempsey	13.6	9.6	14.1	24.9	6.2	-75.1
South Gippsland Water	0.0	4.5	1.8	64.0	3.7	-94.2
Median	4.8	4.5	3.1	3.2	4.7	
Mean	7.1	6.6	6.7	10.0	8.8	

Table A16 A10—Real losses (L/service connection/d), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
City West Water	67	70	71	70	89	27.1
Yarra Valley Water	70	60	71	50	60	20.0
Logan	32.7	78.8	67	66.1	76.5	15.7
Sydney Water	81	74	76	83	93	12.0
Unitywater	58	69	66	51	55.2	8.2
Barwon Water	39	25	47	45	48	6.7
Icon Water	38	58	69	79	83	5.1
Central Coast			31	34	35	2.9
Gold Coast	110	77	81	76.3	76.4	0.1
WC (Perth)	77.9	79.7	78	87	83.6	-3.9
Qld Urban Utilities	69	69	71	76	72	-5.3
Hunter Water	82	91	104	96	86	-10.4
SA Water	89	90	82	86	76	-11.6
South East Water	70.3	67	64	59	47	-20.3
TasWater*					277	
Median	70	70	71	73	76.2	
Mean	68	69.9	69.9	68.5	70	
Large						
Cairns	50.6	24	27	7.9	21.4	170.9
Townsville			276	143	306.4	114.3
Western Water	33	47	37	32	51	59.4
P&W (Darwin)	268	229	96	143	222	55.2
Toowoomba	111.6	84.5	85	59.3	81	36.6
Goulburn Valley Water	82	111	93	104	118	13.5
Central Highlands Water	40	30	30	40	40	0.0
Coliban Water	54	65	74	63	60	-4.8
Gippsland Water	98	78	72	90	80	-11.1
Median	68	71.5	74	63	80	
Mean	92.1	83.6	87.8	75.8	108.9	
Medium						
Bundaberg		50.3	354	50.6	215.5	325.9
Fitzroy River Water	227.7	180	152	114.2	186	62.9
Mackay	118.4	106.5	131	130.3	189.9	45.7
Albury	57	55		46.2	63.3	37.0
North East Water	60	120	60	48	59	22.9
WC (Mandurah)	74.1	54.5	67	77	93.8	21.8
East Gippsland Water	42.5	51.4	66	48	55.8	16.2
Tweed	61	56		90.9	104	14.4
Port Macquarie Hastings	37	45	43	40	45	12.5
Coffs Harbour	63	50	48	56	62	10.7
Riverina Water (W)	81	86	115	55.6	57	2.5

*TasWater has reported for the 2017-18 reporting period only and is not included in the comparison analysis, Median and Mean calculations or summary tables.

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Redland City		44.1	17	16.1	16.5	2.5
Clarence Valley	127	111		46.9	43	-8.3
Fraser Coast	53	84	78	89.1	80.7	-9.4
Wannon Water	82	71	72	84	70	-16.7
Tamworth	91	69	87	79	55	-30.4
MidCoast Council	57	61	71	84	57	-32.1
GWMWater	215	110	109	112	72	-35.7
Lower Murray Water	68	45.7	76	80	51	-36.3
Shoalhaven	57	92	72	107	64	-40.2
Gladstone		860.2	336	239.3	47.8	-80.0
Dubbo				51.3	4	-92.2
Median	65.5	69	74	77	62	
Mean	87.3	114.4	108.6	75.9	78	
Small						
Lismore	39	40	39	38	103	171.1
Western Downs				65.4	170.5	160.7
WC (Geraldton)	220.4	262.4	217	106	209.7	97.8
Kempsey	96	97	93	63	114	81.0
Byron	68	53	90	50	84	68.0
Busselton (W)	95.9	79.8	69	78	115	47.4
Whitsunday		537.2	346	101.8	144.7	42.1
Goulburn Mulwaree	82	70		67.3	95	41.2
Bathurst				67.9	84	23.7
WC (Kal–Boulder) (W)	63	30.1	42	88	102.4	16.4
WC (Australind/Eaton)	88.6	139.8	107	109	124.4	14.1
Essential energy	90	82	84	90.7	101	11.4
Wingecarribee	133	61	116	107	117	9.3
Orange	60	61	63	106	112	5.7
Aqwest–Bunbury (W)	115	106	95	104	108	3.8
Bega Valley	50	50	50	51	51	0.0
Cassowary Coast		356	390	463.9	458.8	-1.1
Eurobodalla	50	48	50	54	52	-3.7
WC (Albany)	90	174.5	189	115	111	-3.5
Central Highlands				271.4	253.7	-6.5
Gympie	75	190	112.8	147.8	133.2	-9.9
Westernport Water	24.5	13	47	50	42	-16.0
P&W (Alice Springs)	291	200	126	153	118	-22.9
Goldenfields Water (W)				200.6	151	-24.7
Ballina	145	156	156	89	57	-36.0
Southern Downs		182	96	66.5	27.8	-58.2
South Gippsland Water	138	103.5	100	87	0.1	-99.9
Livingstone			0	0	0	
Median	89.3	97	95	88.5	109.5	
Mean	100.7	134.4	116.4	106.8	115.7	

Table A17 E12—Total net greenhouse gas emissions (net tonnes CO₂ equivalents per 1,000 connected water properties), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
South East Water	53	60	60	56	63	12.6
SA Water	287	320	402	272	304	11.8
Icon Water	260	257	255	242	268	10.4
Qld Urban Utilities		199	192	168	183	8.5
Sydney Water	85	84	144	176	173	-1.5
Hunter Water	412	220	181	167	163.9	-1.8
Yarra Valley Water	44	44	44	44	43	-2.1
Barwon Water	274	262	268	263	257	-2.3
City West Water	26	27	32	32	30	-5.0
WC (Perth)	731	738	817	828	754	-8.9
Median	260	210	186	172	178	
Mean	241	221	239	225	224	
Large						
P&W (Darwin)	205	165	154	179	229	27.9
Western Water	267	520	530	440	512	16.4
Gippsland Water	580	639	898	546	543	-0.5
Central Highlands Water	250	246	444	230	208	-9.5
Coliban Water	446	610	770	454	384	-15.3
Goulburn Valley Water	873	872	780	686	270	-60.6
Median	357	565	650	447	327	
Mean	437	509	596	422	358	
Medium						
Tweed	441	413	453	457	702	53.7
MidCoast Council	483	490	371	337	426	26.4
Clarence Valley	114	119		200	251	25.6
Lower Murray Water	533	544	602	542	643	18.6
GWMWater	652	607	583	426	477	12.0
Tamworth	419	393	423	422	469	11.1
Dubbo			492	470	504	7.3
Riverina Water	372	372	341	332	356	7.2
Wagga Wagga			176	133	140	5.2
Wannon Water	693	751	776	675	696	3.0
Shoalhaven	377	437	454	470	479	2.1
WC (Mandurah)	290	193	189	348	350	0.5
Albury	451	393	477	437	426	-2.5
East Gippsland Water	359	344	346	365	351	-3.7
Coffs Harbour	362	487	456	489	460	-5.9
North East Water	860	838	885	750	697	-7.1
Port Macquarie Hastings	386	416	385	395	330	-16.4
Queanbeyan			233	299	200	-33.1
Median	419	416	453	424	443	
Mean	453	453	450	419	442	

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Small						
Byron	167	166		138	383	176.7
P&W (Alice Springs)	686	609	636	577	822	42.4
Eurobodalla	363	359	335	381	531	39.5
Orange	416	405	515	450	594	31.9
Ballina	425	390	386	295	376	27.7
South Gippsland Water	354	377	372	416	454	9.0
Kempsey	349	324	292	303	321	6.1
Bega Valley	343	342	422	399	417	4.5
Westernport Water	411	412	379	383	399	4.1
WC (Albany)	541	434	419	380	368	-3.0
WC (Geraldton)	433	341	373	351	331	-5.7
Wingecarribee	467	469	492	474	442	-6.6
WC (Australind/Eaton)	469	457	448	347	323	-7.1
Goulburn Mulwaree	618	449	662	761	667	-12.3
Bathurst	362	337		418	279	-33.3
Lismore	248	233	229	171	64	-62.5
Median	414	384	402	382	391	
Mean	416	381	426	390	423	

Table A18 H3—Percentage of population where microbiological compliance was achieved (%), by utility size group, 2013–14 to 2017–18

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Major						
TasWater	99.0	98.6	99.2	99.4	99.8	0.4
Barwon Water	100.0	100.0	100.0	100.0	100.0	0.0
Central Coast			100.0	100.0	100.0	0.0
Hunter Water	100.0	100.0	100.0	100.0	100.0	0.0
Icon Water	100.0	100.0	100.0	100.0	100.0	0.0
Qld Urban Utilities	100.0	100.0	100.0	100.0	100.0	0.0
SA Water	100.0	100.0	100.0	100.0	100.0	0.0
South East Water	100.0	100.0	100.0	100.0	100.0	0.0
Sydney Water	100.0	100.0	100.0	100.0	100.0	0.0
WC (Perth)	100.0	100.0	100.0	100.0	100.0	0.0
Yarra Valley Water	100.0	100.0	100.0	100.0	100.0	0.0
City West Water	100.0	100.0	100.0	100.0	100.0	0.0
Median	100	100	100	100	100	
Mean	99.9	99.9	99.9	100	100	
Large						
Western Water	100.0	100.0	100.0	99.0	100.0	1.0
Gippsland Water	100.0	100.0	88.6	100.0	100.0	0.0
Goulburn Valley Water	100.0	100.0	100.0	100.0	100.0	0.0
P&W (Darwin)	100.0	100.0	100.0	100.0	100.0	0.0
Central Highlands Water	100.0	100.0	100.0	100.0	99.7	-0.3
Coliban Water	99.4	100.0	100.0	100.0	99.5	-0.5
Median	100.0	100.0	100.0	100.0	100.0	
Mean	99.9	100	98.1	99.8	99.9	
Medium						
Wannon Water	100.0	100.0	100.0	99.9	100.0	0.1
Albury	100.0	100.0	100.0	100.0	100.0	0.0
Clarence Valley	100.0	100.0	100.0	100.0	100.0	0.0
Coffs Harbour	100.0	100.0	100.0	100.0	100.0	0.0
Dubbo			100.0	100.0	100.0	0.0
East Gippsland Water	100.0	100.0	100.0	100.0	100.0	0.0
Lower Murray Water	100.0	100.0	100.0	100.0	100.0	0.0
MidCoast Council	100.0	100.0	100.0	100.0	100.0	0.0
North East Water	100.0	100.0	100.0	100.0	100.0	0.0
Port Macquarie Hastings	100.0	100.0	100.0	100.0	100.0	0.0
Queanbeyan			100.0	100.0	100.0	0.0
Riverina Water (W)	100.0	100.0	100.0	100.0	100.0	0.0
Tamworth	100.0	100.0	100.0	100.0	100.0	0.0
Shoalhaven	100.0	100.0	100.0	100.0	100.0	0.0
Tweed	100.0	100.0	100.0	100.0	100.0	0.0
WC (Mandurah)	100.0	100.0	100.0	100.0	100.0	0.0
GWMWater	100.0	100.0	100.0	100.0	99.4	-0.6
Median	100.0	100.0	100.0	100.0	100.0	
Mean	100.0	100.0	100.0	100.0	100.0	

Utility	2013–14	2014–15	2015–16	2016–17	2017–18	% Change from 2016–17
Small						
Aqwest–Bunbury (W)	100.0	100.0	100.0	100.0	100.0	0.0
Ballina	100.0	100.0	100.0	100.0	100.0	0.0
Westernport Water	100.0	100.0	100.0	100.0	100.0	0.0
WC (Kal–Boulder) (W)	100.0	100.0	100.0	100.0	100.0	0.0
WC (Geraldton)	100.0	100.0	100.0	100.0	100.0	0.0
WC (Australind/Eaton)	100.0	100.0	100.0	100.0	100.0	0.0
WC (Albany)	100.0	100.0	100.0	100.0	100.0	0.0
South Gippsland Water	100.0	100.0	100.0	100.0	100.0	0.0
P&W (Alice Springs)	100.0	100.0	100.0	100.0	100.0	0.0
Orange	100.0	100.0	100.0	100.0	100.0	0.0
Lismore	100.0	100.0	100.0	100.0	100.0	0.0
Kempsey	100.0	100.0	100.0	100.0	100.0	0.0
Goulburn Mulwaree	100.0	100.0	100.0	100.0	100.0	0.0
Goldenfields Water (W)				100.0	100.0	0.0
Eurobodalla	100.0	100.0	100.0	100.0	100.0	0.0
Essential Energy	100.0	100.0	100.0	100.0	100.0	0.0
Byron	100.0	100.0	100.0	100.0	100.0	0.0
Busselton (W)	100.0	100.0	100.0	100.0	100.0	0.0
Bega Valley	100.0	100.0	100.0	100.0	100.0	0.0
Bathurst	100.0	100.0	100.0	100.0	100.0	0.0
Wingecarribee	100.0	100.0	100.0	100.0	100.0	0.0
Median	100.0	100.0	100.0	100.0	100.0	
Mean	100.0	100.0	100.0	100.0	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, 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 2017–18 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 2018 Urban NPR.

The audit requirements state that:

- Audits are to be conducted at a minimum of three-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.
- Auditable indicators are those with the indicator codes W7, W8, W11, W11.3, W12, W14, W18, W18.5, W19, W26, W27, A2, A3, A5, A6, A8–A11, A14, A15, E1–E3, E8, E12, E12.1, C2, C4, C8, C13, C14–C19, H3, H4, F1–F8, F11–F16, F20–F30, P7, and P8.

Appendix C Utilities reporting

Utility name	Jurisdiction	Type or size group
Albury City Council	New South Wales	Medium
Aqwest–Bunbury Water Corporation (W)	Western Australia	Small
Armidale Regional Council	New South Wales	Small
Ballina Shire Council	New South Wales	Small
Barwon Water	Victoria	Major
Bathurst Regional Council	New South Wales	Small
Bega Valley Shire Council	New South Wales	Small
Bundaberg Regional Council	Queensland	Medium
Busselton Water (W)	Western Australia	Small
Byron Shire Council	New South Wales	Small
Cairns Water and Waste (Cairns Regional Council)	Queensland	Large
Cassowary Coast Regional Council	Queensland	Small
Central Coast Council	New South Wales	Major
Central Gippsland Water	Victoria	Large
Central Highlands Regional Council	Queensland	Small
Central Highlands Water	Victoria	Large
City of Kalgoorlie–Boulder (S)	Western Australia	Small
City West Water	Victoria	Major
Clarence Valley Council	New South Wales	Medium
Coffs Harbour City Council	New South Wales	Medium
Coliban Water	Victoria	Large
Dubbo Regional Council	New South Wales	Medium
East Gippsland Water	Victoria	Medium
Essential Energy	New South Wales	Small
Eurobodalla Shire Council	New South Wales	Small
Fraser Coast Regional Council	Queensland	Medium
Fitzroy River Water (Rockhampton Regional Council)	Queensland	Medium
Gladstone Area Water Board	Queensland	Bulk utility
Gladstone Regional Council	Queensland	Medium
Gold Coast City Council	Queensland	Major
Goldenfields Water (W)	New South Wales	Small
Goulburn Mulwaree Council	New South Wales	Small
Goulburn Valley Water	Victoria	Large
GWMWater	Victoria	Medium
Gympie Regional Council	Queensland	Small
Hunter Water Corporation	New South Wales	Major
Icon Water Limited	Australian Capital Territory	Major
Kempsey Shire Council	New South Wales	Small
Lismore City Council	New South Wales	Small
Livingstone Shire Council	Queensland	Small
Logan City Council	Queensland	Major
Lower Murray Water	Victoria	Medium
Mackay Regional Council	Queensland	Medium
Melbourne Water	Victoria	Bulk utility
MidCoast Council	New South Wales	Medium

Utility name	Jurisdiction	Type or size group
North East Water	Victoria	Medium
Orange City Council	New South Wales	Small
Port Macquarie Hastings Council	New South Wales	Medium
Power and Water – Alice Springs	Northern Territory	Small
Power and Water – Darwin	Northern Territory	Large
Queanbeyan–Palarang Regional Council	New South Wales	Medium
Queensland Urban Utilities	Queensland	Major
Redland City Council	Queensland	Medium
Riverina Water (W)	New South Wales	Medium
Rous Water	New South Wales	Bulk utility
SA Water Corporation	South Australia	Major
Seqwater	Queensland	Bulk utility
Shoalhaven City Council	New South Wales	Medium
South East Water Ltd	Victoria	Major
South Gippsland Water	Victoria	Small
Southern Downs Regional Council	Queensland	Small
Sydney Water Corporation	New South Wales	Major
Tasmanian Water and Sewerage Corporation	Tasmania	Major
Tamworth Regional Council	New South Wales	Medium
Toowoomba Regional Council	Queensland	Large
Townsville Water (Townsville Regional Council)	Queensland	Large
Tweed Shire Council	New South Wales	Medium
Unitywater	Queensland	Major
Wagga Wagga Council (S)	New South Wales	Medium
Wannon Water	Victoria	Medium
Water Corporation – Albany	Western Australia	Small
Water Corporation – Australind/Eaton	Western Australia	Small
Water Corporation – Bunbury (S)	Western Australia	Small
Water Corporation – Busselton (S)	Western Australia	Small
Water Corporation – Geraldton	Western Australia	Small
Water Corporation – Kalgoorlie–Boulder (W)	Western Australia	Small
Water Corporation – Mandurah	Western Australia	Medium
Water Corporation – Perth	Western Australia	Major
WaterNSW	New South Wales	Bulk utility
Western Downs Regional Council	Queensland	Small
Western Water	Victoria	Large
Westernport Water	Victoria	Small
Whitsunday Regional Council	Queensland	Small
Wingecarribee Shire Council	New South Wales	Small
Yarra Valley Water	Victoria	Major

Appendix D Urban performance indicators

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Asset	Water treatment plants	A1	Number of water treatment plants providing full treatment (no.)
Asset	Other water assets	A2	Length of water mains (km)
Asset	Other water assets	A3	Number of properties served per km of water main (no./km)
Asset	Other water assets	A4	Number of wastewater treatment plants (no.)
Asset	Other water assets	A5	Length of sewer mains and channels (km)
Asset	Sewerage assets	A6	Number of properties served per km of sewer main (no./km)
Asset	Water main breaks	A8	Number of water main breaks, bursts and leaks (no. per 100 km of water mains)
Asset	Water main breaks	IA8	Number of water main breaks, bursts and leaks
Asset	Water losses	A9	Infrastructure leakage index (ILI)
Asset	Water losses	A10	Real losses: service connections (L/service connections/day)
Asset	Water losses	A11	Real losses: water mains (kL/km water main/day)
Asset	Sewerage breaks & chokes	A14	Number of sewer mains breaks and chokes (no. per 100 km of sewer main)
Asset	Sewerage breaks & chokes	A15	Number of property connection sewer breaks and chokes (no. per 1,000 properties)
Customers	Connected properties & population	C1	Population receiving services: water supply (000s)
Customers	Connected properties & population	C2	Number of connected residential properties: water supply (000s)
Customers	Customers	C3	Number of connected non-residential properties: water supply (000s)
Customers	Connected properties & population	C4	Total number of connected properties: water supply (000s)
Customers	Connected properties & population	C6	Total number of connected properties: water supply (000s)
Customers	Connected properties & population	C7	Number of connected non-residential properties: wastewater (000s)
Customers	Connected properties & population	C8	Total number of connected properties: wastewater (000s)
Customers	Water quality complaints	C9	Number of water quality complaints: water supply (per 1,000 properties)
Customers	Water quality complaints	IC9	Number of water quality complaints: water supply
Customers	Water service complaints	C10	Number of water service complaints (per 1,000 properties)
Customers	Water service complaints	IC10	Number of water service complaints
Customers	Sewerage service complaints	C11	Number of sewerage service complaints (per 1,000 properties)
Customers	Sewerage service complaints	IC11	Number of sewerage service complaints
Customers	Billing & account complaints	C12	Number of billing and account complaints: water supply and sewerage (per 1,000 properties)
Customers	Billing & account complaints	IC12	Number of billing and account complaints: water supply and sewerage

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Customers	Total water & sewerage complaints	C13	Number of water and sewerage complaints (per 1,000 properties)
Customers	Total water & sewerage complaints	IC13	Number of water and sewerage complaints
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 supply (minutes)
Customers	Water interruption frequency	C17	Number of unplanned interruptions: water supply (per 1,000 properties)
Customers	Water interruption frequency	IC17	Number of unplanned interruptions: water supply
Customers	Restrictions/legal action for non-payment of water bill	C18	Number of restrictions for non-payment of water bills (per 1,000 properties)
Customers	Restrictions/legal action for non-payment of water bill	IC18	Number of restrictions for non-payment of water bills
Customers	Restrictions/legal action for non-payment of water bill	C19	Number of legal actions taken for non-payment of water bills (per 1,000 properties).
Customers	Restrictions/legal action for non-payment of water bill	IC19	Number of legal actions taken for non-payment of water bills
Environment	Comparative sewage treatment levels	E1	Percentage of wastewater treated to a primary level (%)
Environment	Comparative sewage treatment levels	IE1	Volume of wastewater treated only to a primary level (ML)
Environment	Comparative sewage treatment levels	E2	Percentage of wastewater treated to a secondary level (%)
Environment	Comparative sewage treatment levels	IE2	Volume of wastewater treated only to a secondary level (ML)
Environment	Comparative sewage treatment levels	E3	Percentage of wastewater treated to a tertiary level (%)
Environment	Comparative sewage treatment levels	IE3	Volume of wastewater treated to a tertiary level (ML)
Environment	Biosolids reuse	E8	Percentage of biosolids reused (%)
Environment	Net greenhouse gas emissions	E9	Net greenhouse gas emissions: water supply (tonnes CO ₂ equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	IE9	Net greenhouse gas emissions: water supply (tonnes CO ₂ equivalents)
Environment	Net greenhouse gas emissions	E9.1	Net greenhouse gas emissions: water supply – bulk utility (tonnes CO ₂ equivalents per ML)
Environment	Net greenhouse gas emissions	E10	Net greenhouse gas emissions: wastewater (tonnes CO ₂ equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	IE10	Net Greenhouse gas emissions: wastewater (tonnes CO ₂ equivalents)
Environment	Net greenhouse gas emissions	E10.1	Net greenhouse gas emissions: wastewater – bulk utility (tonnes CO ₂ equivalents per ML)
Environment	Net greenhouse gas emissions	E11	Net greenhouse gas emissions: other (tonnes CO ₂ equivalents per 1,000 properties)
Environment	Net greenhouse gas emissions	IE11	Net greenhouse gas emissions: other (tonnes CO ₂ equivalents)
Environment	Net greenhouse gas emissions	E11.1	Net greenhouse gas emissions: other – bulk utility (tonnes CO ₂ equivalents per ML)
Environment	Net greenhouse gas emissions	E12	Total net greenhouse gas emissions (tonnes CO ₂ equivalents per 1,000 properties)

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Environment	Net greenhouse gas emissions	IE12	Total net greenhouse gas emissions (tonnes CO ₂ equivalents)
Environment	Net greenhouse gas emissions	E12.1	Total net greenhouse gas emissions: bulk utility (tonnes CO ₂ equivalents per ML)
Finance	Revenue	F1	Total revenue – water supply (\$000s)
Finance	Revenue	F2	Total revenue – wastewater (\$000s)
Finance	Revenue	F3	Total Income for the utility (\$000s)
Finance	Revenue	F4	Percentage of residential revenue from usage charges: water supply (%)
Finance	Revenue	F5	Revenue per property: water supply (\$/property)
Finance	Revenue	F5.1	Revenue per ML: water supply – bulk utility (\$/ML)
Finance	Revenue	F6	Revenue per property: wastewater (\$/property)
Finance	Revenue	F6.1	Revenue per ML: wastewater – bulk utility (\$/ML)
Finance	Revenue	F7	Total income per property (\$/property)
Finance	Revenue	F7.1	Total income per ML: bulk utility (\$/ML)
Finance	Revenue from community service obligations (CSOs)	F8	Community service obligations ratio
Finance	Written-down replacement costs of fixed assets	F9	Written-down replacement cost of fixed water supply assets (\$000s)
Finance	Written down replacement costs of fixed assets	F10	Written-down replacement cost of fixed wastewater assets (\$000s)
Finance	Costs	F11	Operating cost per property: water supply (\$/property)
Finance	Costs	IF11	Operating cost: water supply (000s)
Finance	Costs	F11.1	Operating cost per ML: water supply – bulk utility (\$/ML)
Finance	Costs	F12	Operating cost per property: wastewater (\$/property)
Finance	Costs	IF12	Operating cost: wastewater (000s)
Finance	Costs	F12.1	Operating cost per ML: wastewater – bulk utility (\$/ML)
Finance	Costs	F13	Combined operating cost per property: water supply and wastewater (\$/property)
Finance	Costs	F13.1	Combined operating cost per ML: water supply and wastewater: bulk utility (\$/ML)
Finance	Capital expenditure	F14	Capital expenditure: water supply (\$000s)
Finance	Capital expenditure	F15	Capital expenditure: wastewater (\$000s)
Finance	Capital expenditure	F16	Total capital expenditure: water supply and wastewater (\$000s)
Finance	Economic real rate of return	F17	Economic real rate of return: water supply
Finance	Economic real rate of return	F18	Economic real rate of return: wastewater
Finance	Economic real rate of return	F19	Economic real rate of return: water supply and wastewater
Finance	Dividends	F20	Dividend (\$000s)
Finance	Dividends	F21	Dividend payout ratio
Finance	Net debt to equity	F22	Net debt to equity ratio
Finance	Interest cover	F23	Interest cover ratio
Finance	Net profit after tax	F24	Net profit after tax (NPAT) (\$000s)

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Finance	Community service obligations (CSOs)	F25	Community service obligations (\$000s)
Finance	Capital works grants	F26	Capital works grants: water supply (\$000s)
Finance	Capital works grants	F27	Capital works grants: wastewater (\$000s)
Finance	Capital expenditure	F28	Capital expenditure per property: water supply (\$/property)
Finance	Capital expenditure	F28.1	Capital expenditure per ML: water supply – bulk utility (\$/ML)
Finance	Capital expenditure	F29	Capital expenditure per property: wastewater (\$/property)
Finance	Capital expenditure	F29.1	Capital expenditure per ML: wastewater – bulk utility (\$/ML)
Finance	Net profit after tax	F30	Net profit after tax (NPAT) ratio
Health	Water quality compliance	H1	Water quality guidelines (text)
Health	Water quality compliance	H3	Percentage of population where microbiological compliance was achieved (%)
Health	Water quality compliance	H4	Number of zones where chemical compliance was achieved (e.g. 23/24)
Health	Water quality compliance	H4a	Total number of zones
Health	Water quality compliance	H5	Risk-based drinking water management plan externally assessed? (yes/no)
Pricing	Residential tariff structure	P1	Tariff structure: water supply (text)
Pricing	Residential tariff structure	P1.2	Fixed charge: water supply (\$)
Pricing	Residential tariff structure	P1.3	Usage charge: step 1 (\$/kL)
Pricing	Residential tariff structure	P1.4	Usage charge: step 2 (\$/kL)
Pricing	Residential tariff structure	P1.5	Usage charge: step 3 (\$/kL)
Pricing	Residential tariff structure	P1.6	Usage charge: step 4 (\$/kL)
Pricing	Residential tariff structure	P1.7	Usage charge: step 5 (\$/kL)
Pricing	Residential tariff structure	P1.3a	Upper bound of usage: step 1 (kL)
Pricing	Residential tariff structure	P1.4a	Upper bound of usage: step 2 (kL)
Pricing	Residential tariff structure	P1.5a	Upper bound of usage: step 3 (kL)
Pricing	Residential tariff structure	P1.6a	Upper bound of usage: step 4 (kL)
Pricing	Residential tariff structure	P1.7a	Upper bound of usage: step 5 (kL)
Pricing	Residential tariff structure	P1.12	Special levies: water supply (\$)
Pricing	Residential tariff structure	P1.13	Income from special levies retained by the utility: water supply (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	Residential tariff structure	P4	Tariff structure: wastewater (text)
Pricing	Residential tariff structure	P4.1	Fixed charge: wastewater (\$)
Pricing	Residential tariff structure	P4.2	Usage charge: wastewater (\$/kL)
Pricing	Residential tariff structure	P4.3	Special levies: wastewater (\$)
Pricing	Residential tariff structure	P4.4	Income from special levies retained by the utility: wastewater (yes/no)
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P5	Annual residential bill based on 200 kL per annum: wastewater (\$)
Pricing—annual bill	Annual bill (based on average residential annual water supplied)	P6	Typical residential bill: wastewater

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Pricing—annual bill	Annual bill (based on 200 kL residential water supplied)	P7	Total annual residential bill based on 200 kL per annum: water supply and wastewater (\$)
Pricing—annual bill	Annual bill (based on average residential annual water supplied)	P8	Total typical residential bill: water supply and wastewater (\$)
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 (ML)
Water resources	Water transfers	W5	Total volume of water received from other service providers or operational areas within the urban water supply system
Water resources	Water transfers	W5.3	Volume of water, excluding recycled water, received from other service providers or operational areas within the urban water supply system (ML)
Water resources	Sources of water	W6	Volume of recycled water received from other service providers or operational areas within the urban water supply system (ML)
Water resources	Sources of water	W7	Total volume of water sourced (ML)
Water resources	Uses of water supplied	W8	Total volume of water supplied to residential customers (ML)
Water resources	Uses of water supplied	W8.3	Volume of water supplied to residential customers (ML)
Water resources	Uses of water supplied	W9.3	Volume of water supplied to non-residential customers (ML)
Water resources	Uses of water supplied	W9	Total volume of water supplied to non-residential customers (ML)
Water resources	Uses of water supplied	W10.1	Volume of non-revenue water (ML)
Water resources	Uses of water supplied	W11	Total volume of urban water supplied (ML)
Water resources	Production	W11.3	Volume of potable water produced for supply into the urban water supply system (ML)
Water resources	Uses of water supplied	W12	Average volume of residential water supplied per property (kL/property)
Water resources	Uses of water supplied	W13	Volume of water returned as environmental flows from outside of the water supply system (ML)
Water resources	Water transfers	W14.3	Volume of water, excluding recycled water, exported to other service providers or operational areas within the urban water supply system (ML)
Water resources	Uses of water supplied	W14	Total volume of water exported to other service providers or operational areas within the urban water supply system (ML)
Water resources	Uses of water supplied	W15	Volume of recycled water exported to other service providers or operational areas within the urban water supply system (ML)
Water resources	Wastewater collected	W16	Volume of wastewater, excluding trade waste, collected (ML)
Water resources	Wastewater collected	W17	Volume of trade waste collected (ML)
Water resources	Wastewater collected	W18	Total volume of wastewater collected (ML)
Water resources	Wastewater collected	W18.1	Volume of wastewater exported to other service providers or operational areas within the urban wastewater system (ML)

Indicator category	Indicator subcategory	Indicator Code	Indicator name
Water resources	Wastewater collected	W18.2	Volume of wastewater received from other service providers or operational areas within the urban wastewater system (ML)
Water resources	Wastewater collected	W18.3	Volume of wastewater taken through sewer mining (ML)
Water resources	Wastewater collected	W18.4	Volume of wastewater inflow to wastewater treatment plants (ML)
Water resources	Wastewater collected	W18.5	Volume of treated effluent outflow from wastewater treatment plants (ML)
Water resources	Wastewater collected	W19	Average volume of wastewater collected per property (kL/property)
Water resources	Uses of recycled water & stormwater	W20	Volume of recycled water supplied to residential customers (ML)
Water resources	Uses of recycled water & stormwater	W21	Volume of recycled water supplied to non-residential customers (ML)
Water resources	Uses of recycled water & stormwater	W23	Volume of recycled water supplied as environmental flows (ML)
Water resources	Uses of recycled water & stormwater	W25.1	Volume of recycled water supplied to managed aquifer recharge (ML)
Water resources	Uses of recycled water & stormwater	W26	Total volume of recycled water supplied (ML)
Water resources	Uses of recycled water & stormwater	W27	Recycled water as a percentage of total wastewater collected (%)
Water resources	Uses of recycled water & stormwater	W28.4	Volume of urban stormwater supplied to residential customers (ML)
Water resources	Uses of recycled water & stormwater	W28.5	Volume of urban stormwater supplied to non-residential customers (ML)
Water resources	Outflow from plant	W29	Volume of treated wastewater disposals (ML)
Water resources	Outflow from plant	W30	Volume of wastewater losses and spills (ML)
Water resources	Uses of recycled water & stormwater	W31	Volume of water returned to surface water or groundwater from the urban water supply system (ML)

Appendix E CPI indexation

Period	CPI-weighted average	change from previous period	change applied to values
2017–18	112.3	1.9	0.000
2016–17	110.2	1.8	1.019
2015–16	108.3	1.4	1.037
2014–15	106.8	1.7	1.051
2013–14	105.0	2.6	1.070
2012–13	102.3	2.3	1.098
2011–12	100.0	2.4	1.123
2010–11	97.7	3.1	1.149
2009–10	94.8	2.4	1.185
2008–09	92.6	3.1	1.213
2007–08	89.8	3.3	1.251
2006–07	86.9	3.0	1.292
2005–06	84.4	3.2	1.331
2004–05	81.8	2.4	1.373
2003–04	79.9	2.4	1.406

Appendix F Jurisdictional summaries

Jurisdictional summaries are provided 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.

F1 Australian Capital Territory

F1.1 Introduction

The ACT Government's Environment, Planning and Sustainable Development Directorate has several roles in water management within the ACT. It manages strategic water policy, including ACT implementation of national water reform and Murray–Darling Basin matters including *Basin Plan* implementation, 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. ACT water policy is expressed through the *Water Resources Act 2007*.

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*, 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* (for plumbing and sanitation services), and *Public Health Act 1997*.

The *Utilities Act 2000* provides for the Independent Competition and Regulatory Commission (ICRC) to issue licences and determine industry codes. Among other functions, the Utilities Act provides for the Essential Services Consumer Council.

The ICRC determines price directions for water utilities and regulates access agreements. A new price direction incorporating biennial reviews was issued in June 2013 for the next price path period up to 30 June 2018. That price path was reviewed by an independent panel which made a substitute decision in May 2015. An annual review adjustment is made for water and sewerage services. Prices for water and sewerage services are increased in line with the consumer price index (CPI). The second factor is to incorporate the effect of any approved pass-through events on Icon Water's (formerly ACTEW Water) costs in prices in the following year. Prices set for 2016–17 are:

Water prices (\$, current prices), 2016–17 to 2017–18 (\$, current prices)

	2016–17	2017–18	Change (%)
Fixed (\$/year)	101.14	101.48	0.3
Tier 1 (0–200 kL/a) (\$/kL)	2.60	2.61	0.4
Tier 2 (200 kL/a+) (\$/kL)	5.22	5.24	0.4

Sewerage services prices (\$, current prices), 2016–17 to 2017–18

	2016–17	2017–18	Change (%)
Supply charge (\$/year)	523.18	529.38	1.2
Fixture charge non-residential customers (\$/year) ^a	511.66	517.73	1.2

The next determination is due in June 2018 to commence for the period 1 July 2018 to 30 June 2023.

Since November 2015, the ICRC has released a number of issues papers on the pricing of Icon Water's water and sewerage services tariff. During 2016–17, the ICRC released the following reports:

- *Report 5 of 2016: Tariff Review – Draft Report*
- *Report 3 of 2017: Tariff Structure Review*
- *Report 4 of 2017: Issues Paper – Regulated Water and Sewerage prices 2018–2023s*

Icon Water on 1 July 2017 submitted its price proposal for 2018–2023 determination to the ICRC.

Report 5 of 2017 is the ICRC report on maximum prices for water and sewerage services as a price adjustment for 2017–18.

The community was able to make submissions to these reports and there have been public hearings on the price path determination process.

F1.2 Water utilities in the ACT

ACTEW Corporation Limited (ACTEW), 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 ACTEW Board 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 two subsidiary companies.

Icon Water provides water services to over 172,000 connected properties with over 3,300 km of water mains and sewerage services to 171,500 connections.

The ACT Auditor-General is Icon Water's auditor. Private firms provided internal audit services. Icon Water reports regularly to the ACT Government. Strategic planning for the sewage treatment plants culminated in the release of the *Lower Molonglo Water Quality Control Centre Strategic Plan*.

In 2016–17, the ACT received a rainfall amount 611.8 mm (at the airport reading), which is just below the long-term average of 616 mm. The period was marked by dry periods such as June 2017 but good rainfall in March and September.

Water consumption remained similar to that of recent years.

F1.3 Operation of water utilities

ACT Health regulates water quality under the *Territory's 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 2016–17* in accordance with the code in 2017.

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.

F1.4 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 2017–18 to 2020–21 in May 2017.

The *Icon Corporation annual report 2016–17* was provided to the ACT Government in September 2017.

Quarterly reports of progress on the priorities outlined in the statement of corporate intents 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.

F2 New South Wales

F2.1 Introduction

In New South Wales, urban water supply and sewerage services are provided by three State-owned metropolitan water utilities and 92 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 and price regulator for the three major metropolitan water utilities in New South Wales: Hunter Water, Sydney Water, and WaterNSW. IPART also determines maximum prices that Central Coast Council and Essential Energy can charge their customers for the provision of water and sewerage services.

The Department of Industry oversees and monitors regional water utility performance, and is the primary regulator for all of the New South Wales LWUs, including 92 regional LWUs, which serve a total urban population of 1.85 million (with coverage of 98 per cent for water supply and 96 per cent for sewerage). The infrastructure current replacement cost for regional LWUs is \$28.8 billion, and annual revenue is \$1.51 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 New South Wales water utilities.

The State's water utilities have obligations under Australian and New South Wales legislation, including the Australian Government's *Corporations Act 2001*, *Privacy Act 1988*, and *Water Act 2008*, and the following New South Wales legislation: *Water Management Act 2000*, *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 Act 2006*, *Hunter Water Act 1991*, *Sydney Water Act 1994*, and the *WaterNSW Act 2014*.

F2.2 Establishment of water utilities

The three New South Wales metropolitan utilities, (Sydney Water, WaterNSW, and Hunter Water), are created by and derive their responsibilities and areas of operations from their respective Acts (the *Sydney Water Act 1994*, the *WaterNSW Act 2014*, and the *Hunter Water Act 1991*).

The 92 regional urban LWUs derive their responsibilities from and operate mainly under the *Local Government Act 1993*. Four LWUs (Central Coast, Essential Energy, Fish River, and Cobar Water Board) operate as water supply authorities under the *Water Management Act 2000*.

F2.3 Operation of water utilities

The regulatory oversight of water utilities in New South Wales is shared between different agencies. IPART regulates operating licences that have been issued to Sydney Water (under Part 5 of the *Sydney Water Act 1994*), Hunter Water (under Part 5 of the *Hunter Water Act 1991*), and WaterNSW (under Part 2 of the *WaterNSW Act 2014*). The operating licences include obligations relating to water quality, asset management, water quantity, environmental/catchment management, compliance, and performance reporting. IPART also determines the maximum prices these utilities can charge its customers for water services.

IPART conducts major operating audits each year. These 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.

The Department of Industry is the primary regulator of all of New South Wales 92 regional LWUs, under the New South Wales 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 dividend payments to councils' general revenue is conditional on the implementation of the 19 requirements of the Framework.

Under the current Framework each LWU needs to prepare and implement a 30-year Integrated Water Cycle Management (IWCM¹²) strategy, and Strategic Business Plan (SBP¹), alternatively, every 4 years in consultation with their community – that is, if an IWCM strategy is prepared this year, in four years' time a SBP needs to be prepared, and four years after that an IWCM needs to be prepared, and so on.

The IWCM strategy is critical for long-term planning for sustainable and equitable delivery of water supply, sewerage and stormwater services into the future that encompasses water security and quality measures, new infrastructure and asset renewals needs and associated resourcing and financing needs. The strategy '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. The Department of Industry reviews each LWU's IWCM strategy and provides confirmation to each utility that its final IWCM strategy is sound. The key outcomes of the IWCM strategy is a sound 30-year total asset management plan, associated resourcing and financing plan and an emergency response plan. The SBP is effectively a midterm review of the strategy and the underlying assumptions and updates the asset management and financial plans.

Each LWU needs to prepare and implement a risk-based drinking water management system (NSW Health and the Department of Industry 2013, in accordance with the *Australian Drinking Water Guidelines 2011*). The water-quality management systems need to be independently audited.

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 is therefore an integral part of the utility's IWCM strategy.

Proposed construction or modification of a dam, water, or sewage treatment works or for the development of a water-recycling system in NSW requires approval under section 60 of the *Local Government Act 1993*. This ensures that an independent and objective review of the proposed works is undertaken by the Department of Industry, where insights and expertise obtained from the Department of Industry's involvement in overseeing the design and operation of all of regional NSW dams and water and sewage treatment works can be effectively utilised. The review provides assurance that the proposed infrastructure will be fit for purpose and will provide 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 Department of Industry section 90(1) concurrence.

Under section 61 of the *Local Government Act 1993*, the Department of Industry 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.

The Department of Industry conducts nationally certificated operator-training courses for LWU water and sewage treatment works operators. The performance of each of the 536 LWU treatment works is publicly disclosed annually in the *NSW Water supply and sewerage benchmarking report*, together with the water recycling performance of each treatment works.

¹² The later of the integrated water cycle management strategy and strategic business plan is an LWU's peak planning document for water supply and sewerage. These 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.

NSW Health regulates water quality in NSW and administers functions relating to water suppliers (Sydney Water, Hunter Water, and the regional LWUs) under the *Public Health Act 2010*. NSW Health also enters into memorandums of understanding with the metropolitan water utilities (including WaterNSW) 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 programs. NSW Health also conducts the NSW Drinking Water Quality Program,¹³ which tests and monitors the water quality of samples collected by the LWUs in accordance with the *Australian Drinking Water Guidelines 2011*.

F2.4 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 square km. 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 WaterNSW and from the desalination plant at Kurnell before it is treated and delivered to customers.

WaterNSW is a State-owned corporation established in 2015 by the *WaterNSW Act 2014* through the merging of the Sydney Catchment Authority and State Water Corporation. WaterNSW supplies raw water in bulk. The urban component of WaterNSW 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.

There are 92 regional LWUs in NSW, down from the previously reported 105 LWUs due to amalgamations of 25 of the LWUs into 12 new LWUs. The 92 regional LWUs in NSW range in area from 285 square km (Orange) to over 50,000 square km (Central Darling), while the population served ranges from 1,000 (Central Darling) to approximately 324,000 (Central Coast). There are 28 regional NSW LWUs which serve 10,000 or more connected properties.

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 and this reporting is audited each year through the annual operating licence audit. The audit results are presented to the responsible minister. These utilities also report the NWI performance indicators required for the Urban NPR.

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.

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

Department of Industry annually reports the performance of all the New South Wales utilities¹⁴. The LWU data is audited as follows:

- All of the 30 NWI financial performance indicators are independently audited annually for each of the 92 regional LWUs.
- All of the auditable non-financial performance indicators are independently audited every three years for each of the 28 regional NSW utilities that are required to report nationally.

¹³ See Appendixes B (p. 235), D1 (p. 281) and H (p. 344) of the NSW Office Water 2015.

¹⁴ The NSW reference rates manual for valuation of water supply, sewerage, and stormwater assets provides current unit rates and guidance on the valuation and depreciation of such assets. Further information is available from www.water.nsw.gov.au.

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 a comprehensive data validation process.

The NSW Performance Monitoring System functions as a 'one-stop shop' in order to minimise red tape and to avoid duplication in reporting. The Department of Industry provides LWU data to the Bureau of Meteorology annually (for the Urban NPR) and the Australian Bureau of Statistics, as well as for NSW State reporting—the 'State of the Environment Report' and the annual 'NSW performance monitoring and benchmarking report'.

F3 Northern Territory

F3.1 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 economic regulation; the Northern Territory Minister for Essential Services in terms of its relationship to licensed supply and service; and the Department of Health (NT) in terms of its relationship to water quality standards.

The objects of the *Water Supply and Sewerage Services Act 2009* 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
- 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
- that the Minister 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).

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
- 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 Environment and Natural Resources (NT)).

F3.2 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 *Australian Drinking Water Guidelines 2011*.

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 Environment and Natural Resources 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, Planning and Logistics has a major role in protecting water quality through land-use planning in the Territory. In addition, NT legislation such as the *Water Act 1992* and the *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 by customers about non-compliance with the prices outlined in the order.

F3.3 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.

F3.4 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. Some NPR indicators are audited at an aggregate level.

F4 South Australia

F4.1 Establishment of utilities

The SA Department of Environment, Water and Natural Resources and SA Water Corporation are the main agencies responsible for managing South Australia'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 (the Commission) 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.

The Commission 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.

F4.2 Water utilities in South Australia

Any person or entity providing 'water retail services' to SA customers is required to be licensed by the Commission. The Commission 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 Corporation is the only major retailer in SA and there are currently 66 other retailers (mainly council-run operations).

SA Water Corporation 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
- removal and treatment of wastewater.

SA Water Corporation provides drinking water to approximately 766,000 customers, servicing around 99 per cent of the State's drinking water customers. SA Water Corporation also provides sewerage services to approximately 599,000 customers, servicing around 87 per cent of the State's sewerage customers.

The 66 other water and sewerage retailers provide drinking water to approximately 6,000 customers and sewerage services to around 91,000.

F4.3 Operation of water utilities

Section 35 of the *Water Industry Act 2012* empowers the Commission 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.

The Commission made its second independent revenue determination for *SA Water Corporation Act 1994* in July 2016, setting maximum allowed revenues for drinking water and sewerage retail services for the four-year period from 1 July 2016 to 30 June 2020. SA Water Corporation and the South Australian Government are responsible for setting specific prices (such as supply and usage charges for residential and non-residential customers) however, those prices must comply with the Commission's allowed revenues.

A different, proportional approach to price regulation has been applied to other water retailers through a combination of pricing principles and a price-monitoring framework.

Pursuant to Part 4 of the *Essential Services Commission Act 2002*, the Commission is empowered to make industry codes and rules regulating the conduct or operations of a regulated industry or regulated entities. The Commission has devised a Water Retail Code for major retailers that sets out the minimum requirements to be complied with by SA Water Corporation 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 Corporation 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.

F4.4 Performance reporting

The Commission produces annual regulatory performance reports on the water and sewerage industry. The report covers customer service, financial assistance offered by retailers to customers, infrastructure reliability, and financial performance.

SA Water Corporation 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
- the Incident Response Index.

F5 Tasmania

F5.1 Introduction

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.

Industry regulators for the sector are the: Tasmanian Economic Regulator (TER), responsible for licensing, price regulation, and service standards; Director, Environment Protection Authority (EPA), responsible for regulating wastewater treatment plants; Director of Public Health, responsible for regulating water quality and fluoridation; and the Secretary of the Tasmanian Department of Primary Industries, Parks, Water and Environment, responsible for water licence allocations and regulating dam safety.

In addition to the Industry Act, regulatory requirements are imposed by Tasmanian legislation including the *Environmental Management and Pollution Control Act 1994*, the *Public Health Act 1997* and the *Water Management (Safety of Dams) Regulations 2015*.

In March 2017, the Tasmanian Government announced that it would introduce legislation to take over ownership of the Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater) from 1 July 2018. TasWater is the only licensed water utility in the State. Legislation dealing with the proposed transfer of ownership of TasWater and its restructure as a Government Business Enterprise was passed by the House of Assembly (the lower house) on 17 August 2017. The legislation was read for the first time in the Legislative Council (the upper house) on 15 September 2017. A Select Committee was also established by the Legislative Council to inquire into and report on the benefits and challenges of the Government's proposal, which included public hearings. Following debate on 23 November 2017, the Legislative Council voted against the legislation.

F5.2 Establishment of water utilities

Since 1 July 2013, TasWater has owned, controlled and operated water supply and sewerage systems in Tasmania. As the only licensed water utility in the State, 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.

The licensing requirements place a number of regulatory obligations on TasWater 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.

TasWater's objectives, as prescribed by the *Water and Sewerage Corporation Act 2012*, are to:

- efficiently provide water and sewerage functions in Tasmania
- encourage water conservation, the demand management of water and the re-use of water on an economic and commercial basis
- be a successful business and, to this end:
 - operate its activities in accordance with good commercial practice
 - deliver sustainable returns to its members
 - deliver water and sewerage services to customers in the most cost-efficient manner.

F5.3 Operation of water utilities

TasWater is subject to various economic, environmental, public health and customer service regulatory requirements.

The economic regulatory framework, established under the Industry Act, 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 for capital expenditure to improve compliance with regulatory obligations and ensure operational efficiencies.

The EPA Tasmania administers and enforces the provisions of the Environmental Management and Pollution Control Act which 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 quality guidelines and for the fluoridation of drinking water through the application of a code of practice. The Dam Safety Regulator monitors TasWater's performance against its dam safety regulatory obligations and guideline requirements, to ensure that the dams TasWater is responsible for do not pose an unacceptable level of risk to the public.

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 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 (i.e. the estimated demand placed on the system) of each property.

F5.4 Performance reporting

One of the TER's regulatory functions is to monitor and report on the state of the Tasmanian water and sewerage industry¹⁵. The performance indicators reported upon are based on the National Performance Reporting (NPR) Framework with some additional Tasmanian based measures, as set out in the TER's *Tasmanian Water and Sewerage Industry Performance and Information Reporting Guideline*.

TasWater is required to carry out regular independent audits (performance appraisals) to assess:

- its compliance with, and the adequacy of, its management and compliance plans
- the quality, reliability, and conformity of its regulatory information, including performance information.

Independent reviews of TasWater's performance indicators are conducted triennially as required by the NPR Audit Handbook, with approximately one third of indicators assessed each year. The first round of appraisals was conducted between 2013–14 and 2015–16. A second round of appraisals commenced in 2016–17, with the final appraisal of that round due to be completed during 2018–19.

The TER's approach to regulatory reporting is set out in its *Regulatory Reporting Guideline Version 3*. Its approach to managing noncompliance is outlined in its *Compliance Enforcement Policy Version 2*.

F6 Queensland

F6.1 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.

F6.2 Establishment of water utilities

The Queensland Department of Natural Resources, Mines and Energy (DNRME) is the water supply regulator under the *Queensland Water Supply (Safety and Reliability) Act 2008*. Chapter 2 of that Act 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.

¹⁵ The TER's annual water and sewerage state of the industry reports are available on its website, www.economicregulator.tas.gov.au

The Queensland *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* provides specific arrangements to constitute and govern the operations of council-owned distributor retailers and the council water businesses in South East Queensland (SEQ). The Queensland *South East Queensland Water (Restructuring) Act 2007* governs the provision of bulk water services in SEQ by Seqwater.

Chapter 4 of the Queensland *Water Act 2000* provides the administrative and reporting framework for Category 1 water authorities – the Gladstone and Mount Isa Water Boards.

F6.3 Operation of water utilities

Water service providers in Queensland operate within the following framework of State regulation:

Water quality—health

- *Water Supply (Safety and Reliability) Act 2008* (managed by DNRME)
- *Public Health Act 2005* and *Regulations*, *Water Fluoridation Act 2008* and the *Water Fluoridation Regulation 2008* (managed by Queensland Health).

Water quality—discharges to the environment

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

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 DNRME)
- *Environmental Protection Act 1994* and *Regulations* (administered by the Queensland Department of Environment and Science)
- *Local Government Act 2009* and *Regulations* (managed by the Queensland Department of Local Government, Racing and Multicultural Affairs)
- *Plumbing and Drainage Act 2002* and *Queensland Development Code* (managed by the Queensland Department of Housing and Public Works)
- *Planning Act 2016* (managed by Department of State Development, Manufacturing, Infrastructure and Planning).

Pricing

- *South East Queensland Water (Distribution and Retail Restructuring) Act 2009* and *Water Act 2000* (managed by DNRME)
- *Local Government Act 2009* and *Regulations* (managed by Department of Local Government, Racing and Multicultural Affairs)
- *Queensland Competition Authority Act 1997* (managed by Queensland Treasury).

The Department of Environment and Science licenses wastewater treatment plant discharges and requires monitoring and environment reporting. The Queensland Competition Authority is responsible for investigating and recommending pricing for bulk supply from Seqwater and SunWater.

F6.4 Water utilities in Queensland

Queensland has a total of 174 registered water service providers of which 86 are potable water and sewerage service providers and 88 are non-potable water service providers¹⁶. This includes many entities that are not traditional utilities.

¹⁶ Data is supplied by the Queensland Water Supply Regulator, current as at 1 January 2016, https://www.google.com.au/url?url=https://www.DNRME.qld.gov.au/__data/assets/excel_doc/0011/88967/service-provider-register.xlsx&rc=j&frm=1&q=&esrc=s&sa=U&ei=3njhVLeNcm8AWCwLgDw&ved=0CB0QFjAB&usg=AFQjCNFJqIG_2SZVSrtGXD_2g9y4N4VMpw

In approximate terms, 30 per cent of Queensland's urban drinking water connections are serviced by Queensland Urban Utilities, another 30 per cent are serviced by Unitywater and Gold Coast City. The other two providers in SEQ (Logan and Redland City Councils) take SEQ to 70 per cent of the connections in the State. The remaining 15 providers covered in this report take the total coverage of NPR reporting to 95 per cent of the State. The remaining 5 per cent of connections are served by 58 small retail service providers which are covered by the Queensland Government's performance monitoring framework using a subset of NPR indicators.

F6.5 Performance reporting

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. Service providers are now required to consult on and publish customer service standards as well as publish annual reports.

DNRME 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 DNRME 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. Larger providers (those with over 10,000 connections) are required to report to NPR against a wider set of indicators.

Monitoring and compliance

The *Water Supply (Safety and Reliability) Act 2008* outlines a process for DNRME 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

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

DNRME administers the NPR process for Queensland.

F7 Victoria

F7.1 Introduction

The Victorian Department of Environment, Land, Water and Planning (DELWP) has overall governance oversight, on behalf of the Victorian Minister for 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; Health and Human Services (DHHS), regarding water quality; the Victorian Environment Protection Authority (EPA), (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 (2015), the Water Industry Regulatory Order 2014, and the State Environment Protection Policy (SEPP) (Waters of Victoria) also impose some compliance and reporting obligations.

F7.2 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 section 4I of the *Water Industry Act 1994*, water utilities are subject to statements of obligations, issued by the Minister for 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.

F7.3 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 utilities' proposed strategic directions and business management activities in terms of their potential for financial risk to the utility and its implications for the Victorian 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 utilities. The Regulations establish an auditing framework¹⁷. 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 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 utilities 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 utilities are subject to the SEPP (Waters of Victoria) schedules, which are developed and administered by the EPA. The schedules require wastewater treatment plant operators to ensure that the sustainable re-use of treated effluent and biosolids is maximised wherever possible.

Water utilities are also subject to EPA works approval permits before construction of new treatment plants or major alterations can begin¹⁸.

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
- require regulated businesses to provide information.

F7.4 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. The three retailers also provide some localised sewerage services to their customers not connected to the Melbourne sewerage network.

¹⁷ 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

¹⁸ 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

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 Water¹⁹, and Westernport Water).

Lower Murray Water also provides rural water services such as irrigation and stock and domestic supplies. GWMWater and Coliban Water also provide a piped rural water service for stock and domestic use.

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 bulk and retail services.

Although owned by the Victorian 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 Minister for Water. The board has a range of responsibilities, including:

- setting the entity's strategic direction and steering the entity
- setting objectives and performance targets
- 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 water utility's board appoints a managing director who is responsible for the day-to-day management of the water utility under delegation from the board.

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

The *Financial Management Act 1994* is the principal legislation governing financial reporting by water utilities. The Victorian Minister for Finance (through DTF) issues financial reporting directions under the *Financial Management Act 1994* for the preparation of annual reports. The Minister for Water issues ministerial reporting directions to water utilities for performance reporting and other specific reporting requirements as part of their annual reports. DELWP is responsible for reviewing the annual reports of the water utilities and advising the Minister for Water on 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. Some data reported in the NPR for Victorian water utilities are 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 five years. The Minister for Water (through DELWP) issues guidelines to the water utilities for the preparation of the corporate 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 for Water and the Treasurer, respectively.

¹⁹ Whilst Western Water provides its own bulk and retail services, it also draws on Melbourne Water's bulk water services.

Price submissions (previously called water plans) are generally required every five years²⁰. They include details about proposed revenue requirements and tariffs and pricing structures and are assessed by the ESC. The process requires extensive customer engagement by the water utilities and the ESC.

F7.5 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 (<https://www.esc.vic.gov.au/water/sector-performance-and-reporting/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
- 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 (<https://www.esc.vic.gov.au/water/water-codes-and-guidelines>).

F8 Western Australia

F8.1 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*, the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the *Health Act 1911* (which is being replaced by the new *Public Health Act 2016* over the next three–five years), the *Environmental Protection Act 1986*, and the *Planning and Development Act 2005*.

F8.2 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.

²⁰ Melbourne Water and Goulburn–Murray Water's price determinations for the 3-year period 2013–10 to 2015–16 concluded on 30 June 2016. The new pricing decision for these two water utilities commenced on 1 July 2016 and will cover a 5-year period for Melbourne Water and a 4-year period for Goulburn Murray Water.

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.

F8.3 Operation of water utilities

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

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.

The Environmental Protection Authority is an independent adviser to the 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 the 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. The final decision on pricing, however, rests with the WA 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.

F8.4 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 non-potable 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 non-potable 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 non-potable water services to Kalgoorlie–Boulder, located 600 km east of Perth in the Goldfields district. The non-potable 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, Peel Water, WA Sewage, and four small regional local governments²¹.

F8.5 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.

²¹ Between April and May 2017, the WA Minister for Water exempted 16 small regional local government sewerage and non-potable water suppliers from being licensed. The exemption is for a period of five years.

