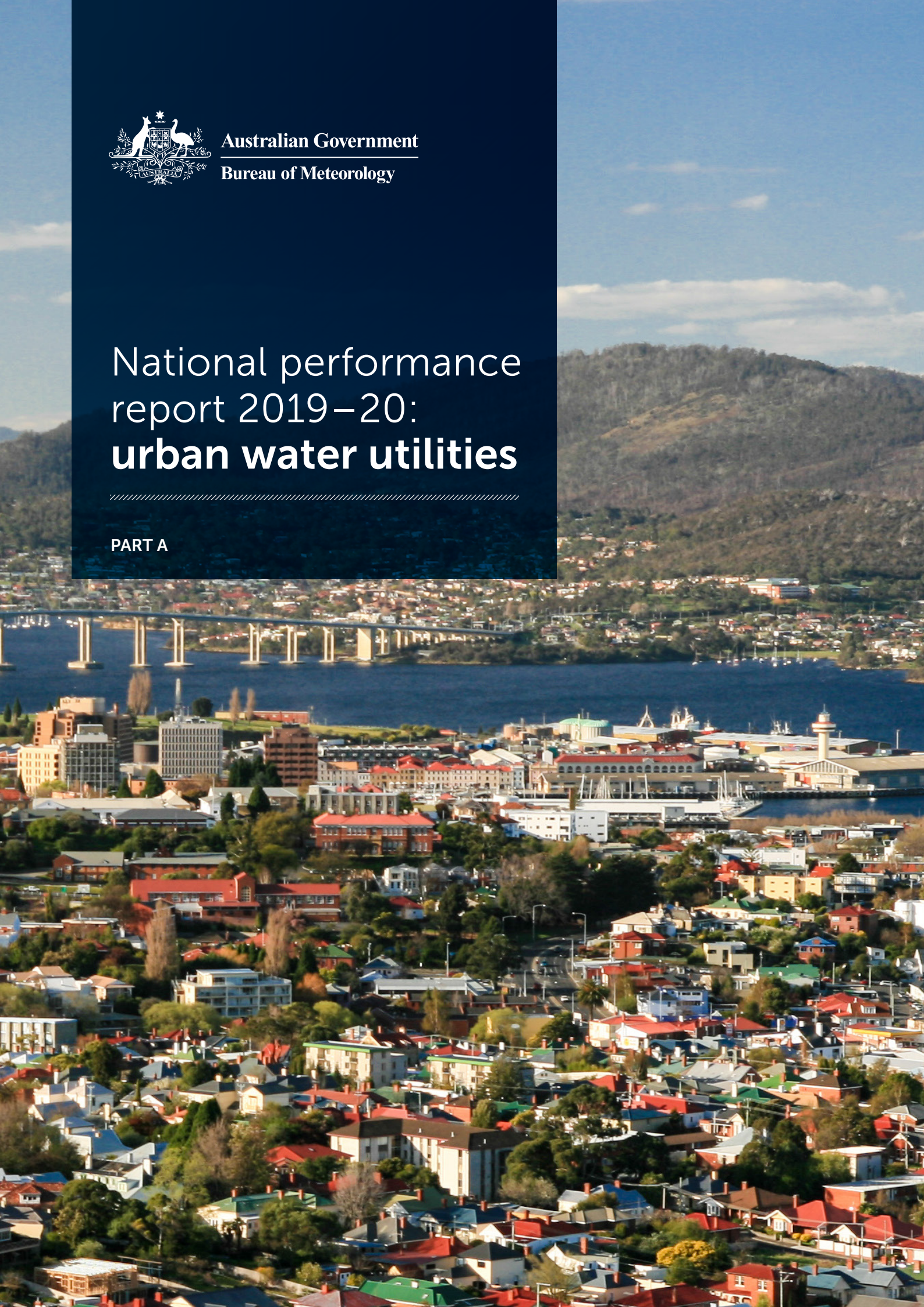




Australian Government  
Bureau of Meteorology

# National performance report 2019–20: **urban water utilities**

////////////////////  
PART A





## Publication details

*National performance report 2019–20: urban water utilities, part A*  
February 2021

ISBN: 978-1-925738-21-6  
ISSN: 1837-7572

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

[water@bom.gov.au](mailto:water@bom.gov.au)



With the exception of logos and photography, this publication is licensed under a Creative Commons Attribution 3.0 Australia License. The terms and conditions of the licence are available at <http://creativecommons.org/licenses/by/3.0/au/>

© Commonwealth of Australia (Bureau of Meteorology) 2021

Cover image: Aerial view of Hobart, Tasmania.

An appropriate citation for this publication is: Bureau of Meteorology 2021, *National performance report 2019–20: urban water utilities, part A*, Bureau of Meteorology, Melbourne.

## Acknowledgements

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

Data coordination was undertaken by the Bureau of Meteorology, the Independent Pricing and Regulatory Tribunal of New South Wales (for Sydney Water Corporation, Hunter Water Corporation, and WaterNSW); the Department of Planning, Industry and Environment (for all other New South Wales utilities); the Department of Regional Development, Manufacturing and Water (for Queensland utilities); the Economic Regulation Authority and Department of Water and Environmental Regulation (for Western Australian utilities); the Essential Services Commission of South Australia (for SA Water Corporation); the Environment, Planning and Sustainable Development Directorate (ACT) (for Icon Water Limited); the Department of Treasury and Finance (Northern Territory) (for Power and Water); and the Office of the Tasmanian Economic Regulator (for TasWater).

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

## Disclaimer

This report has been produced by the Bureau of Meteorology; the Water Services Association of Australia; and the parties to the National Water Initiative (NWI), being the Australian Government and the governments of New South Wales, Victoria, Queensland, South Australia, the Australian Capital Territory, the Northern Territory, Tasmania, and Western Australia (the contributors). These contributors accept no responsibility for the completeness or accuracy of any of the information contained in this report and make no representations about its suitability for any particular purpose. Users of this report should make their own judgements about those matters. To the extent permitted by law, the contributors exclude all liability for loss or damage arising from the use of or reliance on the information contained in this report, whether or not caused by any negligence or wrongdoing on the part of the contributors or their agents.



Australian Government  
Bureau of Meteorology

# National performance report 2019–20: urban water utilities

## PART A



# Contents

<b>A guide to this report</b>	<b>6</b>
Key terms and abbreviations	6
Interpreting 'overview of results' tables	7
Interpreting data and commentary	8
<b>Executive summary</b>	<b>9</b>
Despite some rainfall relief, urban water use increased after another warm and dry year	9
Increased reliance on desalination and groundwater to meet water demand	9
Typical water bills decreased slightly	9
Increasing trend in combined capital expenditure on water and sewerage continued	10
<b>1 Introduction</b>	<b>11</b>
1.1 Context and overview	11
1.2 Reporting	11
1.3 Locations of utilities	12
1.4 Key drivers	12
1.4.1 Rainfall	12
1.4.2 Temperature	14
1.4.3 Utility size	15
1.4.4 Sources of water	15
<b>2 Major urban centres</b>	<b>19</b>
2.1 Water resources	19
2.1.1 Volume of water sources—W1, W2, W3.1, W26	19
2.1.2 Average volume of residential water supplied per property—W12	20
2.1.3 Total volume of recycled water supplied—W26	21
2.2 Pricing	21
2.2.1 Total typical residential bill—P8	21
2.3 Environment	22
2.3.1 Total net greenhouse gas emissions per 1,000 properties—E12	22
2.4 Finance	23
2.4.1 Combined operating cost per property: water supply and wastewater—F13	23
2.4.2 Total capital expenditure: water supply and wastewater—F16	23
2.5 Customers	24
2.5.1 Total water and sewerage complaints per 1,000 properties—C13	24
2.5.2 Average duration of an unplanned interruption: water supply—C15	25
<b>3 Water resources</b>	<b>26</b>
3.1 Average annual residential water supplied—W12	26
3.1.1 Key findings	26
3.1.2 Results and analysis—Major utility group	27
3.2 Total recycled water supplied—W26	27
3.2.1 Key findings	29
3.2.2 Results and analysis—Major utility group	29
<b>4 Pricing</b>	<b>30</b>
4.1 Typical residential bill: water supply and wastewater—P8	30
4.1.1 Key findings	30
4.1.2 Results and analysis—Major utility group	31
4.2 Annual residential bill based on 200 kL per annum: water supply and wastewater—P7	33
4.2.1 Key findings	33
4.2.2 Results and analysis—Major utility group	33



<b>5</b>	<b>Finance</b>	<b>35</b>
5.1	Total capital expenditure: water supply and wastewater—F16	35
5.1.1	Key findings	35
5.1.2	Results and analysis—Major utility group	36
5.2	Capital expenditure per property: water supply (F28) and wastewater (F29)	36
5.2.1	Key findings	36
5.2.2	Results and analysis—Major utility group	37
5.3	Combined operating cost per property: water supply and wastewater—F13	39
5.3.1	Key findings	39
5.3.2	Results and analysis—Major utility group	40
5.4	Community service obligations ratio—F8	40
5.4.1	Key findings	42
5.4.2	Results and analysis—Major utility group	42
<b>6</b>	<b>Customer</b>	<b>43</b>
6.1	Average duration of an unplanned interruption: water—C15	43
6.1.1	Key findings	43
6.1.2	Results and analysis—Major utility group	45
6.2	Number of water and sewerage complaints per 1,000 properties—C13	45
6.2.1	Key findings	45
6.2.2	Results and analysis—Major utility group	47
6.3	Percentage of calls answered by an operator within 30 seconds—C14	47
6.3.1	Key findings	47
6.3.2	Results and analysis—Major utility group	49
<b>7</b>	<b>Asset</b>	<b>50</b>
7.1	Number of water main breaks bursts and leaks per 100 km of water mains—A8	50
7.1.1	Key findings	50
7.1.2	Results and analysis—Major utility group	50
7.2	Number of sewer mains breaks and chokes per 100 km—A14 and property connection sewer breaks and chokes per 1,000 properties—A15	51
7.2.1	Key findings	53
7.2.2	Results and analysis—Major utility group	53
7.3	Real losses: service connections—A10	54
7.3.1	Key findings	54
7.3.2	Results and analysis—Major utility group	57
<b>8</b>	<b>Environment</b>	<b>59</b>
8.1	Total net greenhouse gas emissions per 1,000 properties—E12	59
8.1.1	Key findings	60
8.1.2	Results and analysis—Major utility group	60
<b>9</b>	<b>Health</b>	<b>61</b>
9.1	Percentage of population for whom microbiological compliance was achieved—H3	61
9.1.1	Key findings	61
9.1.2	Results and analysis—Major utility group	61
	<b>Appendix A Individual utility group tables</b>	<b>62</b>
	<b>Appendix B Audit framework</b>	<b>99</b>
	<b>Appendix C Utilities reporting</b>	<b>101</b>
	<b>Appendix D Urban performance indicators</b>	<b>103</b>
	<b>Appendix E CPI indexation</b>	<b>109</b>
	<b>Appendix F Jurisdictional summaries</b>	<b>110</b>

# 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 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);
- Goldenfields Water County Council = Goldenfields Water (W);
- Queanbeyan–Palerang Regional Council = Queanbeyan; and
- Queensland Bulk Water Supply Authority = Seqwater.

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 in brackets 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.<sup>1</sup>

## 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.

<sup>1</sup> City West Water, South East Water Ltd, Yarra Valley Water Corporation, Western Water, Central Gippsland Water, Barwon Water, South Gippsland Water, and Westernport Water



## Reporting year

References to the 'reporting year' or '2019–20' refer to the reporting year between 1 July 2019 and 30 June 2020 inclusive.

## Missing or unavailable data

Missing or unavailable data 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.

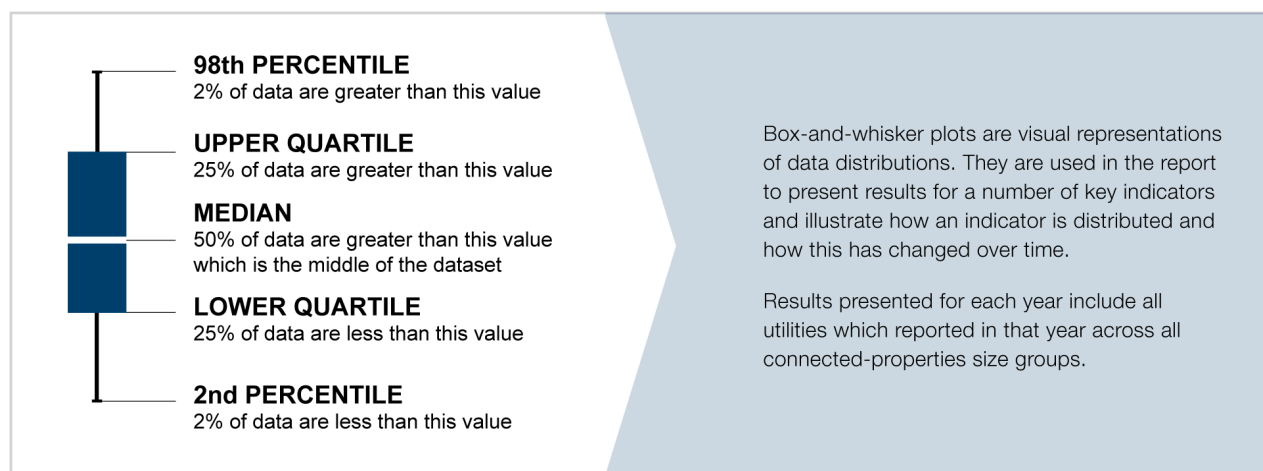
Size group	Range		Number of utilities with increase/decrease from previous year		Median or Total		Change from previous year (%)
	High	Low	Increase	Decrease	Previous year	Current year	
Major	249	140	10	1	158	162	3
	WC (Perth)	Logan					
Large	454	130	9	1	164	181	10
	P&W (Darwin)	Toowoomba					
Medium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

- 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 that did not report in both years are not included in this column. The figures do not include utilities that reported no change from the previous year.
- 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. The median value is calculated using data from all utilities reporting against this indicator in that year. 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 present the sum (total) of the results. The total value for a year is the sum of the results for that year of all the utilities that reported in both years.
- 4 This column shows the percentage change between the current and previous years and is rounded to the nearest integer, except in cases where additional precision is required.
- 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 data and commentary

The report uses 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.

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 urban water utility performance reporting framework: indicators and definitions handbook, January 2018*. The median is the preferred metric for the reporting dataset, as outlier results can affect the average (mean), which can skew results towards the outliers.
- The median is the value at which 50 per cent of utilities fall above and 50 per cent fall below that point. 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 of the water main.
- Single-service utilities are only included in the analysis of an indicator when a comparison can be made on a like-for-like basis with utilities that provide both water and sewerage services. 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 2019–20 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 2018–19 reporting year to 2019–20 with figures rounded to the nearest integer, except in cases where additional precision is required.



# Executive summary

The *National performance report 2019–20: urban water utilities* (2020 Urban NPR) compares the performance of 80 utilities and councils (utilities) and five bulk water authorities providing urban water services to over 23 million people across Australia. The 2020 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 fifteenth in the series, and the seventh to be produced by the Bureau.

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

## Despite some rainfall relief, urban water use increased after another warm and dry year

Despite some rainfall relief in eastern Australia in the early part of 2020, urban water use rose by 2 per cent following a second consecutive year of below-average annual rainfall. The 2019–20 reporting year was the sixth driest on record, and the 2018–20 period was the second-driest 24-month period on record. This was despite heavy rainfall in February 2020 which caused flooding in parts of Queensland and resulted in the Sydney region recording its highest monthly rainfall total in more than 60 years. In 2019–20, Australia experienced its third-warmest reporting year on record with the warm and dry conditions increasing demand for water in Australia's urban areas.

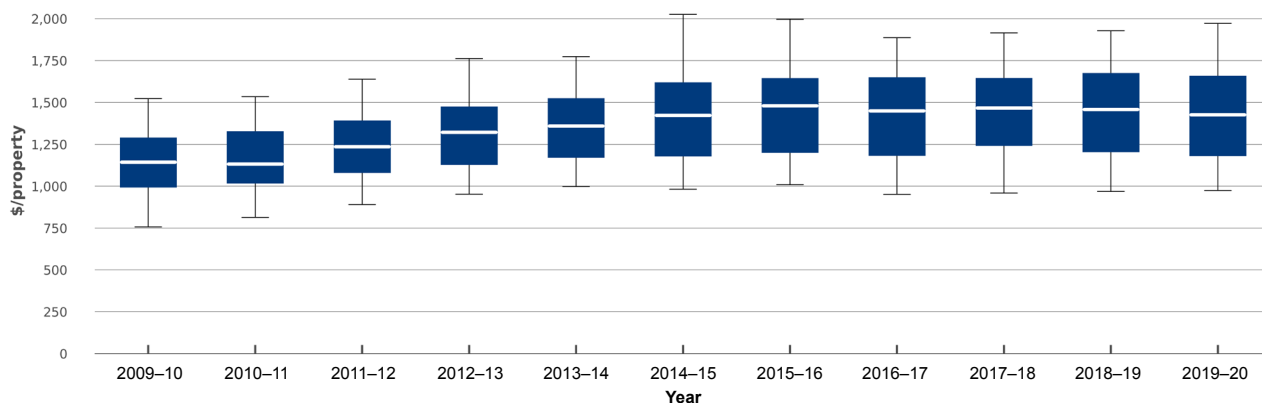
## Increased reliance on desalination and groundwater to meet water demand

Low surface water availability saw an increased reliance on desalination to supply water to major urban centres in 2019–20. All states which have desalination plants reported a significant increase in production compared to 2018–19; Sydney and Adelaide increased the volume of water sourced from desalinated marine water by over eight times compared to the previous year.

Groundwater was an increasingly important source for urban users, particularly in Perth and areas outside the major urban centres. Water sourced from groundwater increased by 12 per cent nationally, and by 11 per cent in Perth, compared to 2018–19. In New South Wales, water sourced from groundwater increased by 62 per cent in response to lower surface water availability.

## Typical water bills decreased slightly

For a fifth consecutive year, residential bills remained steady. The national median bill decreased by 2 per cent since 2018–19 (Figure 1) despite an increase in water demand related to the warm and dry conditions experienced during 2019–20. Water bill changes varied between the main urban centres; utilities in South East Queensland and Perth reported moderate increases of around 2.5 per cent and Darwin and Adelaide utilities reported slight decreases of about 1.5 per cent.

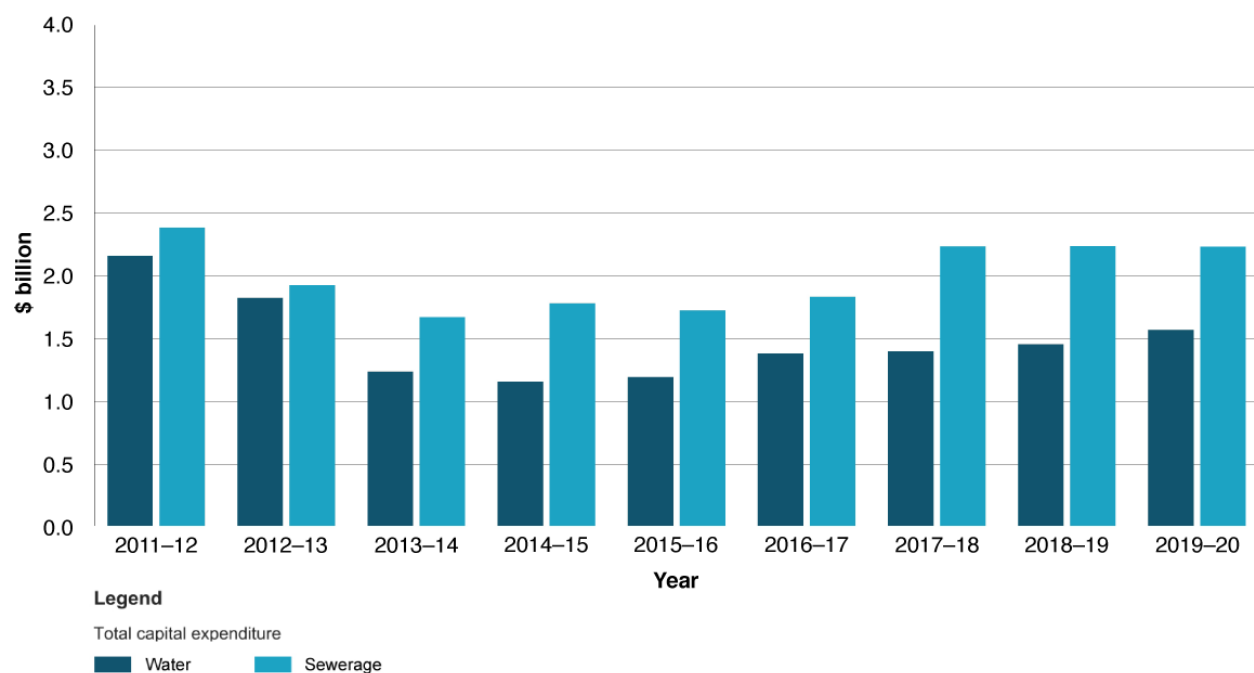


**Figure 1** Typical residential bill: water supply and sewerage (\$), 2009–10 to 2019–20.

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

## Increasing trend in combined capital expenditure on water and sewerage continued

In real terms, total capital expenditure on water supply and sewerage services by utilities grew for the fifth consecutive year, increasing by \$225 million (5 per cent) from 2018–19 to 2019–20. The investments have been mainly driven by utilities in the major water utilities group.



**Figure 2** Total capital expenditure: water supply and sewerage (\$ billion).<sup>a</sup>

<sup>a</sup> Total is for utilities that reported all 10 years and excludes bulk water utilities

For more about capital expenditure see Chapter 5 Finance and Tables A5, Appendix A.



# 1 Introduction

## 1.1 Context and overview

This *National performance report 2019–20: urban water utilities* (2020 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.<sup>2</sup>

The 2020 Urban NPR compares the performance of 80 utilities and councils (utilities) and five bulk water authorities providing urban water and sewerage services to over 23 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 on and analysis of 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 methods, 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 2020 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 2020 Urban NPR (including five bulk water authorities) are listed in Appendix C. Table 1.1 summarises the utility size groups by jurisdiction.

Seventy-one of the 85 utilities included in this report provide both reticulated water supply and wastewater (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.

**Table 1.1 Utilities reporting in the 2020 Urban NPR by size group and jurisdiction.**

Jurisdiction	Bulk	Major	Large	Medium	Small	Total
Australian Capital Territory		1				1
New South Wales	2	3		14	11	30
Northern Territory			1		1	2
Queensland	2	4	4	5	7	22
South Australia		1				1
Tasmania		1				1
Victoria	1	4	6	5	1	17
Western Australia		1	1		9	11
<b>Total</b>	<b>5</b>	<b>15</b>	<b>12</b>	<b>24</b>	<b>29</b>	<b>85</b>

<sup>2</sup> National Water Initiative clauses 75–76

## 1.3 Locations of utilities

Figure 1.1 shows the administrative boundaries of all utilities reporting data for the 2020 Urban NPR. Further details about the utilities are available from the relevant utility websites.

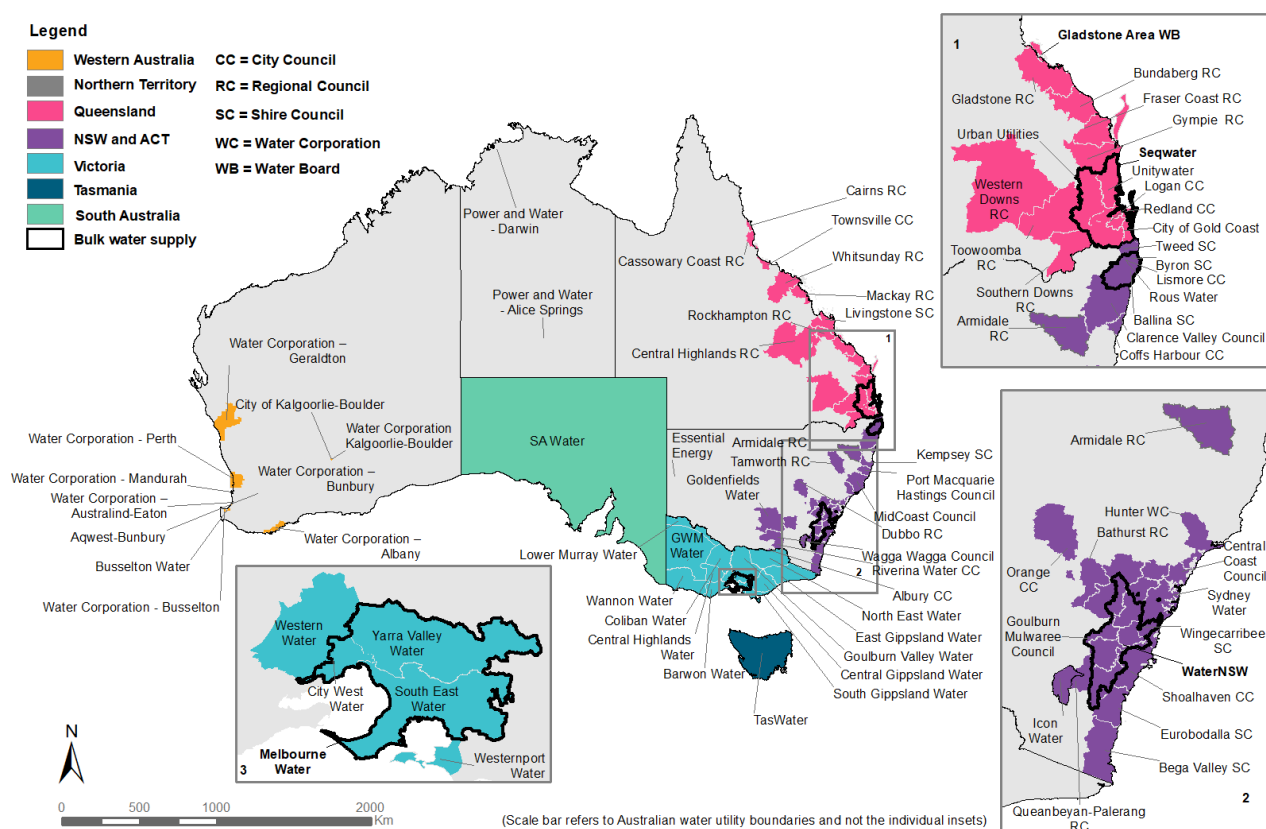


Figure 1.1 The administrative boundaries of all utilities reporting data for 2019–20.

## 1.4 Key drivers

Key drivers of water utility performance presented in the 2020 Urban NPR include rainfall, temperature, utility size, and sources of water.

Other factors—network density, soil types, the age and condition of infrastructure, impacts of the Covid-19 pandemic, and government policy and regulation—also affect performance but are not discussed in detail.

### 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-independent 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.

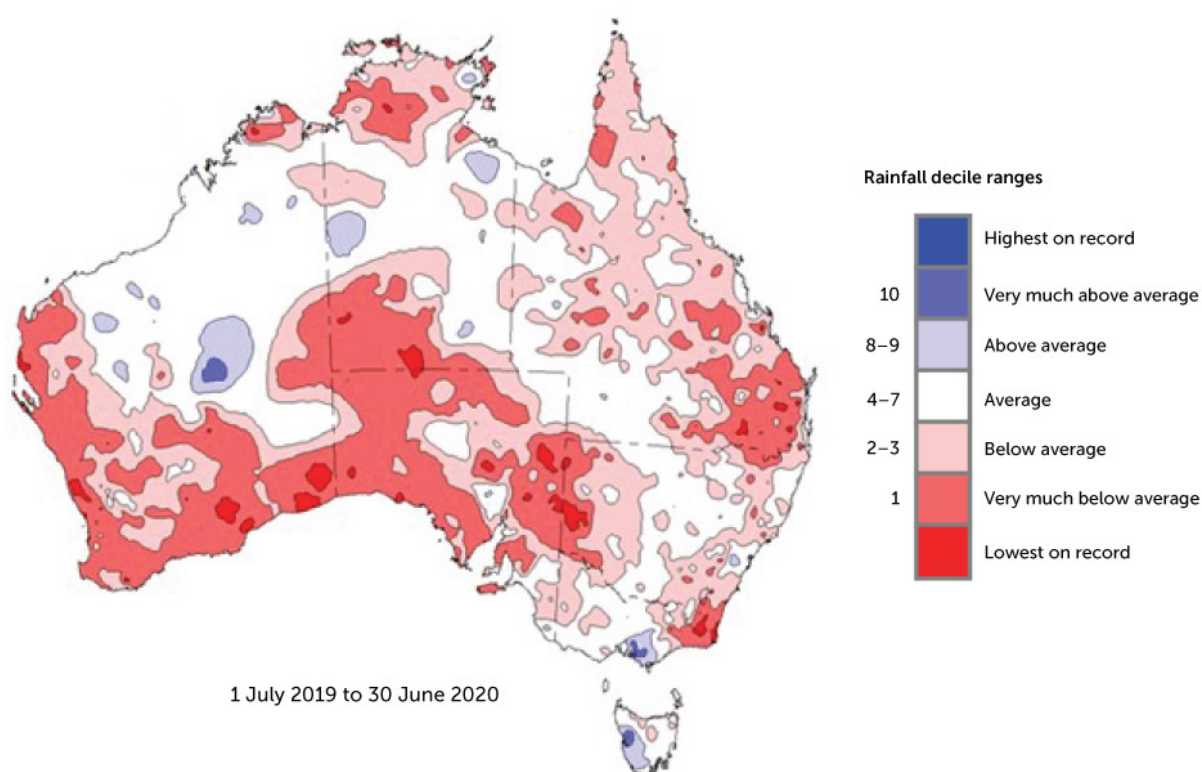


- Wet or dry conditions can affect decisions about the water sources used (Water resource indicators W1–W7). Persistent dry conditions can trigger thresholds for production from desalination plants and the use of groundwater and recycled water sources, which affect the operating costs of utilities (Finance indicators F11–F13).
- High 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 indicators E10, 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.

In 2019–20, rainfall was below average across much of Australia (Figure 1.2); it was the sixth-driest year on record. This was the second consecutive year of below-average annual rainfall, and the past 2 years were Australia’s second-driest 24-month period on record.

Rainfall was very low during the latter half of 2019. The below-average rainfall throughout July–December 2019 was due to a positive phase of the Indian Ocean Dipole, one of the strongest on record, that influenced Australia’s climate during this period (for more information see the Bureau’s 2019–20 Climate Report, <http://www.bom.gov.au/climate/updates/articles/a037.shtml>). There was some rainfall relief during the early part of 2020 as tropical moisture associated with warmer-than-average sea surface temperatures off the northwest coast of Australia moved across the continent and combined with southern cold fronts to produce high rainfall across most of southern Australia.

Heavy rainfall associated with a coastal trough that impacted eastern Australia in early February 2020 contributed to well-above-average rainfall for that month. In the Sydney region, some areas recorded more than 400 mm (almost half the annual average) in one week during the event. The total February rainfall was the region’s highest monthly total in more than 60 years.



**Figure 1.2 Rainfall decile map for 2019–20 (based on all years of data since 1900).**

### 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 available for supply.
- 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 can contribute 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).

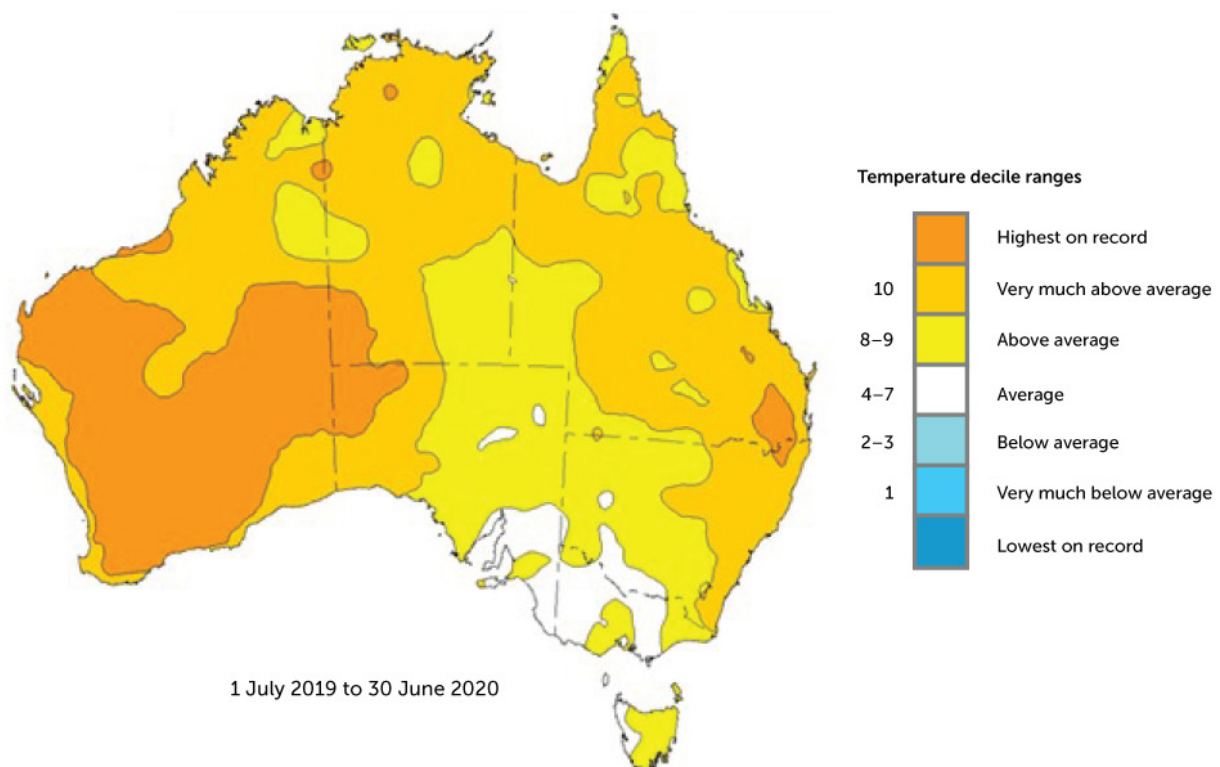


Figure 1.3 Mean daily temperature deciles for 2019–20 (based on all years of data since 1910).

In 2019–20, Australia experienced its third-warmest year on record, behind only 2015–16 and 2018–19. The consecutive very warm years resulted in Australia's warmest 24-month and 36-month periods on record (for more information see the Bureau's 2019–20 Climate Report, <http://www.bom.gov.au/climate/updates/articles/a037.shtml>).

Daytime temperatures were particularly warm in 2019–20. Large areas in the west and east of the country experienced their highest mean maximum temperature on record. Night-time temperatures tended to be closer to average but were still the highest on record over parts of Western Australia. Some long-term sites in Western Australia had their warmest days and warmest nights on record, including Kalgoorlie–Boulder, Meekatharra, and Onslow airports.

Overall, mean daily temperatures were above to very much above average across most of Australia (Figure 1.3), largely driven by the warmer-than-average daytime temperatures. Mean daily temperatures were the highest on record over the entire southwestern part of Australia.

### 1.4.3 Utility size

The size of a 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 several 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 (to meet 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 the 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.

Figure 1.4 shows the annual supply from different sources of water, and the total supply, for utilities in each State and Territory from 2014–15 to 2019–20.

- Water sourced from surface waters (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 groundwater (Water resource indicator W2) and desalinated marine water (Water resource indicator W3.1).

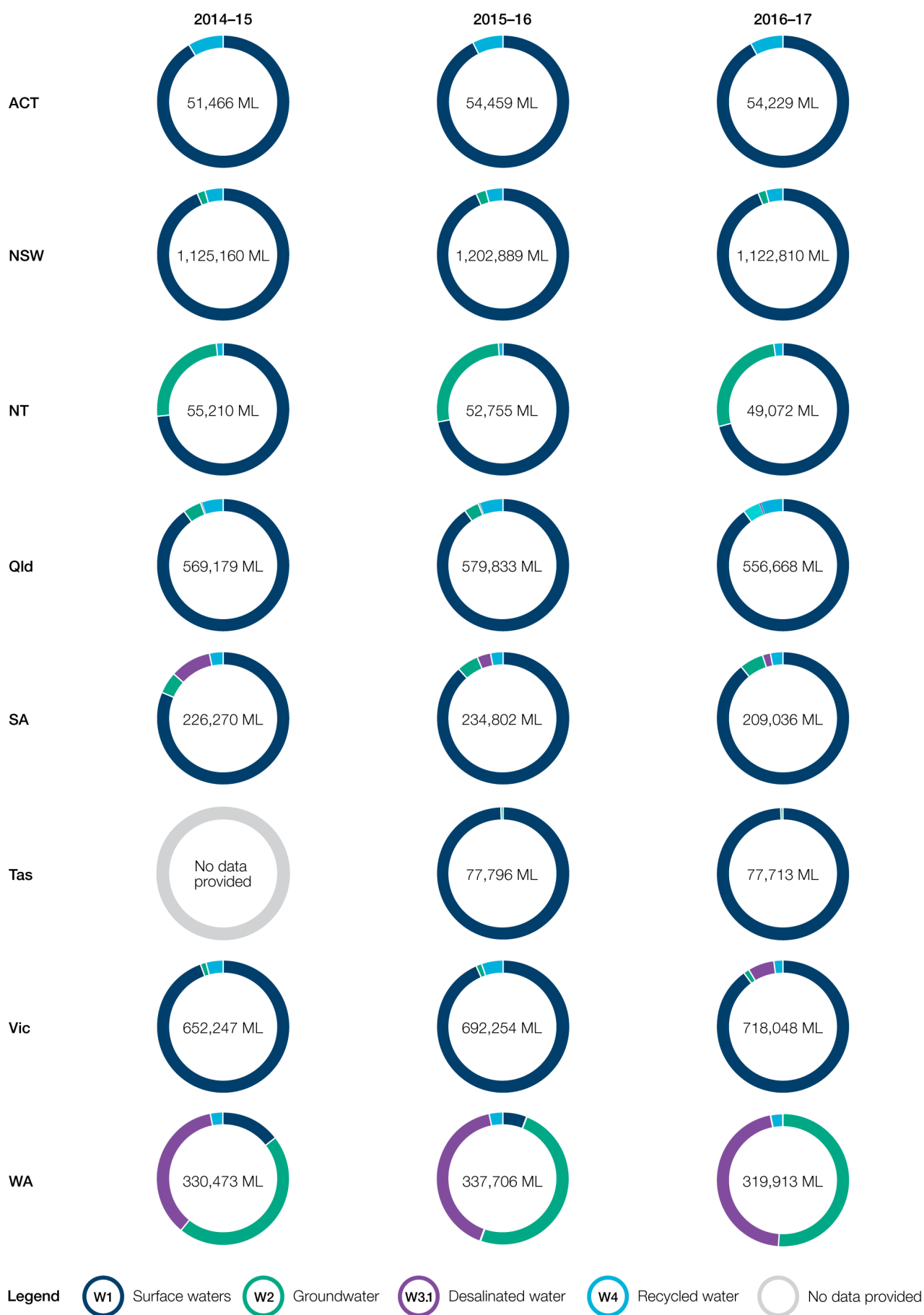


Figure 1.4a Water source breakdown (W1, W2, W3.1, W4/W26) in each State and Territory, 2014–15 to 2016–17.



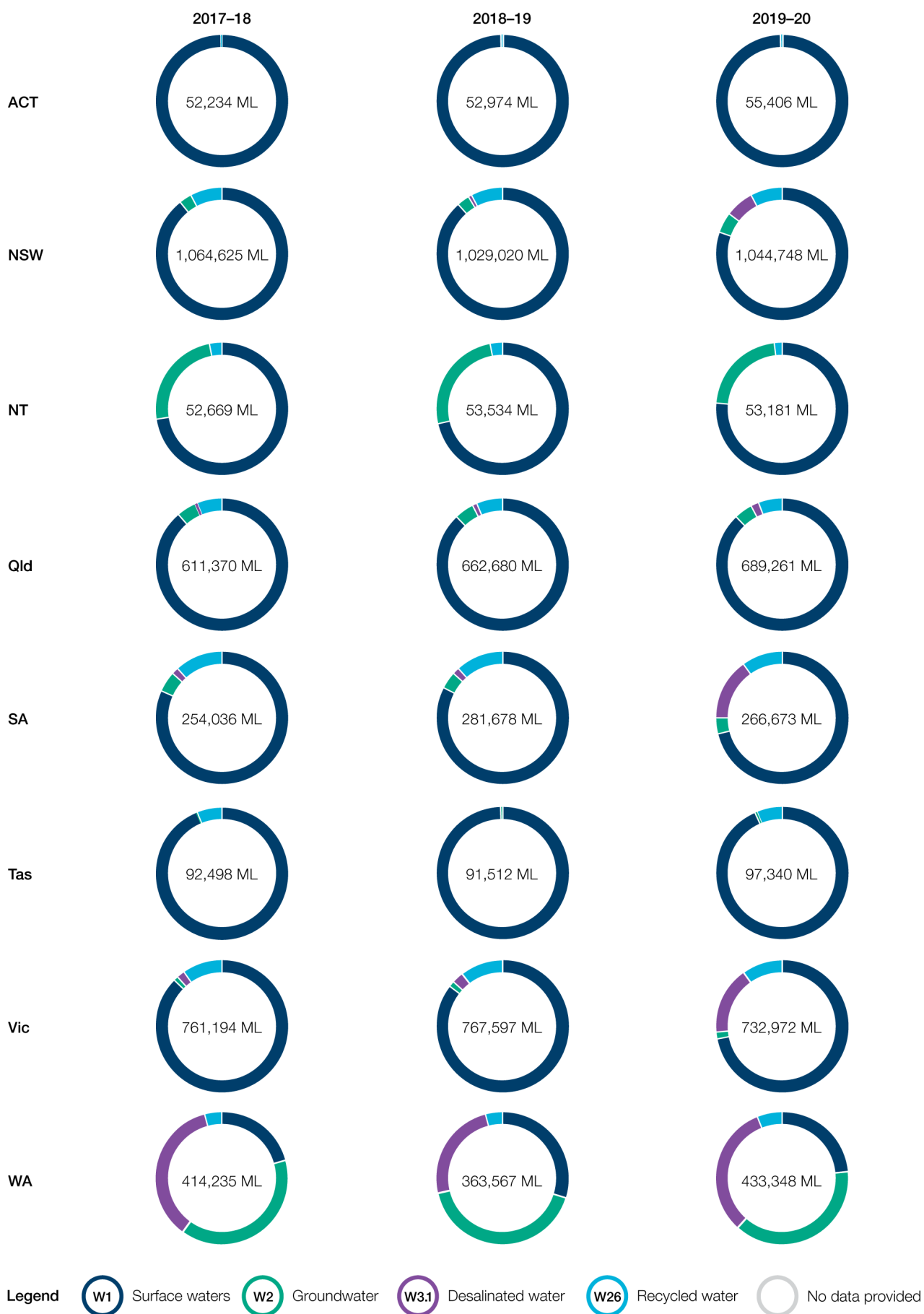


Figure 1.4b Water source breakdown (W1, W2, W3.1, W4/W26) in each State and Territory, 2017-18 to 2019-20.

- In 2019–20, total water sourced across the country from all four categories increased by 2 per cent following a second consecutive year of below-average annual rainfall and very warm temperatures.
- Total surface water extraction decreased across the country; Victoria and South Australia reported the highest percentage decrease from the 2018–19 reporting year (19 per cent and 18 per cent, respectively).
- Volume of water sourced from groundwater across the country increased by 12 per cent from 2018–19. New South Wales reported the highest percentage increase (62 per cent).
- Volume of water sourced from desalinated water in 2019–20 increased significantly from 2018–19 in all states with desalination plants. This increase coincided with the drought and declining water storages. New South Wales sourced 7 per cent of its total water from desalinated water in 2019–20 compared to 0.8 per cent in 2018–19. In South Australia and Victoria, desalinated water accounted for 15 per cent and 16 per cent of total water sourced respectively in 2019–20 (up from 1.8 per cent and 3 per cent in 2018–19). As in previous years, Western Australia sourced the highest volume of water from desalination.
- Total volume of recycled water supplied across the country increased slightly (by 1.2 per cent) from 2018–19. Western Australia reported the highest percentage increase (78 per cent) from last year and the Northern Territory the highest percentage decrease (38 per cent). As in previous years, New South Wales and Victoria supplied the highest volume of recycled water.

## 2 Major urban centres

This chapter provides comparative tables and figures for a selection of key indicators for major urban centres.

The figures and tables are compiled using data supplied by the utilities detailed in Table 2.1.

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 sources for capital city analyses.**

Major urban centre	Utility (B denotes bulk supplier)
Perth	Water Corporation – Perth
Adelaide	SA Water Corporation
Canberra	Icon Water Limited
South East Queensland	Queensland Bulk Water Supply Authority (Seqwater) (B), Urban Utilities, Unitywater, City of Gold Coast, Redland City Council, and Logan City Council
Sydney	WaterNSW (B), Sydney Water Corporation
Melbourne	Melbourne Water (B), City West Water, South East Water Ltd, Yarra Valley Water Corporation
Hobart	No data—TasWater 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

Table 2.2 presents the volume (ML) of total water sourced from surface water (W1), groundwater (W2), desalinated marine water (W3.1), and recycled water (W26) for each city.

Nationally, total water sourced for major urban centres decreased by 1 per cent between 2018–19 and 2019–20. However, Perth reported a 6 per cent increase in water sourced by volume, Canberra reported a 5 per cent increase and South East Queensland reported a 4 per cent increase.

Perth remains the largest supplier of groundwater (135,517 ML) and desalinated marine water (140,048 ML) to an urban centre. Sydney sourced the highest volume of recycled water (46,919 ML) followed by Melbourne (42,877 ML), which sourced the highest volume in 2018–19.

All capital cities with desalination plants significantly increased the volume of supply from those plants from 2018–19 to 2019–20. Adelaide's increase occurred due to the Australian Government's Water for Fodder Program (<https://www.agriculture.gov.au/water/mdb/programs/basin-wide/water-for-fodder>), which helped farmers maintain their breeding stock during the drought. Sydney's increase was related to drier conditions and reduced availability of surface water. Higher desalinated marine water volumes in Melbourne were because of the Victorian Minister for Water's order for supply of 125GL of desalinated water. Some of the order was delivered in June of the previous financial year (2018–19) as the contract allows delivery of water to begin early when the size of the order is larger than the previous year's order.

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

Major urban centre	Surface water (W1)		Groundwater (W2)		Desalinated marine water (W3.1)		Recycled water (W26)		Total	
	2018–19	2019–20	2018–19	2019–20	2018–19	2019–20	2018–19	2019–20	2018–19	2019–20
Adelaide	167,494	127,905	0	0	4,815	40,001	30,533	23,803	202,928	191,709
Canberra	52,914	55,331	0	0	0	0	60	75	52,974	55,406
Darwin	38,364	40,663	4,860	2,794	0	0	488	0	43,712	43,457
Melbourne <sup>a</sup>	438,511	330,095	0	0	22,374	119,471	45,535	42,877	506,420	492,443
Perth	74,014 <sup>b</sup>	17,424 <sup>b</sup>	122,317	135,517	89,295	140,048	9,817	20,681	295,443	313,670
South East Queensland <sup>c</sup>	353,324	365,315	17,594	14,842	6,438	13,805	15,445	14,874	392,801	408,836
Sydney	563,283 <sup>d</sup>	476,605 <sup>d</sup>	0	0	7,793	71,147	44,021	46,919	615,096	585,671

**Table notes**

<sup>a</sup> Melbourne's surface water is sourced from Melbourne Water and South East Water, while its recycled water is sourced from Melbourne Water and the three retailers (Yarra Valley Water, South East Water, and City West Water). Western Water is not included in the Melbourne major urban centre.

<sup>b</sup> Perth's surface water volume reflects the Water Corporation transferring water into surface water storages. In 2019–20, the Water Corporation diverted 101,929 ML from surface water and returned 84,505 ML.

<sup>c</sup> 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 (Urban Utilities, Unitywater, City of Gold Coast and Redland City Councils).

<sup>d</sup> Sydney's surface water is the total of the water received by Sydney Water Corporation from WaterNSW and water it sources directly.

### 2.1.2 Average volume of residential water supplied per property—W12

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

The volume of residential water supplied decreased from 2018–19 to 2019–20 for most major urban centres. The exceptions were Perth and South East Queensland, which increased by 4 per cent and 3 per cent respectively due to below-average rainfall and very high temperatures during the reporting year.

Sydney reported a decrease of 5 per cent in residential water supplied from 2018–19. The average annual residential water volume supplied per property in 2019–20 was the lowest for Sydney in the last 5 years. See Section 3.1 for annual residential water supplied by all utilities.

Table 2.3 Average volume of residential water supplied per property (kL/property).

Major urban centre <sup>a</sup>	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	206	171	195	202	198	-2
Canberra	196	190	197	204	202	-1
Darwin	405	361	368	380	373	-2
Melbourne <sup>b</sup>	154	149	148	151	148	-2
Perth	240	223	219	219	227	4
South East Queensland <sup>b</sup>	159	158	155	158	162	3
Sydney	201	206	215	199	189	-5

**Table notes**

<sup>a</sup> The figures exclude bulk utilities because they do not supply to customers.

<sup>b</sup> Melbourne and South East Queensland figures are the weighted averages for their respective retailers (i.e. W8—Total volume of water supplied to residential customers/C2—Number of connected residential properties: water supply).



### 2.1.3 Total volume of recycled water supplied—W26

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

Total recycled water supply across the major urban centres increased by 2 per cent from 2018–19 following an increase of 10 per cent from 2017–18 to 2018–19. Large increases in recycled water production were reported for Perth while Sydney reported the highest volume of total recycled water supplied across all major cities. Darwin did not supply any recycled water to customers in this reporting year.

See Section 3.2 for recycled water supplied by all utilities.

**Table 2.4 Total volume of recycled water supplied (ML).**

Major urban centre	2015–16 <sup>a</sup>	2016–17 <sup>a</sup>	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	28,481	21,316	26,564	30,533	23,803	-22
Canberra	4,053	4,404	77	60	75	25
Darwin	80	541	451	488	0	-100
Melbourne <sup>b</sup>	34,892	32,442	38,147	45,535	42,877	-6
Perth	10,212	9,568	12,100	9,817	20,681	111
South East Queensland <sup>b</sup>	19,822 <sup>c</sup>	14,755	13,056	15,445	14,874	-4
Sydney	43,342	38,340	42,833	44,020	46,919	7

**Table notes**

<sup>a</sup> Data for 2016–17 and earlier years are sourced from the 2016–17 published NPR, as the definition of W26 changed from 2017–18.

<sup>b</sup> Melbourne and South East Queensland figures for W26 are the aggregated figures for the bulk utility and the retailers.

<sup>c</sup> Seqwater and Redland City Council did not report against this indicator in 2015–16.

## 2.2 Pricing

### 2.2.1 Total typical residential bill—P8

Table 2.5 reports the total typical residential bill (\$) for water supply and wastewater in each major urban centre.

Changes in typical residential bills across the major urban centres range from an increase of 2.7 per cent in South East Queensland and 2.5 per cent in Perth, to a decrease of 1.6 per cent in Darwin and 1.4 per cent in Adelaide from 2018–19 levels.

The higher typical residential bills in South East Queensland and Perth were due to an increase in water charges resulting from increased water consumption as an outcome of the below-average rainfall and very high temperatures experienced during the reporting year. Customers in Melbourne continued to have the lowest typical residential bill across all regions, while those in Darwin had the highest, continuing the pattern seen in previous years.

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

**Table 2.5 Total typical residential bill (\$).**

Major urban centre <sup>a</sup>	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	1,463	1,223	1,309	1,333	1,315	-1.4
Canberra	1,210	1,193	1,204	1,156	1,170	1.2
Darwin	2,010	1,886	1,875	1,887	1,857	-1.6
Melbourne <sup>b</sup>	1,097	1,053	1,047	1,018	1,011	-0.7
Perth	1,463	1,455	1,509	1,567	1,606	2.5
South East Queensland <sup>b</sup>	1,405	1,478	1,443	1,449	1,488	2.7
Sydney	1,248	1,139	1,161	1,117	1,123	0.5

**Table notes**

<sup>a</sup> The figures exclude bulk utilities as they do not supply to customers.

<sup>b</sup> Melbourne and South East Queensland figures are the weighted average of the retail utilities (i.e. P3—Typical residential bill: water supply/C2—Number of connected residential properties: water supply and P6—Typical residential bill: wastewater/C6—Number of connected residential properties: wastewater).

## 2.3 Environment

### 2.3.1 Total net greenhouse gas emissions per 1,000 properties—E12

The contribution of the utilities' operations to greenhouse gas (GHG) emissions (t CO<sub>2</sub> equivalent/1,000 properties), aggregated by major urban centre, is reported in Table 2.6.

Total net GHG emissions fluctuated widely across major urban centres. Emissions decreased for most of the major cities. The highest decrease in emissions (52 per cent) was reported for Adelaide, but this followed a 52 per cent increase for Adelaide in the previous reporting year.

The reduction in emissions in Adelaide was associated with decreased fuel and imported electricity use and a decrease in South Australia's grid electricity emissions factor.

Perth reported the highest net greenhouse gas emissions per 1,000 properties and the highest percentage increase (37 per cent) from last year across major urban centres. The large increase was due to a greater volume of water supplied from desalination plants and an increase in electricity usage at a major wastewater treatment plant.

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

**Table 2.6 Total net greenhouse gas emissions per 1,000 properties (t CO<sub>2</sub> equivalent/1,000 properties).**

Major urban centre	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	421	250	285	434	207	-52
Canberra	255	242	268	363	331	-9
Darwin	154	179	229	215	213	-1
Melbourne <sup>a</sup>	291	268	243	249	278	12
Perth	817	828	754	510	701	37
South East Queensland <sup>b d</sup>			179 <sup>c</sup>	200	204	2
Sydney	145	176	173	180	175	-3

**Table notes**

<sup>a</sup> Melbourne figures are the weighted average of the three retailers (E12—Total net greenhouse gas emissions per 1,000 properties/C4—Total connected properties) and Melbourne Water. Melbourne Water's emissions calculated based on the total connected properties of the three retailers.

<sup>b</sup> South East Queensland figures are the weighted average of the retailers (E12—Total net greenhouse gas emissions per 1,000 properties/C4—Total connected properties).

<sup>c</sup> City of Gold Coast did not report against this indicator in 2017–18.

<sup>d</sup> No data were available for South East Queensland before 2016–17.

## 2.4 Finance

### 2.4.1 Combined operating cost per property: water supply and wastewater—F13

Table 2.7 reports the combined operating cost (\$/property) of the utilities' water and sewerage operations, aggregated by major urban centre.

In real terms, combined operating costs per property increased for four of the major urban centres, with Darwin reporting the highest increase (33 per cent) in combined operating costs of water and sewerage services. Darwin's increase was due to increased operating expenditure for water supply because of changes in corporate overheads and Covid-19 costs incurred in the financial year.

Three of the major urban centres reported decreases from 2018–19 to 2019–20, with Adelaide reporting the highest decrease (9 per cent).

See Section 5.3 for combined operating cost for all utilities.

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

Major urban centre <sup>a</sup>	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	615	570	563	592	537	-9
Canberra <sup>b</sup>	979	1,029	1,026	998	950	-5
Darwin	1,198	1,010	948	898	1,196	33
Melbourne	1,033	945	917	925	920	-1
Perth	638	616	618	555	621	12
South East Queensland	1,112	1,163	1,145	1,182	1,214	3
Sydney <sup>c</sup>	735	706	684	729	731	0.3

**Table notes**

<sup>a</sup> Data for 2017–18 and later are equal to F13; for earlier years the data are equal to F11—Operating cost per property: water supply plus F12—Operating cost per property: wastewater.

<sup>b</sup> Canberra figures for the 2015–16 and 2016–17 years include a water abstraction charge and a utilities network facility tax.

<sup>c</sup> Sydney figures are for Sydney Water and include the bulk water purchases from WaterNSW.

### 2.4.2 Total capital expenditure: water supply and wastewater—F16

Table 2.8 reports the combined capital expenditure (\$000s) related to the utilities' water and sewerage operations, aggregated by major urban centre.

The sum of total capital expenditure for water supply and wastewater across all capital cities increased slightly from 2018–19 to 2019–20 with four major urban centres reporting an increase in their total capital expenditure. Sydney, Perth and Darwin reported a decrease in capital expenditure from the previous year; Darwin reported the highest decrease (40 per cent) due to a decrease in scheduled projects in water and wastewater for the financial year.

See Section 5.1 for combined capital expenditure for all utilities.

**Table 2.8 Total capital expenditure: water supply and wastewater (\$000s).**

Major urban centre	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	195,058	279,437	216,126	285,607	340,085	19
Canberra	89,370	96,405	90,533	89,316	102,163	14
Darwin	51,844	23,355	46,866	33,929	20,470	-40
Melbourne <sup>a</sup>	776,653	831,530	902,721	983,389	1,033,797	5
Perth	313,830	456,853	487,324	467,362	398,730	-15
South East Queensland <sup>a</sup>	518,840	591,335	612,809	697,021	823,750	18
Sydney <sup>a</sup>	709,067	680,655	833,456	1,175,807	1,014,546	-14

**Table notes**

<sup>a</sup> Melbourne, South East Queensland, and Sydney figures are the aggregate for the bulk utility and the respective retailers.

## 2.5 Customers

### 2.5.1 Total water and sewerage complaints per 1,000 properties—C13

Table 2.9 reports the total number of complaints per 1,000 properties received by utilities for water and sewerage services, aggregated by major urban centre.

Two out of the seven major urban centres experienced improved customer satisfaction (based on complaints as an indicator of satisfaction) with a decrease in the number of complaints received in 2019–20. Darwin had the largest decrease (16 per cent) followed by Sydney (13 per cent).

Adelaide, Canberra and South East Queensland were the major urban centres that experienced an increase in complaints.

Perth, with the lowest level of complaints of all the major urban centres, remained steady on 0.8 total water and sewerage complaints per 1,000 properties.

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

**Table 2.9 Total number of water and sewerage complaints per 1,000 properties (complaints/1,000 properties).**

Major urban centre	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	1.6	2.5	2.5	2.1	2.2	5
Canberra	3.8	4.3	3.7	2.8	3.4	21
Darwin	86.2	85.1	68.4	60.4	50.9	-16
Melbourne	4.8	6.3	6.2	6.9	6.9	0
Perth	0.8	0.8	1.2	0.8	0.8	0
South East Queensland <sup>a</sup>	4.1	4.7	5.2	5.3	5.7	8
Sydney	2.6	2.1	2.2	2.4	2.1 <sup>b</sup>	-13

**Table notes**

<sup>a</sup> Logan City Council did not report against this indicator before 2017–18.

<sup>b</sup> During 2019–20 Sydney Water changed the way it captured and reported complaints, using a single source for the 'Account' category to improve complaint reporting. They now only count complaints based on customer contact whereas previously they included billing adjustments as a deemed complaint.



## 2.5.2 Average duration of an unplanned interruption: water supply—C15

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

Adelaide and South East Queensland were the only two major urban centres that had a decrease in the average duration of unplanned interruptions to water supply, at 16 per cent and 4 per cent respectively. Adelaide continued experiencing the highest average duration of unplanned interruption (204 minutes) while Melbourne consistently had the shortest (101 minutes).

Sydney reported the highest increase in the average duration of unplanned interruptions for water (31 per cent). This increase in duration resulted from hot and dry weather conditions leading to an increase in the number of breaks in large mains that have been complex to repair and difficult to arrange alternative water supply.

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

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

Major urban centre	2015–16	2016–17	2017–18	2018–19	2019–20	Change from 2018–19 (%)
Adelaide	189	195	237	243	204	-16
Canberra	135	135	125	135	136	1
Melbourne	106	106	101	95	101	7
Perth	108	103	112	103	111	8
South East Queensland	89	144	125	124	119	-4
Sydney	136	133	155	143	187	31

**Table notes**

No data are available for Darwin.

## 3 Water resources

### 3.1 Average annual residential water supplied—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 2019–20 are given in Table A1, Appendix A.

#### 3.1.1 Key findings

Table 3.1 presents a summary of the median average annual volume of water supplied to residential customers by utility size group. Nationally, the median decreased by 6 per cent.

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

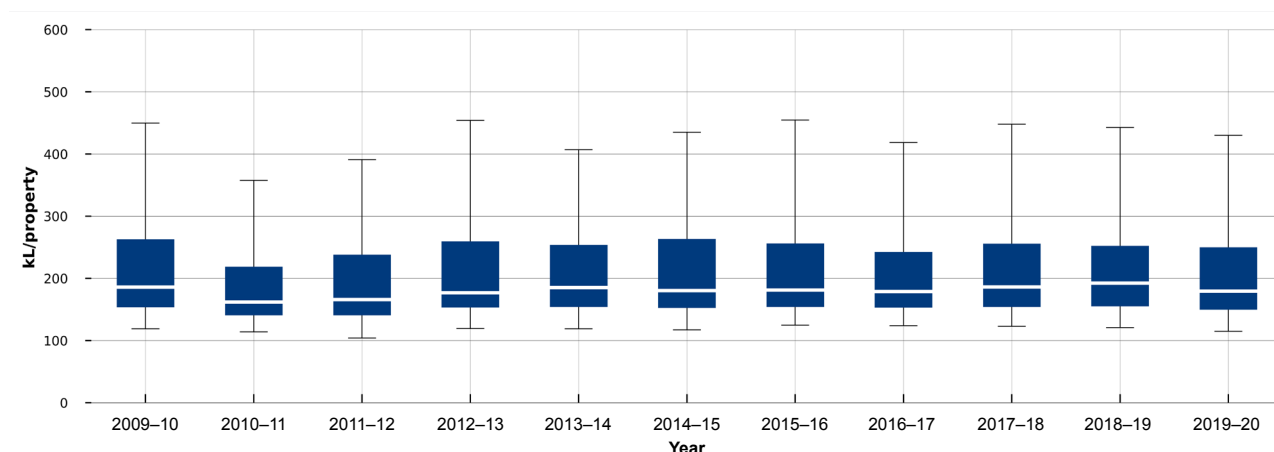
Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	227	146	5	10	164	161	-2
	WC (Perth)	City West Water					
Large	373	151	4	8	211	205	-3
	P&W (Darwin)	Central Highlands Water (Vic)					
Medium	520	115	9	12	186	177	-5
	Lower Murray Water	Multiple utilities					
Small	451	89	11	14	212	201	-5
	P&W (Alice Springs)	Westernport Water					
<b>All size groups (national)</b>	520	89	29	44	192	180	-6
	Lower Murray Water	Westernport Water					

**Table note**

The median average annual residential water supplied (kL/property) for each year is calculated using data from all utilities providing water supply services in that reporting year.

Nationally, there was a large variation in the average annual water supplied in 2019–20, which ranged from 89 kL/property (Westernport Water) to 520 kL/property (Lower Murray Water).

The number of utilities reporting a decrease in the average annual residential water supplied was higher than the number of utilities reporting an increase in all size groups (overall 44 out of 76 utilities reported a decrease and four reported no change). Tamworth Regional Council reported the highest percentage decrease (43 per cent) in average annual residential water supplied and Mackay Regional Council reported the highest percentage increase (15 per cent).



**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 2019–20 median residential water supply was consistent with historical trends, reflecting the recent consecutive years (2012–13 to 2019–20) of warmer-than-average conditions across most of Australia.

### 3.1.2 Results and analysis—Major utility group

Figure 3.2 shows a ranked breakdown of the average volume of residential water supplied for each utility in the Major utility group (2015–16 to 2019–20).

The largest volume supplied to residential customers occurred in the Perth and Canberra (Icon Water Ltd) regions (227 and 202 kL/property, respectively).

Variations ranged from a 10.8 per cent decrease by Hunter Water Corporation to a 7.0 per cent increase by City of Gold Coast. Above-average temperatures and below-average rainfalls in the City of Gold Coast region throughout 2019–20 would have contributed to the increase in the volume of water supplied to residential customers.

## 3.2 Total recycled water supplied—W26

Total recycled water supplied (ML) 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 on-site 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 supplied (W26) data for all utilities reporting in 2019–20 are presented in Table A2, Appendix A.

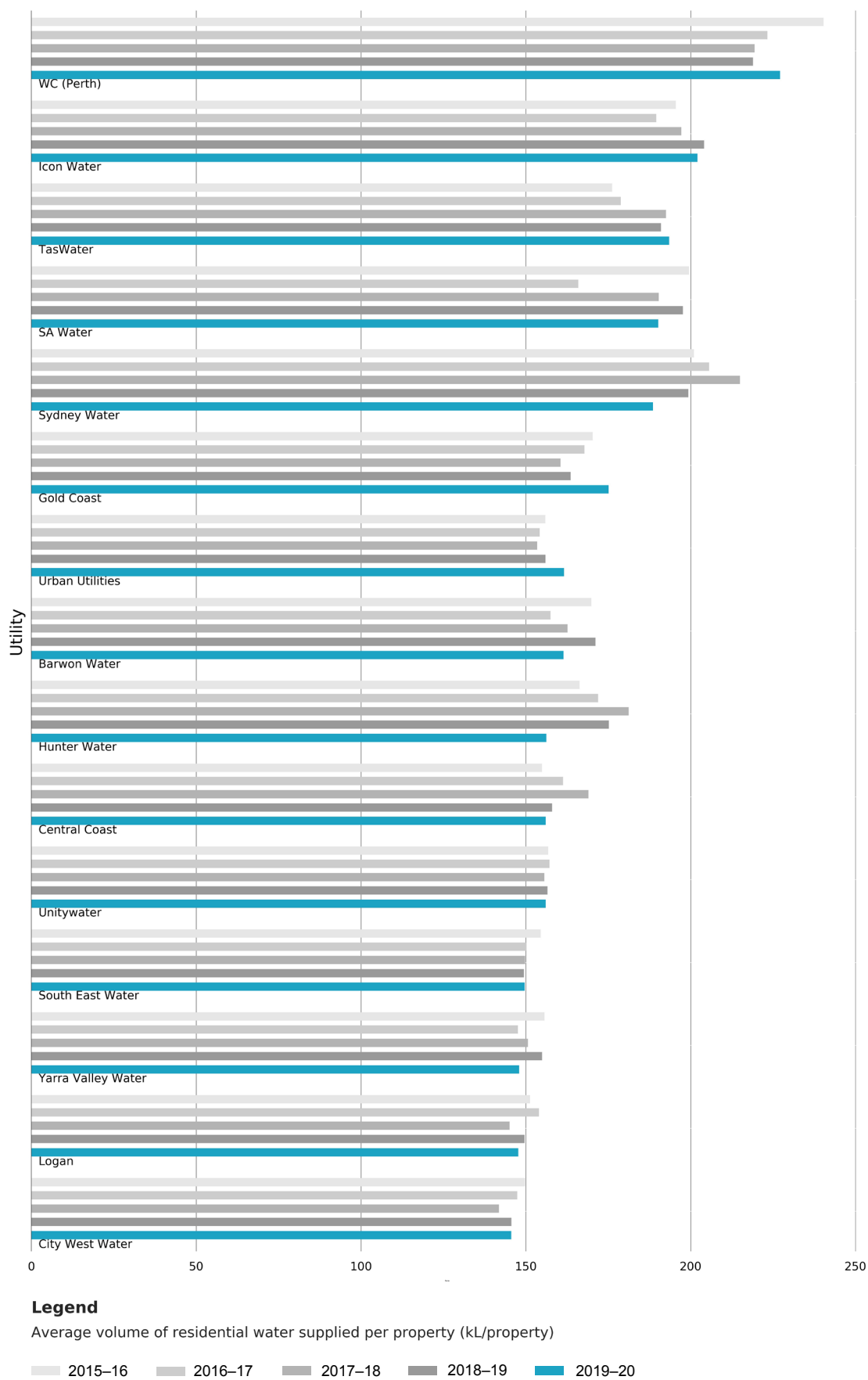


Figure 3.2 Average annual residential water supplied (kL/property)—Major utility group.

### 3.2.1 Key findings

Table 3.2 presents a summary of the total recycled water supplied by utility size group.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Total		Change in total from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	46,919	75	8	6	124,301	130,336	5
	Sydney Water	Icon Water					
Large	8,093	0	4	8	27,927	25,518	-9
	North East Water	P&W (Darwin)					
Medium	6,918	0	10	12	41,814	39,431	-6
	Fraser Coast	GWMWater					
Small	2,723	17	10	14	20,698	18,242	-12
	Orange	Lismore					
<b>All size groups (national)</b>	46,919	0	32	40	214,740	213,527	-1
	Sydney Water	Multiple utilities					

**Table note**

The total recycled water supplied (ML) is calculated using data from all utilities that reported data for W26 in both the 2018–19 and 2019–20 reporting years.

Nationally, the total volume of recycled water supplied decreased by less than 1 per cent in 2019–20. The Major utility group was the only group to increase, and the largest decrease was in the Small utility group.

### 3.2.2 Results and analysis—Major utility group

In 2019–20, the Major utility group supplied 61 per cent of the total recycled water nationally, with an increase of 4.9 per cent from last year. There was a large variation in the changes between reporting periods; for example, Perth increased production by 111 per cent while Barwon Water decreased by 22 per cent. Perth's increase was mostly due to increased production from the Advanced Water Recycling Plant (AWRP) at the Beenyp facility as part of Perth's Groundwater Replenishment Scheme. Sydney Water Corporation continued to be the largest producer of recycled water with 46,919 ML, followed by SA Water Corporation with 26,400 ML.



## 4 Pricing

### 4.1 Typical residential bill: water supply and wastewater—P8

The typical residential bill (\$) for water supply and wastewater (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, P1.2–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:

- 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 City Council remains an exception: ratepayers have a choice between a flat charge and a tiered structure.<sup>3</sup>

Unlike for their residential water supply pricing, most utilities have a fixed price model for wastewater services. The exceptions are the Melbourne utilities<sup>4</sup>, Byron Shire Council and Unitywater. These utilities have both a fixed and volumetric component in their wastewater 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 2019–20 are presented in Table A3, Appendix A.

#### 4.1.1 Key findings

Table 4.1 presents a summary of the median typical residential bill by utility size group.

Nationally, there was a slight decrease (2 per cent) in the typical residential bill for water and wastewater services with 40 out of 71 utilities reporting a decrease. Nationally, this translated to a \$32 decrease in the median residential bill. The Medium utility group reported the largest variation in price changes: Gladstone Regional Council reported a 33.4 per cent increase and Dubbo Regional Council reported a decrease of 14.3 per cent.

<sup>3</sup> [www.townsville.qld.gov.au/payments-rates-and-permits/rates](http://www.townsville.qld.gov.au/payments-rates-and-permits/rates)

<sup>4</sup> Western Water, Yarra Valley Water Corporation, South East Water Ltd, and City West Water.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	1,671	974	8	7	1,220	1,170	-4
	Gold Coast	City West Water					
Large	1,857	909	4	7	1,389	1,358	-2
	P&W (Darwin)	Goulburn Valley Water					
Medium	2,236	1,001	9	13	1,494	1,460	-2
	Gladstone	South Gippsland Water					
Small	2,011	1,056	9	13	1,673	1,652	-1
	P&W (Alice Springs)	Armidale					
<b>All size groups (national)</b>	2,236	909	30	40	1,458	1,426	-2
	Gladstone	Goulburn Valley Water					

**Table note**

The typical residential bill in each year is calculated using data from all utilities supplying both water and wastewater services in that year.

Figure 4.1 shows a box-and-whisker plot of typical residential bills for all utilities reporting data in a given year. For a fifth consecutive year, residential bills have remained steady with a national decrease of 2 per cent since 2018–19.

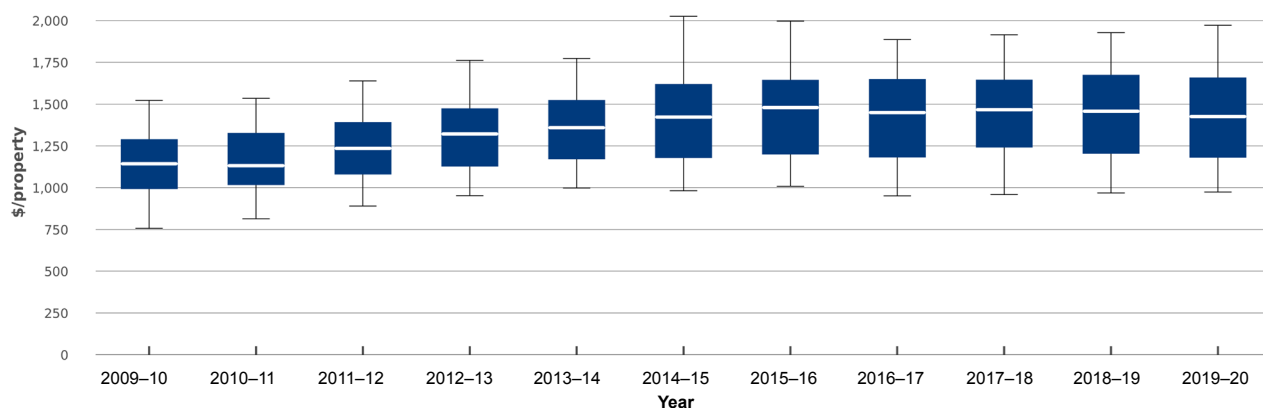


Figure 4.1 Typical residential bill: water supply and wastewater (\$), 2009–10 to 2019–20.

#### 4.1.2 Results and analysis—Major utility group

Figure 4.2 presents a ranked breakdown of the typical residential bill for the Major utility group. The figure shows the water (P3) and wastewater (P6) components of the bill for each utility.

Since 2015–16, typical residential bills for Unitywater and Logan City Council customers have generally trended downwards, although they remain in the top four most expensive retailers in the Major utility group, together with City of Gold Coast, and Water Corporation – Perth. City West Water continued to be the cheapest retailer in the Major utility group with a typical residential bill of \$974.

The variation in the typical residential bill for the Major utility group is larger than in previous years. The highest percentage increase was 4.8 per cent (Urban Utilities) and the greatest percentage decrease was 16.8 per cent (Central Coast Council).

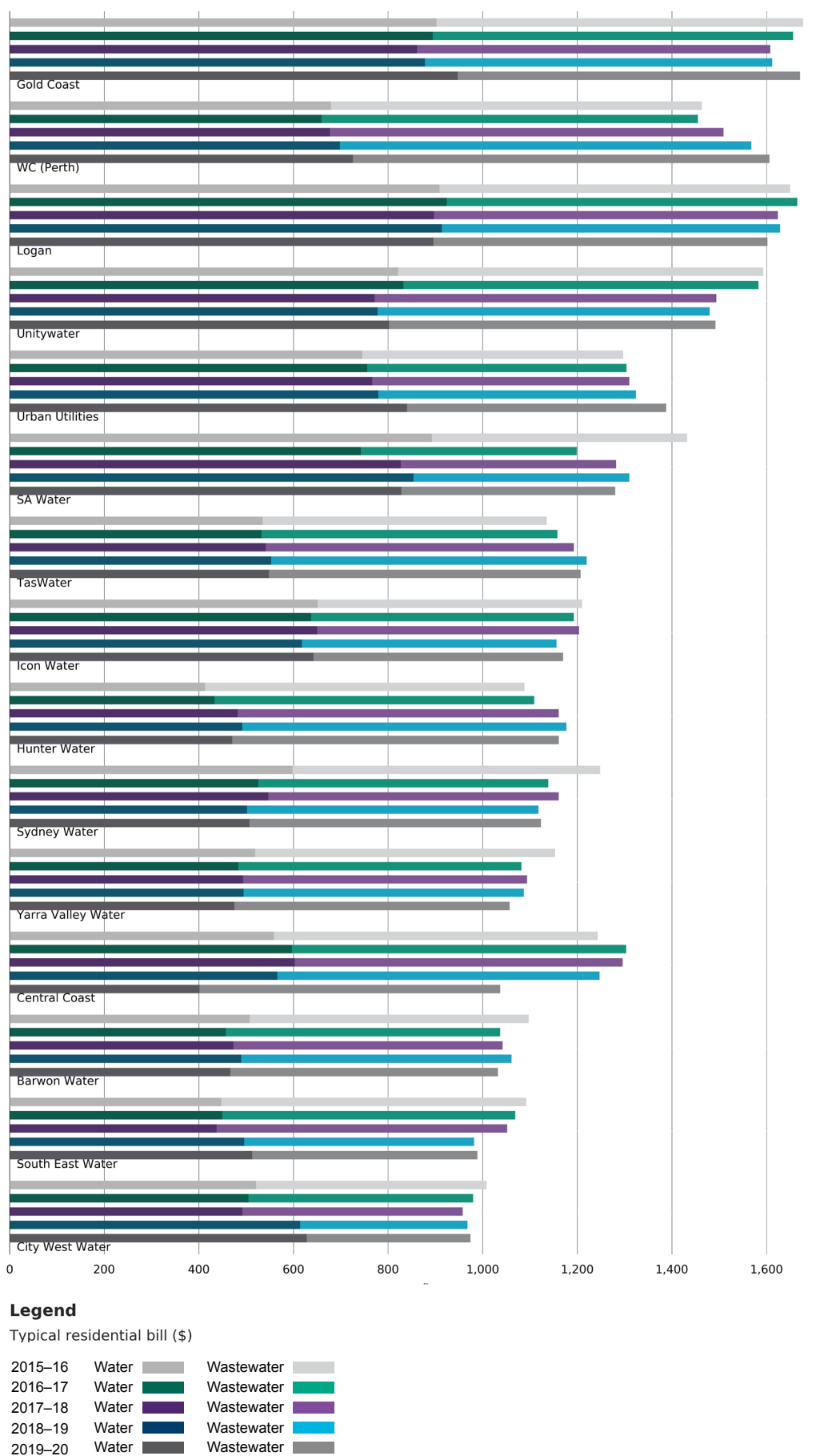


Figure 4.2 Typical residential bill: water supply and wastewater (\$)—Major utility group.

## 4.2 Annual residential bill based on 200 kL per annum: water supply and wastewater—P7

The annual bill (\$) based on 200 kL for water and wastewater 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 wastewater 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 volume 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 wastewater) data for all utilities reporting in 2019–20 are presented in Table A4, Appendix A.

### 4.2.1 Key findings

Table 4.2 presents a summary of the median 200 kL/annum residential bill data by utility size group.

**Table 4.2 Overview of results: Annual residential bill based on 200 kL per annum: water supply and wastewater (\$).**

Utility group	Range		No. utilities with increase/decrease from 2018–19		Total		Change from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	1,813	1,112	8	7	1,266	1,257	-0.7
	Logan	Barwon Water					
Large	1,717	837	5	7	1,402	1,382	-1.4
	Toowoomba	Goulburn Valley Water					
Medium	2,043	786	13	8	1,446	1,455	0.6
	MidCoast Council	Lower Murray Water					
Small	2,059	1,225	16	6	1,606	1,600	-0.4
	Kempsey	Essential Energy					
<b>All utility groups (national)</b>	2,059	786	42	28	1,448	1,462	1.0
	Kempsey	Lower Murray Water					

#### Table note

The 200 kL residential bill data for water supply and wastewater for each year are calculated using data from all utilities reporting against the P2 and P5 indicators in that year.

On a 200 kL/annum basis, the national median bill was a slight (1 per cent) increase from 2018–19. The Medium utility group had a small increase (0.6 per cent), while all other utility groups had small decreases compared to 2018–19. The Medium utility group had a large variation in changes, from a 5.6 per cent increase by Coffs Harbour City Council to a decrease of 17.3 per cent by Queanbeyan–Palerang Regional Council.

### 4.2.2 Results and analysis—Major utility group

Figure 4.3 presents a ranked breakdown of the annual residential bill based on 200 kL for the Major utility group. The figure reinforces the higher volumetric pricing of water by Queensland's Major utilities, but it also demonstrates the decreasing trend over the past five reporting periods by City of Gold Coast and Unitywater. This decrease was also reflected in the typical residential bill (P8).

Sydney Water Corporation had the highest percentage increase in annual residential bill based on 200 kL in the Major utility group (2.5 per cent). Central Coast Council had the largest annual percentage decrease (12.6 per cent).

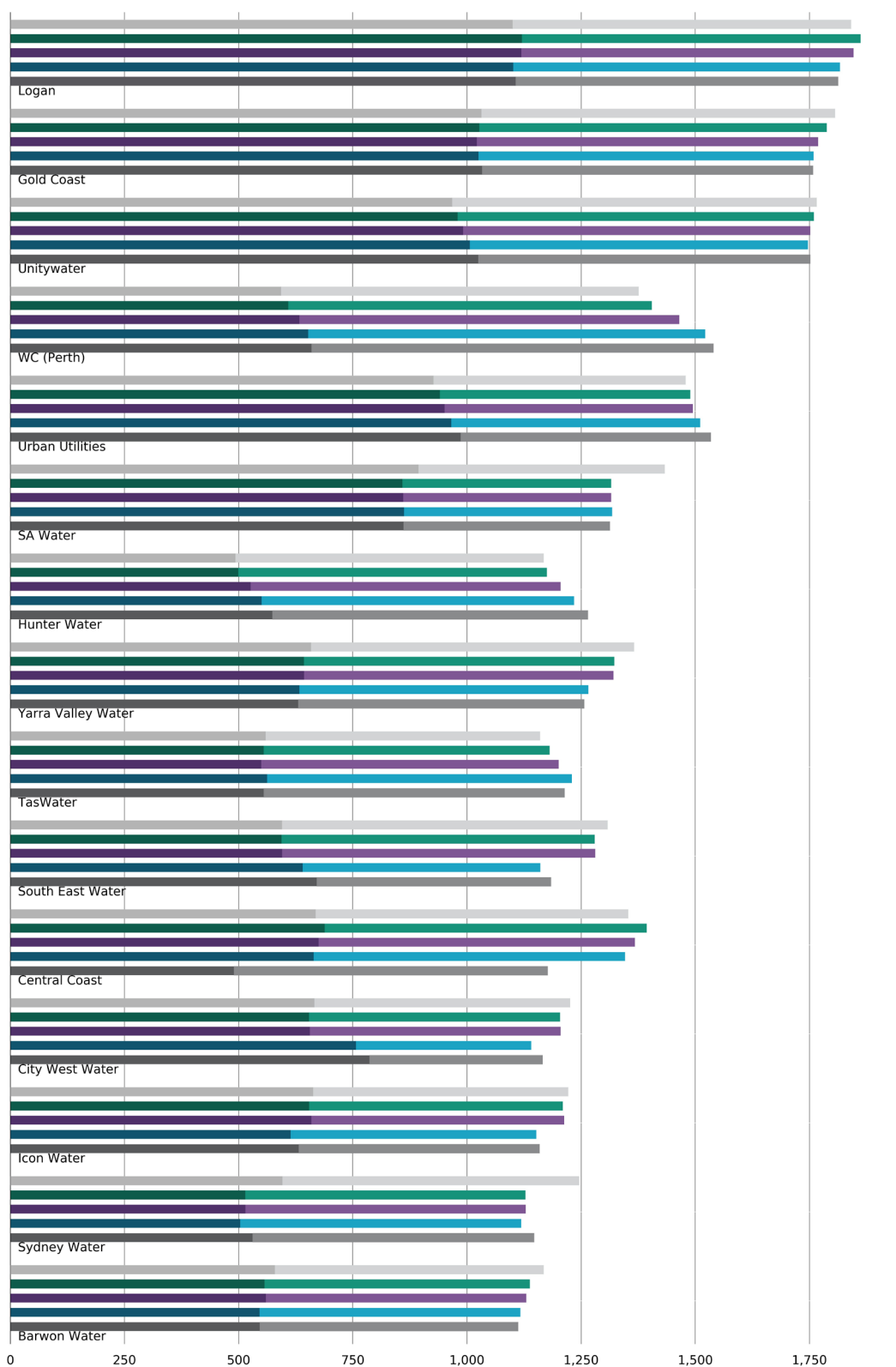


Figure 4.3 Annual bill based on 200 kL: water supply and wastewater (\$)—Major utility group.

## 5 Finance

### 5.1 Total capital expenditure: water supply and wastewater—F16

Total capital expenditure (\$000s) on water supply and wastewater (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. They are influenced by several factors, including the:

- age of a utility's infrastructure;
- stage of each asset's lifecycle; and
- 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 wastewater data for all utilities reporting in 2019–20 are presented in Table A5, Appendix A.

#### 5.1.1 Key findings

Table 5.1 presents a summary of total capital expenditure for water and wastewater by utility size group. In real terms, total capital expenditure increased by 5 per cent to \$4.5 billion primarily associated with capital expenditure from the Major utility group. The Large and Small utility groups also reported an increase in capital expenditure from 2018–19 to 2019–20.

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

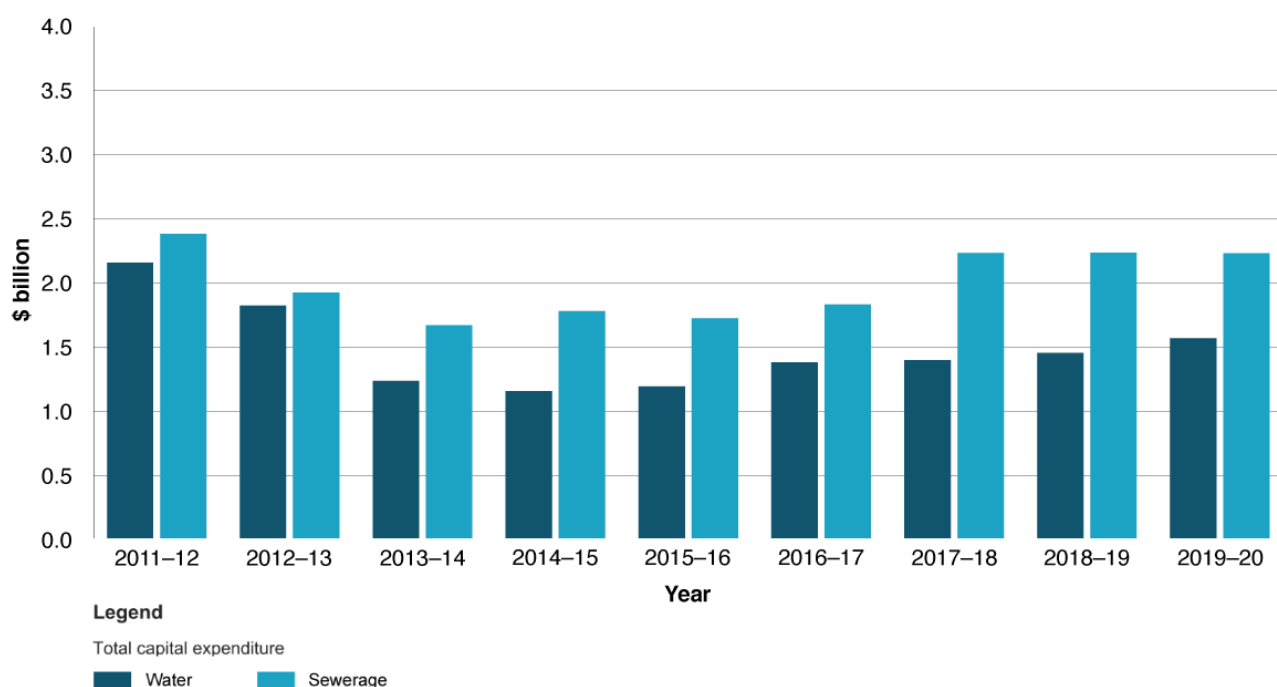
**Table 5.1 Overview of results: Total capital expenditure: water supply and wastewater (\$ million).**

Utility group	Range (\$ million)		No. utilities with increase/decrease from 2018–19		Total (\$ million)		Change in total from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	898	77.4	12	2	3,421	3,639	6
	Sydney Water	Barwon Water					
Large	83	3.7	8	4	391	409	5
	Western Water	Redland City					
Medium	28.4	0	8	14	339	309	-9
	Wannon Water	Dubbo					
Small	25.7	0	9	10	159	178	12
	Multiple utilities	Orange					
<b>All size groups (national)</b>	<b>898</b>	<b>0</b>	<b>37</b>	<b>30</b>	<b>4,310</b>	<b>4,535</b>	<b>5</b>
	Sydney Water	Multiple utilities					

**Table note**

Total capital expenditure for water and wastewater services in each year is calculated using data from utilities reporting against F14 and F15 in both years.





**Figure 5.1 Total capital expenditure: water supply and wastewater (\$ billion).<sup>a</sup>**

<sup>a</sup> Total is for utilities that reported all 10 years and excludes bulk water utilities.

### 5.1.2 Results and analysis—Major utility group

With the exception of Barwon Water and Water Corporation – Perth, all other utilities in the Major utility size group reported increases in capital expenditure across their water and wastewater operations. Barwon Water and Water Corporation – Perth reported decreases of 5.7 per cent and 14.7 per cent, respectively. Barwon Water's decrease follows a large (20.6 per cent) increase in capital expenditure from 2017–18 to 2018–19.

City of Gold Coast had the largest percentage increase (44.1 per cent) followed by Hunter Water Corporation (43.1 per cent).

## 5.2 Capital expenditure per property: water supply (F28) and wastewater (F29)

Capital expenditure (\$/property) on water supply (F28) and wastewater (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 wastewater services, provided by all utilities reporting in 2019–20 are presented in Tables A6 and A7, Appendix A.

### 5.2.1 Key findings

Tables 5.2 and 5.3 present a summary of the median capital expenditure of utilities providing water and wastewater services, respectively, by utility size group.

In 2019–20, the national median per property capital expenditure on water services decreased by 2 per cent (Table 5.2).

In 2019–20, the national median per property capital expenditure on wastewater services increased by 3 per cent (Table 5.3). Major and Small utility size groups reported increases; the largest increase (15 per cent) was in the Major utility group.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change from 2019–20 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	520	77	9	4	160	177	11
	SA Water	South East Water					
Large	333	10	6	6	219	250	14
	Western Water	Redland City					
Medium	664	0	9	13	213	174	-18
	Tamworth	Dubbo					
Small	754	0	11	7	229	257	12
	Cassowary Coast	Orange					
<b>All size groups (national)</b>	754	0	35	30	218	214	-2
	Cassowary Coast	Multiple utilities					

**Table note**

Median capital expenditure per property: water supply (\$/property) for each year is calculated using data from utilities providing water and wastewater services that reported against F28 in that year.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	1,003	158	9	5	251	289	15
	Logan	City West Water					
Large	889	55	7	5	244	227	-7
	Western Water	Redland City					
Medium	568	0	8	13	250	183	-27
	South Gippsland Water	Dubbo					
Small	1,296	0	10	10	224	252	3
	Multiple utilities	Orange					
<b>All size groups (national)</b>	1,296	0	34	33	251	259	3
	Western Downs	Multiple utilities					

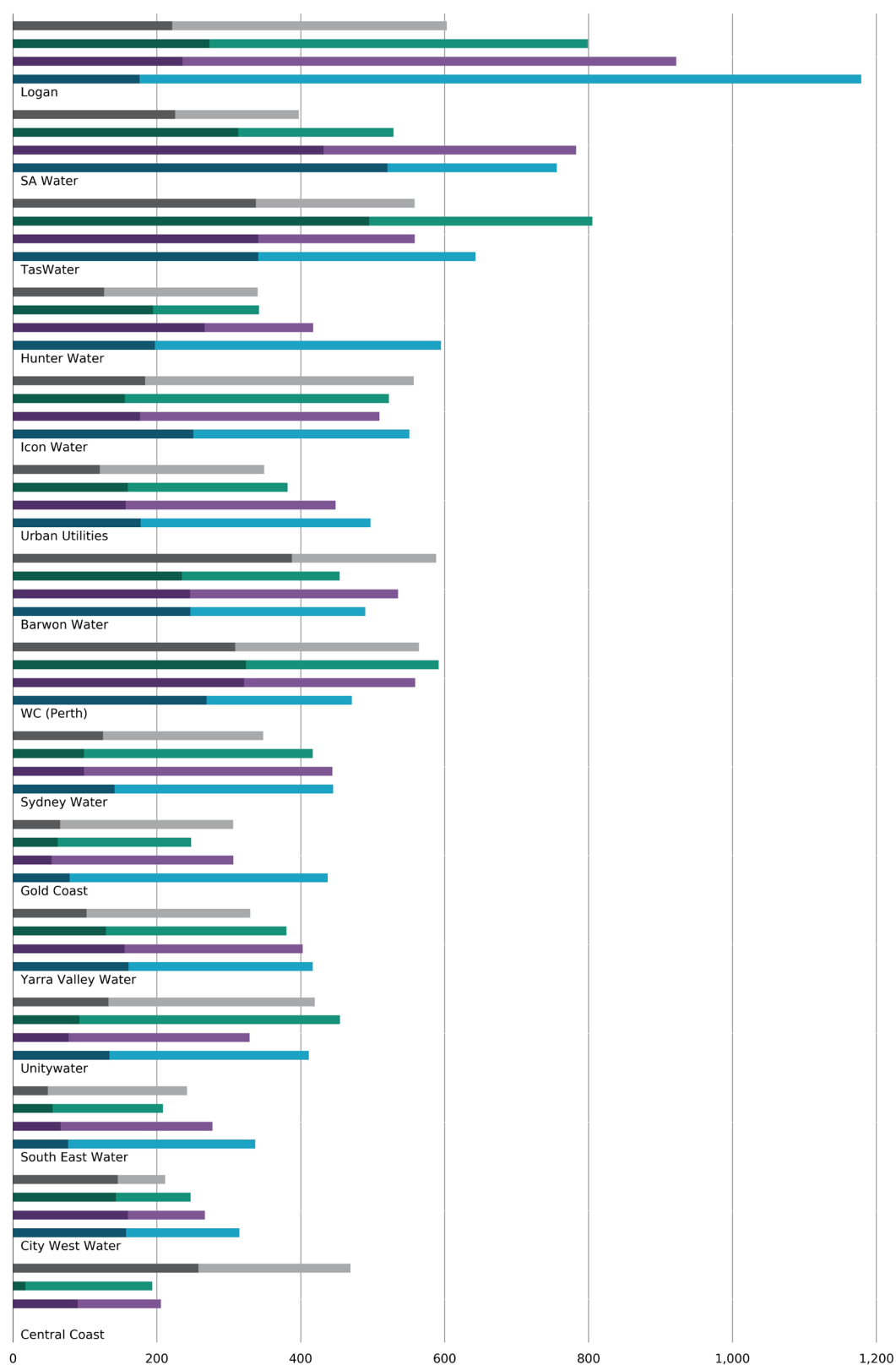
**Table note**

Median capital expenditure: wastewater (\$/property) in each year is calculated using data from all utilities providing water and wastewater services that reported against F29 in that year.

## 5.2.2 Results and analysis—Major utility group

Figure 5.2 shows a ranked breakdown of capital expenditure on a per connected property basis for the Major utility group. The figure shows the water supply (F28) and wastewater (F29) components of the total expenditure and reinforces the year-to-year variation.

The capital expenditure for water increased by 10.6 per cent and expenditure on wastewater increased by 15.1 per cent, each compared to 2018–19. These increases follow increases for both water and wastewater components in 2018–19.



### Legend

Capital expenditure: water supply and wastewater (\$/property)

2016-17	Water	Wastewater
2017-18	Water	Wastewater
2018-19	Water	Wastewater
2019-20	Water	Wastewater

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

Unitywater reported the highest percentage increase in capital expenditure on water (73.1 per cent from 2018–19 to 2019–20). Hunter Water Corporation reported the highest percentage increase of capital expenditure on wastewater services (163.7 per cent) following commencement of upgrades at several wastewater treatment plants in 2019–20.

## 5.3 Combined operating cost per property: water supply and wastewater—F13

Combined operating costs (\$/property) for water supply and wastewater 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 wastewater) data for all the utilities reporting in 2019–20 are presented in Table A8, Appendix A.

### 5.3.1 Key findings

Figure 5.3 shows a box-and-whisker plot of combined operating cost (water supply and wastewater) data for all utilities reporting F13 for a given reporting year from 2009–10 to 2019–20. Table 5.4 presents a summary of the median combined operating costs per property by utility size group.

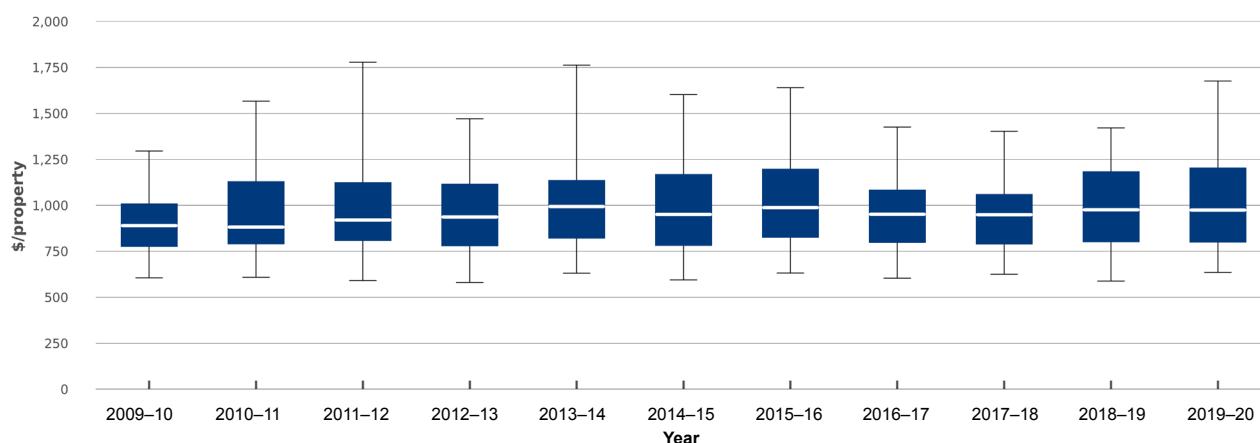


Figure 5.3 Combined operating cost per property: water supply and wastewater (\$/property).

The national 2019–20 median operating cost (on a per property basis for utilities delivering both water and wastewater services) was \$974, almost as same as the previous year (Table 5.4).

The Major, Large and Small utility groups reported increases, whereas the Medium utility group reported a small decrease in median costs. Nationally, 39 utilities across all size groups reported an increase in their operating expenditure per property, while 29 utilities reported a decrease.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	1,273	621	9	5	877	915	4.3
	Urban Utilities	WC (Perth)					
Large	1,379	635	7	5	898	973	8.4
	Townsville	WC (Mandurah)					
Medium	1,300	665	8	14	975	968	-0.7
	Gladstone	Fitzroy River Water					
Small	4,003	554	15	5	1,171	1,196	2.1
	Essential Energy	Gympie					
<b>All size groups (national)</b>	4,003	554	39	29	975	974	-0.1
	Essential Energy	Gympie					

**Table note**

Table 5.4 is based on F13 (Combined operating cost per property: water supply and wastewater) for the reporting utilities that provide both reticulated water supply and wastewater 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

Figure 5.4 presents a ranked breakdown of operating expenditure per connected property for water supply and wastewater services for the Major utility group. The figure shows the component of operating expenditure for water (F11) and wastewater (F12) expenditure for each Major utility from 2015–16 to 2019–20.

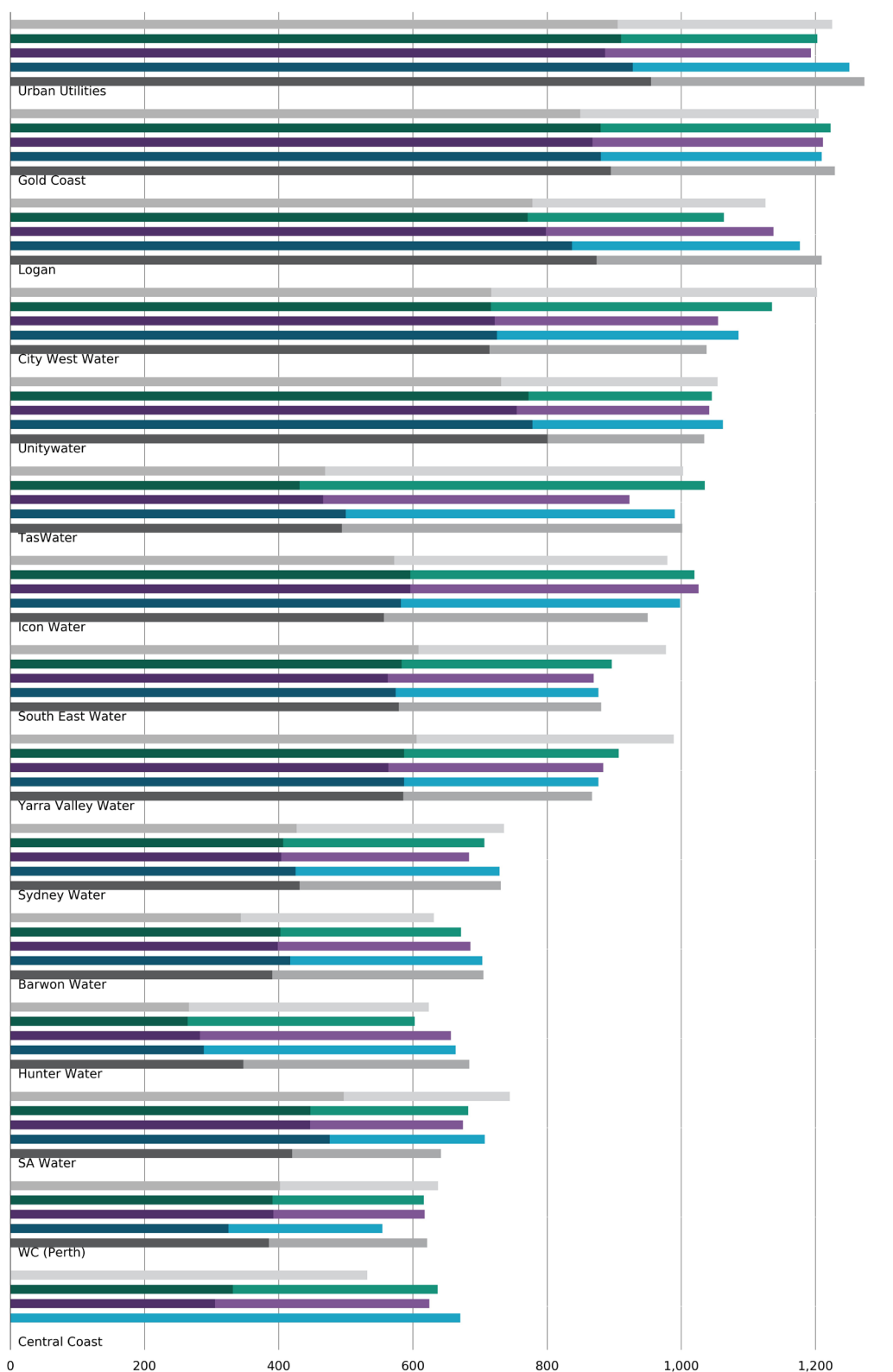
## 5.4 Community service obligations ratio—F8

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 2019–20 are presented in Table A9, Appendix A.



### Legend

Combined operating cost per property: water supply and wastewater (\$/property)

2015-16	Water	Wastewater
2016-17	Water	Wastewater
2017-18	Water	Wastewater
2018-19	Water	Wastewater
2019-20	Water	Wastewater

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



### 5.4.1 Key findings

Table 5.5 presents a summary of the revenue from CSOs, by utility size group.

In 2019–20, 37 utilities reported increases and 23 utilities reported decreases, in the revenue received from CSOs. This resulted in a 3 per cent increase in the national median revenue from CSOs from 2018–19 to 2019–20.

**Table 5.5 Overview of results: Community service obligations ratio (%).**

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	11.90	0	7	3	3.38	4.37	29
	SA Water	Multiple utilities					
Large	6.30	-23.44	9	3	2.77	2.91	5
	North East Water	WC (Mandurah)					
Medium	6.78	0.20	12	9	1.00	1.05	5
	GWMWater	Mackay					
Small	13.09	-93.20	9	8	0.80	0.70	-13
	P&W (Alice Springs)	WC (Geraldton)					
<b>All size groups (national)</b>	13.09	-93.20	37	23	1.07	1.10	3
	P&W (Alice Springs)	WC (Geraldton)					

**Table notes**

Median revenue from community service obligations (%) for each year is calculated using data from all utilities providing data in that year.

In Western Australia, some regional schemes recover adequate revenue to cover the cost of service of the scheme, including the community service obligations, and these schemes partially offset the net loss of other regional services. When reported independently, these schemes will show a negative operating subsidy.

### 5.4.2 Results and analysis—Major utility group

The Major utility group reported an increase of 29 per cent from 2018–19 in CSO payments.

SA Water Corporation continued to have the highest proportion of revenue from CSOs (11.9 per cent). For this utility, CSO payments are used to subsidise non-profitable water services in order to provide water services in country areas at metropolitan water prices.

Water Corporation – Perth reported the largest percentage decrease in its CSO revenue, from 6.63 per cent to 5.9 per cent in 2019–20.

## 6 Customer

### 6.1 Average duration of an unplanned interruption: water—C15

The average duration (minutes) of an unplanned interruption (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 exceed the time limit given 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;
- location of the interruption—for example, the proximity to a repair crew and the depth of the burst pipe;
- utility's response policy for outlying areas; and
- 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.

Data on the average duration of an unplanned interruption (water supply) for all utilities reporting in 2019–20 are presented in Table A10, Appendix A.

#### 6.1.1 Key findings

Table 6.1 presents a summary of unplanned interruptions by utility size group.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	203	88.2	8	5	126.3	131.9	4
	SA Water	South East Water					
Large	121.4	64	4	6	94.7	104.7	11
	Central Highlands Water (Vic)	WC (Mandurah)					
Medium	245	19.6	7	12	109.9	99	-10
	Wingecarribee	Mackay					
Small	278.3	18.3	8	8	108	90	-17
	Whitsunday	Livingstone					
<b>All size groups (national)</b>	278.3	18.3	27	31	113.4	110.5	-3
	Whitsunday	Livingstone					

**Table note:**

Median average duration of an unplanned interruption: water (minutes) for each year is calculated for all utilities that reported data for C15 in that year.

Nationally, the median average duration of unplanned interruptions remained consistent with 2018–19; there was a slight (3 per cent) decrease from 113 minutes to 110 minutes. Whitsunday Regional Council had the highest duration of unplanned interruptions of all utility groups (278.3 minutes). Kempsey Shire Council reported the highest percentage increase (148 per cent) while Tamworth Regional Council reported the highest percentage decrease (80 per cent) from 2018–19.

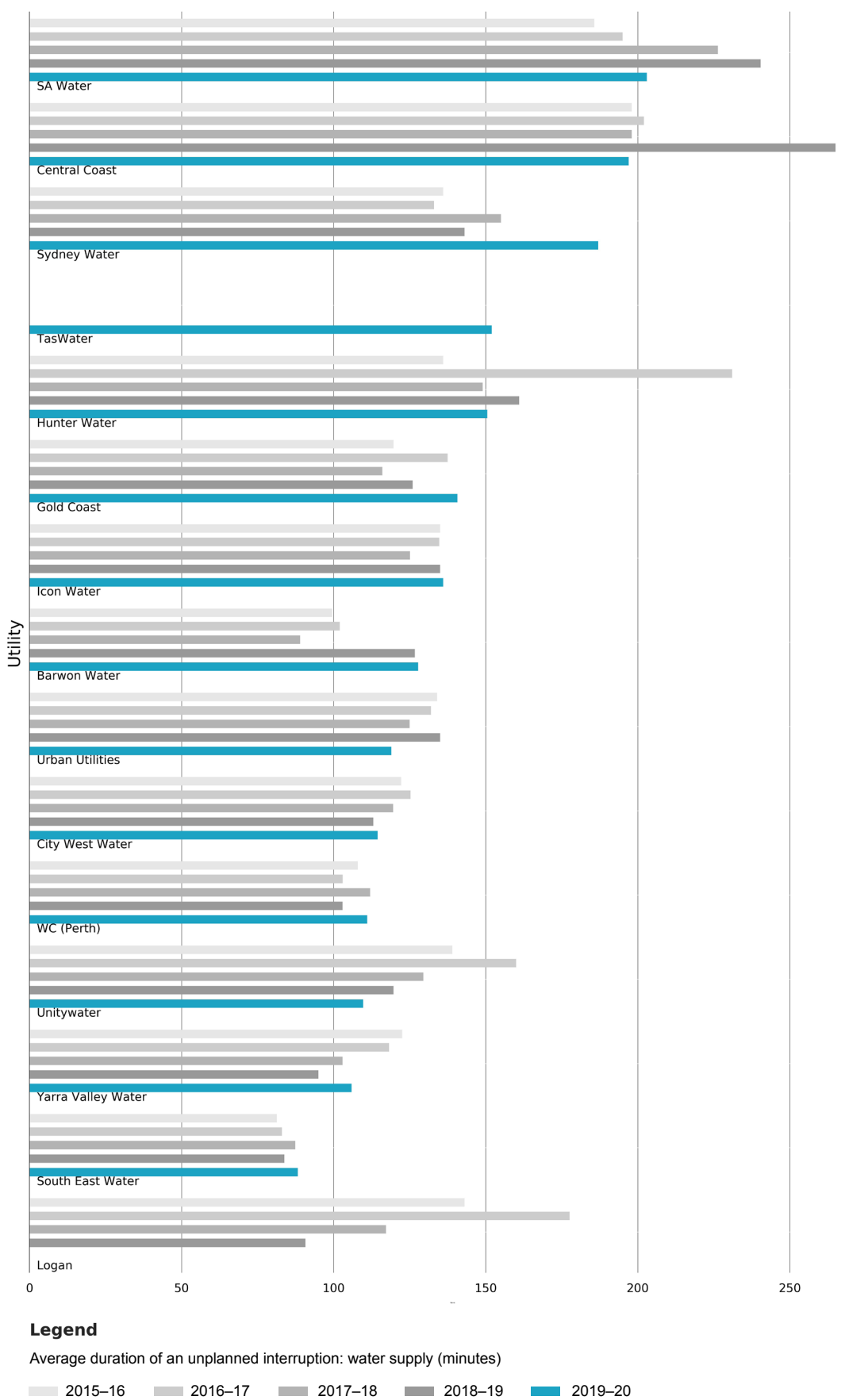


Figure 6.1 Average duration of an unplanned interruption: water (minutes)—Major utility group.

### 6.1.2 Results and analysis—Major utility group

Figure 6.1 presents a ranked breakdown of the average duration of an unplanned interruption for the Major utility group from 2015–16 to 2019–20. The figure highlights the large year-to-year variation in the indicator that can result from a single major mains break.

SA Water Corporation reported the highest (203 minutes) and South East Water Ltd reported the lowest (88 minutes) average duration of unplanned interruptions in 2019–20.

Sydney Water Corporation reported the highest percentage increase in average duration of an unplanned interruption (31 per cent) compared with 2018–19. This was as a result of hot and dry weather conditions over the past 3 years which exacerbated soil movement, leading to an increase in breaks and leaks in water mains which have been complex to repair and difficult to arrange alternative water supply.

## 6.2 Number of water and sewerage complaints 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 2019–20 are presented in Table A11, Appendix A.

### 6.2.1 Key findings

Table 6.2 presents a summary of total water and sewerage complaints by utility size group. Nationally, there was a 9 per cent decrease in the median number of complaints. Clarence Valley Council reported the highest total number of water and sewerage complaints per 1,000 properties in all size groups (115). Gladstone Regional Council and Coffs Harbour City Council reported no water and sewerage complaints per 1,000 properties for 2019–20.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	17.9	0.8	6	6	3.5	4.2	20
	Logan	WC (Perth)					
Large	50.9	0.6	6	5	3.5	4	14
	P&W (Darwin)	Multiple utilities					
Medium	115	0	9	10	7.9	10.3	32
	Clarence Valley	Multiple utilities					
Small	103.1	0.3	9	12	6.9	6.5	-7
	P&W (Alice Springs)	Western Downs					
<b>All utility groups (national)</b>	115	0	30	33	5.4	4.9	-9
	Clarence Valley	Multiple utilities					

**Table note**

The median number of water and sewerage complaints per 1,000 properties for each year is calculated for all non-bulk reporting utilities that provide both reticulated water supply and wastewater services in that year.

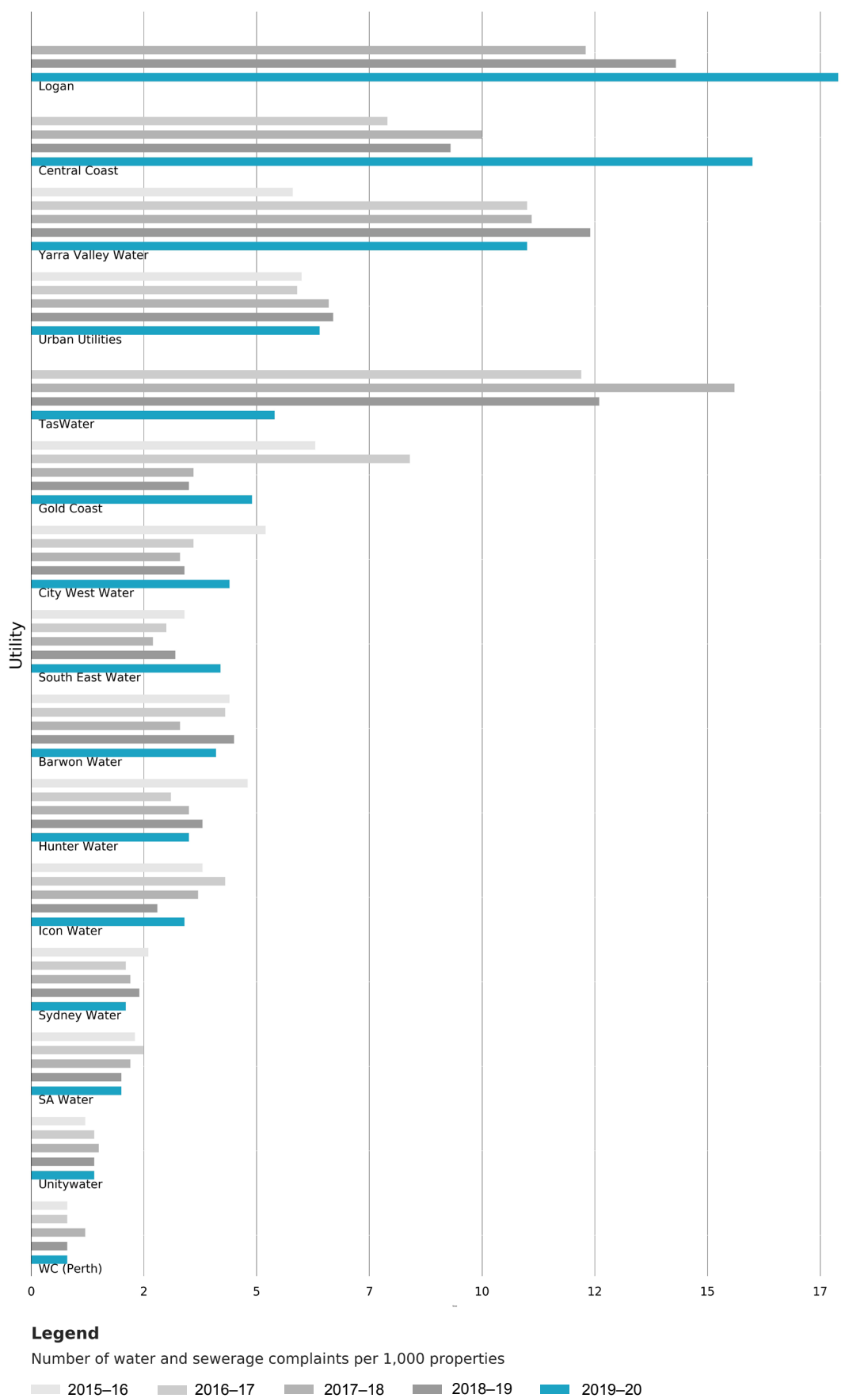


Figure 6.2 Total complaints: water and sewerage (per 1,000 properties)—Major utility group.

## 6.2.2 Results and analysis—Major utility group

Figure 6.2 shows a ranked breakdown of the total water and sewerage complaints from 2015–16 to 2019–20 for the Major utility group.

Logan City Council reported the highest number (17.9) and Water Corporation – Perth reported the lowest number (0.8) of total complaints among the Major utilities for 2019–20. Central Coast Council reported the highest percentage increase (72 per cent) and TasWater reported the highest percentage decrease (57 per cent) in this size group in compared to the previous year.

## 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 in customer calls.

Data on the percentage of calls answered by an operator within 30 seconds for all utilities reporting in 2019–20 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 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	88.5	52.7	8	5	67	73.7	10.0
	Yarra Valley Water	WC (Perth)					
Large	98.6	47.7	4	4	81	81.2	0.2
	North East Water	Townsville					
Medium	99	60	4	7	92	89	-3.3
	East Gippsland Water	Albury					
Small	97	63	4	4	82.3	74.5	-9.5
	Westernport Water	Essential Energy					
<b>All size groups (national)</b>	99	47.7	20	20	75.9	77.9	2.6
	East Gippsland Water	Townsville					

**Table note**

Median percentage of calls answered by an operator within 30 seconds for each year is calculated for all utilities reporting data in that year.

### 6.3.1 Key findings

Nationally, the median percentage of calls answered within 30 seconds increased by 2.6 per cent from 2018–19 to 2019–20 (to 78 per cent). Medium and Small utility groups reported a decrease in the percentage of calls answered by an operator within 30 seconds, the highest percentage decrease (9.5 per cent) being in the Small utility group. East Gippsland Water reported the best performance with the highest percentage of calls answered by an operator within 30 seconds (99 per cent) across all size groups.



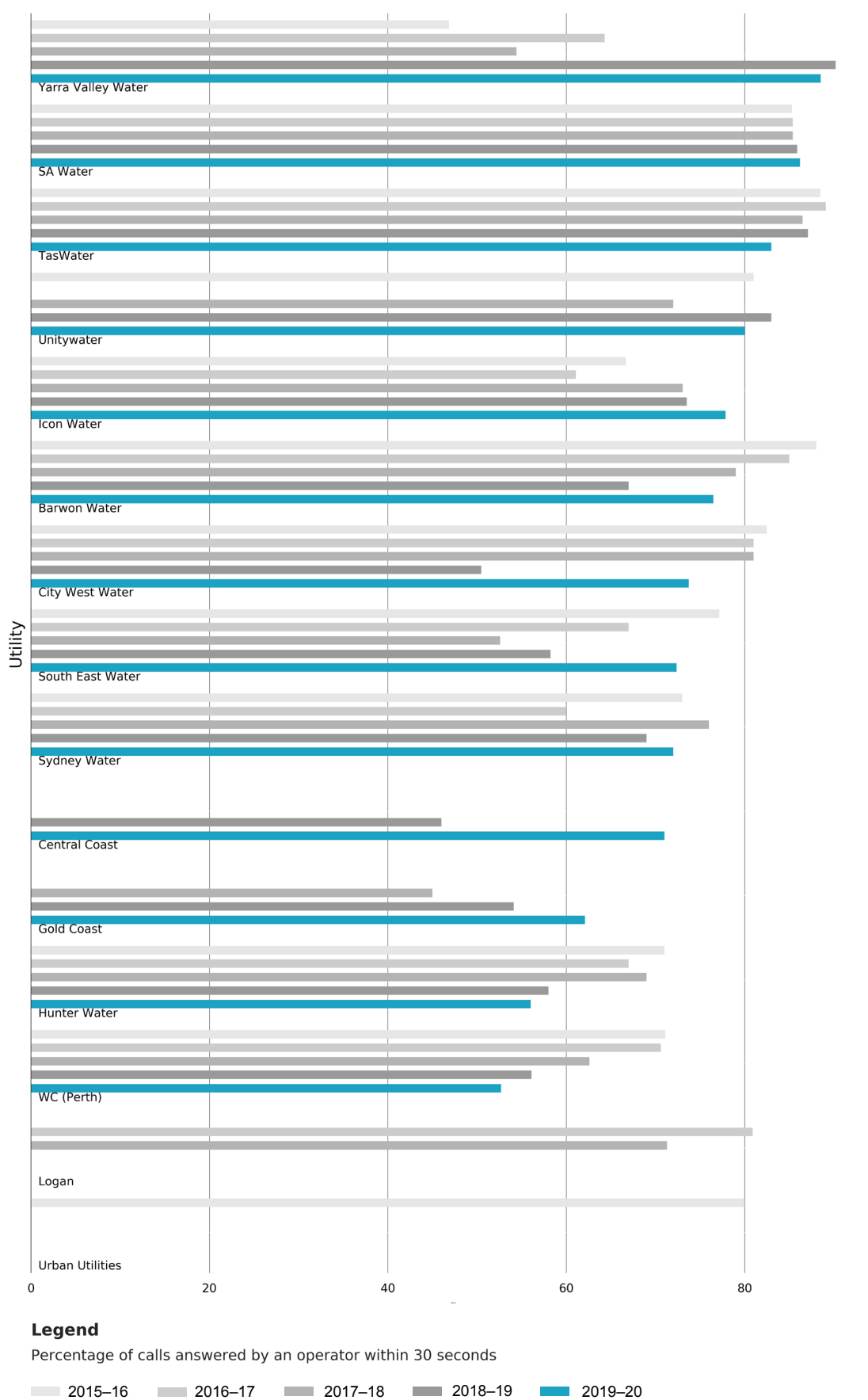


Figure 6.3 Percentage of calls answered by an operator within 30 seconds—Major utility group.

### 6.3.2 Results and analysis—Major utility group

Figure 6.3 shows a ranked breakdown of the percentage of calls answered by an operator within 30 seconds from 2015–16 to 2019–20 for the Major utility group.

Central Coast Council reported the biggest increase (54 per cent) in the percentage of calls answered by an operator within 30 seconds from 2018–19 to 2019–20. Yarra Valley Water Corporation reported the best performance with the highest percentage of calls answered by an operator within 30 seconds (89 per cent) in the Major utility group.

## 7 Asset

### 7.1 Number of water main breaks bursts and leaks per 100 km of water mains—A8

The number of water main breaks, bursts and leaks per 100 km of water mains (A8) is the total number of breaks, bursts, and leaks in all distribution system mains<sup>5</sup>, 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, bursts and leaks per 100 km of water mains for all utilities reporting in 2019–20 are presented in Table A13, Appendix A.

#### 7.1.1 Key findings

Figure 7.1 shows the downward trend in water mains breaks data for all utilities reporting A8 from 2009–10 to 2017–18. In 2018–19, and again in 2019–20, there were modest increases to the national median number of mains breaks.

Table 7.1 presents a summary of the number of water main breaks per 100 km of water main by utility size group.

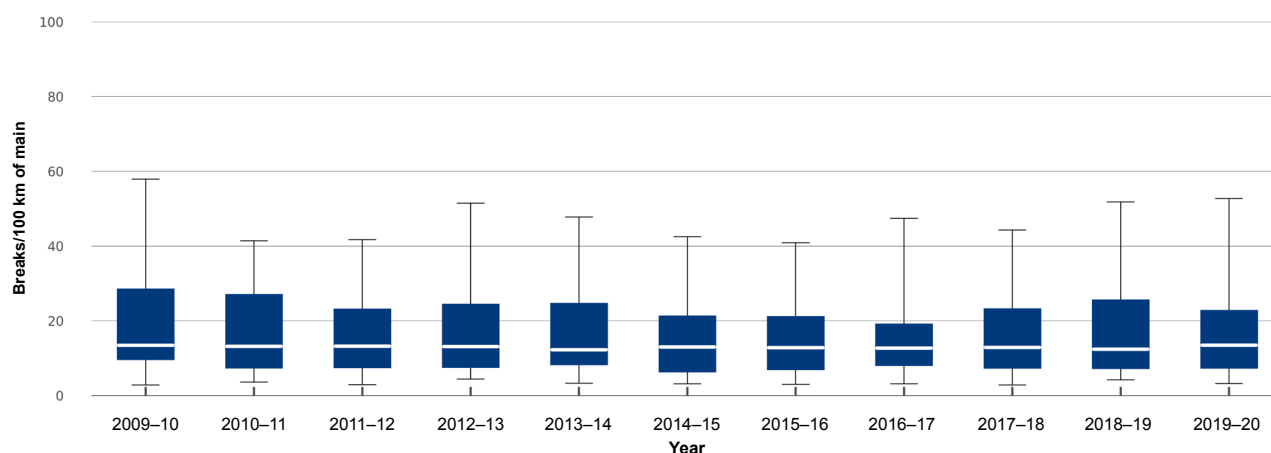


Figure 7.1 Number of water main breaks, bursts and leaks per 100 km of water mains.

#### 7.1.2 Results and analysis—Major utility group

Figure 7.2 presents a ranked breakdown of the water main breaks for each utility in the Major utility group from 2015–16 to 2019–20. The figure highlights both the variance within the utility group and a broad downward trend for some utilities (for example, Central Coast Council and Yarra Valley Water Corporation).

Six utilities, including Sydney Water Corporation, Unitywater, Logan City Council and City of Gold Coast reported an increase in water main breaks, bursts and leaks from 2018–19 to 2019–20. Sydney Water Corporation reported the largest percentage increase (18.2 per cent); however, their 2019–20 result followed a decrease of 25 per cent from 2017–18 to 2018–19. City West Water reported the largest percentage decrease (22.8 per cent); however, as this decrease followed a large increase from 2017–18 to 2018–19, their 2019–20 result is relatively close to their long-term average.

<sup>5</sup> The figure includes both potable and non-potable water mains.

**Table 7.1 Overview of results: Number of water main breaks, burst and leaks per 100 km of water mains (mains breaks/100 km).**

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	43.8	4.9	6	9	24.7	25.1	2
	Yarra Valley Water	Unitywater					
Large	27.6	2.3	5	7	14.7	13.4	-9
	Townsville	WC (Mandurah)					
Medium	86.1	3.5	9	14	9.4	11.2	19
	Clarence Valley	Albury					
Small	52.7	3.2	11	11	15.1	11.5	-24
	Lismore	Livingstone					
<b>All utility groups (national)</b>	86.1	2.3	31	41	12.4	13.5	9
	Clarence Valley	WC (Mandurah)					

**Table note**

The median for water main breaks, burst and leaks per 100 km of water mains in each year was calculated using data from all utilities (dual-service and single-service providers) reporting data against A8 in that year.

## 7.2 Number of sewer mains breaks and chokes per 100 km—A14 and property connection sewer breaks and chokes per 1,000 properties—A15

Indicator A14 reports the number of sewer breaks and chokes per 100 km of sewer mains, and A15 reports the number of property connection sewer 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.

- 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 own<sup>6</sup> 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.

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.

<sup>6</sup> For such utilities, the property owner is responsible for the property's sewer connections.

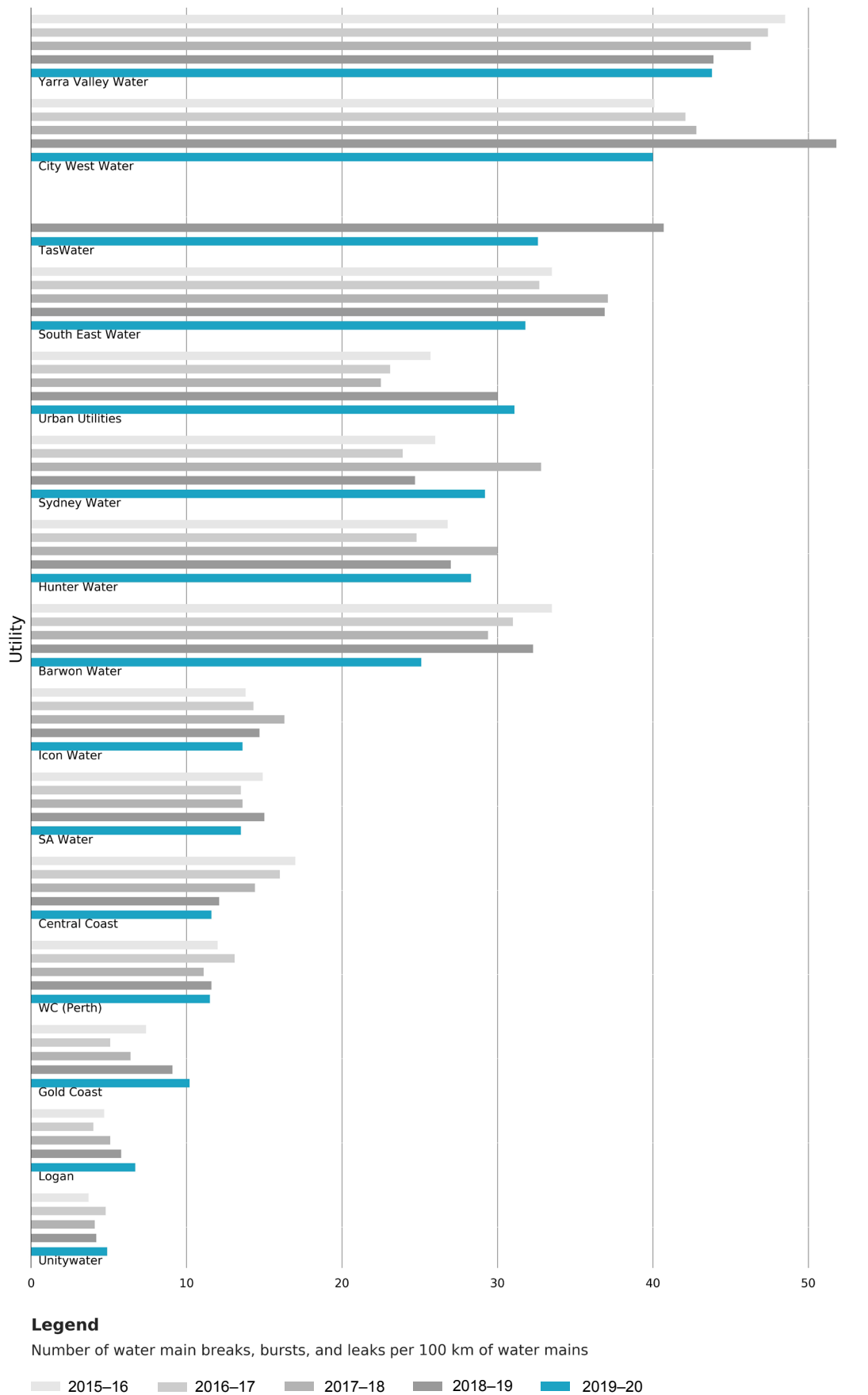


Figure 7.2 Water main breaks, bursts and leaks per 100 km of water mains—Major utility group.

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.

Data on sewer mains breaks and chokes for all utilities reporting in 2019–20 are presented in Table A14, Appendix A. Property connection sewer breaks and chokes for all utilities reporting in 2019–20 are presented in A15, Appendix A.

### 7.2.1 Key findings

Table 7.2 presents a summary of the number of sewer mains breaks and chokes per 100 km of sewer main by utility group.

Table 7.3 presents a summary of the property connection sewer breaks and chokes per 1,000 properties by utility group.

In 2019–20, there was a national median of 18 sewer mains breaks and chokes per 100 km of sewer main, which was a 2 per cent increase from 2018–19 (Table 7.2). There was a 23 per cent decrease in the sewer breaks and chokes per 1,000 properties (Table 7.3). All utility groups reported a decrease in property connection sewer breaks and chokes; the Medium utility group reported a 24 per cent decrease while the others were in the range of 6 per cent to 10 per cent.

**Table 7.2 Overview of results: Number of sewer mains breaks and chokes per 100 km of sewer main (breaks and chokes/100 km).**

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	83.8	6.2	12	3	36.6	33	-10
	Icon Water	Gold Coast					
Large	54.8	2.7	6	6	10.7	13.7	28
	Townsville	Redland City					
Medium	88	0	11	9	20.4	14.7	-28
	Coffs Harbour	Tweed					
Small	143	3	13	9	10	13.7	37
	Essential Energy	Cassowary Coast					
<b>All size groups (national)</b>	143	0	42	27	17.6	18	2
	Essential Energy	Tweed					

**Table note**

The median number of sewer mains breaks (per 100 km of sewer main) in each year is calculated using data from all utilities (dual-service and single-service providers) reporting data against A14 in that year.

### 7.2.2 Results and analysis—Major utility group

Figures 7.3 and 7.4 show a ranked breakdown of the sewer mains breaks and chokes for each Major utility from 2015–16 to 2019–20 and a ranked breakdown for property connection sewer breaks and chokes, respectively.

Twelve utilities reported an increase in sewer mains breaks and chokes per 100 km sewer main, and six utilities reported an increase in sewer breaks and chokes per 1,000 properties from 2018–19 to 2019–20. City of Gold Coast reported the largest percentage increase (26.5 per cent) in breaks and chokes per 100 km of sewer main compared with 2018–19 (Figure 7.3). This is consistent with continued below-average rainfall for the first half of 2019–20 for eastern Australia. Temperatures also remained very much above average in 2019–20, resulting in dry soil conditions which can contribute to an increase in breaks and chokes.



**Table 7.3 Overview of results: Number of property connection sewer breaks and chokes per 1,000 properties (breaks and chokes/1,000 properties).**

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	29	0.3	6	6	4.4	4	-9
	SA Water	Sydney Water					
Large	7.5	1	4	7	3	2.7	-10
	Goulburn Valley Water	P&W (Darwin)					
Medium	33.1	0.2	9	11	4.1	3.1	-24
	GWMWater	Port Macquarie Hastings					
Small	60	0	8	9	4.9	4.6	-6
	Essential Energy	Kal–Boulder (S)					
<b>All utility groups (national)</b>	60	0	27	33	4.3	3.3	-23
	Essential Energy	Kal–Boulder (S)					

**Table note**

The median number of property connection sewer breaks and chokes per 1,000 properties in each year is calculated using data from all utilities (dual-service and single-service providers) reporting data against A15 in that year.

## 7.3 Real losses: service connections—A10

‘Real’ losses (A10) are leakages and overflows from potable water mains, service reservoirs, and service connections before the customer meter (L/service connection/day). 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.

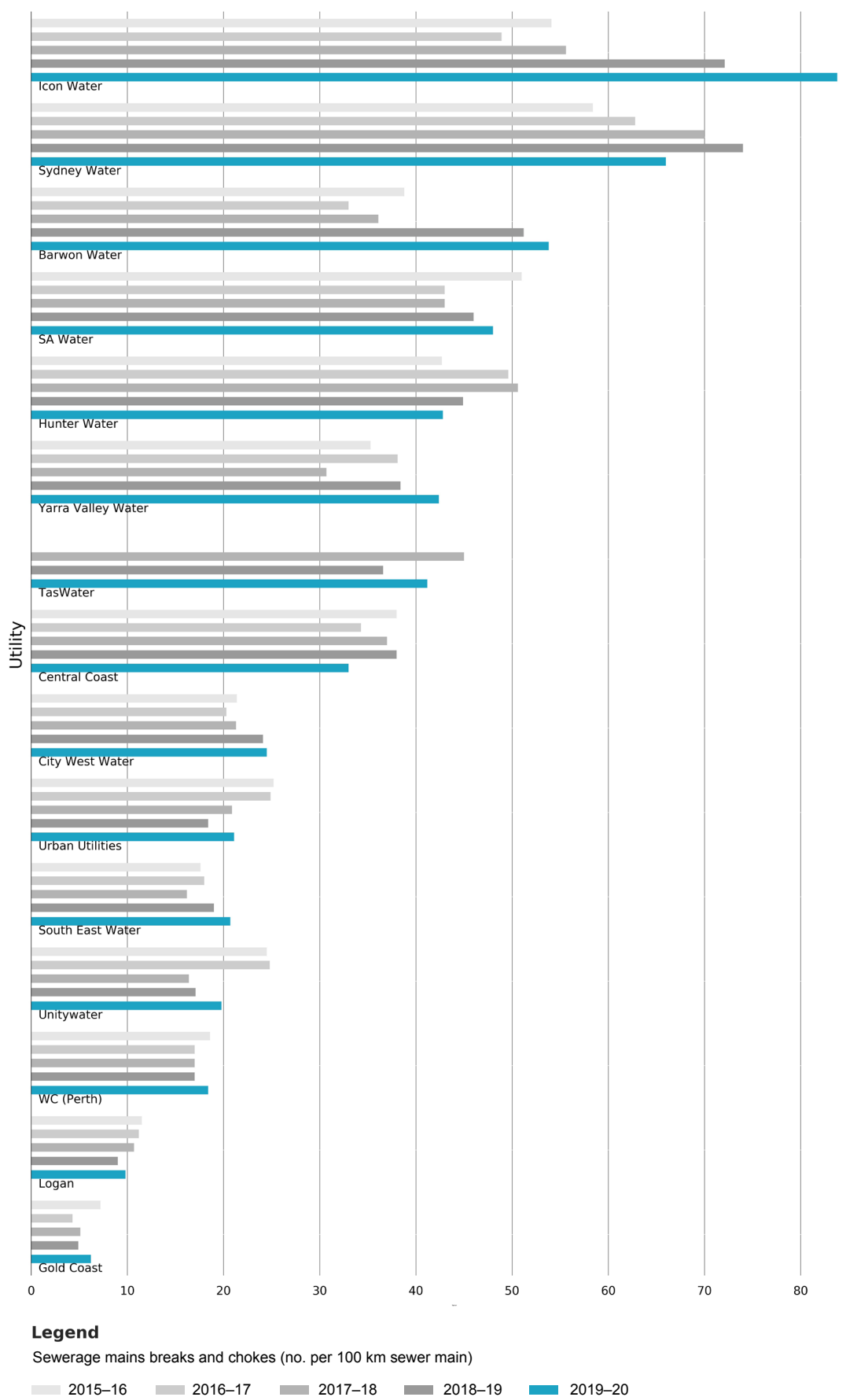
Real loss data for all utilities reporting in 2019–20 are presented in Table A16, Appendix A.

### 7.3.1 Key findings

Table 7.4 presents a summary of the real losses by utility size group.

The national median across all size groups decreased by 10 per cent from 2018–19 to 2019–20, to 70.9 L/service connection/day.

As in 2018–19, Cassowary Coast Regional Council reported the highest real losses among the utilities (472.4 L/service connection/day in 2019–20). Power and Water – Alice Springs reported the highest percentage increase in real losses since 2018–19.



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

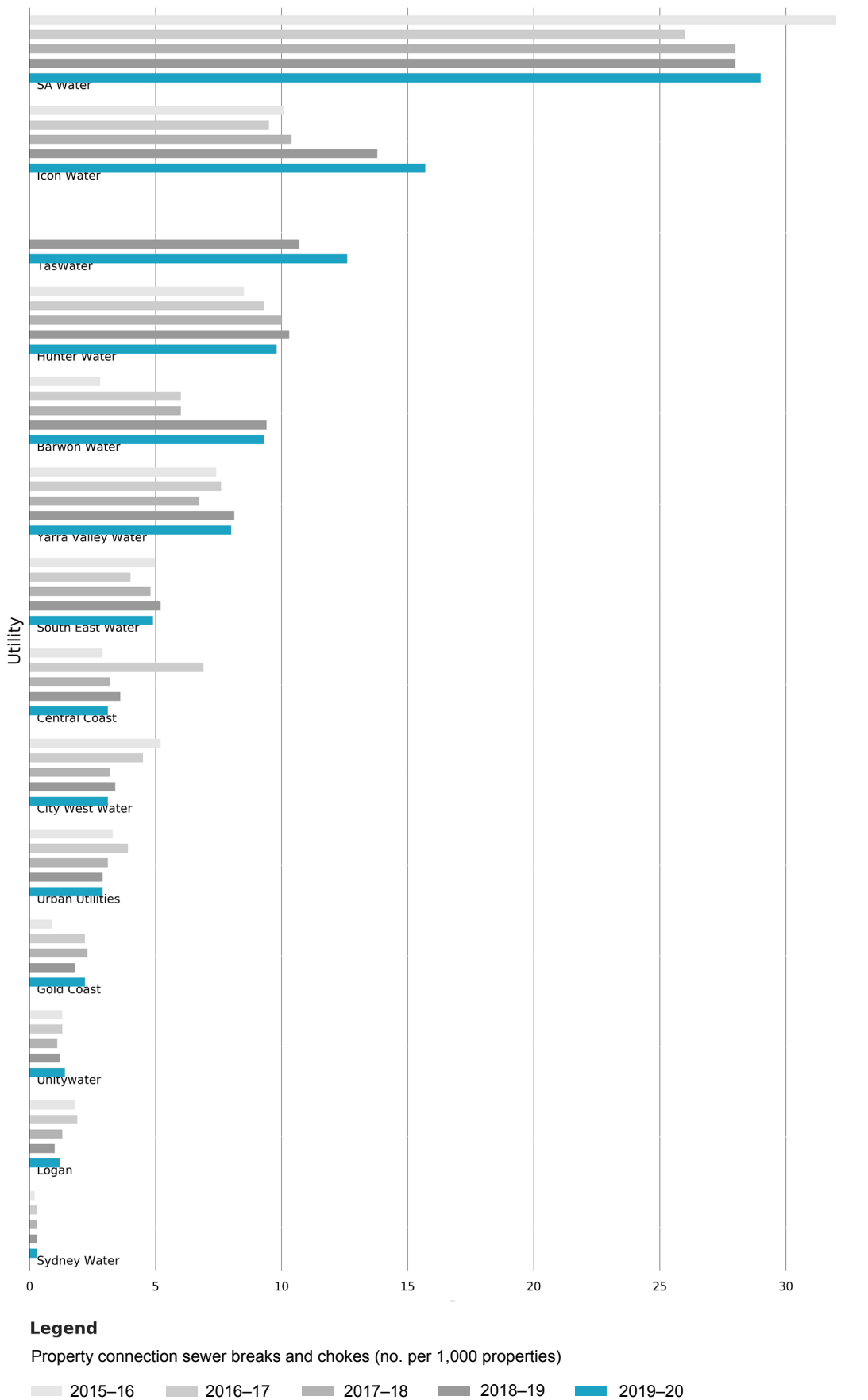


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties—Major utility group.

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

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	361	21	5	10	69.3	68	-2
	TasWater	Barwon Water					
Large	333.7	0	5	7	68.5	62.5	-9
	Townsville	Western Water					
Medium	194.1	0	12	9	76.9	74	-4
	Fitzroy River Water	Multiple utilities					
Small	472.4	6.7	13	11	105.5	88.2	-16
	Cassowary Coast	Western Downs					
<b>All utility groups (national)</b>	472.4	0	35	37	78.5	70.9	-10
	Cassowary Coast	Multiple utilities					

**Table note**

The median real losses (L/service connection/day) for each year are calculated using data from all utilities (dual-service and single-service providers) reporting data against A10 in that year.

Figure 7.5 shows a box-and-whisker plot of the real losses for all utilities reporting A10 for a given reporting year from 2009–10 to 2019–20.

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.

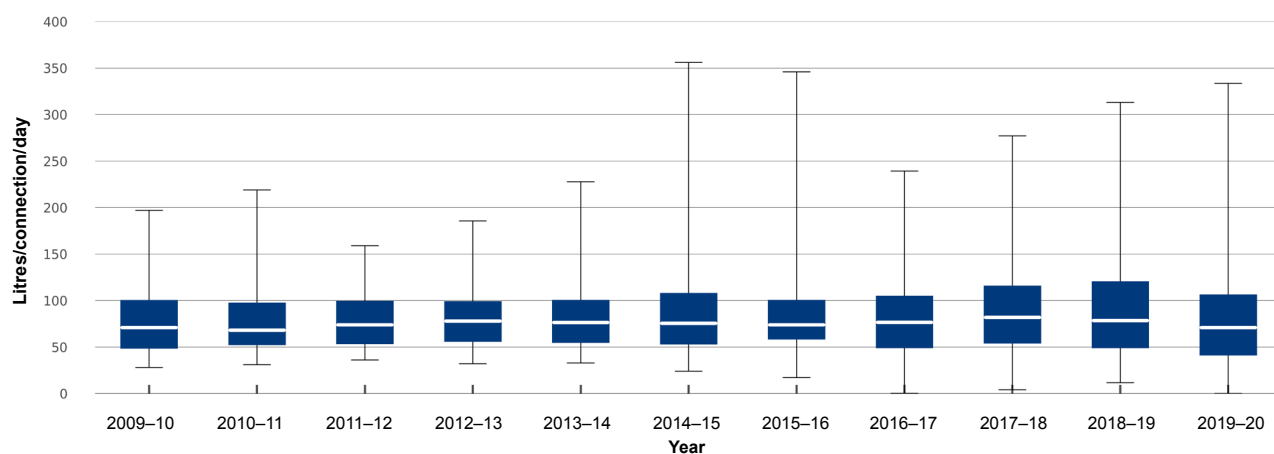


Figure 7.5 Real losses (L/service connection/day).

### 7.3.2 Results and analysis—Major utility group

Figure 7.6 presents a ranked breakdown of the real losses per annum for each Major utility from 2015–16 to 2019–20. Five utilities reported an increase in real losses between 2018–19 and 2019–20. Central Coast Council reported the highest percentage increase (56.8 per cent), from 37 L/service connection/day in 2018–19 to 58 L/service connection/day in 2019–20).

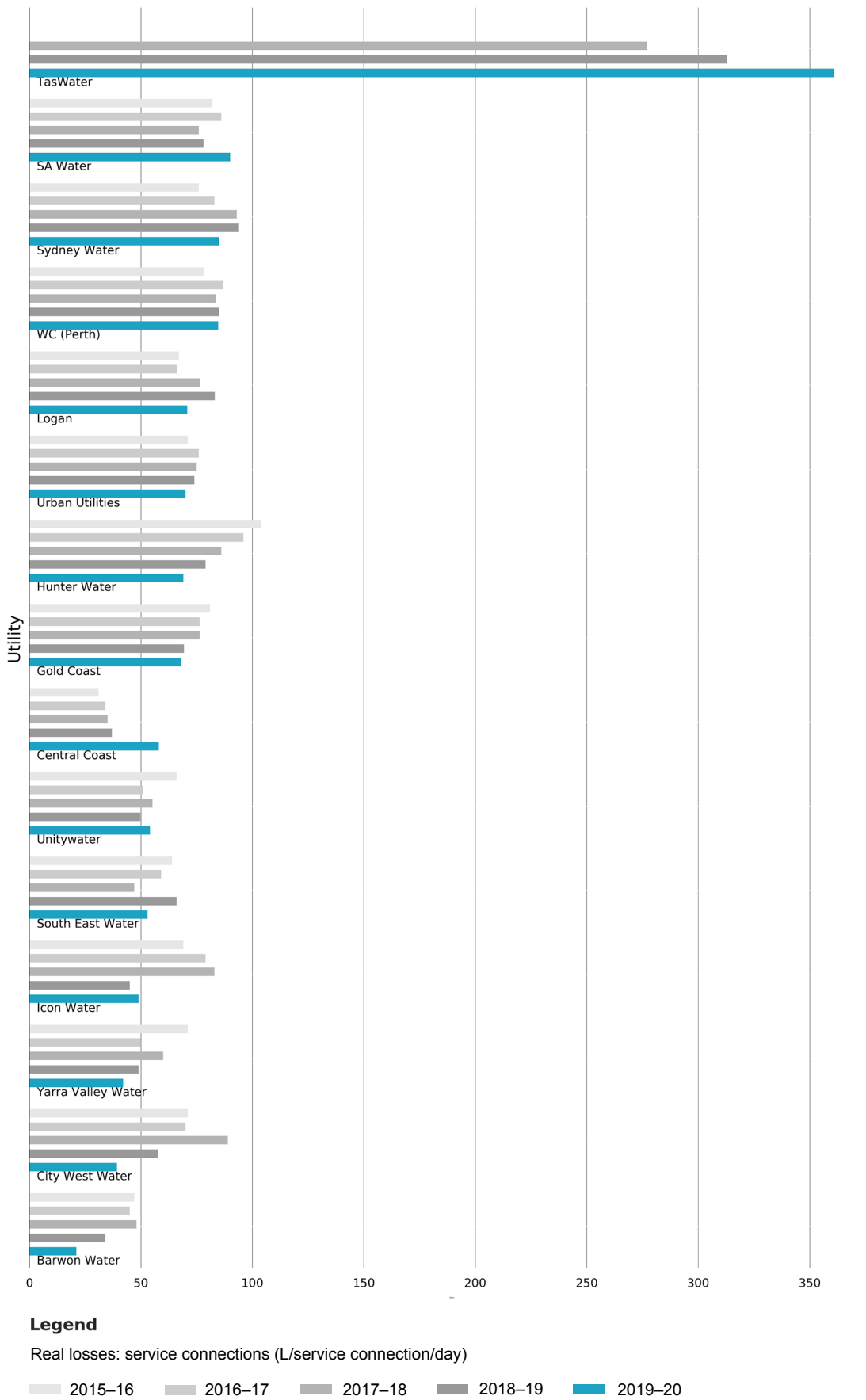


Figure 7.6 Real losses: service connections (L/service connection/day)—Major utility group.

## 8 Environment

### 8.1 Total net greenhouse gas emissions per 1,000 properties—E12

The total net greenhouse gas (GHG) emissions per 1,000 properties indicator (E12) reports the contribution of a utility's operations to greenhouse gas emissions (t CO<sub>2</sub> equivalent/1,000 properties). Utilities' calculations are required to refer to the National Greenhouse Accounts (NGA) Factors issued by the Department of the Environment and Energy and must also be updated annually. Greenhouse gas 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 (CO<sub>2</sub> 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 2019–20 are presented in Table A17, Appendix A.

### 8.1.1 Key findings

Table 8.1 presents a summary of the total net GHG emissions by utility size group.

Table 8.1 Overview of results: Total net greenhouse gas emissions per 1,000 properties (t CO<sub>2</sub> equivalent/1,000 properties).

Utility group	Range		No. utilities with increase/decrease from 2018–19		Median		Change in median from 2018–19 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	701	28	6	9	212	228	8
	WC (Perth)	City West Water					
Large	1,290	184	3	9	405	409	1
	Goulburn Valley Water	Redland City					
Medium	739	0	6	13	433	426	-2
	Shoalhaven	Mackay					
Small	878	168	10	9	423	385	-9
	P&W (Alice Springs)	Southern Downs					
<b>All size groups (national)</b>	1,290	0	25	40	410	385	-6
	Goulburn Valley Water	Mackay					

**Table note**

The median total net GHG emissions for each year is calculated using data from all utilities supplying both water and wastewater services reporting data for E12 for that year.

The median total net GHG emissions decreased by 6 per cent for all size groups after a sudden increase last year. The notable changes from 2018–19 include a high increase (76 per cent) in net emissions by Wingecarribee Shire Council (from 416 t CO<sub>2</sub> equivalent/1,000 properties to 733 t CO<sub>2</sub> equivalent/1,000 properties) and a large decrease (55.9 per cent) by Essential Energy.

### 8.1.2 Results and analysis—Major utility group

The Major utility group reported an 8 per cent increase in median net GHG emissions from 2018–19 to 2019–20. Perth reported the highest percentage increase (37.5 per cent) and SA Water Corporation reported the highest percentage decrease (18.8 per cent).

As in previous years, Water Corporation – Perth was the highest net GHG emitter per property in the Major utility group (701 t CO<sub>2</sub> equivalent/1,000 properties) in 2019–20, and City West Water was the lowest total net GHG emitter (28 t CO<sub>2</sub> equivalent/1,000 properties).



## 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*<sup>7</sup>, 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 and the cause of non-compliance is not always traceable.

Microbiological compliance data for 2019–20 are presented in Table A18, Appendix A.

#### 9.1.1 Key findings

Table 9.1 presents a summary of the percentage of population for which microbiological compliance was achieved by utility size group.

In 2019–20, nationwide and across all utility groups, all utilities achieved 100 per cent microbiological compliance except Southern Downs Regional Council (99.5 per cent), Gympie Regional Council (98.6 per cent), Cassowary Coast Regional Council (97.5 per cent), and Coliban Water (94.3 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 2018–19		Median		Change in median from 2019–20 (%)
	High	Low	Increase	Decrease	2018–19	2019–20	
Major	100	100	0	0	100	100	0
	Multiple utilities	Multiple utilities					
Large	100	94.3	0	1	100	100	0
	Multiple utilities	Coliban Water					
Medium	100	100	1	0	100	100	0
	Multiple utilities	Multiple utilities					
Small	100	97.5	0	3	100	100	0
	Multiple utilities	Cassowary Coast					
<b>All size groups (national)</b>	100	94.3	1	4	100	100	0
	Multiple utilities	Coliban Water					

**Table note**

The median percentage of population for which microbiological compliance was achieved for each year was calculated using data from all utilities supplying both water services reporting data against H3 in that reporting year.

#### 9.1.2 Results and analysis—Major utility group

All utilities in this Major utility group reported achieving microbiological compliance for 100 per cent of the population. In 2019–20, TasWater reported 100 per cent compliance for the second successive year.

<sup>7</sup> [www.nhmrc.gov.au/guidelines/publications/eh52](http://www.nhmrc.gov.au/guidelines/publications/eh52), updated August 2018.

## Appendix A Individual utility group tables

- Tables A1 to A18 present a summary of key indicators by utility group for the period 2015–16 to 2019–20.
- Utilities are sorted in descending order based on their percentage changes in value from 2019–20 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 year.
- For conciseness, in some cases data presented in Appendix A are rounded to the nearest integer. For the full dataset, refer to Part B—The complete dataset.

**Table A1 W12—Average annual residential water supplied (kL/property) by utility size group, 2015–16 to 2019–20.**

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Gold Coast	170	168	161	164	175	7.0
WC (Perth)	240	223	219	219	227	3.8
Urban Utilities	156	154	153	156	162	3.6
TasWater	176	179	193	191	193	1.3
South East Water	154	150	150	149	150	0.2
City West Water	150	147	142	146	146	0.0
Unitywater	157	157	156	157	156	-0.4
Icon Water	196	190	197	204	202	-1.0
Central Coast	155	161	169	158	156	-1.3
Logan	151	154	145	150	148	-1.3
SA Water	200	166	190	198	190	-3.8
Yarra Valley Water	156	148	151	155	148	-4.5
Sydney Water	201	206	215	199	189	-5.3
Barwon Water	170	158	163	171	161	-5.6
Hunter Water	166	172	181	175	156	-10.8
<b>Median</b>	<b>166</b>	<b>161</b>	<b>163</b>	<b>164</b>	<b>161</b>	
<b>Mean</b>	<b>173</b>	<b>169</b>	<b>172</b>	<b>173</b>	<b>171</b>	
<b>Large</b>						
Townsville	369	243	242	314	363	15.8
WC (Mandurah)	234	221	216	212	220	3.8
Redland City	166	172	164	169	174	2.6
Cairns	244	251	253	254	257	1.2
Toowoomba	145	155	152	163	162	-0.3
P&W (Darwin)	405	361	368	380	373	-1.8
North East Water	214	198	208	224	214	-4.5
Central Highlands Water (Vic)	163	150	157	161	151	-6.3
Western Water	193	179	186	196	182	-7.1
Coliban Water	210	185	201	210	195	-7.1
Goulburn Valley Water	287	242	264	285	261	-8.5
Gippsland Water	170	166	168	177	161	-9.1
<b>Median</b>	<b>212</b>	<b>192</b>	<b>205</b>	<b>211</b>	<b>205</b>	
<b>Mean</b>	<b>233</b>	<b>210</b>	<b>215</b>	<b>229</b>	<b>226</b>	

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Medium</b>						
Mackay	196	175	180	187	215	15.3
Queanbeyan	163	150	167	158	171	8.2
Bundaberg	236	234	218	243	261	7.2
Shoalhaven	150	151	157	146	155	6.2
Wingecarribee	186	190	216	206	218	5.8
Gladstone	243	224	132	239	251	5.2
Fraser Coast	181	201	164	186	191	2.8
Fitzroy River Water	363	345	343	375	383	2.1
Lower Murray Water	504	428	490	519	520	0.3
Eurobodalla	117	124	123	121	121	0.0
Tweed	165	178	176	177	177	0.0
Riverina Water (W)	333	298	311	343	338	-1.5
Coffs Harbour	167	167	170	154	151	-1.9
Albury	223	204	237	252	246	-2.4
GWMWater	254	210	316	249	241	-3.3
South Gippsland Water	125	120	118	119	115	-3.7
Wannon Water	153	136	144	147	141	-4.1
East Gippsland Water	146	148	157	160	153	-4.4
MidCoast Council	139	144	142	155	144	-7.1
Port Macquarie Hastings	158	152	172	160	144	-10.0
Clarence Valley	158	162	155	159	115	-27.7
Dubbo	322	300	386	337	207	-38.6
Tamworth	251	230	291	247	141	-42.9
<b>Median</b>	<b>181</b>	<b>178</b>	<b>172</b>	<b>186</b>	<b>177</b>	
<b>Mean</b>	<b>215</b>	<b>203</b>	<b>216</b>	<b>219</b>	<b>209</b>	
<b>Small</b>						
Whitsunday	292	238	319	268	304	13.4
Bega Valley	135	150	149	145	163	12.4
Livingstone	294	281	296	317	349	10.1
Gympie	182	170	171	158	169	7.4
WC (Kal–Boulder) (W)	295	279	280	284	300	5.6
WC (Geraldton)	306	298	289	279	286	2.5
WC (Australind/Eaton)	315	288	288	283	289	2.2
Aqwest–Bunbury (W)	261	248	242	240	245	2.1
Goulburn Mulwaree	162	156	149	150	153	2.0
Essential Energy	233	242	277	275	277	0.7
Cassowary Coast	294	251	237	219	220	0.6
Byron	169	156	199	200	200	0.0
WC (Albany)	178	176	176	169	169	-0.2
Kempsey	149	141	159	147	146	-0.7
P&W (Alice Springs)	455	418	448	457	451	-1.3

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Western Downs		181	188	204	201	-1.5
Busselton (W)	288	275	294	265	261	-1.7
Orange	173	173	186	166	163	-1.8
Westernport Water	77	84	85	91	89	-1.9
Central Highlands	520	445	487	443	430	-2.9
Ballina	168	192	179	183	173	-5.5
Goldenfields Water (W)		261	287	305	288	-5.6
Lismore	156	155	147	148	127	-14.2
Bathurst	235	231	254	194	144	-25.8
Southern Downs	145	158	157	152	100	-34.1
Armidale			214	226	141	-37.6
<b>Median</b>	<b>233</b>	<b>231</b>	<b>225</b>	<b>212</b>	<b>201</b>	
<b>Mean</b>	<b>238</b>	<b>226</b>	<b>237</b>	<b>229</b>	<b>225</b>	

Table A2 W26—Total recycled water supplied (ML), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
WC (Perth)	10,212	9,568	12,100	9,817	20,681	110.7
Logan	784	738	461	625	789	26.2
Icon Water	4,053	4,404	77	60	75	25.0
Central Coast	895	724	1,042	674	825	22.4
Hunter Water	5,373	5,384	4,923	3,862	4,651	20.4
Unitywater	969	1,461	1,030	1,160	1,292	11.4
City West Water	2,567	2,581	2,605	2,739	2,931	7.0
Sydney Water	43,342	38,339	42,833	44,020	46,919	6.6
Yarra Valley Water	3,905	4,107	2,601	2,473	2,427	-1.9
Urban Utilities	8,828	4,188	4,037	4,776	4,532	-5.1
Gold Coast	9,241	8,256	7,439	7,712	7,306	-5.3
South East Water	3,968	3,233	7,433	8,073	6,825	-15.5
SA Water	31,181	23,890	29,421	32,312	26,400	-18.3
Barwon Water	6,187	5,541	5,655	5,998	4,683	-21.9
TasWater		4,691	5,605		6,093	
<b>Median</b>	<b>4,713</b>	<b>4,404</b>	<b>4,923</b>	<b>4,319</b>	<b>4,651</b>	
<b>Mean</b>	<b>9,393</b>	<b>7,807</b>	<b>8,484</b>	<b>8,879</b>	<b>9,095</b>	
<b>Large</b>						
Redland City		105	89	94	121	28.7
North East Water	2,590	2,391	8,432	7,955	8,093	1.7
Western Water	8,956	9,073	7,244	7,627	7,748	1.6
Townsville	1,606	1,719	1,283	1,367	1,383	1.2
Central Highlands Water (Vic)	2,055	1,104	1,593	1,680	1,628	-3.1
Gippsland Water	1,958	2,169	2,291	2,054	1,969	-4.1
Coliban Water	3,444	9,739	1,509	1,510	1,411	-6.6
WC (Mandurah)	137	168	226	239	220	-7.9
Toowoomba	2,773	2,854	1,743	2,597	2,105	-18.9
Goulburn Valley Water	7,194	5,698	314	390	307	-21.3
Cairns	2,278	2,184	2,119	1,926	533	-72.3
P&W (Darwin)	80	541	451	488	0	-100.0
<b>Median</b>	<b>2,278</b>	<b>2,177</b>	<b>1,551</b>	<b>1,595</b>	<b>1,397</b>	
<b>Mean</b>	<b>3,006</b>	<b>3,145</b>	<b>2,275</b>	<b>2,327</b>	<b>2,127</b>	
<b>Medium</b>						
Eurobodalla	195	186	228	239	433	81.2
Port Macquarie Hastings	340	481	400	440	610	38.6
Albury	2,503	4,655	3,885	2,457	3,297	34.2
Coffs Harbour	1,113	1,229	1,650	965	1,281	32.7
Fraser Coast	4,933	4,893	4,739	5,591	6,918	23.7
South Gippsland Water	221	136	108	111	122	9.9
Bundaberg	758	452	352	533	585	9.8
Clarence Valley	385	329	376	376	386	2.7
Fitzroy River Water	682		755	717	735	2.5

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Shoalhaven	1,551	1,576	2,289	2,185	2,218	1.5
Queanbeyan	100	158	70	70	70	0.0
Tweed	695	824	852	879	874	-0.6
MidCoast Council	944	1,033	1,290	1,432	1,398	-2.4
Wagga Wagga (S)	5,679	5,923	5,008	4,986	4,819	-3.0
Mackay	4,967	2,602	4,263	4,263	4,034	-5.4
East Gippsland Water	3,172	2,933	2,774	1,139	1,072	-5.9
Wingecarribee	232	187	179	186	171	-8.1
Dubbo	2,599	2,327	3,043	2,448	2,159	-11.8
Wannon Water	1,725	1,656	1,779	2,008	1,725	-14.1
Lower Murray Water	2,791	3,759	387	483	408	-15.5
Tamworth	4,071	4,188	4,060	4,563	3,622	-20.6
Gladstone	3,572	2,899	3,166	3,174	2,494	-21.4
GWMWater	2,108	4,416	2,147	2,569	0	-100.0
<b>Median</b>	<b>1,551</b>	<b>1,616</b>	<b>1,650</b>	<b>1,139</b>	<b>1,072</b>	
<b>Mean</b>	<b>1,971</b>	<b>2,129</b>	<b>1,904</b>	<b>1,818</b>	<b>1,714</b>	
<b>Small</b>						
Kal-Boulder (S)	1,449	946	955	773	1,126	45.7
Essential Energy	669	704	662	484	617	27.5
Bega Valley	401	535	680	628	762	21.3
Lismore	5	8	6	15	17	13.3
Bathurst	0	0	674	691	762	10.3
Central Highlands	1,753	1,619	1,621	1,857	1,939	4.4
Western Downs		1,097	1,073	1,075	1,105	2.8
Kempsey	96	123	158	145	149	2.8
WC (Bunbury) (S)	109	114	139	124	127	2.4
WC (Albany)	2,131	2,145	2,172	2,081	2,085	0.2
WC (Australind/Eaton)	1,469	1,181	714	733	721	-1.6
P&W (Alice Springs)	1,121	1,078	1,146	1,001	927	-7.4
Orange	2,051	786	2,020	3,074	2,723	-11.4
Whitsunday	667	460	403	358	317	-11.5
WC (Busselton) (S)	225	221	247	287	254	-11.5
Ballina	500	701	623	782	688	-12.0
Gympie	160	118	108	111	97	-12.4
WC (Geraldton)	216	220	214	248	210	-15.3
Byron	367	661	629	642	516	-19.6
Armidale			1,263	1,188	846	-28.8
Livingstone	0	786	789	1,480	1,047	-29.3
Southern Downs	1,538	1,524	1,298	1,279	894	-30.1
Westernport Water	295	299	85	109	76	-30.3
Goulburn Mulwaree	1,730	1,843	1,618	1,533	237	-84.5
<b>Median</b>	<b>451</b>	<b>701</b>	<b>677</b>	<b>712</b>	<b>705</b>	
<b>Mean</b>	<b>771</b>	<b>746</b>	<b>804</b>	<b>862</b>	<b>760</b>	

Table A3 P8—Typical annual bill (\$), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Urban Utilities	1,297	1,304	1,310	1,324	1,388	4.8
Gold Coast	1,677	1,656	1,608	1,612	1,671	3.7
WC (Perth)	1,463	1,455	1,509	1,568	1,606	2.4
Icon Water	1,210	1,193	1,204	1,156	1,170	1.2
Unitywater	1,593	1,583	1,494	1,480	1,492	0.8
South East Water	1,092	1,069	1,052	982	989	0.7
City West Water	1,008	980	958	968	974	0.6
Sydney Water	1,248	1,139	1,161	1,118	1,123	0.4
TasWater	1,135	1,158	1,193	1,220	1,207	-1.1
Hunter Water	1,088	1,109	1,161	1,177	1,161	-1.4
Logan	1,650	1,665	1,624	1,629	1,602	-1.7
SA Water	1,432	1,199	1,282	1,310	1,280	-2.3
Barwon Water	1,097	1,037	1,042	1,061	1,032	-2.7
Yarra Valley Water	1,153	1,082	1,094	1,087	1,057	-2.8
Central Coast	1,243	1,303	1,296	1,247	1,037	-16.8
<b>Median</b>	<b>1,243</b>	<b>1,193</b>	<b>1,204</b>	<b>1,220</b>	<b>1,170</b>	
<b>Mean</b>	<b>1,292</b>	<b>1,262</b>	<b>1,266</b>	<b>1,263</b>	<b>1,253</b>	
<b>Large</b>						
Toowoomba	1,418	1,453	1,468	1,578	1,669	5.8
WC (Mandurah)	1,630	1,632	1,679	1,727	1,758	1.8
Townsville	1,600	1,573	1,576	1,580	1,590	0.6
Redland City	1,571	1,593	1,501	1,524	1,527	0.2
Cairns	1,322	1,368	1,389	1,370	1,370	0.0
Western Water	1,108	1,004	1,026	1,029	1,019	-1.0
P&W (Darwin)	2,010	1,886	1,875	1,887	1,857	-1.6
North East Water	944	903	921	961	940	-2.2
Gippsland Water	1,335	1,360	1,366	1,370	1,323	-3.4
Central Highlands Water (Vic)	1,309	1,268	1,280	1,277	1,231	-3.6
Coliban Water	1,435	1,370	1,407	1,408	1,347	-4.3
Goulburn Valley Water	988	928	954	963	909	-5.6
<b>Median</b>	<b>1,376</b>	<b>1,369</b>	<b>1,398</b>	<b>1,389</b>	<b>1,358</b>	
<b>Mean</b>	<b>1,389</b>	<b>1,362</b>	<b>1,370</b>	<b>1,390</b>	<b>1,378</b>	
<b>Medium</b>						
Gladstone	1,681	1,589	1,512	1,676	2,236	33.4
Coffs Harbour	1,491	1,470	1,467	1,454	1,530	5.2
Fitzroy River Water	1,280	1,283	1,307	1,344	1,375	2.3
Wingecarribee	1,329	1,362	1,403	1,385	1,414	2.1
Shoalhaven	1,175	1,189	1,213	1,211	1,231	1.7
Mackay	1,523	1,446	1,477	1,506	1,522	1.1
Tweed	1,480	1,549	1,546	1,586	1,597	0.7
Eurobodalla	1,688	1,715	1,726	1,730	1,741	0.6
Fraser Coast	1,627	1,682	1,612	1,554	1,559	0.3
Bundaberg	1,574	1,486	1,469	1,501	1,492	-0.6



Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Port Macquarie Hastings	1,482	1,494	1,567	1,536	1,524	-0.8
GWMWater	1,452	1,361	1,407	1,378	1,367	-0.8
Lower Murray Water	1,024	951	997	1,019	1,010	-0.9
East Gippsland Water	1,209	1,248	1,256	1,200	1,188	-1.0
South Gippsland Water	1,036	1,005	1,013	1,014	1,001	-1.3
Wannon Water	1,200	1,122	1,130	1,126	1,110	-1.4
Albury	1,197	1,191	1,245	1,249	1,219	-2.4
MidCoast Council	1,699	1,738	1,813	1,905	1,842	-3.3
Clarence Valley	1,662	1,672	1,648	1,655	1,549	-6.4
Tamworth	1,491	1,458	1,548	1,488	1,342	-9.8
Queanbeyan	1,531	1,514	1,594	1,679	1,442	-14.1
Dubbo	1,685	1,612	1,808	1,723	1,477	-14.3
<b>Median</b>	<b>1,486</b>	<b>1,464</b>	<b>1,473</b>	<b>1,494</b>	<b>1,460</b>	
<b>Mean</b>	<b>1,433</b>	<b>1,415</b>	<b>1,444</b>	<b>1,451</b>	<b>1,444</b>	
<b>Small</b>						
Kempsey	1,542	1,608	1,712	1,758	1,917	9.0
Bega Valley	1,820	1,854	1,843	1,846	1,945	5.4
Livingstone	1,635	1,784	1,691	1,644	1,723	4.8
Gympie	1,303	1,331	1,336	1,216	1,248	2.6
WC (Geraldton)	1,804	1,833	1,889	1,928	1,972	2.3
WC (Australind/Eaton)	1,800	1,788	1,836	1,885	1,925	2.1
Byron	1,821	1,912	1,915	1,826	1,854	1.5
Central Highlands	1,996	1,816	1,921	1,946	1,971	1.3
WC (Albany)	1,599	1,643	1,711	1,761	1,782	1.2
Orange	1,157	1,190	1,225	1,193	1,191	-0.2
Goulburn Mulwaree	1,508	1,436	1,391	1,371	1,368	-0.2
Essential Energy	1,324	1,338	1,403	1,376	1,365	-0.8
P&W (Alice Springs)	2,104	2,002	2,033	2,041	2,011	-1.5
Whitsunday	1,715	1,715	1,781	1,702	1,675	-1.6
Ballina	1,505	1,609	1,582	1,605	1,573	-2.0
Western Downs		1,438	1,436	1,458	1,426	-2.2
Lismore	1,648	1,704	1,717	1,833	1,762	-3.9
Westernport Water	1,153	1,165	1,189	1,192	1,141	-4.3
Cassowary Coast	1,694	1,683	1,681	1,705	1,630	-4.4
Southern Downs	1,556	1,557	1,582	1,580	1,498	-5.2
Bathurst	1,152	1,185	1,266	1,206	1,108	-8.1
Armidale			1,267	1,309	1,056	-19.3
<b>Median</b>	<b>1,617</b>	<b>1,643</b>	<b>1,686</b>	<b>1,673</b>	<b>1,652</b>	
<b>Mean</b>	<b>1,592</b>	<b>1,600</b>	<b>1,609</b>	<b>1,608</b>	<b>1,597</b>	

Table A4 P7—Annual bill based on 200 kL (\$), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Sydney Water	1,246	1,128	1,129	1,119	1,147	2.5
Hunter Water	1,168	1,175	1,205	1,235	1,265	2.4
City West Water	1,226	1,204	1,205	1,141	1,166	2.2
South East Water	1,308	1,280	1,281	1,161	1,184	2.0
Urban Utilities	1,479	1,489	1,495	1,511	1,534	1.5
WC (Perth)	1,376	1,405	1,465	1,522	1,540	1.2
Icon Water	1,222	1,210	1,213	1,152	1,159	0.6
Unitywater	1,766	1,760	1,752	1,747	1,752	0.3
Gold Coast	1,806	1,788	1,769	1,759	1,758	-0.1
Logan	1,841	1,862	1,847	1,817	1,813	-0.2
SA Water	1,433	1,316	1,316	1,318	1,313	-0.4
Barwon Water	1,168	1,138	1,130	1,117	1,112	-0.4
Yarra Valley Water	1,366	1,323	1,321	1,266	1,257	-0.7
TasWater	1,160	1,181	1,201	1,230	1,214	-1.3
Central Coast	1,353	1,394	1,368	1,346	1,177	-12.6
<b>Median</b>	<b>1,353</b>	<b>1,316</b>	<b>1,316</b>	<b>1,266</b>	<b>1,257</b>	
<b>Mean</b>	<b>1,395</b>	<b>1,377</b>	<b>1,380</b>	<b>1,363</b>	<b>1,359</b>	
<b>Large</b>						
Redland City	1,591	1,606	1,617	1,628	1,665	2.3
Toowoomba	1,548	1,564	1,582	1,679	1,717	2.3
Cairns	1,308	1,306	1,326	1,304	1,316	0.9
WC (Mandurah)	1,556	1,585	1,642	1,698	1,710	0.7
Townsville	1,600	1,573	1,576	1,580	1,590	0.6
North East Water	913	907	902	908	905	-0.3
P&W (Darwin)	1,589	1,561	1,540	1,531	1,518	-0.8
Western Water	1,123	1,036	1,080	1,078	1,068	-0.9
Gippsland Water	1,397	1,430	1,433	1,419	1,404	-1.1
Coliban Water	1,411	1,405	1,407	1,384	1,360	-1.7
Central Highlands Water (Vic)	1,387	1,373	1,372	1,362	1,335	-2.0
Goulburn Valley Water	882	877	876	860	837	-2.7
<b>Median</b>	<b>1,404</b>	<b>1,418</b>	<b>1,420</b>	<b>1,402</b>	<b>1,382</b>	
<b>Mean</b>	<b>1,359</b>	<b>1,352</b>	<b>1,363</b>	<b>1,369</b>	<b>1,369</b>	
<b>Medium</b>						
Coffs Harbour	1,584	1,565	1,552	1,590	1,679	5.6
Port Macquarie Hastings	1,605	1,628	1,648	1,654	1,695	2.5
Fraser Coast	1,694	1,683	1,679	1,581	1,616	2.2
Tamworth	1,411	1,413	1,407	1,416	1,435	1.3
Dubbo	1,435	1,436	1,430	1,443	1,462	1.3
Fitzroy River Water	1,136	1,156	1,180	1,182	1,191	0.8
Mackay	1,508	1,483	1,493	1,499	1,509	0.7
Eurobodalla	1,998	1,995	2,008	2,017	2,030	0.6
Gladstone	1,546	1,541	1,622	1,596	1,606	0.6
Tweed	1,582	1,619	1,617	1,657	1,667	0.6

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Wingecarribee	1,356	1,375	1,374	1,374	1,382	0.6
Shoalhaven	1,262	1,278	1,290	1,303	1,309	0.5
Clarence Valley	1,746	1,766	1,760	1,758	1,762	0.2
Bundaberg	1,412	1,453	1,453	1,448	1,448	0.0
Lower Murray Water	798	793	794	793	786	-0.9
East Gippsland Water	1,325	1,363	1,352	1,317	1,304	-1.0
South Gippsland Water	1,175	1,155	1,158	1,160	1,148	-1.0
MidCoast Council	1,889	1,923	2,010	2,070	2,043	-1.3
Albury	1,165	1,185	1,163	1,149	1,134	-1.3
GWMWater	1,354	1,353	1,355	1,326	1,308	-1.4
Wannon Water	1,305	1,261	1,253	1,253	1,221	-2.6
Queanbeyan	1,689	1,720	1,724	1,843	1,524	-17.3
<b>Median</b>	<b>1,424</b>	<b>1,444</b>	<b>1,442</b>	<b>1,446</b>	<b>1,455</b>	
<b>Mean</b>	<b>1,453</b>	<b>1,461</b>	<b>1,469</b>	<b>1,474</b>	<b>1,466</b>	
<b>Small</b>						
Kempsey	1,662	1,738	1,813	1,893	2,059	8.8
Central Highlands	1,395	1,361	1,345	1,505	1,548	2.9
Bega Valley	2,007	1,999	1,992	2,009	2,058	2.4
Armidale			1,135	1,246	1,275	2.3
Southern Downs	1,617	1,633	1,656	1,670	1,707	2.2
Western Downs	1,241	1,430	1,408	1,370	1,399	2.1
Byron	1,938	1,955	1,918	1,921	1,952	1.6
WC (Geraldton)	1,573	1,614	1,683	1,738	1,762	1.4
WC (Australind/Eaton)	1,548	1,593	1,633	1,685	1,708	1.4
Whitsunday	1,554	1,558	1,558	1,568	1,588	1.3
WC (Albany)	1,647	1,699	1,766	1,835	1,857	1.2
Bathurst	1,088	1,124	1,155	1,221	1,233	1.0
Lismore	1,800	1,874	1,912	2,039	2,056	0.8
Livingstone	1,530	1,578	1,608	1,644	1,657	0.8
Gympie	1,349	1,365	1,369	1,267	1,273	0.5
Orange	1,222	1,257	1,260	1,276	1,281	0.4
Ballina	1,575	1,631	1,641	1,647	1,637	-0.6
Goulburn Mulwaree	1,622	1,566	1,537	1,512	1,501	-0.7
P&W (Alice Springs)	1,589	1,561	1,540	1,531	1,518	-0.8
Essential Energy	1,263	1,260	1,260	1,239	1,225	-1.1
Westernport Water	1,406	1,426	1,429	1,418	1,399	-1.3
Cassowary Coast	1,622	1,640	1,650	1,695	1,613	-4.8
<b>Median</b>	<b>1,573</b>	<b>1,578</b>	<b>1,583</b>	<b>1,606</b>	<b>1,600</b>	
<b>Mean</b>	<b>1,536</b>	<b>1,565</b>	<b>1,558</b>	<b>1,588</b>	<b>1,605</b>	

Table A5 F16—Total capital expenditure: water supply and wastewater (\$000s), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Gold Coast	55,004	74,471	62,097	77,679	111,949	44.1
Hunter Water	94,377	81,227	83,946	104,286	149,249	43.1
Logan	49,111	63,388	85,561	102,672	134,033	30.5
Unitywater	93,131	122,251	134,474	99,512	129,101	29.7
South East Water	154,373	174,217	154,931	210,215	260,152	23.8
City West Water	75,941	93,841	113,077	125,965	153,166	21.6
TasWater	137,378	108,854	158,802	111,299	128,249	15.2
Icon Water	89,370	96,405	90,533	89,316	102,163	14.4
Urban Utilities	214,710	203,114	228,597	272,079	308,479	13.4
Yarra Valley Water	279,333	245,554	290,741	316,950	335,268	5.8
Sydney Water	692,170	663,135	809,856	880,299	898,001	2.0
SA Water	293,842	279,437	377,802	558,345	564,887	1.2
Barwon Water	85,317	87,451	68,091	82,108	77,438	-5.7
WC (Perth)	313,830	456,853	487,324	467,362	398,730	-14.7
Central Coast	67,992	62,878	25,729			
<b>Median</b>	<b>94,377</b>	<b>108,854</b>	<b>134,474</b>	<b>111,299</b>	<b>151,208</b>	
<b>Mean</b>	<b>179,725</b>	<b>187,538</b>	<b>211,437</b>	<b>235,044</b>	<b>267,919</b>	
<b>Large</b>						
North East Water	14,626	9,251	18,740	14,475	23,975	65.6
Redland City	19,608	15,575	6,191	2,335	3,687	57.9
Coliban Water	36,090	23,308	21,013	20,571	27,200	32.2
Western Water	16,792	72,986	64,618	70,966	83,003	17.0
Goulburn Valley Water	32,568	35,138	28,836	32,751	38,009	16.1
Gippsland Water	34,350	32,286	40,676	40,025	45,275	13.1
Townsville	55,548	53,781	80,956	54,514	59,611	9.3
WC (Mandurah)	14,997	22,334	19,059	16,190	16,333	0.9
Cairns	18,595	34,668	37,364	48,519	45,797	-5.6
Central Highlands Water (Vic)	18,954	19,765	17,949	23,055	18,648	-19.1
Toowoomba	41,794	30,180	25,600	33,578	26,990	-19.6
P&W (Darwin)	51,844	23,355	46,866	33,929	20,470	-39.7
<b>Median</b>	<b>26,088</b>	<b>26,768</b>	<b>27,218</b>	<b>33,164</b>	<b>27,095</b>	
<b>Mean</b>	<b>29,647</b>	<b>31,052</b>	<b>33,989</b>	<b>32,576</b>	<b>34,083</b>	
<b>Medium</b>						
Tamworth	6,073	16,303	10,603	7,924	21,794	175.0
Bundaberg	16,686	33,363	27,748	9,725	17,112	76.0
East Gippsland Water	7,739	11,686	8,608	11,214	17,195	53.3
Wannon Water	15,283	19,339	19,347	21,340	28,437	33.3
Queanbeyan	8,458	56,900	12,436	10,226	13,145	28.5
South Gippsland Water	8,634	5,609	30,431	16,986	21,498	26.6
Tweed	9,032	7,195	8,557	9,757	12,248	25.5
Mackay	17,156	11,600	12,605	20,738	24,849	19.8
Wingecarribee	6,403	16,338	17,215	16,776	16,289	-2.9
Fraser Coast	19,125	22,493	20,054	22,627	21,050	-7.0
Eurobodalla	14,057	16,992	20,623	15,377	13,786	-10.3

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Gladstone	13,513	23,590	27,470	15,491	13,632	-12.0
Clarence Valley	19,713	3,617	4,431	8,065	6,816	-15.5
Albury	9,006	9,649	5,527	10,308	7,619	-26.1
Lower Murray Water	10,307	5,203	12,953	13,307	9,583	-28.0
GWMWater	6,859	7,039	16,549	19,863	14,010	-29.5
Fitzroy River Water	20,119	17,177	17,538	15,452	10,827	-29.9
Coffs Harbour	5,829	5,660	7,235	9,762	6,183	-36.7
Shoalhaven	23,180	62,268	129,702	40,906	24,217	-40.8
MidCoast Council	15,310	9,699	15,860	11,155	5,191	-53.50
Port Macquarie Hastings	20,186	27,562	19,835	31,645	3,944	-87.5
Dubbo	15,228	4,725	1,324	244	0	-100.0
<b>Median</b>	<b>13,785</b>	<b>13,994</b>	<b>16,204</b>	<b>14,342</b>	<b>13,709</b>	
<b>Mean</b>	<b>13,086</b>	<b>17,909</b>	<b>20,302</b>	<b>15,404</b>	<b>14,065</b>	
<b>Small</b>						
Western Downs	12,039	16,807	4,553	4,305	25,689	496.7
Whitsunday	5,549	6,897	9,884	5,590	25,689	359.6
Cassowary Coast	7,874	8,543	11,923	8,722	14,835	70.1
WC (Geraldton)	11,860	10,285	9,426	12,657	18,858	49.0
Westernport Water	4,481	6,103	4,749	4,745	6,675	40.7
WC (Albany)	10,367	14,152	20,764	6,666	9,179	37.7
P&W (Alice Springs)	5,501	6,963	6,642	6,429	8,703	35.4
Bathurst	8,165	15,305	8,587	9,389	11,354	20.9
Gympie	9,620	5,345	3,164	4,605	5,115	11.1
Southern Downs	2,721	3,752	8,698	8,141	7,908	-2.9
Goulburn Mulwaree	5,795	14,766	23,228	7,992	7,186	-10.1
WC (Australind/Eaton)	7,072	7,051	6,027	5,594	4,876	-12.8
Lismore	8,877	11,647	21,516	11,433	8,096	-29.2
Kempsey	6,796	9,135	8,410	5,677	3,795	-33.2
Ballina	4,940	3,800	16,545	18,325	8,041	-56.1
Central Highlands	943	5,615	17,026	10,712	4,202	-60.8
Livingstone	1,850	5,800	6,981	14,150	5,295	-62.6
Bega Valley	5,818	2,428	749	11,910	2,266	-81.0
Orange	12,498	0	0	1,885	0	-100.0
Armidale			3,178	2,337		
Byron	4,277	2,763	1,908	5,348		
Essential Energy	15,410	5,871			7,933	
<b>Median</b>	<b>6,796</b>	<b>6,897</b>	<b>8,410</b>	<b>6,666</b>	<b>7,920</b>	
<b>Mean</b>	<b>7,260</b>	<b>7,763</b>	<b>9,236</b>	<b>7,926</b>	<b>9,285</b>	

Table A6 F28—Capital expenditure: water (\$/property), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Unitywater	121	133	92	77	134	73.1
Gold Coast	49	66	62	54	79	46.3
Sydney Water	125	126	99	99	141	42.8
Icon Water	255	184	156	177	251	41.9
SA Water	213	226	313	432	520	20.5
South East Water	47	49	55	66	77	15.9
Urban Utilities	134	121	160	157	178	13.2
Yarra Valley Water	110	102	129	155	161	3.4
Barwon Water	257	388	235	246	247	0.1
TasWater	371	338	495	341	341	0.0
City West Water	124	146	143	160	157	-1.8
WC (Perth)	207	309	324	321	269	-16.1
Logan	192	222	273	236	176	-25.3
Hunter Water	134	127	195	267	197	-25.9
Central Coast	172	258	18	90		
<b>Median</b>	<b>134</b>	<b>146</b>	<b>156</b>	<b>160</b>	<b>177</b>	
<b>Mean</b>	<b>167</b>	<b>186</b>	<b>183</b>	<b>192</b>	<b>209</b>	
<b>Large</b>						
Townsville	484	393	403	174	300	72.4
North East Water	210	136	217	144	219	52.1
Coliban Water	205	213	175	139	201	44.4
Gippsland Water	210	204	326	216	253	17.2
WC (Mandurah)	139	135	212	222	242	9.0
Goulburn Valley Water	285	368	309	302	320	6.1
Redland City	13	22	17	10	10	-3.1
P&W (Darwin)	659	245	277	264	246	-6.9
Western Water	83	452	175	393	333	-15.1
Cairns	57	270	339	348	283	-18.8
Toowoomba	176	209	227	361	263	-27.3
Central Highlands Water (Vic)	150	181	166	187	120	-35.5
<b>Median</b>	<b>191</b>	<b>211</b>	<b>222</b>	<b>219</b>	<b>250</b>	
<b>Mean</b>	<b>222</b>	<b>236</b>	<b>237</b>	<b>230</b>	<b>233</b>	
<b>Medium</b>						
Bundaberg	112	99	153	119	415	247.9
Tamworth	196	389	201	198	664	236.0
East Gippsland Water	117	247	223	275	532	93.8
Tweed	104	122	113	172	220	27.7
Wannon Water	239	255	209	144	169	18.0
Fraser Coast	373	460	305	307	348	13.3
Clarence Valley	167	97	131	160	177	10.5
South Gippsland Water	88	183	1403	479	524	9.3
Wingecarribee	120	302	337	368	402	9.3

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Queanbeyan	63	87	152	77	76	-1.3
Coffs Harbour	52	52	163	107	97	-9.7
Fitzroy River Water	388	303	282	261	210	-19.5
GWMWater	142	103	399	478	357	-25.4
Eurobodalla	159	165	411	256	190	-25.9
Lower Murray Water	261	84	274	208	154	-26.1
Albury	115	262	130	237	172	-27.5
Mackay	174	125	232	219	140	-35.9
Gladstone	220	407	800	171	103	-39.7
MidCoast Council	226	197	332	152	45	-70.4
Shoalhaven	298	367	302	699	167	-76.1
Port Macquarie Hastings	219	346	254	422	55	-87.0
Dubbo	339	140	42	8	0	-100.0
<b>Median</b>	<b>170</b>	<b>190</b>	<b>243</b>	<b>213</b>	<b>174</b>	
<b>Mean</b>	<b>190</b>	<b>218</b>	<b>311</b>	<b>251</b>	<b>237</b>	
<b>Small</b>						
Western Downs	341	1,460	348	246	728	195.6
Whitsunday	158	222	248	324	728	124.6
Central Highlands	36	176	99	108	218	101.6
Bathurst	351	688	358	277	533	92.7
WC (Albany)	336	435	436	128	221	71.8
Westernport Water	93	191	148	132	199	50.5
Lismore	338	261	299	198	294	48.8
Cassowary Coast	382	480	675	511	754	47.5
P&W (Alice Springs)	295	321	516	410	567	38.3
Goulburn Mulwaree	251	287	292	272	308	13.4
Gympie	224	150	149	187	187	0.2
WC (Geraldton)	422	264	412	553	529	-4.3
Ballina	116	87	255	215	193	-10.2
Livingstone	89	169	288	137	107	-21.9
Southern Downs	181	298	594	646	468	-27.5
WC (Australind/Eaton)	186	286	374	242	170	-29.9
Kempsey	343	325	301	280	150	-46.4
Orange	583	0	0	70	0	-100.0
Armidale			138	119		
Bega Valley	277	116	22		53	
Byron	260	54	140	215		
Essential Energy	1,300	222	0		661	
<b>Median</b>	<b>277</b>	<b>261</b>	<b>290</b>	<b>229</b>	<b>257</b>	
<b>Mean</b>	<b>312</b>	<b>309</b>	<b>277</b>	<b>263</b>	<b>353</b>	



Table A7 F29—Capital expenditure: wastewater (\$/property), by utility size group , 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Hunter Water	269	213	148	151	398	163.7
City West Water	54	66	104	107	158	47.6
Logan	287	382	526	686	1,003	46.2
Gold Coast	181	240	186	253	359	42.0
TasWater	350	221	310	218	302	38.8
South East Water	172	193	153	211	260	23.2
Unitywater	207	287	362	251	277	10.3
Urban Utilities	250	228	222	292	319	9.5
Yarra Valley Water	271	227	251	247	256	3.5
Icon Water	276	373	367	333	300	-9.8
Sydney Water	245	222	318	345	304	-12.0
WC (Perth)	190	255	268	238	202	-15.2
Barwon Water	342	200	219	289	243	-15.9
SA Water	217	172	216	351	236	-32.9
Central Coast	306	211	176	116		
<b>Median</b>	<b>250</b>	<b>222</b>	<b>222</b>	<b>251</b>	<b>289</b>	
<b>Mean</b>	<b>241</b>	<b>233</b>	<b>255</b>	<b>272</b>	<b>330</b>	
<b>Large</b>						
Redland City	371	268	94	30	55	80.7
North East Water	94	53	165	148	259	75.0
Goulburn Valley Water	323	272	207	282	351	24.7
Western Water	218	798	903	714	889	24.6
Coliban Water	319	112	115	143	164	14.5
Gippsland Water	333	297	287	388	419	7.9
Cairns	204	227	182	315	333	5.9
Central Highlands Water (Vic)	155	126	106	160	159	-0.4
Toowoomba	660	363	219	207	194	-6.4
Townsville	204	279	627	530	450	-15.1
WC (Mandurah)	216	392	210	124	99	-20.1
P&W (Darwin)	227	157	517	307	95	-69.1
<b>Median</b>	<b>222</b>	<b>270</b>	<b>208</b>	<b>244</b>	<b>227</b>	
<b>Mean</b>	<b>277</b>	<b>279</b>	<b>303</b>	<b>279</b>	<b>289</b>	
<b>Medium</b>						
Shoalhaven	215	1,037	2,506	153	375	145.1
Tamworth	88	357	285	173	321	85.4
Mackay	229	156	44	250	435	73.9
South Gippsland Water	401	110	103	388	568	46.7
Wannon Water	141	231	281	408	564	38.1
Tweed	181	102	152	133	160	20.5
Gladstone	360	625	276	410	457	11.7
Queanbeyan	361	2,640	433	395	440	11.3
Eurobodalla	593	746	663	562	546	-2.9
East Gippsland Water	260	301	167	228	207	-9.4

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Wingecarribee	251	635	630	575	488	-15.1
Albury	251	112	91	180	140	-22.4
Lower Murray Water	57	81	126	210	144	-31.4
Fraser Coast	181	176	269	336	223	-33.6
MidCoast Council	178	53	63	155	101	-34.9
Bundaberg	544	1,158	1,008	220	131	-40.6
Fitzroy River Water	262	251	277	230	131	-43.0
GWMWater	92	144	150	181	99	-45.5
Coffs Harbour	191	181	125	287	144	-49.8
Clarence Valley	1,093	102	109	325	128	-60.7
Port Macquarie Hastings	479	567	427	655	75	-88.5
Dubbo	424	92	21		0	
<b>Median</b>	<b>251</b>	<b>206</b>	<b>218</b>	<b>250</b>	<b>183</b>	
<b>Mean</b>	<b>311</b>	<b>448</b>	<b>373</b>	<b>307</b>	<b>267</b>	
<b>Small</b>						
Whitsunday	225	303	523	72	1,296	1,703.7
Western Downs	901	22	63	168	1,296	670.3
Southern Downs	74	45	220	45	252	455.7
WC (Geraldton)	313	422	118	154	698	352.8
Cassowary Coast	488	378	508	328	790	140.9
Westernport Water	208	203	153	161	205	27.0
P&W (Alice Springs)	163	266	17	117	145	23.7
WC (Albany)	412	576	1,099	359	425	18.4
Gympie	533	307	108	179	199	11.4
WC (Australind/Eaton)	532	360	124	244	261	7.1
Kempsey	275	531	457	233	191	-18.1
Goulburn Mulwaree	272	1,050	1,768	449	314	-30.1
Byron	119	209	39	325	151	-53.6
Bathurst	157	249	160	291	135	-53.6
Lismore	324	617	1,283	745	305	-59.1
Ballina	221	168	846	1,066	354	-66.8
Livingstone	65	356	302	1,186	366	-69.2
Bega Valley	149	61	36	607	131	-78.4
Central Highlands	53	365	1,617	952	143	-85.0
Orange	118	0	0	39	0	-100.0
Armidale			205	122		
Essential Energy	177	370			110	
<b>Median</b>	<b>221</b>	<b>307</b>	<b>205</b>	<b>244</b>	<b>252</b>	
<b>Mean</b>	<b>275</b>	<b>327</b>	<b>459</b>	<b>373</b>	<b>370</b>	

Table A8 F13—Combined operating cost: water and wastewater (\$/property), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
WC (Perth)	638	616	618	555	621	12.0
Hunter Water	624	603	657	664	684	3.1
Logan	1,126	1,064	1,137	1,177	1,209	2.8
Urban Utilities	1,225	1,203	1,193	1,251	1,273	1.8
Gold Coast	1,205	1,223	1,211	1,209	1,229	1.6
TasWater	1,003	1,035	923	990	1,003	1.3
South East Water	977	897	869	876	881	0.5
Barwon Water	631	672	686	703	705	0.3
Sydney Water	736	707	684	729	731	0.2
Yarra Valley Water	989	907	884	877	867	-1.1
Unitywater	1,054	1,046	1,042	1,062	1,034	-2.6
City West Water	1,202	1,135	1,055	1,085	1,038	-4.4
Icon Water	979	1,019	1,026	998	950	-4.8
SA Water	744	682	675	707	642	-9.2
Central Coast	532	637	625	671		
<b>Median</b>	<b>979</b>	<b>907</b>	<b>884</b>	<b>877</b>	<b>915</b>	
<b>Mean</b>	<b>911</b>	<b>896</b>	<b>886</b>	<b>904</b>	<b>919</b>	
<b>Large</b>						
P&W (Darwin)	1,198	1,010	948	898	1,196	33.2
Townsville	1,056	1,060	1,033	1,101	1,379	25.2
Toowoomba	737	639	774	812	974	20.0
Goulburn Valley Water	903	932	913	905	986	8.9
WC (Mandurah)	699	619	642	587	635	8.1
North East Water	890	924	900	869	925	6.4
Coliban Water	878	835	840	899	905	0.7
Gippsland Water	1,247	1,200	1,255	1,266	1,261	-0.4
Cairns	693	693	711	712	702	-1.4
Western Water	986	913	856	877	862	-1.7
Central Highlands Water (Vic)	855	881	977	1,041	1,013	-2.7
Redland City	935	857	972	1,047	972	-7.2
<b>Median</b>	<b>896</b>	<b>897</b>	<b>907</b>	<b>898</b>	<b>973</b>	
<b>Mean</b>	<b>923</b>	<b>880</b>	<b>902</b>	<b>918</b>	<b>984</b>	
<b>Medium</b>						
Port Macquarie Hastings	933	914	990	921	1,009	9.6
Albury	720	690	712	774	848	9.6
Shoalhaven	794	828	804	908	982	8.1
Eurobodalla	1,026	1,089	1,091	1,096	1,157	5.6
Wingecarribee	865	917	919	921	962	4.4
Tweed	997	1,022	1,023	1,047	1,089	4.0
Tamworth	978	992	1,042	1,037	1,050	1.2
Gladstone	1,516	1,079	1,587	1,290	1,300	0.8
Bundaberg	832	700	846	837	830	-0.8
Wannon Water	1,021	969	996	974	958	-1.6

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Queanbeyan	1,026	1,425	1,402	1,264	1,238	-2.0
Fitzroy River Water	706	675	668	682	665	-2.6
Dubbo	834	1,061	933	1,007	974	-3.3
Lower Murray Water	711	837	777	745	715	-4.0
Mackay	1,180	940	1,031	1,191	1,134	-4.7
East Gippsland Water	973	1,090	950	916	847	-7.5
South Gippsland Water	1,194	962	907	1,118	1,014	-9.3
Clarence Valley	861	831	844	807	717	-11.2
Fraser Coast	939	965	1,033	914	806	-11.8
Coffs Harbour	1,037	1,010	1,033	1,013	891	-12.0
MidCoast Council	1,038	1,037	1,010	1,225	1,034	-15.6
GWMWater	1,057	1,007	1,023	977	793	-18.8
<b>Median</b>	<b>967</b>	<b>967</b>	<b>993</b>	<b>975</b>	<b>968</b>	
<b>Mean</b>	<b>965</b>	<b>956</b>	<b>983</b>	<b>978</b>	<b>955</b>	
<b>Small</b>						
Gympie	733	421	348	273	554	103.1
Goulburn Mulwaree	903	773	777	766	1,064	38.9
P&W (Alice Springs)	1,908	1,334	1,214	1,200	1,556	29.6
Southern Downs	1,467	815	1,088	1,190	1,437	20.7
Bathurst	1,117	1,153	1,253	1,171	1,326	13.2
Bega Valley	1,546	1,353	1,379	1,402	1,518	8.3
Livingstone	1,259	1,836	855	1,212	1,274	5.1
Ballina	1,317	1,326	1,264	1,337	1,396	4.4
WC (Albany)	812	736	745	678	697	2.9
WC (Australind/Eaton)	898	802	704	679	696	2.5
Byron	1,338	1,412	1,545	1,749	1,788	2.2
WC (Geraldton)	684	625	637	638	648	1.7
Westernport Water	1,025	1,010	1,030	1,010	1,026	1.6
Lismore	1,193	1,188	1,121	1,195	1,211	1.3
Western Downs	1,301	893	794	964	974	1.0
Whitsunday	1,302	1,184	1,383	1,698	1,675	-1.4
Orange	797	845	823	883	840	-4.9
Kempsey	1,088	1,033	1,032	1,259	1,196	-5.0
Central Highlands	1,639	1,191	931	773	731	-5.3
Cassowary Coast	1,054	596	1,058	1,032	674	-34.6
Armidale			1,144	1,207		
Essential Energy	1,716	1,728			4,003	
<b>Median</b>	<b>1,193</b>	<b>1,033</b>	<b>1,032</b>	<b>1,171</b>	<b>1,196</b>	
<b>Mean</b>	<b>1,195</b>	<b>1,060</b>	<b>1,006</b>	<b>1,063</b>	<b>1,252</b>	

Table A9 F8—Revenue from community service obligations (%), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
TasWater	2.72	2.71	2.47	2.31	5.78	150.2
SA Water	9.14	10.5	10.63	9.29	11.9	28.1
Hunter Water	4.45	4.49	4.21	4.4	5.22	18.6
Icon Water	3.23	3.34	1.99	1.57	1.76	12.1
South East Water	4.44	4.6	4.3	4.1	4.39	7.1
Yarra Valley Water	5.02	5.25	5	4.64	4.87	5.0
Sydney Water	5.92	5.5	5.05	4.98	5.11	2.6
Unitywater	0.86	0.84	0.82	0.8	0.8	0.0
Barwon Water	4.71	4.89	0	4.48	4.35	-2.9
City West Water	3.55	3.33	3.44	3.38	3.17	-6.2
WC (Perth)	6.15	6.51	6.22	6.63	5.9	-11.0
Central Coast	1.3	1.3	1.3	1.3		
Gold Coast	0	0	0	0	0	
Logan	0	0	0	0	0	
Urban Utilities	1.65	0	0	0	0	
<b>Median</b>	<b>3.55</b>	<b>3.34</b>	<b>2.47</b>	<b>3.38</b>	<b>3.76</b>	
<b>Mean</b>	<b>3.54</b>	<b>3.55</b>	<b>3.03</b>	<b>3.19</b>	<b>3.56</b>	
<b>Large</b>						
Toowoomba	0.73	0	0	0	1.2	
WC (Mandurah)	6.28	10.39	-40.77	-12.63	-23.44	85.6
Gippsland Water	3.89	4.33	4.45	4.15	4.75	14.5
Western Water	4.01	4.25	3.53	2.95	3.32	12.5
Redland City	0.3	0.3	0.33	0.36	0.4	11.1
Townsville	1.19	1.02	1.04	1.45	1.5	3.4
North East Water	6.06	6.49	6.24	6.1	6.3	3.3
Central Highlands Water (Vic)	5.27	4.34	5.53	5	5.13	2.6
Coliban Water	4.07	4.2	4.03	4.07	4.13	1.5
Goulburn Valley Water	5.65	5.67	5.47	5.33	5.4	1.3
Cairns	2.88	2.83	2.86	2.58	2.5	-3.1
P&W (Darwin)	3.61	2.77	2.65	2.3	2.06	-10.4
<b>Median</b>	<b>3.95</b>	<b>4.23</b>	<b>3.19</b>	<b>2.77</b>	<b>2.91</b>	
<b>Mean</b>	<b>3.66</b>	<b>3.88</b>	<b>-0.39</b>	<b>1.81</b>	<b>1.0</b>	
<b>Medium</b>						
Gladstone	0	0	0	0	0.9	
Bundaberg	1.7	3.26	3.59	2.56	3.1	21.1
Port Macquarie Hastings	1.05	1.11	0.8	0.97	1.1	13.4
Albury	0.79	0.77	0.74	0.71	0.8	12.7
Lower Murray Water	5.67	5.98	5.54	5.34	5.91	10.7
MidCoast Council	1.27	1.18	1.05	1	1.1	10.0
Tamworth	0.86	0.82	0.86	0.82	0.9	9.8
Fitzroy River Water	0.94	1.08	1.12	1.01	1.1	8.9
Wingecarribee	0.96	0.76	0.65	0.75	0.8	6.7
GWMWater	6.59	6.9	6.52	6.5	6.78	4.3

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
South Gippsland Water	5.48	6.03	6.02	5.67	5.75	1.4
Eurobodalla	0.98	1.02	0.91	0.89	0.9	1.1
Tweed	1.22	1.06	1.03	1.1	1.1	0.0
Queanbeyan	0.6	0.5	0.39	0.41	0.4	-2.4
East Gippsland Water	6.19	6.2	6.25	6.47	6.3	-2.6
Shoalhaven	1.49	1.31	1.22	1.26	1.2	-4.8
Mackay	0.2	0.22	0.21	0.21	0.2	-4.8
Wannon Water	4.5	4.75	4.77	5.16	4.74	-8.1
Clarence Valley	1.28	1.29	1.16	1.17	1	-14.5
Fraser Coast	0.42	0.42	0.9	0.94	0.7	-25.5
Coffs Harbour	0.96	0.89	0.86	0.81	0.4	-50.6
Dubbo	0.6	0.6	0.48	1.1	0.5	-54.5
<b>Median</b>	<b>1.01</b>	<b>1.07</b>	<b>0.97</b>	<b>1.00</b>	<b>1.05</b>	
<b>Mean</b>	<b>1.99</b>	<b>2.0</b>	<b>2.05</b>	<b>2.04</b>	<b>2.08</b>	
<b>Small</b>						
Western Downs		4.82	59.18	0	9.3	
Cassowary Coast	0	0	0	0	1.8	
WC (Albany)	22.52	-8.25	3.85	-17.91	-8.42	53.0
WC (Geraldton)	6.22	-65.26	-131.71	-136.87	-93.2	31.9
Ballina	1.04	1.06	0.75	0.81	0.9	11.1
Bathurst	0.8	0.59	0.59	0.64	0.7	9.4
Byron	0.58	0.5	0.54	0.55	0.6	9.1
Goulburn Mulwaree	0.82	0.72	0.55	0.66	0.7	6.1
Orange	0.87	0.84	0.81	0.86	0.9	4.7
Central Highlands	0	0	0	0	0	0.0
Livingstone	0	0	0	0	0	0.0
Southern Downs		0	0	0	0	0.0
P&W (Alice Springs)	9.3	14.27	14.03	13.88	13.09	-5.7
Westernport Water	3.86	3.88	3.27	3.66	3.37	-7.9
Bega Valley	0.97	0.93	0.8	0.9	0.8	-11.1
Kempsey	1.29	1.38	1.14	1.04	0.9	-13.5
Whitsunday	2.54	3.21	4.5	10.96	9.3	-15.1
Lismore	0.97	1.46	0.94	1.02	0.7	-31.4
Gympie	2.53	4.24	2.2	2.2	0.7	-68.2
WC (Australind/Eaton)	13.84	-1.1	14.33	1.99	-31.54	-1,684.9
Armidale	0	0	0.84	0.8		
Bega Valley	0.97	0.93	80		0.8	
Essential Energy	1.44	1.9			0.9	
<b>Median</b>	<b>1.04</b>	<b>0.84</b>	<b>0.81</b>	<b>0.8</b>	<b>0.7</b>	
<b>Mean</b>	<b>3.66</b>	<b>-1.66</b>	<b>-1.11</b>	<b>-5.79</b>	<b>-4.21</b>	

Table A10 C15—Average duration of an unplanned interruption: water (minutes), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Sydney Water	136	133	155	143	187	30.8
Gold Coast	119.7	137.5	116	126	140.7	11.7
Yarra Valley Water	122.5	118.2	102.9	95	105.9	11.5
WC (Perth)	107.9	103	112	102.9	111	7.9
South East Water	81.3	83	87.4	83.8	88.2	5.3
City West Water	122.2	125.3	119.6	113	114.5	1.3
Barwon Water	99.5	102	89	126.7	127.8	0.9
Icon Water	135	134.7	125.1	135	136	0.7
Hunter Water	136	231	149	161	150.5	-6.5
Unitywater	139	160	129.5	119.7	109.7	-8.4
Urban Utilities	134	132	125	135	119	-11.9
SA Water	185.7	195	226.3	240.4	203	-15.6
Central Coast	198	202	198	265	197	-25.7
Logan	143	177.6	117.2	90.7		
TasWater					152	
<b>Median</b>	<b>134.5</b>	<b>133.8</b>	<b>122.3</b>	<b>126.3</b>	<b>131.9</b>	
<b>Mean</b>	<b>132.8</b>	<b>145.3</b>	<b>132.3</b>	<b>138.4</b>	<b>138.7</b>	
<b>Large</b>						
Cairns	92	65.1	49.3	44.5	76.9	72.8
Western Water	92.8	214.8	90	72	121.3	68.5
Townsville	63.9	77	70	84.2	103.1	22.4
Goulburn Valley Water	107.5	98.2	102.7	98.6	106.3	7.8
Gippsland Water	76.2	87.4	85.2	93.4	90.8	-2.8
Redland City	23.9	114	148	113.8	110	-3.3
North East Water	107.7	111.5	99.4	96	91.2	-5.0
WC (Mandurah)	49.9	71	65	71	64	-9.9
Coliban Water	118.4	132	102.5	142.1	112.5	-20.8
Central Highlands Water (Vic)	109.2	107.3	137.7	155.1	121.4	-21.7
<b>Median</b>	<b>92.4</b>	<b>102.8</b>	<b>94.7</b>	<b>94.7</b>	<b>104.7</b>	
<b>Mean</b>	<b>84.2</b>	<b>107.8</b>	<b>95.0</b>	<b>97.1</b>	<b>99.8</b>	
<b>Medium</b>						
East Gippsland Water	71.5	92	76	72	169	134.7
Wannon Water	104.9	93.5	79.3	90.3	158	75.0
Fitzroy River Water	33	39.8	34.4	32.6	55.3	69.6
Shoalhaven	202	104	147	94	153	62.8
Bundaberg		138	77	58	84	44.8
Lower Murray Water	54.1	57	59	62	66.6	7.4
Mackay	115	66.5	63.6	19.1	19.6	2.6
Port Macquarie Hastings	121	30	30	90	90	0.0
GWMWater	105.7	94.4	103.4	115.1	102.9	-10.6
Tweed	112	136	141	159	139	-12.6
Dubbo	165	162	129	142	123	-13.4

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Coffs Harbour	120	120	120	207	177	-14.5
Eurobodalla	214	213	237	178	135	-24.2
South Gippsland Water	95.6	91	101	121	90	-25.6
Wingecarribee	117	120	270	341	245	-28.2
Gladstone	46	47.6	23.2	69.8	50	-28.4
Fraser Coast	127.8	105.6	230.3	104.8	56.6	-46.0
Riverina Water (W)	206	183	242	233	125	-46.4
Albury	137	119	266	254	95	-62.6
Tamworth			0	420	86	-79.5
Clarence Valley	120	120			180	
Queanbeyan	180	161	2		38	
<b>Median</b>	<b>118.5</b>	<b>105.6</b>	<b>101</b>	<b>109.9</b>	<b>99</b>	
<b>Mean</b>	<b>122.4</b>	<b>109.2</b>	<b>115.8</b>	<b>143.1</b>	<b>110.8</b>	
<b>Small</b>						
Kempsey	155	26	198	96	238	147.9
Whitsunday	120	120	120	120	278.3	131.9
Busselton (W)	85.7	63.5	93.7	66.3	147.5	122.5
Orange	135	135	135	141	240	70.2
Gympie	85	81.6	197.3	129	201	55.8
WC (Australind/Eaton)	56	85	87	58.2	85	46.0
WC (Albany)	132	121	147	123.6	173	40.0
Livingstone	26	25.7	19	16.3	18.3	12.3
Lismore	214	129	180	90	90	0.0
Central Highlands	30	30	30	30	30	0.0
Bega Valley		141	234	165	163	-1.2
Aqwest–Bunbury (W)	61	49	34	45	39	-13.3
Armidale			135	127	98	-22.8
Cassowary Coast	375	218	185	254	184	-27.6
Westernport Water	80.2	109	108.6	85.9	58.4	-32.0
WC (Geraldton)	120	137	135	162.8	89	-45.3
WC (Kal–Boulder) (W)	62.4	44	46	74.2	36	-51.5
Western Downs		61	53	90	23	-74.4
Bathurst	120	120	120			
Byron	120	120	120	120		
Goldenfields Water (W)			258	235		
Goulburn Mulwaree	180	180	180			
Southern Downs	120	87.1	102		90	
<b>Median</b>	<b>120</b>	<b>109</b>	<b>120</b>	<b>108</b>	<b>90</b>	
<b>Mean</b>	<b>128.3</b>	<b>99.2</b>	<b>126.9</b>	<b>111.5</b>	<b>120.1</b>	



Table A11 C13—Total complaints: water and sewerage (per 1,000 properties), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Central Coast		7.9	10	9.3	16	72.0
Gold Coast	6.3	8.4	3.6	3.5	4.9	40.0
South East Water	3.4	3	2.7	3.2	4.2	31.2
City West Water	5.2	3.6	3.3	3.4	4.4	29.4
Logan			12.3	14.3	17.9	25.2
Icon Water	3.8	4.3	3.7	2.8	3.4	21.4
SA Water	2.3	2.5	2.2	2	2	0.0
Unitywater	1.2	1.4	1.5	1.4	1.4	0.0
WC (Perth)	0.8	0.8	1.2	0.8	0.8	0.0
Urban Utilities	6	5.9	6.6	6.7	6.4	-4.5
Hunter Water	4.8	3.1	3.5	3.8	3.5	-7.9
Barwon Water	4.4	4.3	3.3	4.5	4.1	-8.9
Yarra Valley Water	5.8	11	11.1	12.4	11	-11.3
Sydney Water	2.6	2.1	2.2	2.4	2.1	-12.5
TasWater		12.2	15.6	12.6	5.4	-57.1
<b>Median</b>	<b>4.1</b>	<b>4</b>	<b>3.5</b>	<b>3.5</b>	<b>4.2</b>	
<b>Mean</b>	<b>3.9</b>	<b>5.0</b>	<b>5.5</b>	<b>5.5</b>	<b>5.8</b>	
<b>Large</b>						
North East Water	1.7	2.9	3.4	3.8	5.8	52.6
Cairns	2.9	3.6	2.4	2.1	3	42.9
Goulburn Valley Water	6.6	5.4	3.9	4.5	5.9	31.1
Townsville	0.7	0.8	0.5	0.5	0.6	20.0
WC (Mandurah)	0.4	0.3	0.6	0.5	0.6	20.0
Western Water	5.5	3.3	3.3	2.6	3	15.4
Coliban Water	6.5	8.6	5.3	6.4	6.4	0.0
P&W (Darwin)	86.2	85.1	68.4	60.4	50.9	-15.7
Redland City	3.6	2.6	3.2	3	2.4	-20.0
Gippsland Water	9.4	10.9	8.7	14.2	9.2	-35.2
Toowoomba	2.6	4.1	3.2	3.2	2	-37.5
Central Highlands Water (Vic)	5	6.9	8.4	8.6	5.1	-40.7
<b>Median</b>	<b>4.3</b>	<b>3.8</b>	<b>3.3</b>	<b>3.5</b>	<b>4</b>	
<b>Mean</b>	<b>10.9</b>	<b>11.2</b>	<b>9.3</b>	<b>9.2</b>	<b>7.9</b>	
<b>Medium</b>						
GWMWater	7.4	7.6	8.3	0.4	8.7	2,075.0
Clarence Valley		0	19	42.7	115	169.3
Eurobodalla	1.9	2	4	11.9	22	84.9
Albury	7	11.2	2	1.2	2	66.7
Fraser Coast	7.7	20.5	15.1	10.1	14.4	42.6
Dubbo	23.1	18.3	17	15.2	21	38.2
Mackay	33.4	57	93.4	60.9	70.8	16.3
Shoalhaven	1.5	1.8	2	0.9	1	11.1
Fitzroy River Water	48	47.2	39.9	46	48.4	5.2
East Gippsland Water	1.8	4	3.7	3.6	3.6	0.0
Gladstone	0	0.3	0.3	0	0	0.0

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Tweed	47.6	0	1	1	1	0.0
Wingecarribee	87.9	90	81	119	110	-7.6
Queanbeyan	36.6	52	55	88.4	76	-14.0
Wannon Water	6.1	5.3	6	4	3.4	-15.0
Tamworth	54.5	39.5	48	68.8	51	-25.9
South Gippsland Water	5.2	6.2	8.9	5.7	4.1	-28.1
MidCoast Council	8.2	4.4	3	3.4	2	-41.2
Bundaberg	2.8	12.8	59.7	52.6	28.2	-46.4
Port Macquarie Hastings	31.2	15.5	6	28.5	12	-57.9
Lower Murray Water	2.9	4.8	1.7	3.2	0.1	-96.9
Coffs Harbour	0.4	1.6	0	0.2	0	-100.0
<b>Median</b>	<b>7.6</b>	<b>6.9</b>	<b>7.2</b>	<b>7.9</b>	<b>10.3</b>	
<b>Mean</b>	<b>21.6</b>	<b>18.3</b>	<b>21.6</b>	<b>25.8</b>	<b>27.0</b>	
<b>Small</b>						
Gympie	2.3	5.5	5.2	0.5	1.1	120.0
Ballina	0.9	0.6	2	5.7	12	110.5
Western Downs		9.2	2.8	0.2	0.3	50.0
Kempsey	2.4	1.1	1	6.3	9	42.9
Livingstone	7.1	61.6	3.3	3.3	4	21.2
WC (Albany)	1	0.9	1.1	0.5	0.6	20.0
Bega Valley	7.2	7.5	11	6.9	8	15.9
Central Highlands	184.2	146	24.1	25.5	28.6	12.2
Byron	4.5	6.1	8	14.8	16	8.1
WC (Australind/Eaton)	0.8	1.5	1.2	0.9	0.9	0.0
Goulburn Mulwaree	98.5	0	69	80.2	76	-5.2
Cassowary Coast	115.4	16.6	10.3	14.4	13.1	-9.0
Armidale			10	22.1	20	-9.5
Bathurst	89.3	69.4	51	52.9	47	-11.2
Orange	123.1	111.6	102	112.4	97	-13.7
P&W (Alice Springs)	45.2	101.3	110.7	121.9	103.1	-15.4
Southern Downs	48.5	95.6	5.4	6.9	4.9	-29.0
Lismore	0.3	0.5	2	5.4	3	-44.4
Whitsunday	106.2	84.7	9.3	7.8	4.3	-44.9
WC (Geraldton)	1.2	1.5	2.3	2	0.8	-60.0
Westernport Water	6.8	4.8	2.5	3.7	1.3	-64.9
Essential Energy	2.5	1	2	12.5	2	-84.0
<b>Median</b>	<b>6.9</b>	<b>6.1</b>	<b>5.3</b>	<b>6.9</b>	<b>6.5</b>	
<b>Mean</b>	<b>42.4</b>	<b>34.6</b>	<b>19.8</b>	<b>23.0</b>	<b>20.6</b>	

Table A12 C14—Percentage of calls answered by an operator within 30 seconds, by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Central Coast				46	71	54.3
City West Water	82.5	81	81	50.5	73.7	46.1
South East Water	77.2	67	52.6	58.2	72.4	24.3
Gold Coast			45	54.1	62.1	14.8
Barwon Water	88	85	79	67	76.5	14.2
Icon Water	66.7	61.1	73.1	73.5	77.9	5.9
Sydney Water	73	60	76	69	72	4.3
SA Water	85.3	85.4	85.4	85.9	86.2	0.3
Yarra Valley Water	46.9	64.3	54.4	90.2	88.5	-1.8
Hunter Water	71	67	69	58	56	-3.4
Unitywater	81		72	83	80	-3.6
TasWater	88.5	89.1	86.5	87.1	83	-4.7
WC (Perth)	71.1	70.6	62.6	56.1	52.7	-6.1
Logan		80.9	71.3			
Urban Utilities	80					
<b>Median</b>	<b>78.6</b>	<b>70.6</b>	<b>72</b>	<b>67</b>	<b>73.7</b>	
<b>Mean</b>	<b>75.9</b>	<b>73.8</b>	<b>69.8</b>	<b>67.6</b>	<b>73.2</b>	
<b>Large</b>						
Toowoomba			80	81	83	2.5
Redland City				81	82	1.2
North East Water	90.8	90	96	98.4	98.6	0.2
Western Water	88.3	86	75	75.8	75.9	0.1
Townsville				47.7	47.7	0.0
Goulburn Valley Water	97.2	97.3	98.6	96.7	95.3	-1.4
Coliban Water	90.9	91.8	86.5	83	81.2	-2.2
Gippsland Water	88.8	83.8	83.5	67.8	62.2	-8.2
Central Highlands Water (Vic)	88.2	89.4	79.7	70.7	62	-12.2
<b>Median</b>	<b>89.8</b>	<b>89.7</b>	<b>83.5</b>	<b>81</b>	<b>81.2</b>	
<b>Mean</b>	<b>90.7</b>	<b>89.7</b>	<b>85.6</b>	<b>78.0</b>	<b>76.4</b>	
<b>Medium</b>						
Dubbo	93	84		69	93	34.8
Tweed	49	50	50	69	72	4.3
Port Macquarie Hastings	98	96	96	75	78	4.0
GWMWater	93.1	92.3	91.4	90.9	92.9	2.2
Albury	63	47	50	60	60	0.0
East Gippsland Water	99.5	99	99	99	99	0.0
Mackay			97	97	97	0.0
Shoalhaven	98	98	98	98	98	0.0
South Gippsland Water	99.5	94	98.8	98.6	98.4	-0.2
Wannon Water	99.3	98.8	98.8	98.6	98.2	-0.5
Eurobodalla	72	68	65	66	65	-1.5
Gladstone			100	79.7	78.3	-1.8

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Coffs Harbour	99	99	99	76	73	-3.9
Lower Murray Water	86.4	94	95	94	89	-5.3
Bundaberg			95	96	82	-14.6
Fitzroy River Water			80	75.9		
Wagga Wagga (S)	100	94	94	92		
Wingecarribee	66	96	97	99		
<b>Median</b>	<b>98</b>	<b>94</b>	<b>96</b>	<b>92</b>	<b>89</b>	
<b>Mean</b>	<b>87.3</b>	<b>86.6</b>	<b>88.5</b>	<b>86.7</b>	<b>84.9</b>	
<b>Small</b>						
Cassowary Coast				50	65	30.0
Bega Valley	45	50	50	70	90	28.6
Essential Energy	78	78	78	60	63	5.0
Orange	65	77	76	72	73	1.4
Lismore	77	80	80	70	70	0.0
Westernport Water	97.6	99.7	98.2	98.7	97	-1.7
Whitsunday			84.4	86.6	85.1	-1.7
Gympie			72	78	71	-9.0
Western Downs			91	94	76	-19.1
Ballina	100	100	100	90		
Bathurst		100	100	100		
Kal-Boulder (S)	100					
Goldenfields Water (W)			100	100		
Kempsey	42	40	45		93	
<b>Median</b>	<b>78</b>	<b>79</b>	<b>82.2</b>	<b>82.3</b>	<b>74.5</b>	
<b>Mean</b>	<b>78.3</b>	<b>78.1</b>	<b>81.2</b>	<b>80.8</b>	<b>78.3</b>	

Table A13 A8—Water main breaks, bursts and leaks (mains breaks per 100 km), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Sydney Water	26	23.9	32.8	24.7	29.2	18.2
Unitywater	3.7	4.8	4.1	4.2	4.9	16.7
Logan	4.7	4	5.1	5.8	6.7	15.5
Gold Coast	7.4	5.1	6.4	9.1	10.2	12.1
Hunter Water	26.8	24.8	30	27	28.3	4.8
Urban Utilities	25.7	23.1	22.5	30	31.1	3.7
Yarra Valley Water	48.5	47.4	46.3	43.9	43.8	-0.2
WC (Perth)	12	13.1	11.1	11.6	11.5	-0.9
Central Coast	17	16	14.4	12.1	11.6	-4.1
Icon Water	13.8	14.3	16.3	14.7	13.6	-7.5
SA Water	14.9	13.5	13.6	15	13.5	-10.0
South East Water	33.5	32.7	37.1	36.9	31.8	-13.8
TasWater				40.7	32.6	-19.9
Barwon Water	33.5	31	29.4	32.3	25.1	-22.3
City West Water	40.1	42.1	42.8	51.8	40	-22.8
<b>Median</b>	<b>21.4</b>	<b>19.6</b>	<b>19.4</b>	<b>24.7</b>	<b>25.1</b>	
<b>Mean</b>	<b>22.0</b>	<b>21.1</b>	<b>22.3</b>	<b>24.0</b>	<b>22.3</b>	
<b>Large</b>						
P&W (Darwin)	17.2	11.2	10.7	9.8	12.7	29.6
Townsville	31.6	33.5	18.3	21.7	27.6	27.2
North East Water	8.7	13.7	10.3	11.9	13.7	15.1
Coliban Water	29.1	28.7	28.5	25.8	26.4	2.3
Cairns	12.4	10.5	23	20	20.1	0.5
Central Highlands Water (Vic)	18.8	18.2	25.4	20.9	19.7	-5.7
Western Water	13.3	12.3	12.2	12.1	10.4	-14.0
Goulburn Valley Water	19.9	12.9	16.2	17	13.2	-22.4
Gippsland Water	24.5	23	25.1	26.9	20.5	-23.8
Redland City	3.2	3.1	3.1	4	3	-25.0
Toowoomba	13.3	16.3	29	12.4	9.1	-26.6
WC (Mandurah)	3.6	4	2.8	4.8	2.3	-52.1
<b>Median</b>	<b>15.2</b>	<b>13.3</b>	<b>17.2</b>	<b>14.7</b>	<b>13.4</b>	
<b>Mean</b>	<b>16.3</b>	<b>15.6</b>	<b>17.1</b>	<b>15.6</b>	<b>14.2</b>	
<b>Medium</b>						
Clarence Valley	12.3	15.4	5.9	9.4	86.1	816.0
Bundaberg	4.2	8	3.9	4.6	22	378.3
Riverina Water (W)	18.6	11.6	8.1	6	16.7	178.3
Shoalhaven	8	5.7	6.5	6.1	11.2	83.6
MidCoast Council	1.7	6.9	8.9	8.3	13.7	65.1
Port Macquarie Hastings	2.6	1.8	4.2	5.7	7.9	38.6
Queanbeyan	7.5	8.3	6.5	15.8	21.4	35.4
Coffs Harbour	7.1	10	9.7	8.2	11	34.1
Fraser Coast	3	4.2	3.6	7	7.9	12.9
Mackay	11.8	9.4	6.6	7.3	7.2	-1.4

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Wannon Water	11.1	9.6	8.3	5.2	5.1	-1.9
Tweed	7.5	9.1	7.5	9.5	9.3	-2.1
East Gippsland Water	12.9	12.8	17.1	15.9	15.4	-3.1
Fitzroy River Water	16.7	16.2	12.3	11.2	10.8	-3.6
GWMWater	55.5	56.6	58.5	57.1	45.2	-20.8
Lower Murray Water	32	28.6	26.2	33.4	26.4	-21.0
Albury	4.1	3.3	3.9	4.5	3.5	-22.7
South Gippsland Water	40.9	29.5	34.3	32.7	24	-26.6
Dubbo	6.5	7.8	9.7	7.8	5.4	-30.8
Gladstone	33.9	6.7	10.8	98.5	63.7	-35.3
Eurobodalla	12.7	10	9.1	28.1	17.2	-38.8
Wingecarribee	12	15	8.1	14.6	8.3	-43.2
Tamworth	8.9	5.5	6.8	10.1	3.7	-63.4
<b>Median</b>	<b>11.1</b>	<b>9.4</b>	<b>8.1</b>	<b>9.4</b>	<b>11.2</b>	
<b>Mean</b>	<b>14.4</b>	<b>12.7</b>	<b>12.0</b>	<b>17.7</b>	<b>19.3</b>	
<b>Small</b>						
Goulburn Mulwaree	14.7	19	19.7	8.2	14.4	75.6
Essential Energy	20.9	16.2	24.6	15.2	22.3	46.9
WC (Albany)	11.4	10.9	15.1	9	11.5	27.8
Lismore	35.8	29.5	39.9	43.2	52.7	22.0
P&W (Alice Springs)	8.3	30.7	44.3	36.2	43.1	19.1
Orange	8.8	7.3	8.7	6.3	7.4	17.5
Armidale			13.2	17.3	20.1	16.2
Cassowary Coast	7.6	8.8	12.7	18.2	20.8	14.3
Goldenfields Water (W)		16.3	15	16.7	18.5	10.8
WC (Kal-Boulder) (W)	20.3	15.5	19.7	19.3	21.2	9.8
Aqwest-Bunbury (W)	13.5	17.5	9.9	5.9	6.1	3.4
Gympie	3.8	11.1	9.8	9.8	9.8	0.0
Southern Downs	3.7	4.5	1.1	7.2	7.2	0.0
WC (Australind/Eaton)	7.4	9.2	6.9	6.5	6.5	0.0
Livingstone	3.2	2.9	1	3.5	3.2	-8.6
Central Highlands	40.4	48.6	42.1	37.7	33.9	-10.1
Bega Valley	4.5	9.5	13.1	5.7	4.7	-17.5
Busselton (W)	7.2	7.1	9.7	9	7.4	-17.8
Whitsunday	15	10.4	19.4	20.4	16.2	-20.6
WC (Geraldton)	25.2	27.4	32.5	28.6	22.6	-21.0
Bathurst	14.8	10.8	15	7.2	4.2	-41.7
Kempsey	5.5	12.6	5.1	10.6	5.5	-48.1
Westernport Water	22	18.2	20	21.2	11	-48.1
Byron	7.1	13.7	17.1	27.4	13.1	-52.2
Western Downs	20.5	28	18.2	15.1	7.2	-52.3
Ballina	3.7	10.1				
<b>Median</b>	<b>10.1</b>	<b>12.6</b>	<b>15</b>	<b>15.1</b>	<b>11.5</b>	
<b>Mean</b>	<b>13.6</b>	<b>15.8</b>	<b>17.4</b>	<b>16.3</b>	<b>15.6</b>	

Table A14 A14—Number of sewer mains breaks and chokes per 100 km of sewer main (breaks and chokes/100 km), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Gold Coast	7.2	4.3	5.1	4.9	6.2	26.5
Icon Water	54.1	48.9	55.6	72.1	83.8	16.2
Unitywater	24.5	24.8	16.4	17.1	19.8	15.8
Urban Utilities	25.2	24.9	20.9	18.4	21.1	14.7
TasWater			45	36.6	41.2	12.6
Yarra Valley Water	35.3	38.1	30.7	38.4	42.4	10.4
South East Water	17.6	18	16.2	19	20.7	8.9
Logan	11.5	11.2	10.7	9	9.8	8.9
WC (Perth)	18.6	17	17	17	18.4	8.2
Barwon Water	38.8	33	36.1	51.2	53.8	5.1
SA Water	51	43	43	46	48	4.3
City West Water	21.4	20.3	21.3	24.1	24.5	1.7
Hunter Water	42.7	49.6	50.6	44.9	42.8	-4.7
Sydney Water	58.4	62.8	70	74	66	-10.8
Central Coast	38	34.3	37	38	33	-13.2
<b>Median</b>	<b>30.2</b>	<b>28.9</b>	<b>30.7</b>	<b>36.6</b>	<b>33</b>	
<b>Mean</b>	<b>31.7</b>	<b>30.7</b>	<b>31.7</b>	<b>34.0</b>	<b>35.4</b>	
<b>Large</b>						
Townsville	3.9	2.7	2.8	7.3	54.8	650.7
North East Water	9.6	11.8	10.3	10.3	13.9	35.0
Goulburn Valley Water	9.5	9.1	6.1	10.3	13.8	34.0
P&W (Darwin)	22.2	19	14.3	9.9	12.7	28.3
Redland City	7.2	4	3.6	2.3	2.7	17.4
Coliban Water	53.7	40.5	29.8	20.5	22.3	8.8
Western Water	14.1	11.5	12.7	18.1	17.3	-4.4
Central Highlands Water (Vic)	22.6	19.3	19.1	20.5	19.2	-6.3
Gippsland Water	8	8.4	9.1	7.8	6.9	-11.5
Cairns	7.2	11.8	14.5	15.1	12.9	-14.6
WC (Mandurah)	9	10	7	11	8.5	-22.7
Toowoomba	64.8	56.9	64.6	44.2	13.5	-69.5
<b>Median</b>	<b>9.6</b>	<b>11.7</b>	<b>11.5</b>	<b>10.7</b>	<b>13.7</b>	
<b>Mean</b>	<b>19.3</b>	<b>17.1</b>	<b>16.2</b>	<b>14.8</b>	<b>16.5</b>	
<b>Medium</b>						
Tamworth	20	41	8	7	12	71.4
Dubbo	46	35.7	38	40	63	57.5
Bundaberg	11.4	10.1	11.5	13.1	20.3	55.0
Fraser Coast	6.2	8.1	7.1	7.9	9.4	19.0
Albury	76	78	9	44	52	18.2
East Gippsland Water	5.2	5.9	7.6	6.9	8.1	17.4
MidCoast Council	8	20	22	24	27	12.5
Coffs Harbour	97	95	84	82	88	7.3
Gladstone	10.9	12.4	5.6	7.9	8.4	6.3
Clarence Valley	40	31	36	64	66	3.1

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
GWMWater	50.5	46.3	42.1	43	43.2	0.5
Shoalhaven	13	8	11	3	3	0.0
Tweed	1	1	0	0	0	0.0
Mackay	5.1	3.8	2.2	3.5	3.1	-11.4
Fitzroy River Water	25.9	28.1	17	21.7	18.3	-15.7
Lower Murray Water	15.6	18	16	19	16	-15.8
Eurobodalla	23	25	33	37	29	-21.6
Wannon Water	18.2	18	12.5	12.1	9.2	-24.0
Port Macquarie Hastings	27	15	14	9	6	-33.3
Queanbeyan	33	86	59	101	55	-45.5
South Gippsland Water	29.9	110	13.4	36.6	13.3	-63.7
Wingecarribee	10	31	26	45	8	-82.2
Wagga Wagga (S)	72	62	73			
<b>Median</b>	<b>19.1</b>	<b>25</b>	<b>14</b>	<b>20.4</b>	<b>14.7</b>	
<b>Mean</b>	<b>27.5</b>	<b>34.3</b>	<b>23.8</b>	<b>28.5</b>	<b>25.4</b>	
<b>Small</b>						
WC (Busselton) (S)	3.7	3.8	2	3	13.2	340.0
Central Highlands	39.4	32.9	7.6	6.5	25.6	293.8
Gympie	3.8	3	8.7	5.9	14.2	140.7
Kempsey	25	10	22	5	12	140.0
P&W (Alice Springs)	1.8	3.6	6.3	3.2	6.6	106.2
Southern Downs	35.7	12	0.3	34.2	64.4	88.3
Byron	21	7	7	8	13	62.5
Lismore	28	16	26	17	24	41.2
Essential Energy	122	120.7	122	115	143	24.3
Armidale			49	51	58	13.7
Western Downs	4.8	4.8	2.8	4.4	4.7	6.8
Kal-Boulder (S)	27	30	39	33	34	3.0
WC (Albany)	30.6	20.9	17	21	21.1	0.5
Bega Valley	20	14	27	18	18	0.0
Goulburn Mulwaree	45	106.7	69	44	44	0.0
WC (Australind/Eaton)	7.9	7.4	9	7	6.3	-10.0
Cassowary Coast	1.3	4.8	4.4	3.9	3	-23.1
Livingstone	6	3.3	4.2	5.1	3.9	-23.5
Bathurst	162	91	55	49	36	-26.5
Westernport Water	4.2	4.1	6	6	3.6	-40.0
WC (Bunbury) (S)	12.8	9.2	14	11	6.4	-41.8
WC (Geraldton)	8.7	7.1	12	9	5	-44.4
Orange	42	78	83	90	40	-55.6
Whitsunday	8.9	8.9	15.5	17.6	7.6	-56.8
Ballina	21	0	0			
<b>Median</b>	<b>20.5</b>	<b>9.1</b>	<b>12</b>	<b>10</b>	<b>13.7</b>	
<b>Mean</b>	<b>28.4</b>	<b>25.0</b>	<b>24.4</b>	<b>23.7</b>	<b>25.3</b>	



Table A15 A15—Number of property connection sewer breaks and chokes (breaks and chokes/1,000 properties), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Gold Coast	0.9	2.2	2.3	1.8	2.2	22.2
Logan	1.8	1.9	1.3	1	1.2	20.0
TasWater				10.7	12.6	17.8
Unitywater	1.3	1.3	1.1	1.2	1.4	16.7
Icon Water	10.1	9.5	10.4	13.8	15.7	13.8
SA Water	32	26	28	28	29	3.6
Sydney Water	0.2	0.3	0.3	0.3	0.3	0.0
Urban Utilities	3.3	3.9	3.1	2.9	2.9	0.0
Barwon Water	2.8	6	6	9.4	9.3	-1.1
Yarra Valley Water	7.4	7.6	6.7	8.1	8	-1.5
Hunter Water	8.5	9.3	10	10.3	9.8	-4.9
South East Water	5	4	4.8	5.2	4.9	-5.8
City West Water	5.2	4.5	3.2	3.4	3.1	-8.8
Central Coast	2.9	6.9	3.2	3.6	3.1	-13.9
<b>Median</b>	<b>3.3</b>	<b>4.5</b>	<b>3.2</b>	<b>4.4</b>	<b>4</b>	
<b>Mean</b>	<b>6.3</b>	<b>6.4</b>	<b>6.2</b>	<b>7.1</b>	<b>7.4</b>	
<b>Large</b>						
Toowoomba	0.6	4.3	2.5	1	2.3	130.0
Goulburn Valley Water	4.3	2.3	5	4.6	7.5	63.0
Redland City	0.6	1.3	1.1	1	1.1	10.0
Gippsland Water	1.8	2.4	2.2	1.3	1.4	7.7
Townsville	4.3	4.2	3.2	5.5	5.4	-1.8
Central Highlands Water (Vic)	1.7	2.2	3.8	4.9	4.6	-6.1
Coliban Water	5.2	8.9	4.3	3.6	3.3	-8.3
North East Water	2	2.9	3	3	2.7	-10.0
Cairns	1.4	2.2	2.7	2.7	2.3	-14.8
Western Water	5.6	4.8	4.2	4.9	3.9	-20.4
P&W (Darwin)	3.1	0.8	2	1.4	1	-28.6
<b>Median</b>	<b>2</b>	<b>2.4</b>	<b>3</b>	<b>3</b>	<b>2.7</b>	
<b>Mean</b>	<b>2.8</b>	<b>3.3</b>	<b>3.1</b>	<b>3.1</b>	<b>3.2</b>	
<b>Medium</b>						
Mackay	0.6	1.7	2.2	0.6	1.2	100.0
Wingecarribee	3.7	4.6	16.9	8.4	16.7	98.8
Gladstone	0.7	1.2	0.6	1	1.5	50.0
Coffs Harbour	1.5	2.8	0.5	2	3	50.0
Tweed	1.2	1.2	0.8	0.3	0.4	33.3
Dubbo	6.5	6.1	6.9	7	8.6	22.9
Lower Murray Water	6.2	6	7	8	9	12.5
Fitzroy River Water	9.8	10.6	9.7	11.6	12.8	10.3
Wagga Wagga (S)	13.4	6.7	5	7.8	8.5	9.0
Port Macquarie Hastings		1.1	1	0.2	0.2	0.0
Eurobodalla	4.4	4.6	5.8	4.3	4.2	-2.3

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
GWMWater	31.4	29.2	35.1	34.9	33.1	-5.2
Shoalhaven	0.1	0.1	0	3.5	3.1	-11.4
East Gippsland Water	0.8	1.2	1.8	1.6	1.3	-18.8
Clarence Valley	3.3	5.9	20.4	5.7	4.2	-26.3
Wannon Water	3.5	3	3	3	2	-33.3
Albury	12.5	10.7	4.5	4.1	2.7	-34.1
Fraser Coast	1.3	2.7	2.8	2.3	1.5	-34.8
Bundaberg	0.2	0.6	8.7	13.2	7.6	-42.4
Tamworth	10.8	8.6	10.2	5.4	2.9	-46.3
South Gippsland Water	1.8	64	3.7	10.1	5.1	-49.5
MidCoast Council				0		
Queanbeyan	0.6	1.1	0	0		
<b>Median</b>	<b>3.3</b>	<b>3.8</b>	<b>4.1</b>	<b>4.1</b>	<b>3.1</b>	
<b>Mean</b>	<b>1.8</b>	<b>7.9</b>	<b>6.7</b>	<b>5.9</b>	<b>6.2</b>	
<b>Small</b>						
Whitsunday	0.3	0.9	1.4	0.1	0.7	600.0
Western Downs	2.8	2.9	2	0.8	4.6	475.0
P&W (Alice Springs)	0.2	2	1.3	0.9	4.1	355.6
Gympie	0.5		4	0.6	1.9	216.7
Essential Energy	44	43.3	51.3	51.7	60	16.1
Byron	10.3	11.3	9.6	14.9	16.8	12.8
Kempsey	14.1	24.9	6.2	21	23.5	11.9
Armidale			27.3	32.9	34.1	3.6
Livingstone		3.4	1.4	2.2	2.2	0.0
Kal-Boulder (S)	0	1	1.8	0	0	0.0
Lismore	8.2	5.9	21.3	9.5	8.9	-6.3
Orange	1.4	0.3	3.2	10.9	10	-8.3
Goulburn Mulwaree	17	17.4	18	14.7	12.6	-14.3
Central Highlands	2.3	1.1	10.2	10.3	8.6	-16.5
Southern Downs	6.3	2.1	7.6	11.3	7.1	-37.2
Bathurst	3.1	3.2	4.9	4.9	3	-38.8
Westernport Water	2.3	2.3	3.3	4.4	1.8	-59.1
Bega Valley	2	1.5	4.4	2.2	0.8	-63.6
Cassowary Coast	3.2	3.1	0.8	1	0.3	-70.0
<b>Median</b>	<b>2.8</b>	<b>2.9</b>	<b>4.4</b>	<b>4.9</b>	<b>4.6</b>	
<b>Mean</b>	<b>6.9</b>	<b>7.4</b>	<b>9.5</b>	<b>10.2</b>	<b>10.6</b>	

Table A16 A10—Real losses: service connections (L/service connection/day), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Central Coast	31	34	35	37	58	56.8
SA Water	82	86	76	78	90	15.4
TasWater			277	313	361	15.3
Icon Water	69	79	83	45	49	8.9
Unitywater	66	51	55.2	49.8	54.1	8.6
WC (Perth)	78	87	83.6	85	84.7	-0.3
Gold Coast	81	76.3	76.4	69.3	68	-1.9
Urban Utilities	71	76	75	74	70	-5.4
Sydney Water	76	83	93	94	85	-9.6
Hunter Water	104	96	86	79	69	-12.7
Yarra Valley Water	71	50	60	49	42	-14.3
Logan	67	66.1	76.5	83.1	70.8	-14.8
South East Water	64	59	47	66	53	-19.7
City West Water	71	70	89	57.8	39.2	-32.2
Barwon Water	47	45	48	34	21	-38.2
<b>Median</b>	<b>71</b>	<b>73</b>	<b>76.4</b>	<b>69.3</b>	<b>68</b>	
<b>Mean</b>	<b>69.9</b>	<b>68.5</b>	<b>84.0</b>	<b>80.9</b>	<b>81.0</b>	
<b>Large</b>						
Redland City	17	16.1	16.5	11.6	25.6	120.7
P&W (Darwin)	96	143	222	142	276	94.4
Coliban Water	74	63	60	72	86	19.4
WC (Mandurah)	67	77	93.8	41.9	47.8	14.1
Toowoomba	85	59.3	81	66.9	73.4	9.7
Townsville	276	143	306.4	342.9	333.7	-2.7
Central Highlands Water (Vic)	30	40	40	50	42	-16.0
Goulburn Valley Water	93	104	118	100	80	-20.0
Gippsland Water	72	90	80	90	71	-21.1
North East Water	60	48	59	70	54	-22.9
Cairns	27	7.9	21.4	46.3	31.3	-32.4
Western Water	37	32	51	50	0.03	-99.9
<b>Median</b>	<b>69.5</b>	<b>61.1</b>	<b>70</b>	<b>68.5</b>	<b>62.5</b>	
<b>Mean</b>	<b>77.8</b>	<b>68.6</b>	<b>95.8</b>	<b>90.3</b>	<b>93.4</b>	
<b>Medium</b>						
Gladstone	336	239.3	47.8	50.8	96	89.0
Tamworth	87	79	55	55	87	58.2
East Gippsland Water	66	48	55.8	27.8	43.1	55.0
Queanbeyan	110	0	101	92	142	54.3
Dubbo	90	51.3	4	86	121	40.7
Bundaberg	354	50.6	215.5	133.7	163.6	22.4
Fraser Coast	78	89.1	80.7	54	62.1	15.0
Port Macquarie Hastings	43	40	45	77	87	13.2
Fitzroy River Water	152	114.2	186	176	194.1	10.3
MidCoast Council	71	84	57	37	40	8.1

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Coffs Harbour	48	56	62	42	44	4.8
Shoalhaven	72	107	64	71	74	4.2
Lower Murray Water	0.1	0.1	0.1	0.1	0.1	0.0
Wannon Water	72	84	70	70	70	0.0
Eurobodalla	50	54	52	51	50	-2.0
South Gippsland Water	100	87	105	122.8	102.6	-16.4
Wingecarribee	116	107	117	95	77	-18.9
Tweed	90	90.9	104	137	96	-29.9
Mackay	131	130.3	189.9	186	111	-40.3
Albury	60	46.2	63	44	19	-56.8
Clarence Valley	40	46.9	43	126	30	-76.2
Riverina Water (W)	115	55.6	57	85	2	-97.6
GWMWater	109	112	72	119	0	-100.0
<b>Median</b>	<b>87</b>	<b>79</b>	<b>63</b>	<b>76.9</b>	<b>74</b>	
<b>Mean</b>	<b>103.9</b>	<b>77.1</b>	<b>80.3</b>	<b>83.4</b>	<b>74.4</b>	
<b>Small</b>						
P&W (Alice Springs)	126	153	118	92	246	167.4
Livingstone	0	0	0	116.8	245	109.8
Goldenfields Water (W)		200.6	151	54	89	64.8
WC (Kal–Boulder) (W)	42	88	102.4	78	120.6	54.6
Busselton (W)	69	78	115	119	162	36.1
Central Highlands		271.4	253.7	200	261.9	30.9
Whitsunday	346	101.8	144.7	251.4	323.1	28.5
Southern Downs	96	66.5	27.8	29	35.4	22.1
Ballina	156	89	57	100	116	16.0
Bega Valley	50	51	51	50	54	8.0
WC (Albany)	189	115	111	163.9	176.5	7.7
Cassowary Coast	390	463.9	458.8	461.8	472.4	2.3
WC (Geraldton)	217	106	209.7	161.6	162.6	0.6
Westernport Water	47	50	42	11	11	0.0
Byron	90	50	84	49	49	0.0
Aqwest–Bunbury (W)	95	104	108	98	95	-3.1
Lismore	39	38	103	96	78	-18.8
Bathurst	70	67.9	84	58	47	-19.0
Essential Energy	84	90.7	101	111	76	-31.5
WC (Australind/Eaton)	107	109	124.4	142.3	87.4	-38.6
Gympie	98	147.8	133.2	185.4	113.7	-38.7
Kempsey	93	63	114	90	45	-50.0
Orange	63	106	112	113	39	-65.5
Goulburn Mulwaree	40	67.3	95	119	40	-66.4
Armidale			129	127	28	-78.0
Western Downs		65.4	170.5	52.1	6.7	-87.1
<b>Median</b>	<b>91.5</b>	<b>89</b>	<b>111.5</b>	<b>105.5</b>	<b>88.2</b>	
<b>Mean</b>	<b>114.0</b>	<b>109.7</b>	<b>123.1</b>	<b>120.4</b>	<b>122.3</b>	

Table A17 E12—Total net greenhouse gas emissions per 1,000 properties (t CO<sub>2</sub> equivalents/1,000 properties), by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
WC (Perth)	817	828	754	510	701	37.5
Logan			187	163	185	13.0
TasWater			179	196	218	11.3
Unitywater	199		199	212	228	7.2
Central Coast	397	505	436	449	472	5.1
Gold Coast				246	250	1.5
Barwon Water	268	263	257	267	267	-0.2
Urban Utilities	192	168	183	182	178	-2.4
Sydney Water	144	176	173	180	175	-3.0
City West Water	32	32	30	28	28	-3.5
Hunter Water	181	167	163	357	344	-3.7
Icon Water	255	242	268	363	331	-8.9
Yarra Valley Water	44	44	43	40	35	-13.1
South East Water	60	56	63	49	42	-15.0
SA Water	402	272	302	426	346	-18.8
<b>Median</b>	<b>195</b>	<b>176</b>	<b>185</b>	<b>212</b>	<b>228</b>	
<b>Mean</b>	<b>249</b>	<b>250</b>	<b>231</b>	<b>245</b>	<b>253</b>	
<b>Large</b>						
WC (Mandurah)	189	348	350	257	377	46.7
Goulburn Valley Water	780	686	1,004	1,080	1,290	19.5
Townsville			294	368	433	17.8
P&W (Darwin)	154	179	229	215	213	-0.8
Toowoomba			501	633	617	-2.6
Redland City			34	190	184	-3.5
Western Water	530	440	512	558	529	-5.2
North East Water	885	750	697	653	619	-5.2
Cairns			256	254	228	-10.5
Coliban Water	770	454	384	443	385	-13.0
Central Highlands Water (Vic)	444	230	208	236	200	-15.3
Gippsland Water	898	546	543	617	483	-21.7
<b>Median</b>	<b>650</b>	<b>447</b>	<b>367</b>	<b>405</b>	<b>409</b>	
<b>Mean</b>	<b>581</b>	<b>454</b>	<b>418</b>	<b>459</b>	<b>463</b>	
<b>Medium</b>						
Wingecarribee	492	474	442	416	733	76.2
Fitzroy River Water			475	445	562	26.2
Coffs Harbour	456	489	459	386	428	10.9
Port Macquarie Hastings	385	395	304	482	527	9.3
Queanbeyan	233	299	200	169	184	8.9
Tamworth	423	422	469	376	391	4.0
Mackay				0.1	0.1	0.0
Eurobodalla	335	381	530	500	495	-1.0
Tweed	453	457	730	420	413	-1.7

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Shoalhaven	454	470	479	754	739	-2.0
Albury	477	437	418	383	367	-4.2
South Gippsland Water	372	416	454	446	424	-5.0
Bundaberg				40	37	-6.3
Clarence Valley	177	200	252	181	169	-6.7
East Gippsland Water	346	365	351	368	341	-7.3
Lower Murray Water	602	542	643	624	578	-7.3
MidCoast Council	371	337	426	453	416	-8.2
Wannon Water	776	675	696	704	611	-13.2
GWMWater	583	426	477	566	473	-16.4
Dubbo	492	470	505	563	468	-16.9
Fraser Coast			0			
<b>Median</b>	<b>453</b>	<b>426</b>	<b>459</b>	<b>433</b>	<b>426</b>	
<b>Mean</b>	<b>453</b>	<b>427</b>	<b>437</b>	<b>414</b>	<b>418</b>	
<b>Small</b>						
Kempsey	292	303	321	460	682	48.3
Orange	515	450	596	482	668	38.6
Whitsunday			355	408	475	16.4
WC (Geraldton)	373	351	331	332	343	3.3
WC (Albany)	419	380	368	356	364	2.4
P&W (Alice Springs)	636	577	822	859	878	2.2
WC (Australind/Eaton)	448	347	323	316	321	1.5
Byron	172	138	385	383	386	0.8
Western Downs			334	472	475	0.7
Ballina	386	295	378	456	459	0.7
Westernport Water	379	383	399	394	384	-2.5
Gympie				434	405	-6.7
Goulburn Mulwaree	662	761	670	744	687	-7.7
Bathurst	416	418	278	434	388	-10.6
Lismore	229	171	64	223	185	-17.0
Armidale			436	423	326	-22.9
Cassowary Coast				412	290	-29.8
Bega Valley	422	399	417	413	284	-31.2
Essential Energy	1,118	984	1,220	835	368	-55.9
Central Highlands					291	
Livingstone					391	
Southern Downs					168	
<b>Median</b>	<b>417</b>	<b>381</b>	<b>378</b>	<b>423</b>	<b>385</b>	
<b>Mean</b>	<b>462</b>	<b>425</b>	<b>453</b>	<b>465</b>	<b>419</b>	

Table A18 H3—Percentage of population where microbiological compliance was achieved, by utility size group, 2015–16 to 2019–20.

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
<b>Major</b>						
Barwon Water	100	100	100	100	100	0.0
Central Coast	100	100	100	100	100	0.0
City West Water	100	100	100	100	100	0.0
Gold Coast			100	100	100	0.0
Hunter Water	100	100	100	100	100	0.0
Icon Water	100	100	100	100	100	0.0
Logan			100	100	100	0.0
SA Water	100	100	100	100	100	0.0
South East Water	100	100	100	100	100	0.0
Sydney Water	100	100	100	100	100	0.0
TasWater	99.2	99.4	99.8	100	100	0.0
Unitywater	100		100	100	100	0.0
Urban Utilities	100	100	100	100	100	0.0
WC (Perth)	100	100	100	100	100	0.0
Yarra Valley Water	100	100	100	100	100	0.0
<b>Median</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Mean</b>	<b>99.9</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Large</b>						
Cairns			100	100	100	0.0
Gippsland Water	88.6	100	100	100	100	0.0
Central Highlands Water (Vic)	100	100	99.7	100	100	0.0
Goulburn Valley Water	100	100	100	100	100	0.0
North East Water	100	100	100	100	100	0.0
P&W (Darwin)	100	100	100	100	100	0.0
Redland City			100	100	100	0.0
Toowoomba			100	100	100	0.0
Townsville			100	100	100	0.0
WC (Mandurah)	100	100	100	100	100	0.0
Western Water	100	99	100	100	100	0.0
Coliban Water	100	100	99.5	100	94.3	-5.7
<b>Median</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Mean</b>	<b>98.6</b>	<b>99.9</b>	<b>99.9</b>	<b>100</b>	<b>99.5</b>	
<b>Medium</b>						
South Gippsland Water	100	100	100	99	100	1.0
Albury	100	100	100	100	100	0.0
MidCoast Council	100	100	100	100	100	0.0
Wannon Water	100	99.9	100	100	100	0.0
Tweed	100	100	100	100	100	0.0
Tamworth	100	100	100	100	100	0.0
Shoalhaven	100	100	100	100	100	0.0
Fitzroy River Water			100	100	100	0.0
Riverina Water (W)	100	100	100	100	100	0.0
Queanbeyan	100	100	100	100	100	0.0

Utility	2015–16	2016–17	2017–18	2018–19	2019–20	% Change from 2018–19
Port Macquarie Hastings	100	100	100	100	100	0.0
Mackay			100	100	100	0.0
Bundaberg			100	100	100	0.0
Lower Murray Water	100	100	100	100	100	0.0
GWMWater	100	100	99.4	100	100	0.0
Gladstone			100	100	100	0.0
Fraser Coast			100	100	100	0.0
Eurobodalla	100	100	100	100	100	0.0
East Gippsland Water	100	100	100	100	100	0.0
Dubbo	100	100	100	100	100	0.0
Coffs Harbour	100	100	100	100	100	0.0
Clarence Valley	100	100	100	100	100	0.0
Wingecarribee	100	100	100	100	100	0.0
<b>Median</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Mean</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Small</b>						
Aqwest–Bunbury (W)	100	100	100	100	100	0.0
Armidale			100	100	100	0.0
Westernport Water	100	100	100	100	100	0.0
Western Downs			72.5	100	100	0.0
WC (Kal–Boulder) (W)	100	100	100	100	100	0.0
WC (Geraldton)	100	100	100	100	100	0.0
WC (Australind/Eaton)	100	100	100	100	100	0.0
WC (Albany)	100	100	100	100	100	0.0
P&W (Alice Springs)	100	100	100	100	100	0.0
Orange	100	100	100	100	100	0.0
Livingstone			100	100	100	0.0
Lismore	100	100	100	100	100	0.0
Kempsey	100	100	100	100	100	0.0
Goulburn Mulwaree	100	100	100	100	100	0.0
Goldenfields Water (W)		100	100	100	100	0.0
Essential Energy	100	100	100	100	100	0.0
Central Highlands			100	100	100	0.0
Byron	100	100	100	100	100	0.0
Busselton (W)	100	100	100	100	100	0.0
Bega Valley	100	100	100	100	100	0.0
Bathurst	100	100	100	100	100	0.0
Ballina	100	100	100	100	100	0.0
Whitsunday			100	100	100	0.0
Southern Downs			100	100	99.5	-0.5
Gympie			100	100	98.6	-1.4
Cassowary Coast			99.3	98.9	97.5	-1.4
<b>Median</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	
<b>Mean</b>	<b>100</b>	<b>100</b>	<b>98.9</b>	<b>100</b>	<b>99.8</b>	



## Appendix B Audit framework

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

The National Water Commission, the Water Services Association of Australia, and representative National Water Initiative (NWI) parties established the National Framework for Reporting on Performance of Urban Water Utilities Deed, which sets out how the parties will report on the performance of urban water utilities in accordance with the NWI. The deed requires parties to use all reasonable endeavours to ensure that a comprehensive audit of the data collected by each urban water utility under the National Performance Framework is undertaken at least once every 3 years.

The National Performance Framework 2013–14 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 2020 Urban NPR.

- Audits are to be conducted at a minimum of 3-year intervals.
- Indicators that have failed an audit will not be published (they need to be re-audited before they are published).
- Audits must be carried out by suitably qualified and independent auditors.
- The level of assurance to be provided is generally 'reasonable' assurance (although there are some instances in which 'limited' assurance is appropriate).
- Audits must be conducted under Australian Standard ASAE 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information.
- 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–C15, C17–C19, H3, H4, F1–F8, F11–F16, F20–F30, P7, and P8.

### B1 2019–20 Indicator audit status summary

Table B1 Status of indicator audits undertaken within each jurisdiction.

Jurisdiction	Audit activities
Australian Capital Territory	No Urban NPR data audits were undertaken in 2019–20 as a result of difficulties with their auditors being Melbourne-based and access to Icon Water's sites being limited to essential staff due to COVID-19. The next audit will be conducted in 2020–21.
New South Wales	<p>In the New South Wales metropolitan area, the most recent audit conducted on the NPR data was in 2020. That audit covered a subset (one-third) of the indicators; this approach ensures that each indicator is audited once every 3 years as required. The next audit will be conducted in late 2021.</p> <p>In the New South Wales country area, the most recent audit conducted on the NPR data was in 2018–19. Audits are conducted every 3 years, with the next audits due in 2021–22.</p>
Northern Territory	The Department of Treasury and Finance has not required the utilities providers, Power and Water – Alice Springs and Power and Water – Darwin, to audit their National Performance Reporting data. Some NPR indicators are audited at an aggregate level.
Queensland	The Department of Regional Development, Manufacturing and Water has not required service providers to audit their National Performance Reporting data.
South Australia	No Urban NPR data audits were undertaken in 2019–20 in South Australia as it was not an auditing year. Auditing is conducted every 3 years on the full set of indicators. An audit of every indicator was completed in November 2018. The next audit will be conducted in late 2021 on the 2020–21 reporting year.

Jurisdiction	Audit activities
Tasmania	TasWater's performance indicators are audited in three tranches over a 3-year period. In the 2019–20, selected TasWater performance indicators were audited (year one of three). The data audited related to the 2018–19 reporting year. An audit of selected performance indicators (year two of three) concluded in September 2020. The data audited related to the 2019–20 reporting year. 2020–21 data will be audited in 2021–22.
Victoria	No Urban NPR data audits were undertaken in 2019–20 in Victoria. Given the impacts of coronavirus on water businesses, the audit process was deferred as part of a commitment to reducing the burden on water businesses and their staff during this year. The last audit was conducted in 2018–19. When the next regular audit is conducted, verification of a subset of 2019–20 indicators will be within the audit scope.
Western Australia	No Urban NPR data audits were undertaken in 2019–20 in Western Australia as it was not an auditing year. Auditing is conducted every 3 years. The last audit was conducted in 2018–19. The next round of audits is scheduled for 2022.

## Appendix C Utilities reporting

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

Utility name	Display name in tables and graphs	Jurisdiction	Utility size group
MidCoast Council	MidCoast Council	New South Wales	Medium
North East Water	North East Water	Victoria	Large
Orange City Council	Orange	New South Wales	Small
Port Macquarie Hastings Council	Port Macquarie Hastings	New South Wales	Medium
Power and Water – Darwin	P&W (Darwin)	Northern Territory	Large
Power and Water – Alice Springs	P&W (Alice Springs)	Northern Territory	Small
Queanbeyan–Palerang Regional Council	Queanbeyan	New South Wales	Medium
Queensland Bulk Water Supply Authority	Seqwater	Queensland	Bulk water
Redland City Council	Redland City	Queensland	Large
Riverina Water County Council	Riverina Water (W)	New South Wales	Medium
Rockhampton Regional Council	Fitzroy River Water	Queensland	Medium
Rous Water	Rous Water	New South Wales	Bulk water
Shoalhaven City Council	Shoalhaven	New South Wales	Medium
SA Water Corporation	SA Water	South Australia	Major
South East Water Ltd	South East Water	Victoria	Major
South Gippsland Water	South Gippsland Water	Victoria	Medium
Southern Downs Regional Council	Southern Downs	Queensland	Small
Sydney Water Corporation	Sydney Water	New South Wales	Major
Tamworth Regional Council	Tamworth	New South Wales	Medium
TasWater	TasWater	Tasmania	Major
Toowoomba Regional Council	Toowoomba	Queensland	Large
Townsville City Council	Townsville	Queensland	Large
Tweed Shire Council	Tweed	New South Wales	Medium
Unitywater	Unitywater	Queensland	Major
Urban Utilities	Urban Utilities	Queensland	Major
Wagga Wagga Council	Wagga Wagga (S)	New South Wales	Medium
Wannon Water	Wannon Water	Victoria	Medium
Water Corporation – Perth	WC (Perth)	Western Australia	Major
Water Corporation – Albany	WC (Albany)	Western Australia	Small
Water Corporation – Australind/Eaton	WC (Australind/Eaton)	Western Australia	Small
Water Corporation – Bunbury (S)	WC (Bunbury) (S)	Western Australia	Small
Water Corporation – Busselton (S)	WC (Busselton) (S)	Western Australia	Small
Water Corporation – Geraldton	WC (Geraldton)	Western Australia	Small
Water Corporation – Kalgoorlie–Boulder (W)	WC (Kal–Boulder) (W)	Western Australia	Small
Water Corporation – Mandurah	WC (Mandurah)	Western Australia	Large
WaterNSW	WaterNSW	New South Wales	Bulk water
Western Downs Regional Council	Western Downs	Queensland	Small
Western Water	Western Water	Victoria	Large
Westernport Water	Westernport Water	Victoria	Small
Whitsunday Regional Council	Whitsunday	Queensland	Small
Wingecarribee Shire Council	Wingecarribee	New South Wales	Medium
Yarra Valley Water Corporation	Yarra Valley Water	Victoria	Major

## Appendix D Urban performance indicators

Indicator category	Indicator subcategory	Indicator code	Indicator name
Assets	Water treatment plants	A1	Number of water treatment plants providing full treatment (plants)
Assets	Other water assets	A2	Length of water mains (km)
Assets	Other water assets	A3	Number of properties served per km of water main (properties/km)
Assets	Wastewater assets	A4	Number of wastewater treatment plants (plants)
Assets	Wastewater assets	A5	Length of sewer mains and channels (km)
Assets	Wastewater assets	A6	Number of properties served per km of sewer main (properties/km)
Assets	Water main breaks	A8	Number of water main breaks, bursts, and leaks, per 100 km of water mains (mains breaks/100 km)
Assets	Water losses	A9	Infrastructure leakage index (ILI)
Assets	Water losses	A10	Real losses: service connections (L/service connection/day)
Assets	Water losses	A11	Real losses: water mains (kL/km water main/day)
Assets	Wastewater breaks and chokes	A14	Number of sewer mains breaks and chokes per 100 km (breaks and chokes/100 km)
Assets	Wastewater breaks and chokes	A15	Number of property connection sewer breaks and chokes per 1,000 properties (breaks and chokes/1,000 properties)
Assets	Water main breaks	IA8	Number of water main breaks, bursts, and leaks (mains breaks)
Customers	Connected properties and population	C1	Population receiving services: water supply (population 000s)
Customers	Connected properties and population	C2	Number of connected residential properties: water supply (properties 000s)
Customers	Connected properties and population	C3	Number of connected non-residential properties: water supply (properties 000s)
Customers	Connected properties and population	C4	Total number of connected properties: water supply (properties 000s)
Customers	Connected properties and population	C6	Number of connected residential properties: wastewater (properties 000s)
Customers	Connected properties and population	C7	Number of connected non-residential properties: wastewater (properties 000s)
Customers	Connected properties and population	C8	Total number of connected properties: wastewater (properties 000s)
Customers	Water quality complaints	C9	Number of water quality complaints per 1,000 properties: water supply (complaints/1,000 properties)
Customers	Water service complaints	C10	Number of water service complaints per 1,000 properties (complaints/1,000 properties)
Customers	Wastewater service complaints	C11	Number of sewerage service complaints per 1,000 properties (complaints /1,000 properties)
Customers	Billing and account complaints	C12	Number of billing and account complaints per 1,000 properties: water supply and sewerage (complaints/1,000 properties)
Customers	Total water and wastewater complaints	C13	Number of water and sewerage complaints per 1,000 properties (complaints/1,000 properties)

Indicator category	Indicator subcategory	Indicator code	Indicator name
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 per 1,000 properties: water supply (interruptions/1,000 properties)
Customers	Restrictions or legal action for non-payment of water bill	C18	Number of restrictions for non-payment of water bills per 1,000 properties (restrictions/1,000 properties)
Customers	Restrictions or legal action for non-payment of water bill	C19	Number of legal actions taken for non-payment of water bills per 1,000 properties (legal actions/1,000 properties)
Customers	Water quality complaints	IC9	Number of water quality complaints: water supply (complaints)
Customers	Water service complaints	IC10	Number of water service complaints (complaints)
Customers	Wastewater service complaints	IC11	Number of sewerage service complaints (complaints)
Customers	Billing and account complaints	IC12	Number of billing and account complaints: water supply and sewerage (complaints)
Customers	Total water and wastewater complaints	IC13	Number of water and sewerage complaints (complaints)
Customers	Water interruption frequency	IC17	Number of unplanned interruptions: water supply (interruptions)
Customers	Restrictions or legal action for non-payment of water bill	IC18	Number of restrictions for non-payment of water bills (restrictions)
Customers	Restrictions or legal action for non-payment of water bill	IC19	Number of legal actions taken for non-payment of water bills (legal actions)
Environment	Comparative wastewater treatment levels	E1	Percentage of wastewater only treated to a primary level (%)
Environment	Comparative wastewater treatment levels	E2	Percentage of wastewater only treated to a secondary level (%)
Environment	Comparative wastewater treatment levels	E3	Percentage of wastewater treated to a tertiary level (%)
Environment	Net greenhouse gas emissions	E8	Percentage of biosolids reused (%)
Environment	Net greenhouse gas emissions	E9	Net greenhouse gas emissions per 1,000 properties: water supply (t CO <sub>2</sub> equivalents/1,000 properties)
Environment	Net greenhouse gas emissions	E9.1	Net greenhouse gas emissions per ML: water supply—bulk utility (t CO <sub>2</sub> equivalents/ML)
Environment	Net greenhouse gas emissions	E10	Net greenhouse gas emissions per 1,000 properties: wastewater (t CO <sub>2</sub> equivalents/1,000 properties)
Environment	Comparative wastewater treatment levels	E10.1	Net greenhouse gas emissions per ML: wastewater—bulk utility (t CO <sub>2</sub> equivalents/ML)
Environment	Net greenhouse gas emissions	E11	Net greenhouse gas emissions per 1,000 properties: other (t CO <sub>2</sub> equivalents/1,000 properties)
Environment	Net greenhouse gas emissions	E11.1	Net greenhouse gas emissions per ML: other—bulk utility (t CO <sub>2</sub> equivalents/ML)
Environment	Net greenhouse gas emissions	E12	Total net greenhouse gas emissions per 1,000 properties (t CO <sub>2</sub> equivalents/1,000 properties)

Indicator category	Indicator subcategory	Indicator code	Indicator name
Environment	Net greenhouse gas emissions	E12.1	Total net greenhouse gas emissions per ML: bulk utility (t CO <sub>2</sub> equivalents/ML)
Environment	Comparative wastewater treatment levels	IE1	Volume of wastewater only treated to a primary level (ML)
Environment	Comparative wastewater treatment levels	IE2	Volume of wastewater only treated to a secondary level (ML)
Environment	Comparative wastewater treatment levels	IE3	Volume of wastewater treated to a tertiary level (ML)
Environment	Net greenhouse gas emissions	IE9	Net greenhouse gas emissions: water supply (t CO <sub>2</sub> equivalents)
Environment	Net greenhouse gas emissions	IE10	Net greenhouse gas emissions: wastewater (t CO <sub>2</sub> equivalents)
Environment	Net greenhouse gas emissions	IE11	Net greenhouse gas emissions: other (t CO <sub>2</sub> equivalents)
Environment	Net greenhouse gas emissions	IE12	Total net greenhouse gas emissions (t CO <sub>2</sub> equivalents)
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	Costs	F9	Written-down replacement cost of fixed water supply assets (\$000s)
Finance	Costs	F10	Written-down replacement cost of fixed wastewater assets (\$000s)
Finance	Costs	F11	Operating cost per property: water supply (\$/property)
Finance	Costs	F11.1	Operating cost per ML: water supply—bulk utility (\$/ML)
Finance	Costs	F12	Operating cost per property: wastewater (\$/property)
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



Indicator category	Indicator subcategory	Indicator code	Indicator name
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	Dividends	F24	Net profit after tax (NPAT) (\$000s)
Finance	Community service obligations (CSOs)	F25	Community service obligation (\$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	Capital works grants	F30	Net profit after tax (NPAT) ratio
Finance	Costs	IF11	Operating cost: water supply (\$000s)
Finance	Costs	IF12	Operating cost: wastewater (\$000s)
Public Health	Water quality compliance	H1	Water quality guidelines (provided as text)
Public Health	Water quality compliance	H3	Percentage of population where microbiological compliance was achieved (%)
Public Health	Water quality compliance	H4	Number of zones where chemical compliance was achieved (zones)
Public Health	Water quality compliance	H4a	Total number of zones (zones)
Public Health	Water quality compliance	H5	Risk-based drinking water management plan externally assessed (yes/no)
Pricing	Residential tariff structure	P1	Tariff structure: water supply (provided as 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	P1.12	Special levies: water supply (\$)
Pricing	Residential tariff structure	P1.13	Income from special levies retained by the utility: water supply (yes/no)
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	Annual bill	P2	Annual residential bill based on 200 kL per annum: water supply (\$)
Pricing	Annual bill	P3	Typical residential bill: water supply (\$)
Pricing	Residential tariff structure	P4	Tariff structure: wastewater (provided as text)



Indicator category	Indicator subcategory	Indicator code	Indicator name
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	P5	Annual residential bill based on 200 kL per annum: wastewater (\$)
Pricing	Annual bill	P6	Typical residential bill: wastewater (\$)
Pricing	Annual bill	P7	Total annual residential bill based on 200 kL per annum: water supply and wastewater (\$)
Pricing	Annual bill	P8	Total typical residential bill: water supply and wastewater (\$)
Water Resources	Sources	W1	Volume of water sourced from surface water (ML)
Water Resources	Sources	W2	Volume of water sourced from groundwater (ML)
Water Resources	Sources	W3.1	Volume of water sourced from desalinated marine water (ML)
Water Resources	Transfers	W5	Total volume of water received from other service providers or operational areas within the urban water system (ML)
Water Resources	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	Transfers	W6	Volume of recycled water received from other service providers or operational areas within the urban water supply system (ML)
Water Resources	Sources	W7	Total volume of water sourced (ML)
Water Resources	Use	W8	Total volume of water supplied to residential customers (ML)
Water Resources	Use	W8.3	Volume of water supplied to residential customers (ML)
Water Resources	Use	W9	Total volume of water supplied to non-residential customers (ML)
Water Resources	Use	W9.3	Volume of water supplied to non-residential customers (ML)
Water Resources	Use	W10.1	Volume of non-revenue water (ML)
Water Resources	Production	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	Use	W12	Average volume of residential water supplied per property (ML/property)
Water Resources	Use	W13	Volume of water returned as environmental flows from outside of the urban water supply system (ML)
Water Resources	Transfers	W14	Total volume of water exported to other service providers or operational areas within the urban water supply system (ML)
Water Resources	Transfers	W14.3	Volume of water, excluding recycled water, exported to other service providers or operational areas within the urban water supply system (ML)

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

## Appendix E CPI indexation

Period	CPI-weighted average	Change from previous period	Change applied to values
2019–20	115.7	1.3	0.000
2018–19	114.1	1.6	1.014
2017–18	112.3	1.9	1.030
2016–17	110.2	1.8	1.050
2015–16	108.3	1.4	1.068
2014–15	106.8	1.7	1.083
2013–14	105.0	2.6	1.102
2012–13	102.3	2.3	1.131
2011–12	100.0	2.4	1.157
2010–11	97.7	3.1	1.184
2009–10	94.8	2.4	1.220
2008–09	92.6	3.1	1.249
2007–08	89.8	3.3	1.288
2006–07	86.9	3.0	1.331
2005–06	84.4	3.2	1.371
2004–05	81.8	2.4	1.414
2003–04	79.9	2.4	1.448

# 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*, and *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*, *Water Resources Act*, *Environment Protection Act 1997*, *Water and Sewerage Act 2000* (for plumbing and sanitation services), and *Public Health Act 1997*.

The Utilities Act 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 was issued in May 2018 for the next price path period up to 30 June 2023.<sup>8</sup> An annual 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. An industry panel adjustment mechanism is in place in order to share demand volatility risk between Icon Water and consumers.

### 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.

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 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 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.

<sup>8</sup> ICRC 2018, *Regulated water and sewerage services prices 2018–23*, Final Report, Canberra.

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*.

### F1.3 Operation of water utilities

ACT Health regulates water quality under the Territory's Public Health Act, in accordance with the *Australian Drinking Water Guidelines 2011*. Water quality testing was undertaken in accordance with these guidelines. Icon Water achieved 100 per cent compliance the Public Health (Drinking Water) Code of Practice (2007) in 2019–20.<sup>9</sup> Icon Water also published its *Annual drinking water quality report 2019–20* in accordance with the code in 2020.

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 Water annual report to the ACT Government 2019–20* was provided to the ACT Government in September 2020.

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 water utilities and 93 local water utilities (LWUs)<sup>10</sup>.

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 State-owned water utilities in New South Wales: Hunter Water Corporation, Sydney Water Corporation, and WaterNSW (bulk water services in metropolitan and regional New South Wales). IPART is also the price regulator which determines maximum prices that two regional LWUs—Central Coast Council and Essential Energy (Broken Hill)—can charge their customers for the provision of water and sewerage services.

The Department of Planning, Industry and Environment oversees and monitors water utility performance, and is the primary policymaker for all water utilities and regulator for the 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 NSW Environment Protection Authority (EPA), the Office of Local Government, SafeWork NSW, the Natural Resource Access Regulator and Dam Safety NSW, are each responsible for aspects of the regulation of New South Wales water utilities.

<sup>9</sup> Icon Water Limited 2020, *2019–20 Annual report to the ACT Government*, Canberra.

<sup>10</sup> In addition to 92 LWUs in regional New South Wales, Hawkesbury City Council provides sewerage services only within Sydney Water's area of operation.

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 2007*, 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 *Water NSW Act 2014*.

## F2.2 Establishment of water utilities

The three New South Wales State-owned utilities (Sydney Water Corporation, WaterNSW, and Hunter Water Corporation) are created by and derive their responsibilities and areas of operations from their respective Acts (the Sydney Water Act, the Water NSW Act, and the Hunter Water Act) and operate as major utilities under the Water Management Act.

The 92 regional LWUs derive their responsibilities from and operate mainly under the Local Government Act. Four LWUs (Central Coast Council, Essential Energy, WaterNSW [but only in relation to the Fish River water supply scheme] and Cobar Water Board) operate as water supply authorities under the Water Management Act.

## 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 Corporation (under Part 5 of the Sydney Water Act), Hunter Water Corporation (under Part 5 of the Hunter Water Act), and WaterNSW (under Part 2 of the Water NSW Act). The operating licences include obligations relating to water quality, water conservation, system performance standards, environmental/catchment management, asset management, customer relations, compliance, and performance reporting. IPART also determines the maximum prices these utilities can charge its customers for water services.

IPART conducts major operational 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 Planning, Industry and Environment is the primary regulator of LWUs, under sections 56ff and 409(6) of the Local Government Act, and administers the New South Wales Government's comprehensive Best-Practice Management of Water Supply and Sewerage Framework (<https://www.industry.nsw.gov.au/water/water-utilities>). The Framework is the key policy and regulatory framework for strategic service planning, management, pricing, performance reporting and continuing performance improvement of the LWUs. Eligibility for dividend payments to councils' general revenue is conditional on substantial compliance with the Framework.

Under the current Framework each LWU needs to prepare and implement a 30-year integrated water cycle management (IWCM) strategy and strategic business plan (SBP) in consultation with their community.

The IWCM strategy is critical for long-term strategic planning for ensuring that all water security, water quality and sewage management needs and risks in the LWU's urban water supply and sewerage systems are addressed within the planning horizon. An IWCM strategy sets levels of service and associated investment priorities, including 30-year total asset management plan and associated investment strategy and financial plan and a drought contingency and emergency response plan, based on system demand analysis and secure yield analysis, strategic options analysis and solutions identification in accordance with the department's 2019 IWCM Checklist. The Department of Planning, Industry and Environment reviews each LWU's IWCM strategy and provides confirmation to each utility that its final IWCM strategy is sound.

The New South Wales 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 New South Wales.

Each LWU needs 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 are therefore an integral part of the utility's IWCM strategy.

Proposed construction or modification of water or sewage treatment works or for the development of a waterrecycling system in New South Wales requires approval under section 60 of the Local Government Act. This ensures that an independent and objective review of the proposed works is undertaken by the Department of Planning, Industry and Environment, where insights and expertise obtained from the department's involvement in overseeing the design and operation of these 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-risk or medium-risk trade waste discharge to the sewerage system requires a departmental concurrence under section 90(1) of the Local Government Act.

Under section 61 of the Local Government Act, the department 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 New South Wales is required to have appropriate qualifications and experience.

The department conducts operator-training courses for LWU water and sewage treatment works operators.

The annual performance of each of the LWU's activities and outcomes is publicly reported via the interactive performance monitoring data dashboard (<https://www.industry.nsw.gov.au/water/water-utilities/lwu-performance-monitoring-data>) and the NSW Water supply and sewerage benchmarking reports.

NSW Health regulates water quality in New South Wales and administers functions relating to water suppliers (Sydney Water Corporation, Hunter Water Corporation, and the regional LWUs) under the Public Health Act. 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, which tests and monitors the water quality of samples collected by the LWUs in accordance with the Australian Drinking Water Guidelines 2011.

Under the Public Health Act, each water supplier needs to prepare and implement a risk-based drinking water management system in accordance with the Australian Drinking Water Guidelines 2011. The water quality management system is regulated by NSW Health.

## **F2.4 Water utilities in New South Wales**

Sydney Water Corporation, a statutory corporation wholly owned by the New South Wales Government, is Australia's largest water utility, with an area of operations covering almost 13,000 km<sup>2</sup>. It provides drinking water, recycled water, wastewater services, and some stormwater services to more than five million people in Sydney, the Illawarra, and the Blue Mountains. Drinking water is sourced from a network of dams managed by WaterNSW, from the Hawkesbury River, 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 Water NSW Act 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. WaterNSW also provides bulk water services in regional New South Wales and operates the Fish River water supply scheme.

Hunter Water Corporation is a wholly State-owned corporation providing drinking water, recycled water, wastewater and some stormwater services to almost 600,000 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.



Across regional New South Wales, there are currently 92 LWUs. Eighty-nine of these LWUs are either general purpose local government councils or county councils, which operate as financially separate to general council operations. Other LWUs operate as water supply authorities under the Water Management Act, including the Cobar Water Board, Essential Energy and WaterNSW for the Fish River Water Supply.<sup>11</sup> The 92 regional LWUs in New South Wales range in area from 285 km<sup>2</sup> (Orange City Council) to over 50,000 km<sup>2</sup> (Central Darling Shire Council), while the population served ranges from 1,000 (Central Darling Shire Council) to over 300,000 (Central Coast Council). There are 28 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 New South Wales Government, IPART, and the Productivity Commission.<sup>12</sup>

The State-owned water utilities are required to report on the performance indicators in their operating licences and this reporting is audited through the operating licence audit. The audit results are presented to the responsible minister. These utilities also report the National Water Initiative performance indicators required for the Urban NPR.

With the exception of the pricing and 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, or other qualified auditors, audits the pricing and financial NWI indicators once every 3 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 Planning, Industry and Environment annually reports the performance of all the New South Wales utilities by way of its NSW Performance Monitoring and Reporting System.

- The audit of the 30 NWI financial performance indicators is affected by the annual independent audit of the financial statements of each of the 92 regional LWUs.
- All the auditable non-financial performance indicators are independently audited every 3 years for each of the 28 regional NSW utilities that are required to report nationally.

The remainder of the information reported in the NSW Performance Monitoring and Reporting System is not independently audited; however, to assure data accuracy and reliability, the data are subject to a comprehensive quality assurance process.

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

### Private water utilities

In New South Wales, private utilities can also provide water and sewerage services if licensed under the Water Industry Competition Act (WIC Act). The WIC Act is designed to encourage competition in the supply of water and wastewater services, and to facilitate private sector delivery of recycled water infrastructure.

The Act sets out a licensing and compliance framework and establishes strict rules to ensure drinking water meets Australian standards, recycled water is 'fit for purpose', and all services are delivered safely, reliably and with minimal environmental impacts.

The Minister for Water, Property and Housing administers the WIC Act and is advised by the Department of Planning, Industry and Environment. IPART administers the licensing system, which includes assessing licence applications and making recommendations to the minister on whether to grant a licence, as well as auditing and

<sup>11</sup> Councils exercising water supply and/or sewerage functions do so under the Local Government Act, including under a division generally administered by the minister responsible for water. Central Coast Council exercises its functions under both the Local Government Act and as a water supply authority under the Water Management Act. The Cobar Water Board, Essential Energy and WaterNSW (for the Fish River Water Supply) carry out their functions under the Water Management Act.

<sup>12</sup> Productivity Commission 2011, Australia's urban water sector, Report No. 55, Final Inquiry Report, Canberra.



enforcing licences. All licensees are required to report annually against a limited suite of NPR indicators. At this stage, no current licences have the 10,000 connections that would trigger reporting requirements for this report.

The WIC Act commenced operation on 8 August 2008. There are now 20 private water schemes in operation in the Greater Sydney and Hunter regions. As at June 2020, these schemes were providing services to 6,745 water customers, 9,845 recycled water customers and 8,977 sewerage customers. The New South Wales Government is currently finalising significant reforms of the licensing framework, including:

- separating licences from the approval of individual water and sewerage schemes;
- introducing a pre-construction approval of schemes which includes an assessment of a scheme's financial viability; and
- stronger last resort arrangements, including designation of last resort providers at scheme inception.

## F3 Northern Territory

### F3.1 Establishment of service providers

The Northern Territory's *Water Supply and Sewerage Services Act 2000* provides the regulatory framework for the Territory's water and sewerage industry. The NT Department of Treasury and Finance and the Northern Territory Treasurer are responsible for administering this Act insofar 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 are:

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

Among other things, this Act provides for the following:

- that the supply of water and sewerage services be licensed, and that licences issued by the Utilities Commission are for defined, gazetted, geographical areas; and
- that the Minister 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 programs 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.

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

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

The NT *Water Act 1992* is another major piece of legislation pertaining to the regulation of water 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 also allows for the issue of waste discharge licences and water extraction licences by the Controller of Water Resources (Department of Environment, Parks and Water Security [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, several 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, Parks and Water Security and the Northern Territory Environment Protection Authority (NT 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* 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 NT 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 NT EPA on pollution incidents under the *NT Waste Management and Pollution Control Act 1998*.

Water and sewerage tariffs and charges for the Power and Water Corporation 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 Northern Territory, 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 are 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 are reviewed and/or signed off at the senior management level. NPR data are 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 for Environment and Water 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 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; and
- removal and treatment of wastewater.

SA Water Corporation provides drinking water to approximately 793,000 customers, servicing around 99 per cent of the State's drinking water customers. SA Water Corporation also provides sewerage services to approximately 625,000 customers, servicing around 87 per cent of the State's sewerage customers.

## **F4.3 Operation of water utilities**

Section 35 of the Water Industry Act 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 the SA Water Corporation Act in July 2016, setting maximum allowed revenues for drinking water and sewerage retail services for the 4-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 several 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; and
- 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.

The Tasmanian Water and Sewerage Corporation Pty Ltd (TasWater) is the only licensed water utility in the State.

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 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*.

### 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 reuse 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; and
  - deliver water and sewerage services to customers in the most cost-efficient manner.

TasWater is owned by Tasmania's 29 councils, and the Tasmanian Government also became a shareholder in early 2019.

### 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.

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 (that is, 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 sewerage charges based on the assessed equivalent tenements (that is, the estimated demand placed on the system) of each property.

### F5.4 Performance reporting

One of the Tasmanian Economic Regulator's functions is to monitor and report on the State of the Tasmanian water and sewerage industry.<sup>13</sup> 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; and
- the quality, reliability, and conformity of its regulatory information, including performance information.

Independent audits of TasWater's performance indicators are conducted at least once every 3 years as required by the NPR Audit Handbook. As a result, TasWater's performance indicators are audited in three tranches over a 3-year period. The tranche one and two audits were conducted in 2019–20 and 2020–21. The tranche three audit is due to be completed in 2021–22.

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.

<sup>13</sup> The TER's annual water and sewerage state of the industry reports are available from [www.economicregulator.tas.gov.au](http://www.economicregulator.tas.gov.au).

## F6.2 Establishment of water utilities

The Queensland Department of Regional Development, Manufacturing and Water (DRDMW) 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.

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 South East Queensland by the Queensland Bulk Water Supply Authority (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 DRDMW)
- *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 *Water Act 2000* (managed by DRDMW)
- *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 State Development, Infrastructure, Local Government, and Planning)
- *Plumbing and Drainage Act 2018* and Queensland Development Code (managed by the Queensland Department of Energy and Public Works)
- *Planning Act 2016* (managed by the Queensland Department of State Development, Infrastructure, Local Government and Planning).

### Pricing

- *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* and *Water Act 2000* (managed by DRDMW)
- *Local Government Act 2000* and Regulations (managed by the Queensland Department of State Development, Infrastructure, Local Government and Planning)
- *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 the Queensland Bulk Water Supply Authority and SunWater.

## **F6.4 Water utilities in Queensland**

There are 182 registered water service providers in Queensland<sup>14</sup>, of which around 75 are urban water and sewerage service providers that serve towns and communities across the State.

Most water service providers are local governments or are local government-owned (such as Urban Utilities and Unitywater). Three urban water service providers are State bulk water providers (the Queensland Bulk Water Supply Authority, Gladstone Area Water Board and Mount Isa Water Board).

While there are many service providers in Queensland, 70 per cent of connected properties receive water and sewerage services from the five service providers in South East Queensland. Another 25 per cent of connected properties receive water and sewerage from 14 service providers with more than 10,000 connections (that is, the providers that report under the National Performance Reporting framework). This means that the remaining 5 per cent of connected properties receive water and sewerage services from over 50 small service providers across a vast area of the State.

## **F6.5 Performance reporting**

The regulatory framework for water service providers in Queensland, under 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 National Performance Reporting framework and uses mandatory reporting on key performance indicators and public and comparative performance reporting. Service providers are required to consult on and publish customer service standards as well as publish annual reports. DRDMW is responsible for issuing notices to relevant service providers that require them to report on particular key performance indicators. It receives annual performance reports, undertakes data validation, administers compliance and incident or quarterly reporting, including managing the systems that stores information, under the Water Supply (Safety and Reliability) Act 2008.

### **Key performance indicators**

Since 1 July 2014, all service providers have been required to report to DRDMW 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 for the National Performance Reporting framework against a wider set of indicators.

### **Monitoring and compliance**

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

DRDMW can publish a 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 are also made publicly available as part of the open data requirements.

DRDMW administers the National Performance Reporting framework process for Queensland.

<sup>14</sup> Data from service provider register, current as at 2 January 2019, <https://www.data.qld.gov.au/dataset/service-providers-register>.

## 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, 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 Victorian Water Act. 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, 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 DELWP, 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 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 framework.<sup>15</sup> 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 non-compliance. 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 reuse 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 begin.

<sup>15</sup> Details of the drinking water regulatory framework, the audit arrangements and the annual drinking water quality report are available at <https://www2.health.vic.gov.au/about/publications/annualreports>



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

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

## 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 Ltd, and Yarra Valley Water Corporation. The three retailers (City West Water, South East Water Ltd, and Yarra Valley Water Corporation) 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.

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 Gippsland Water, Central Highlands Water, Coliban Water, East Gippsland Water, Goulburn Valley Water, GWMWater (Grampians Wimmera Mallee Water), Lower Murray Water, North East Water, South Gippsland Water, Wannon Water, Western Water<sup>16</sup>, 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; and
- ensuring compliance with legislation and government policy.

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

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.

<sup>16</sup> While Western Water provides its own bulk and retail services, it also draws on Melbourne Water's bulk water services, as do Barwon Water, Central Gippsland Water, South Gippsland Water and Westernport Water.

The Financial Management Act 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 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 auditing the annual financial statements and performance reports 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, each water utility must submit an annual corporate plan that provides a statement of corporate intent, lists expected activities, and provides a financial forecast for the following 5 years.

The 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 business cases for major capital projects above a threshold value) and for advising the Minister for Water and the Treasurer, respectively.

Price submissions (previously called water plans) are generally required every 5 years.<sup>17</sup> They include details about proposed revenue requirements and tariffs and pricing structures and are assessed by the Essential Services Commission. 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 ([www.esc.vic.gov.au/Water/Performance-reports/](http://www.esc.vic.gov.au/Water/Performance-reports/)).

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

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

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

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

## F8 Western Australia

### F8.1 Introduction

The WA Department of Water and Environmental Regulation 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 Department of Health and the Western Australian Environmental Protection Authority also have some reporting responsibilities.

<sup>17</sup> Goulburn–Murray Water's price determination came into effect on 1 July 2020 for a 4-year period, and North East Water's 8-year price determination will be in place until 30 June 2026.

Reporting and compliance obligations are imposed by Australian Government legislation including the *Corporations Act 2001* and the *Privacy Act 1988*, and by Western Australian legislation including the *Water Services Act 2012*, the *Metropolitan Water Supply, Sewerage and Drainage Act 1909*, the *Health (Miscellaneous Provisions) Act 1911* (which is being replaced by the new *Public Health Act 2016* over the next 3 to 5 years), the *Environmental Protection Act 1986*, and the *Planning and Development Act 2005*.

## **F8.2 Establishment of utilities**

In Western Australia's legislative framework, water utilities are referred to as 'water service providers'.

Under the *Water Services Act*, 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.

## **F8.3 Operation of water utilities**

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

The Department of Health sets standards for drinking water quality and regulates the public health aspects of water supply (both potable and non-potable), pursuant to the *Health (Miscellaneous Provisions) 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 has recently introduced new standards that regulate the public health aspects of sewerage services pursuant to the *Health (Miscellaneous Provisions) Act*.

The licence terms and conditions for service providers that supply drinking water require them to enter into a memorandum of understanding with the Department of Health for compliance with the health-related criteria in the Australian Drinking Water Guidelines.

The licence terms and conditions for service providers that provide sewerage services to more than 400 connections require them to enter into a memorandum of understanding with the Department of Health for compliance with the required public health standards.

Each memorandum of understanding is reviewed every 3 years, unless agreed otherwise.

The Department of Water and Environmental Regulation'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 also regulates the environmental impacts of water service providers through the *Environmental Protection Act*. 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 service 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, Lands and Heritage, oversees the land-use planning implications of the operations of the water service providers, according to requirements of the *Planning and Development Act 2005*.

Prices for drinking water and sewerage services provided by the Water Corporation, Bunbury Water Corporation (trading as Aqwest), and Busselton Water Corporation (trading as Busselton Water) are set by the Minister for Water. The WA Government may request the ERA to undertake an independent review of pricing for the water

corporations to provide advice to the government (the ERA has carried out 14 inquiries related to water pricing to date). Charges for sewerage services provided by local government authorities are set for each local government area and applied using a formula that depends on the type of property. Prices charged by private water and sewerage service providers are unregulated.

The Water Services Act requires licensees to arrange for an operational audit and a review of asset management system effectiveness at least once every 2 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.

The Water Services Code of Conduct (Customer Service Standards) 2018 prescribes the customer service standards applicable to water and sewerage licensees. The Code is administered by the ERA in consultation with the Water Code Consultative Committee comprising representatives from industry, consumer representative organisations and government.

#### F8.4 Water utilities in Western Australia

Several water service providers are involved in delivering water supply and sewerage services in Western Australia. This report covers the larger service providers (the Water Corporation, Aqwest, Busselton Water and the City of Kalgoorlie–Boulder). There are other water supply and sewerage services that are delivered by privately owned operators and local government authorities.

The Water Corporation is a government trading enterprise operating under the *WA Water Corporations Act 1995* 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 and Environmental Regulation 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 km<sup>2</sup>. It has regional offices in Perth, Bunbury, Albany, Karratha, Geraldton, Northam, and Kalgoorlie.

Aqwest and Bunbury Water are government trading enterprises operating under the *WA Water Corporations Act*.

The Aqwest licence permits the supply of potable water to the regional centre of Bunbury, 160 km south of Perth.

The Busselton Water licence permits the supply of potable water to the regional centre of Busselton, approximately 200 km south of Perth, and the Busselton–Capel and Blackwater groundwater areas. 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 550 km east of Perth in the Goldfields district. The non-potable water supplied to customers is sourced from recycled effluent.

There are also several small licensed or exempted water service providers in the State. The licensed service providers include Aquasol, Aqua Ferre (Mucnea) (trading as Mucnea Water), Athena Water Solutions, Hamersley Iron, Lancelin South, Moore River Water Services, the Rottnest Island Authority, Robe River Mining Company, Peel Water, TMC Witchcliffe, WA Sewage, Water West North Dandalup, and three small regional local governments.<sup>18</sup>

<sup>18</sup> Since 2017, the WA Minister for Water has exempted 18 small regional local government sewerage and non-potable water suppliers from being licensed. The exemption is for a period of five years.

## F8.5 Performance reporting

Licensees are required to provide the Economic Regulation Authority 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 publishes performance data provided by licensed urban service providers that do not report under the Urban NPR and three of WA's largest rural water service providers.<sup>19</sup> Most of the urban performance indicators are consistent with those of the NPR. Except for the licensees that report under the Urban NPR, licensees are not subject to the data audit requirements of the NPRs. For those licensees not reporting under the NPR, confirmation of the accuracy of the performance data they report to the ERA is assessed in the operational audits.

<sup>19</sup> The data are available from the ERA, <https://www.erawa.com.au/water/water-licensing/water-sewerage-and-irrigation-performance-data-2019-onwards>



