

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 mains⁵, 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.

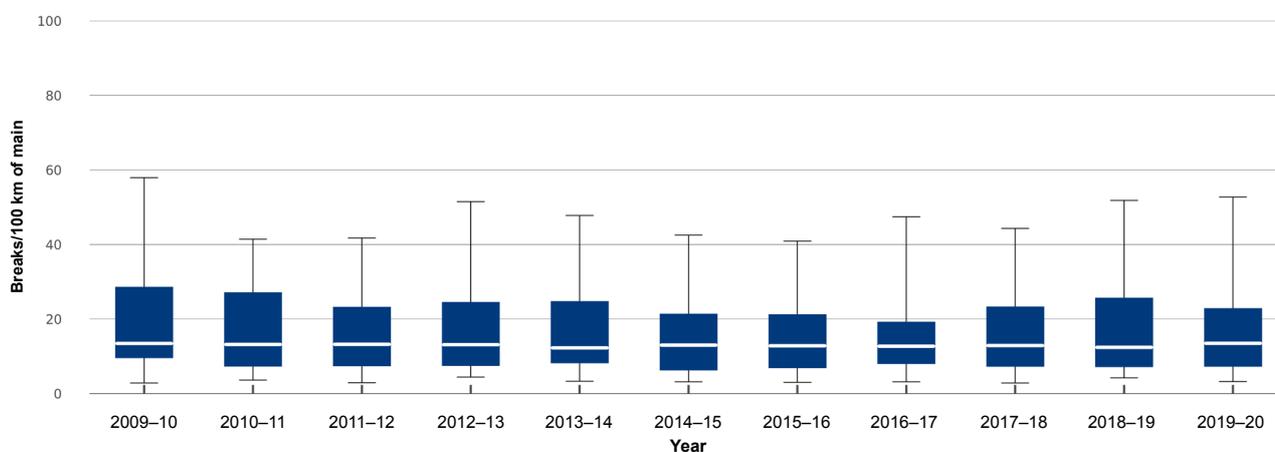


Figure 7.1 Number of water main breaks, bursts and leaks per 100 km of water mains.

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.

⁵ 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 | | | | | |
| All utility groups (national) | 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 own⁶ 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.

⁶ For such utilities, the property owner is responsible for the property’s sewer connections.

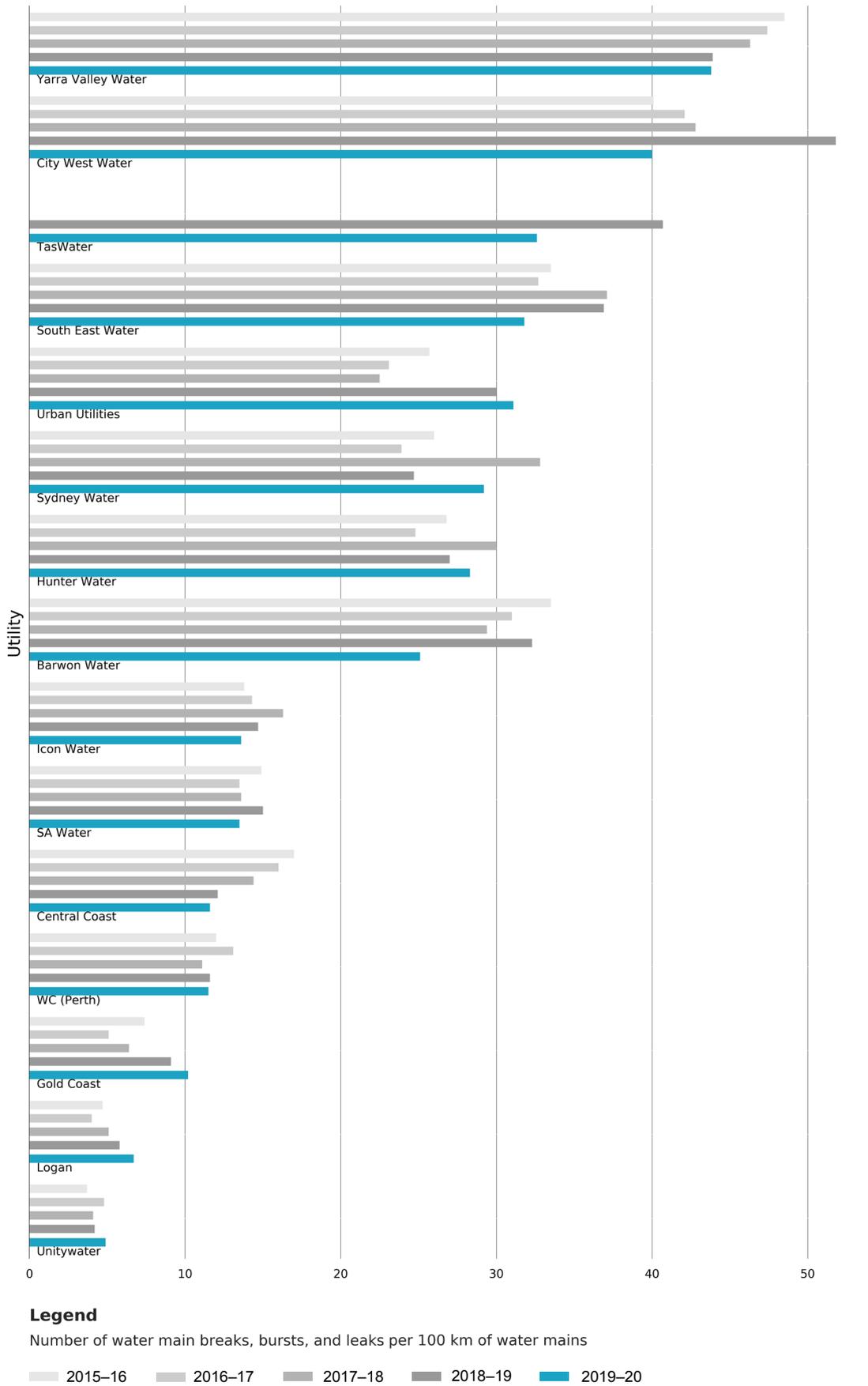


Figure 7.2 Water main breaks, bursts and leaks per 100 km of water mains—Major utility group.

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 | | | | | |
| All size groups (national) | 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) | | | | | |
| All utility groups (national) | 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.

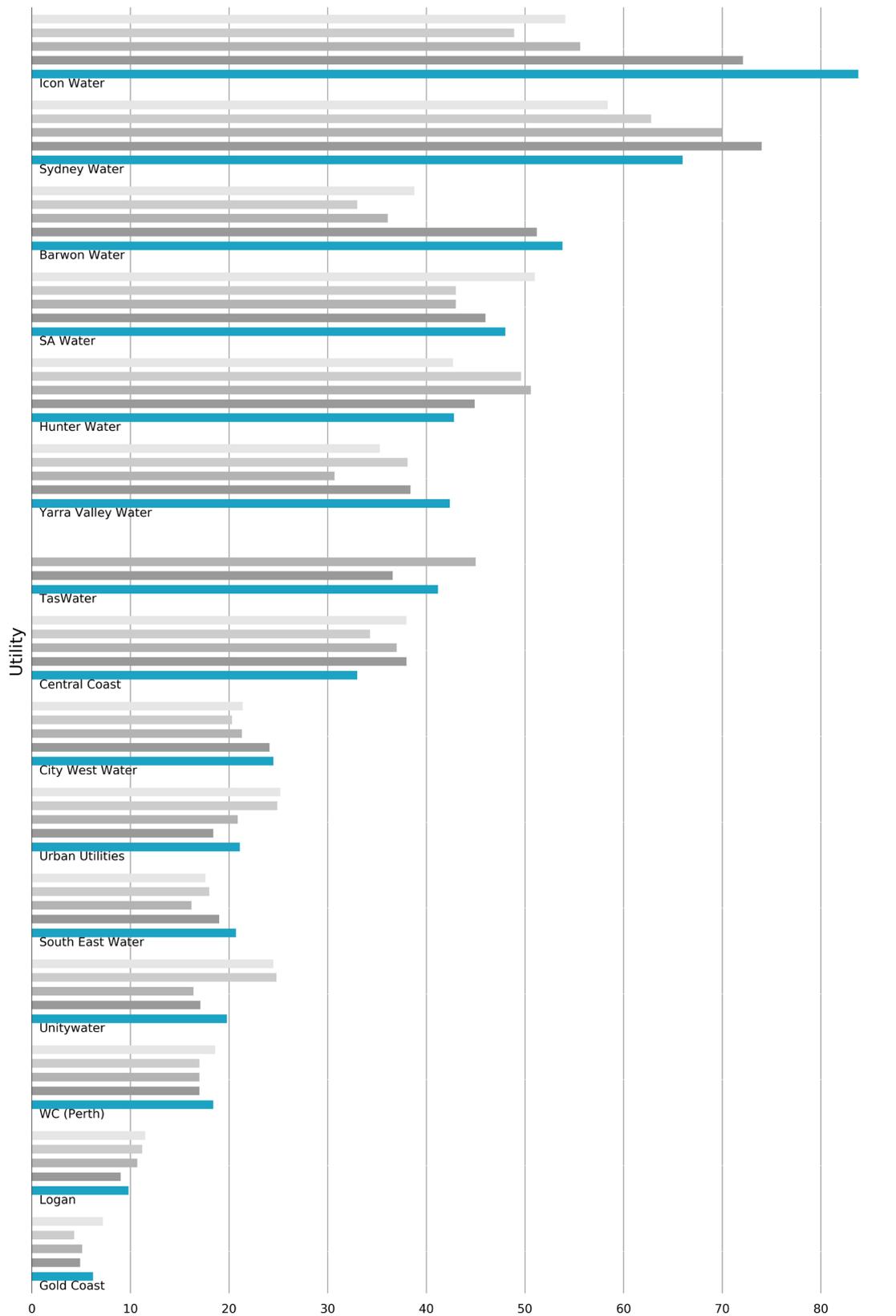
Real loss data for all utilities reporting in 2019–20 are presented in Table A16, Appendix A.

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.



Legend

Sewerage mains breaks and chokes (no. per 100 km sewer main)

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

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

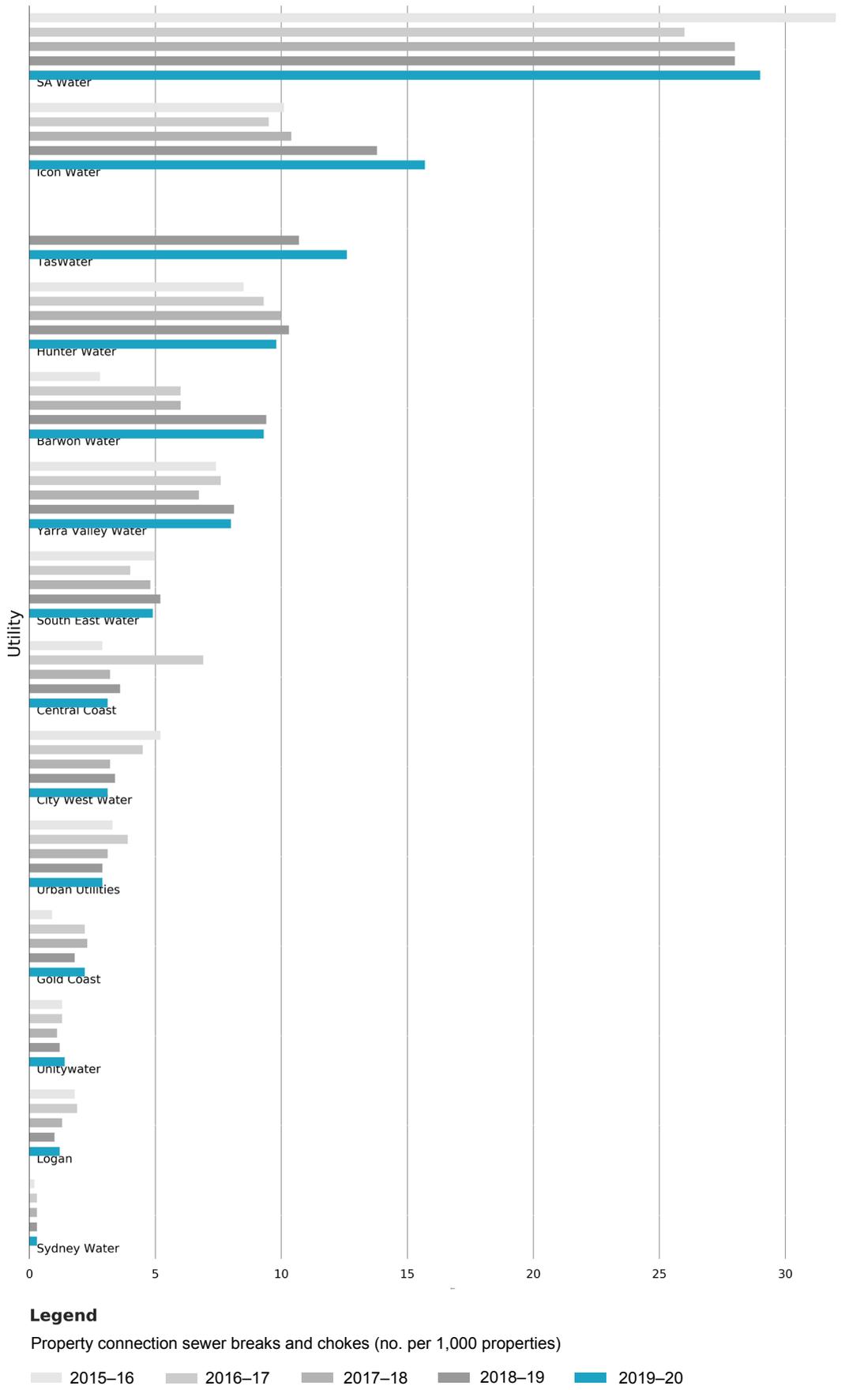


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties—Major utility group.

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 | | | | | |
| All utility groups (national) | 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.

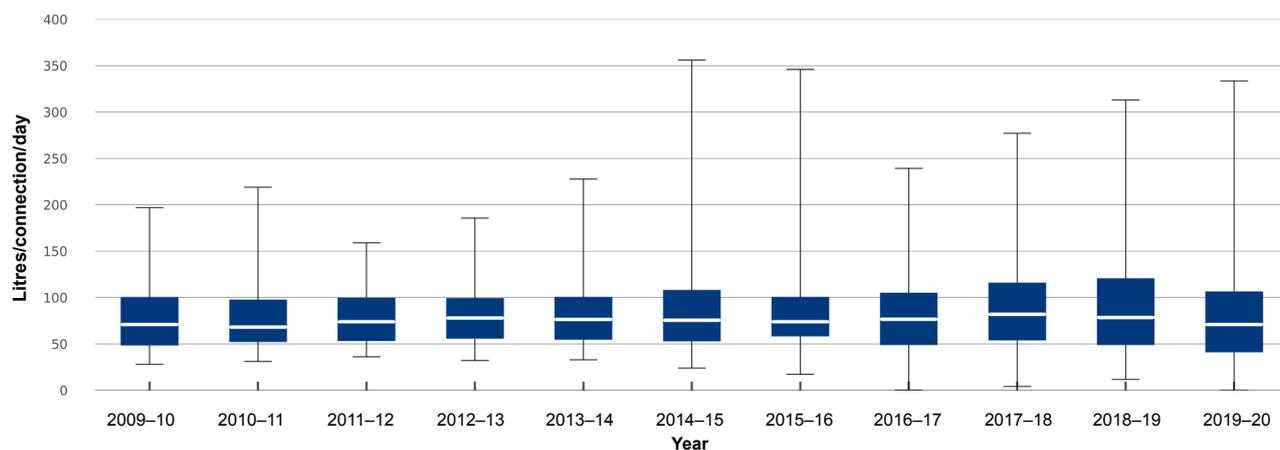


Figure 7.5 Real losses (L/service connection/day).

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).

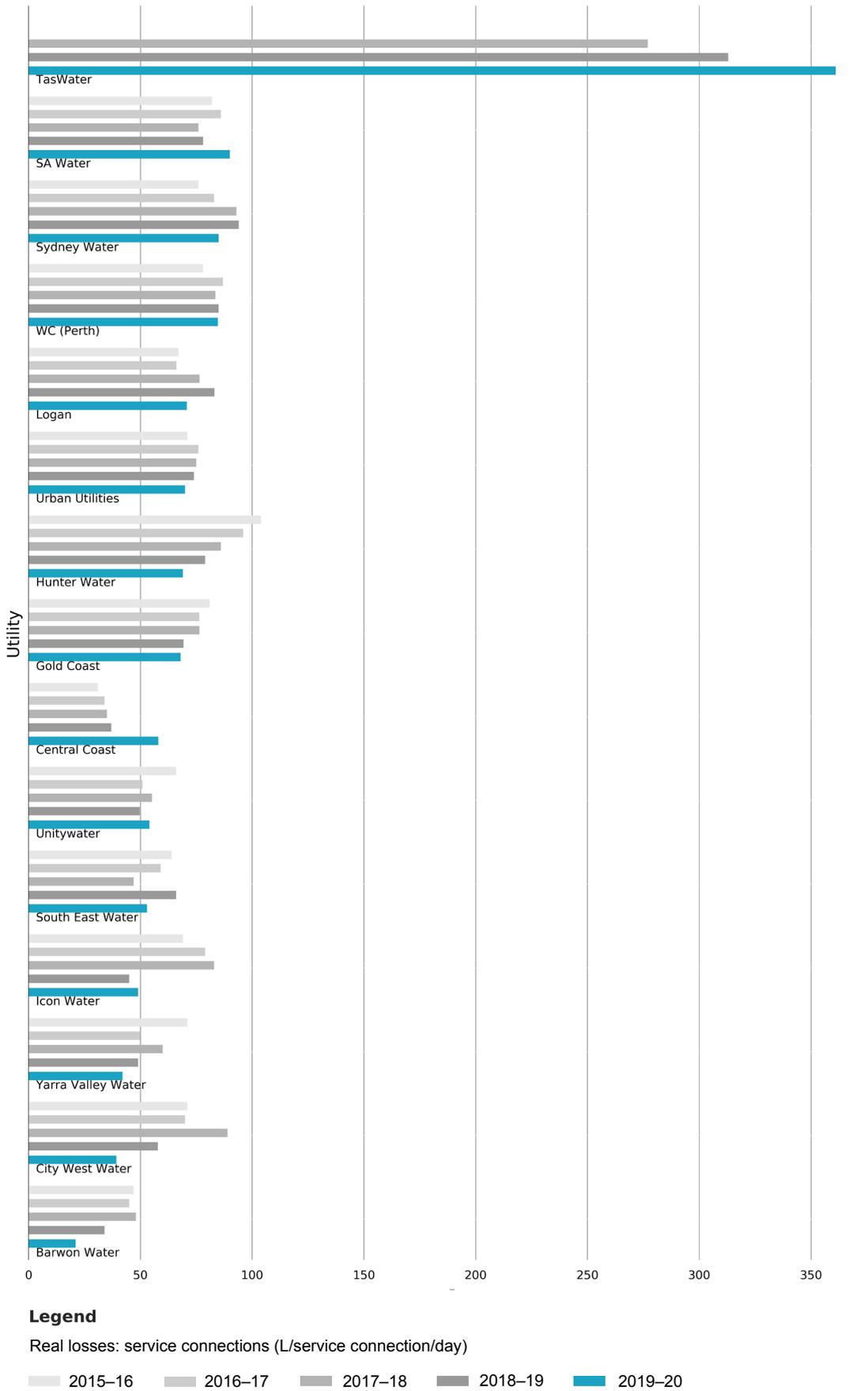


Figure 7.6 Real losses: service connections (L/service connection/day)—Major utility group.