

7 Asset

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

The number of water main breaks per 100 km of water main (A8) is the total number of breaks, bursts, and leaks in all distribution system 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 per 100 km of water mains for all utilities reporting in 2018–19 are presented in Table A13, Appendix A.

7.1.1 Key findings

Figure 7.1 shows the downward trend in water main breaks data for all utilities reporting A8 from 2008–09 to 2017–18. In 2018–19, there was a modest increase for all but the Large utility group which reported a decrease.

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

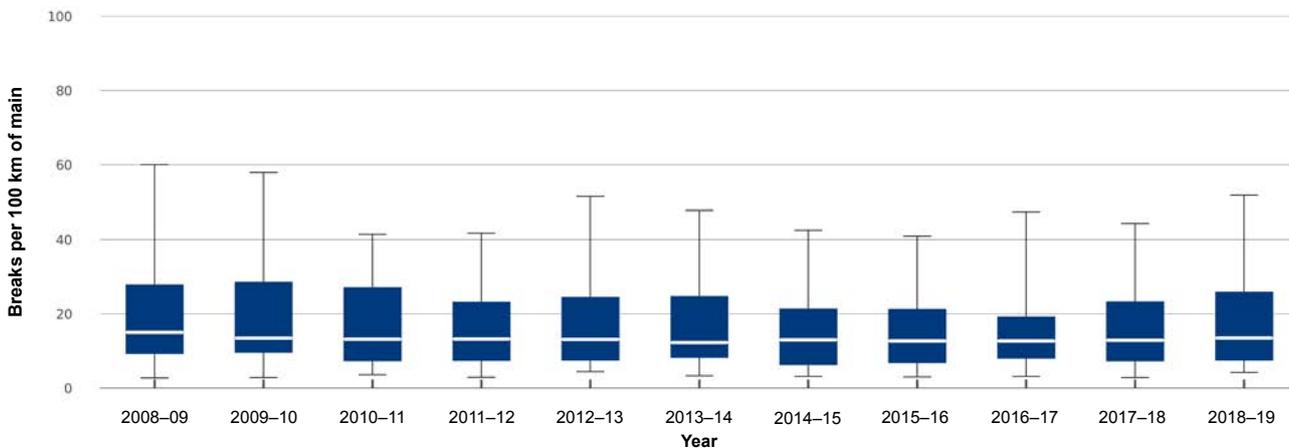


Figure 7.1 Water main breaks per 100 km of water main.

⁵ The figure includes both potable and non-potable water mains.

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

| Utility group | Range | | No. utilities with increase/decrease from 2017–18 | | Median | | Change in median from 2017–18 (%) |
|--------------------------------------|-----------------|--------------|---|----------|---------|---------|-----------------------------------|
| | High | Low | Increase | Decrease | 2017–18 | 2018–19 | |
| Major | 51.8 | 4.2 | 8 | 6 | 19.4 | 19.9 | 3 |
| | City West Water | Unitywater | | | | | |
| Large | 26.9 | 4 | 4 | 6 | 20.6 | 18.5 | -10 |
| | Gippsland Water | Redland City | | | | | |
| Medium | 98.5 | 4.6 | 12 | 9 | 8.1 | 8.3 | 2 |
| | Gladstone | Bundaberg | | | | | |
| Small | 43.2 | 3.5 | 12 | 15 | 15 | 15.1 | 1 |
| | Lismore | Livingstone | | | | | |
| All utility groups (national) | 98.5 | 3.5 | 36 | 36 | 13.1 | 12.4 | -5 |
| | Gladstone | Livingstone | | | | | |

Table note

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

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 2014–15 to 2018–19. The figure highlights both the variance within the utility group and a broad downward trend for some utilities (for example, Central Coast Council and Water Corporation – Perth).

Eight utilities, including Queensland Urban Utilities, City West Water, Logan City Council and SA Water Corporation, reported an increase in water main breaks from 2017–18 to 2018–19. Gold Coast Council reported the largest relative increase of 42 per cent compared to 2017–18. However, their 2018–19 result of 9.1 water main breaks per 100 km of water main still meets their annual target of less than 12 breaks.⁶ Sydney Water Corporation reported the largest relative decrease with a 25 per cent decrease in breaks and leaks compared to 2017–18. However, this decrease followed a large increase from 2016–17 to 2017–18, so their 2018–19 result is close to their long-term average again.

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

Indicator A14 reports the number of breaks and chokes per 100 km of sewerage main, and A15 reports the number of property connection sewerage breaks and chokes per 1,000 properties. The indicators are presented together to provide a complete picture of sewer system performance as utilities have sewer networks with various configurations.

- 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 own⁷ 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.

⁶ City of Gold Coast Annual Report 2018–19.

⁷ For such utilities, the property owner is responsible for the property’s sewer connections.

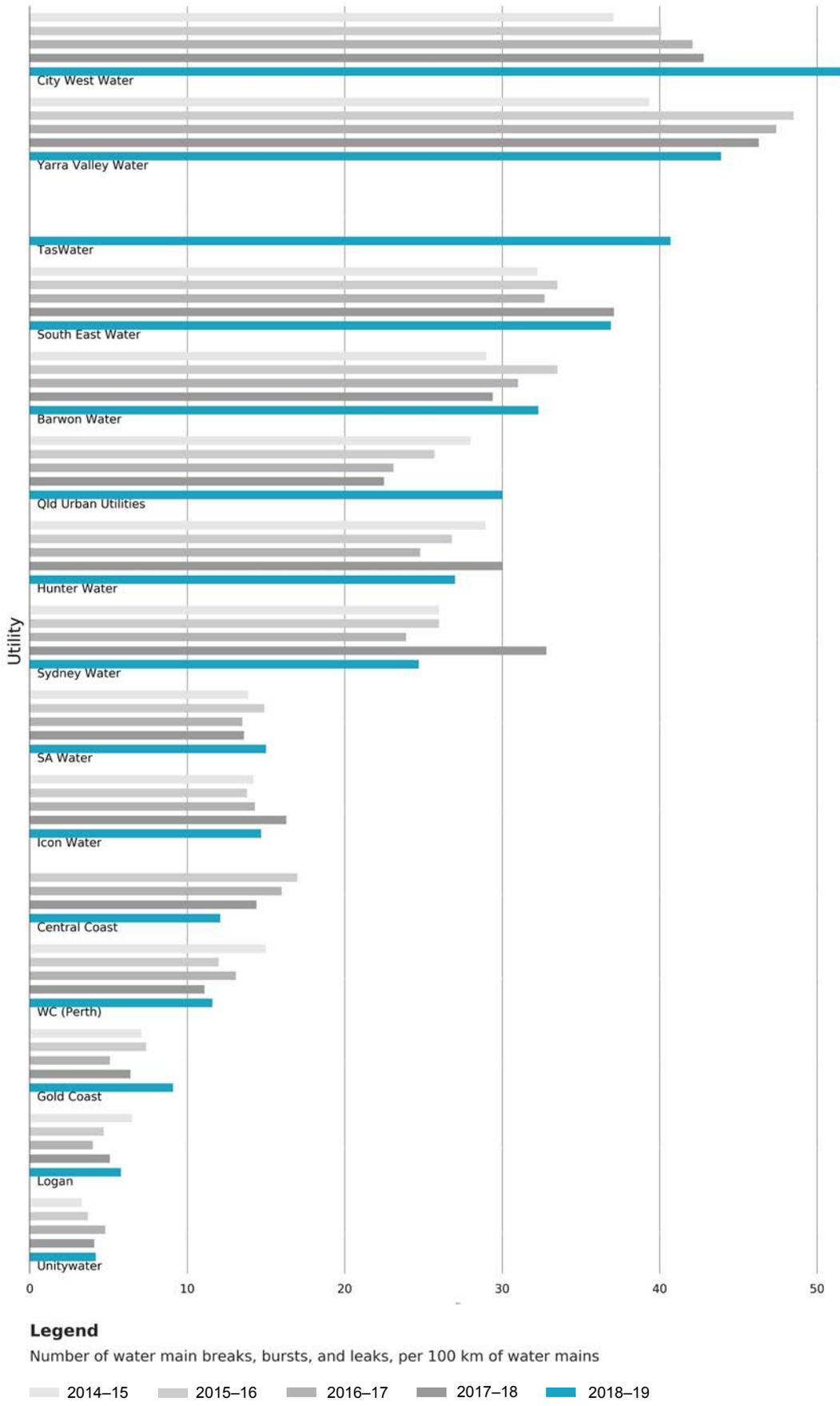


Figure 7.2 Water main breaks per 100 km of water main—Major utility group.

The performance of a sewerage system is influenced by:

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

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

Data on sewerage mains breaks and chokes for all utilities reporting in 2018–19 are presented in Table A14, Appendix A. Property connection sewer breaks and chokes for all utilities reporting in 2018–19 are presented in A15, Appendix A.

7.2.1 Key findings

Table 7.2 presents a summary of the number of sewerage 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, by utility group.

In 2018–19, there were 17.6 sewerage main breaks and chokes per 100 km of sewer, which was a 14 per cent increase in the national median from 2017–18 (Table 7.2). There was an 11 per cent increase in the sewer breaks and chokes per 1,000 properties (Table 7.3). Almost all size groups reported increases in sewerage mains breaks and chokes, except for Large which reported a 6 per cent decrease. All utility groups reported an increase in property connection sewer breaks and chokes; the Small utility group reported a 43 per cent increase while the others were in the range of 7 to 11 per cent.

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

| Utility group | Range | | No. utilities with increase/decrease from 2017–18 | | Median | | Change in median from 2017–18 (%) |
|-----------------------------------|------------------|--------------------|---|----------|---------|---------|-----------------------------------|
| | High | Low | Increase | Decrease | 2017–18 | 2018–19 | |
| Major | 74 | 4.9 | 8 | 6 | 30.7 | 36.6 | 19 |
| | Sydney Water | Gold Coast | | | | | |
| Large | 44.2 | 2.3 | 5 | 5 | 13.5 | 12.7 | -6 |
| | Toowoomba | Redland City | | | | | |
| Medium | 101 | 0 | 13 | 6 | 11.5 | 12.1 | 5 |
| | Queanbeyan | Tweed | | | | | |
| Small | 115 | 3 | 12 | 14 | 14 | 17 | 21 |
| | Essential Energy | WC (Busselton) (S) | | | | | |
| All size groups (national) | 115 | 0 | 38 | 31 | 15.5 | 17.6 | 14 |
| | Essential Energy | Tweed | | | | | |

Table note

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

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

| Utility group | Range | | No. utilities with increase/decrease from 2017–18 | | Median | | Change in median from 2017–18 (%) |
|--------------------------------------|------------------|--------------------|---|----------|---------|---------|-----------------------------------|
| | High | Low | Increase | Decrease | 2017–18 | 2018–19 | |
| Major | 28 | 0.3 | 9 | 3 | 4 | 4.4 | 10 |
| | SA Water | Sydney Water | | | | | |
| Large | 5.5 | 1 | 3 | 6 | 3 | 3.2 | 7 |
| | Townsville | Multiple utilities | | | | | |
| Medium | 34.9 | 0 | 8 | 9 | 3 | 3.2 | 7 |
| | GWMWater | Queanbeyan | | | | | |
| Small | 51.7 | 0 | 11 | 10 | 4.7 | 6.7 | 43 |
| | Essential Energy | Kal–Boulder (S) | | | | | |
| All utility groups (national) | 51.7 | 0 | 31 | 28 | 3.8 | 4.2 | 11 |
| | Essential Energy | Multiple utilities | | | | | |

Table note

The median property connection sewer breaks and chokes (per 1,000 properties) is calculated using data from all utilities (dual- and single-service providers) reporting data against A15 in both 2017–18 and 2018–19.

7.2.2 Results and analysis—Major utility group

Figures 7.3 and 7.4 show a ranked breakdown of the sewerage mains breaks and chokes for each utility from 2014–15 to 2018–19 and a ranked breakdown for property connection sewer breaks and chokes, respectively.

Eight utilities reported an increase in sewerage main breaks and chokes per 100 km sewer main, and nine utilities reported an increase in sewer breaks and chokes per 1,000 properties from 2017–18. This is consistent with these utilities experiencing consistent above-average temperatures and below-average rainfall in 2018–19. Dry conditions can result in more ground movement and an increase in sewerage main breaks (see Section 1.4 Key drivers).

Barwon Water reported the largest increase (42 per cent) in breaks and chokes per 100 km of sewer main compared with 2017–18 (Figure 7.3). This is consistent with continued below-average rainfall for eastern Australia. Temperatures also remained very much above average in 2018–19, resulting in dry soil conditions which can contribute to an increase in breaks and chokes (see Section 1.4 Key drivers).

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

‘Real’ losses (A10) are leakages and overflows from potable water mains, service reservoirs, and service connections before the customer meter. This indicator excludes metering errors, unauthorised consumption (apparent losses), and unbilled authorised consumption (for example, water used for firefighting). Performance of this indicator may be influenced by the condition of mains, infrastructure and water pressure.

Real losses are estimated using a range of assumptions, including assumed errors in metered water deliveries, estimates of unmetered components, and metering of night flows, and may not be as accurate as other indicators (such as water main breaks), when comparing utilities.

Real loss data for all utilities reporting in 2018–19 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.

In 2018–19, the national median across all size groups decreased by 5 per cent since 2017–18 to 79 L/service connection/day.

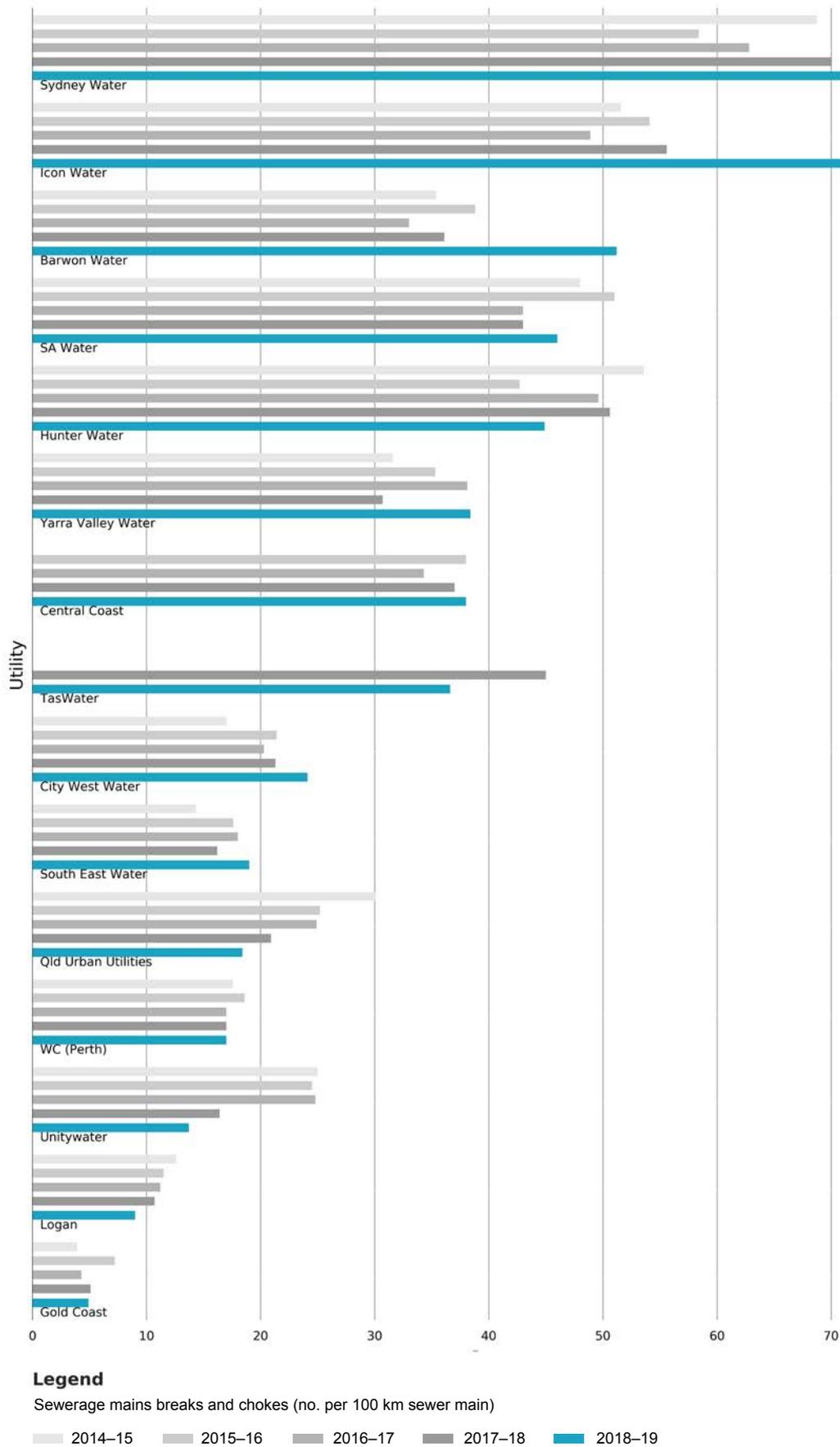


Figure 7.3 Sewerage mains breaks and chokes per 100 km of sewer main—Major utility group.

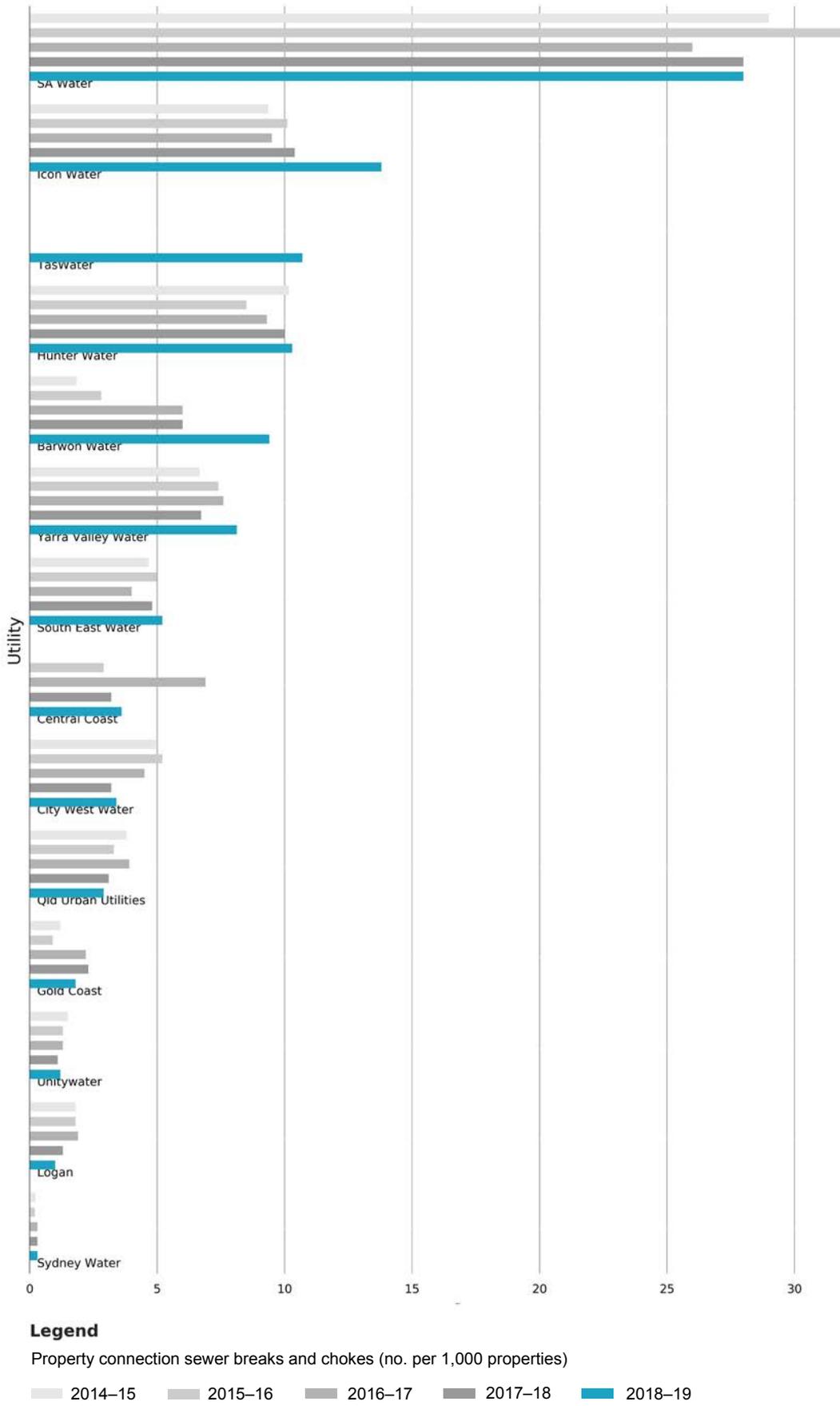


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties—Major utility group.

As in 2016–17 and 2017–18, Cassowary Coast Regional Council reported the highest real losses among the utilities (461 L/service connection/day in 2018–19). Dubbo reported the highest proportional increase in real losses since 2017–18.

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

| Utility group | Range | | No. utilities with increase/decrease from 2017–18 | | Median | | Change in median from 2017–18 (%) |
|--------------------------------------|-----------------|----------------------|---|----------|---------|---------|-----------------------------------|
| | High | Low | Increase | Decrease | 2017–18 | 2018–19 | |
| Major | 313 | 34 | 7 | 8 | 76.4 | 69.3 | -9 |
| | TasWater | Barwon Water | | | | | |
| Large | 342.9 | 11.6 | 5 | 5 | 70 | 69.5 | -1 |
| | Townsville | Redland City | | | | | |
| Medium | 186 | 27.8 | 8 | 11 | 63 | 70 | 11 |
| | Mackay | East Gippsland Water | | | | | |
| Small | 461.8 | 11 | 13 | 16 | 111 | 100 | -10 |
| | Cassowary Coast | Westernport Water | | | | | |
| All utility groups (national) | 461.8 | 11 | 33 | 40 | 83 | 79 | -5 |
| | Cassowary Coast | Westernport Water | | | | | |

Table note

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

Figure 7.5 shows a box-and-whisker plot of the real losses for all utilities reporting A10 for a given reporting year from 2008–09 to 2018–19.

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

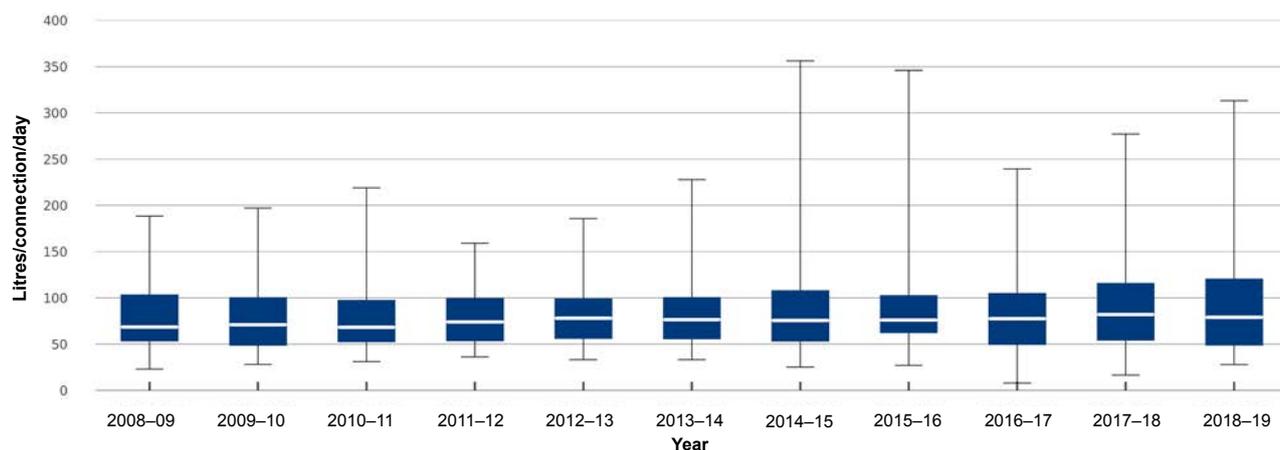


Figure 7.5 Real losses (L/service connection/day).

7.3.2 Results and analysis—Major utility group

Figure 7.6 presents a ranked breakdown of the real losses per annum for each utility from 2014–15 to 2018–19. Seven utilities reported an increase in real losses between 2017–18 and 2018–19. South East Water Ltd reported the highest increase of 40 per cent (from 47 L/service connection/day in 2017–18 to 66 L/service connection/day in 2018–19).

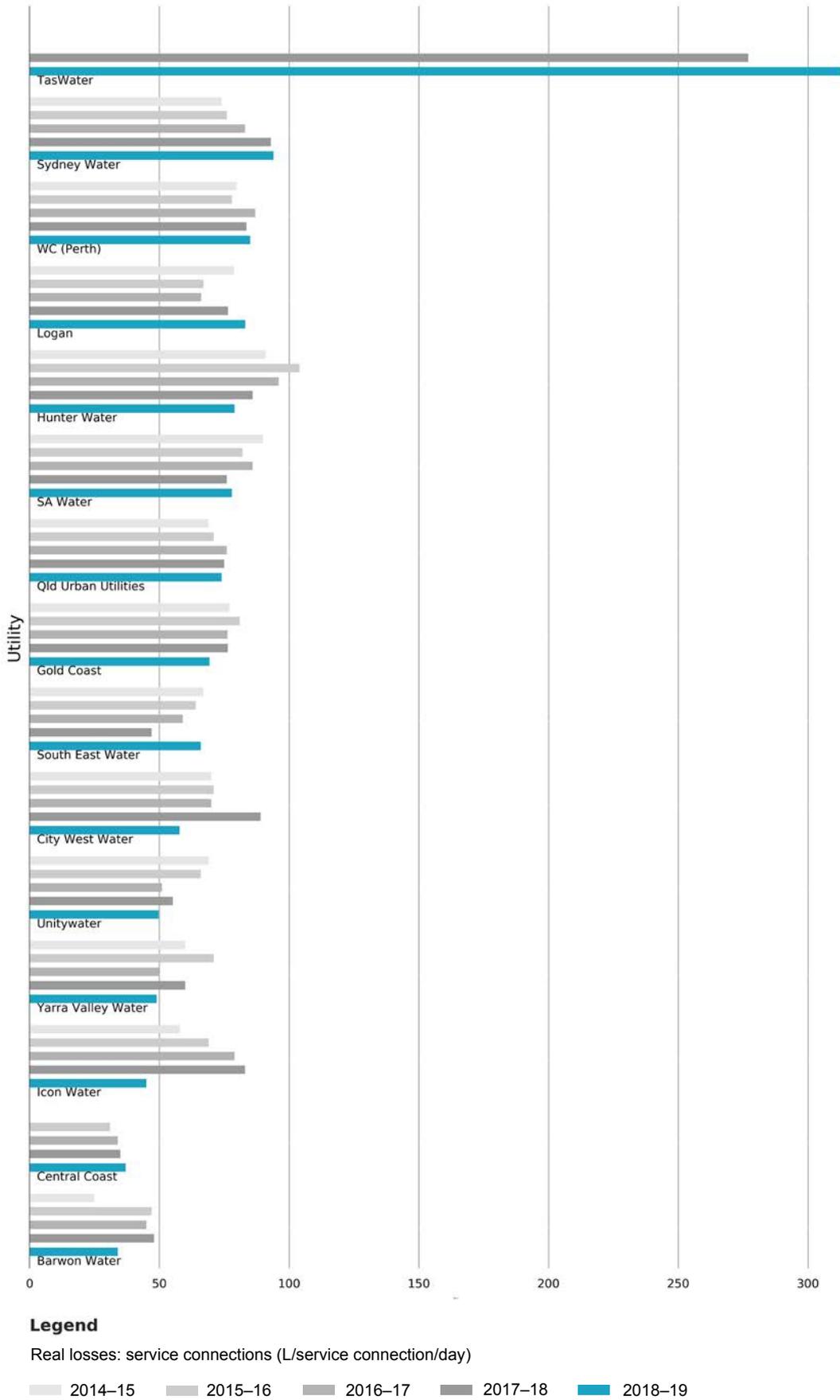


Figure 7.6 Real losses (L/service connection/day)—Major utility group.