

# 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 mains<sup>7</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 per 100 km of water mains for all utilities reporting in 2017–18 are presented in Table A13, Appendix A.

### 7.1.1 Key findings

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

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

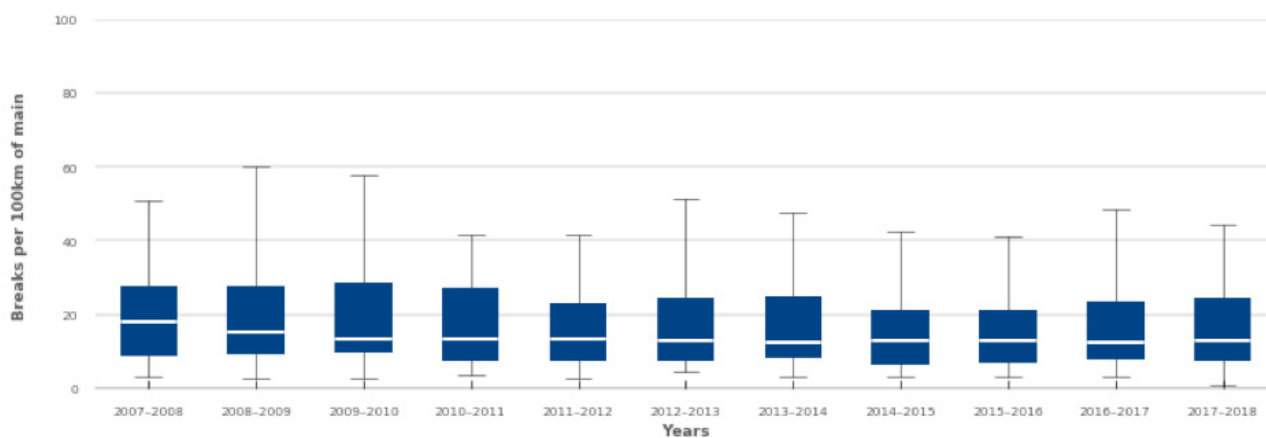


Figure 7.1 Water main breaks per 100 km of water main.

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

<sup>7</sup> The figure includes both potable and non-potable water mains.

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

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

**Table note**

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

### 7.1.2 Results and analysis—Major utility group

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

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

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

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

- Some utilities have a very long property connection (from the customer’s sanitary drain to the middle of a road), while others have a very short or no property connection (that is, the sanitary drain may connect straight to the sewer main, which runs down an easement at the back of the property).
- Some utilities do not own<sup>8</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.

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

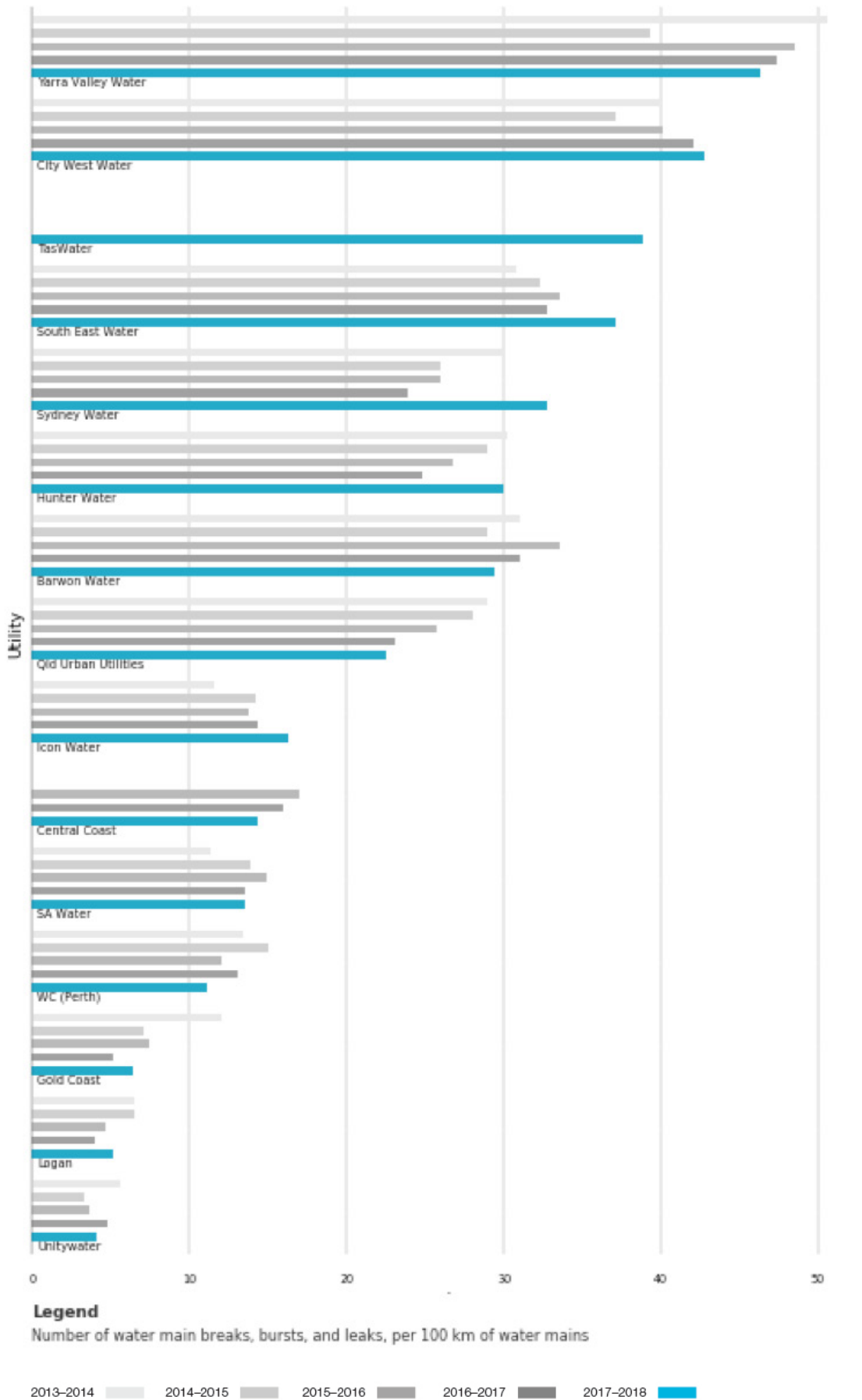


Figure 7.2 Water main breaks per 100 km of water main—Major utility group.

The performance of a sewerage system is influenced by:

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

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

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

### 7.2.1 Key findings

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

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

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

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

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

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

**Table note**

The median sewerage main breaks (per 100 km of sewer main) is calculated using data from all utilities (dual- and single-service providers) reporting data against A14 in both 2016–17 and 2017–18.

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

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

**Table note**

The median property connection sewer breaks and chokes (per 1,000 properties) is calculated using data from all utilities (dual- and single-service providers) reporting data against A15 in both 2016–17 and 2017–18.

### 7.2.2 Results and analysis—Major utility group

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

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

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

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

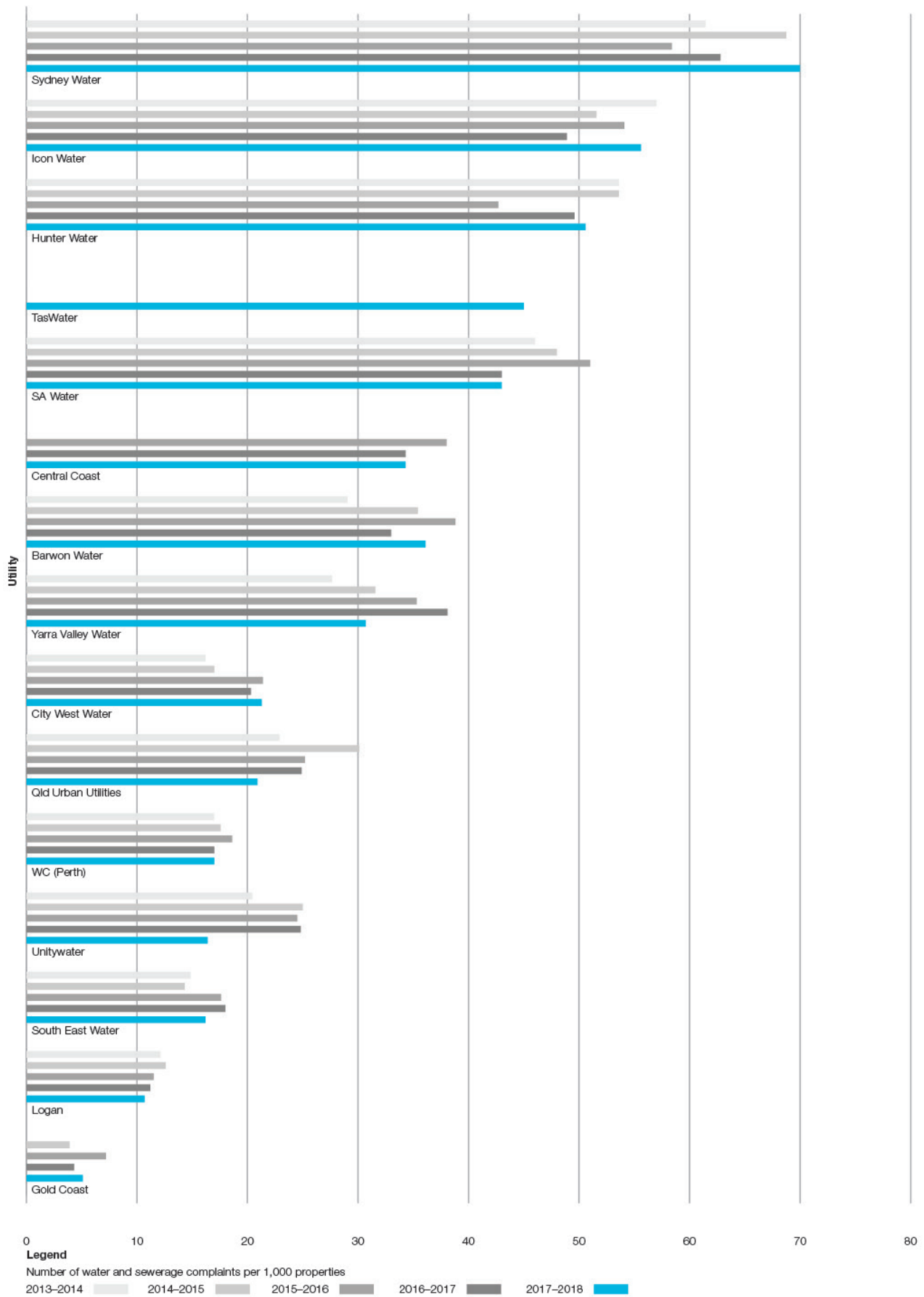
Real losses are estimated using a range of assumptions, including assumed errors in metered water deliveries, estimates of unmetered components, and metering of night flows, and may not be as accurate as other indicators (such as water main breaks), when comparing utilities.

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

### 7.3.1 Key findings

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

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



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

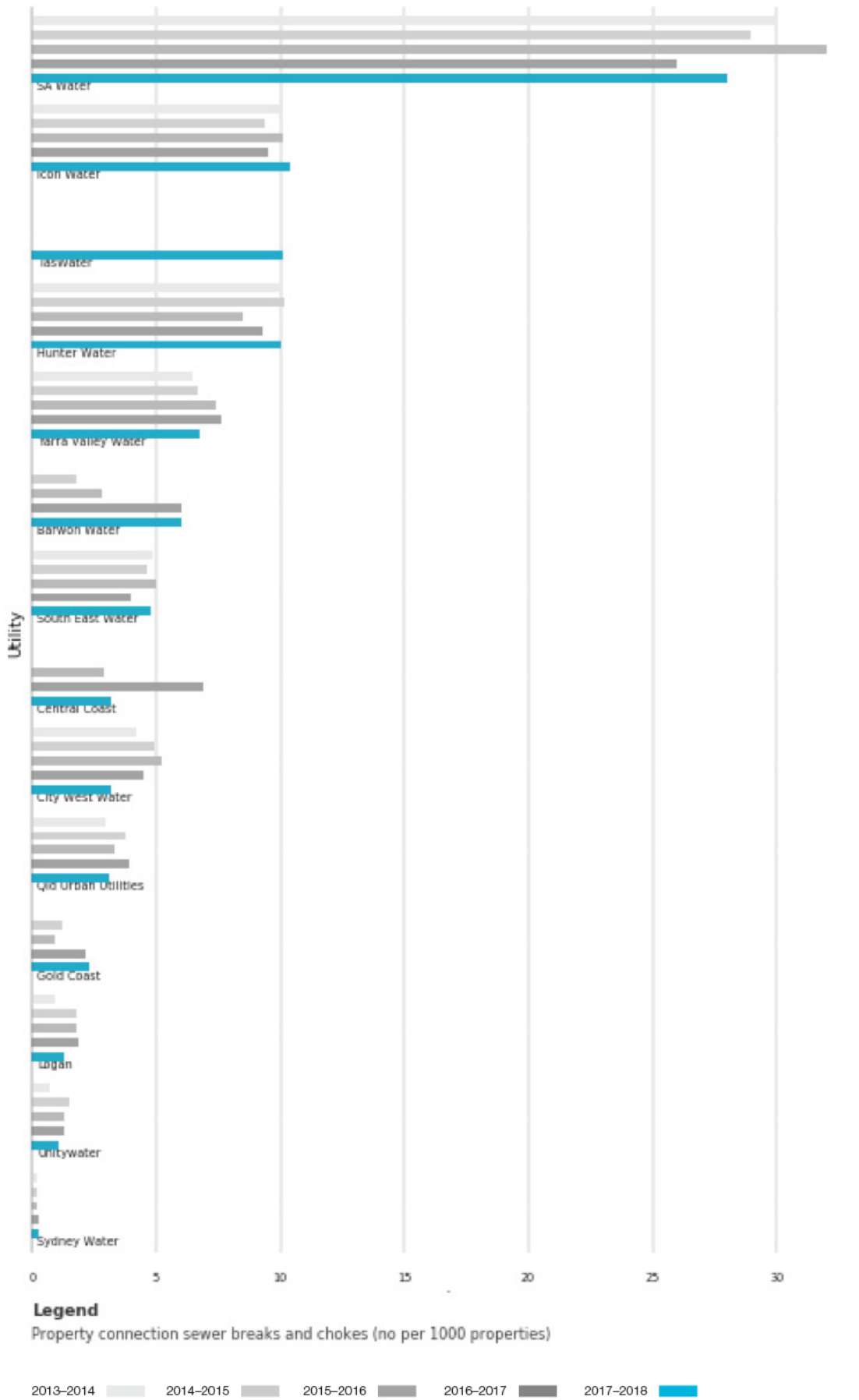


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties—Major utility group.

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

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

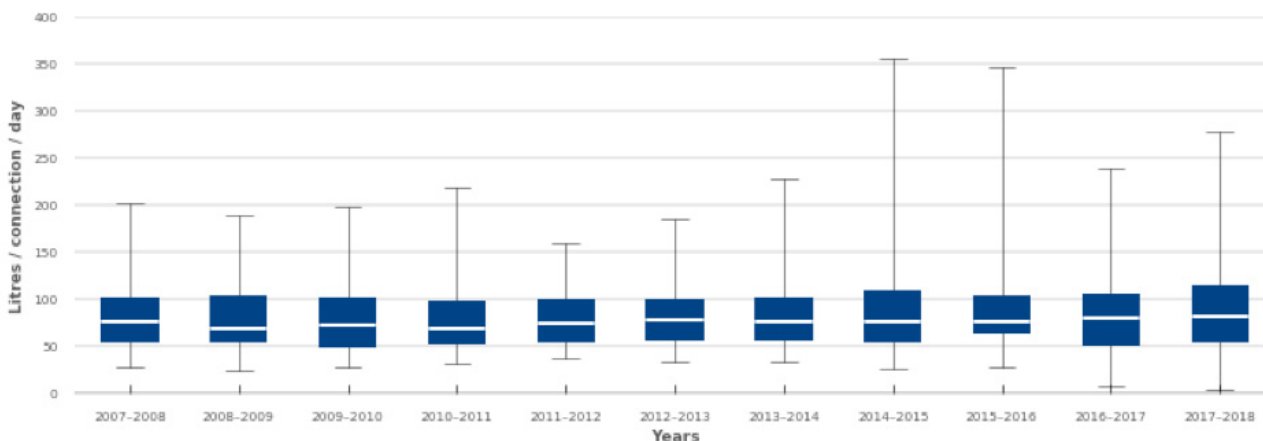
Utility group	Range		No. utilities with increase/decrease from 2016–17		Median		Change from 2016–17 (%)
	High	Low	Increase	Decrease	2016–17	2017–18	
Major	93.0	35.3	9	5	73.0	76.2	4
	Sydney Water	Central Coast					
Large	306.4	21.4	6	2	63.0	80.0	27
	Townsville	Cairns					
Medium	215.5	4.0	13	10	77.0	62.0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

**Table note**

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

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

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



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

### 7.3.2 Results and analysis—Major utility group

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



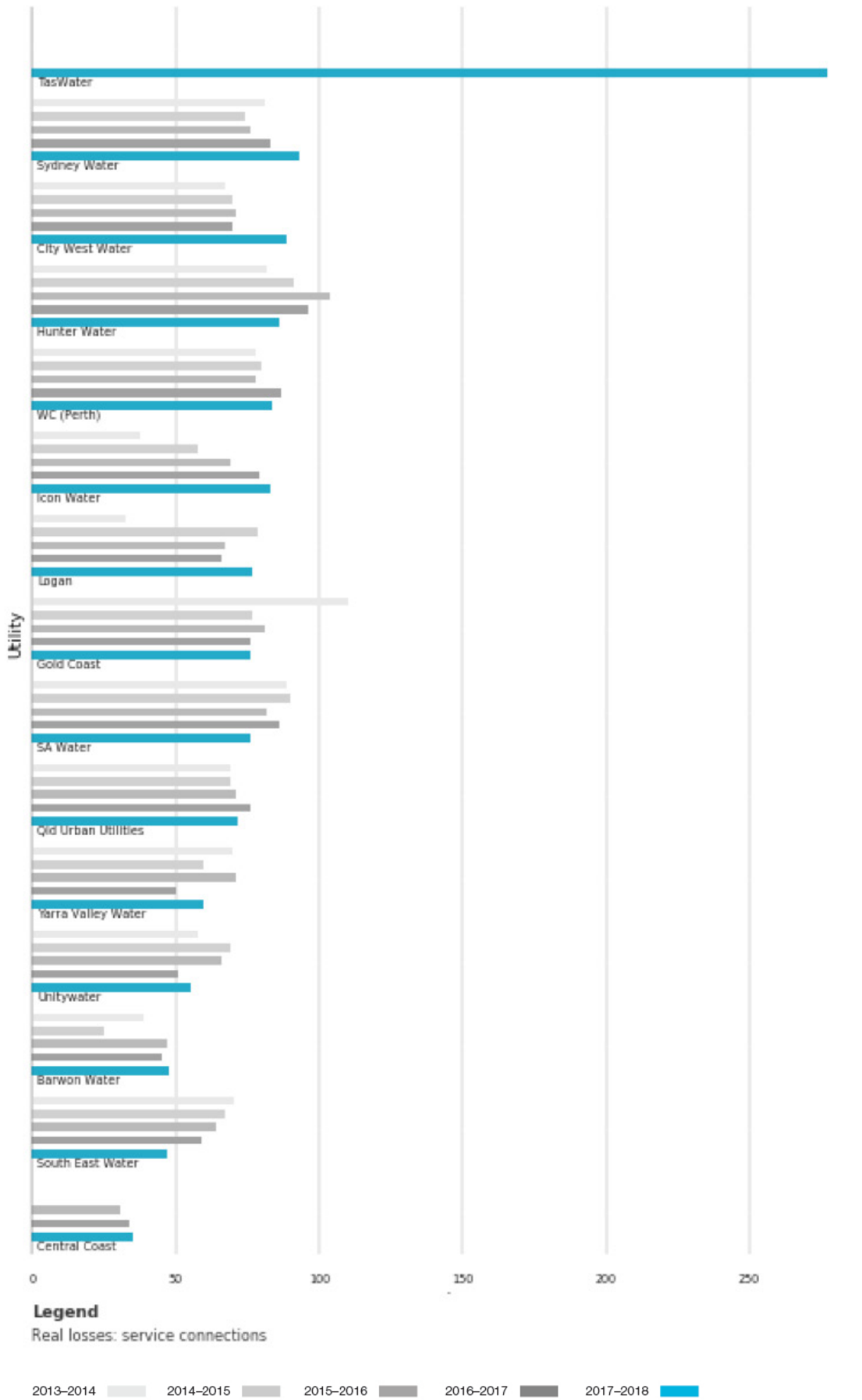


Figure 7.6 Real losses (L/service connection/day)—Major utility group.