

# 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>6</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
- 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 2022–23 are presented in Appendix A, Table A13.

### 7.1.1 Key findings

Figure 7.1 shows that the national median number of main breaks in 2022–23 increased slightly (7%) from 2021–22, following the modest increases since 2018–19.

Table 7.1 presents a summary of the number of water main breaks per 100 km of water main by utility size group. The largest increase (18%) was reported in the Large size group, whereas the Medium size group reported the largest decrease of 6%. Additionally, Byron Shire Council within the Small size group reported the highest number of water main breaks, bursts and leaks per 100 km of water (55.4), while Mount Barker District in the Medium size group reported the lowest number (0).

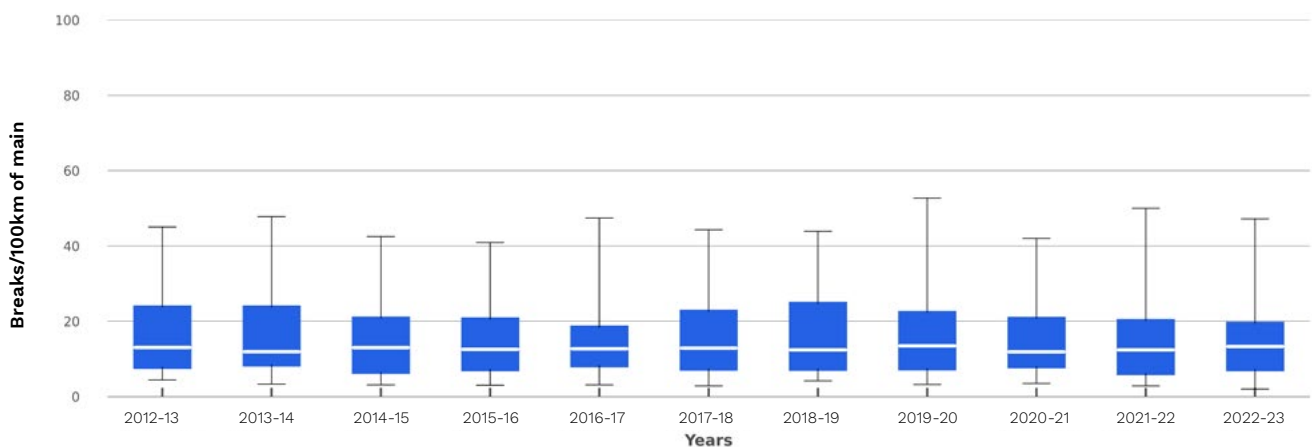


Figure 7.1 Number of water main breaks, bursts and leaks per 100 km of water mains

<sup>6</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 2021–22		Median		Change in median from 2021–22 (%)
	High	Low	Increase	Decrease	2021–22	2022–23	
Major	47.2	3.7	6	8	17.2	16.8	-2%
	TasWater	Logan					
Large	25.6	2.9	6	6	13.9	16.4	18%
	Cairns	WC (Mandurah)					
Medium	46.2	1.4	8	14	10.6	9.9	-6%
	GWMWater	Clarence Valley					
Small	55.4	0	14	12	12.2	12.7	4%
	Byron	Mount Barker					
<b>All size groups (national)</b>	<b>55.4</b>	<b>0</b>	<b>34</b>	<b>40</b>	<b>12.4</b>	<b>13.3</b>	<b>7%</b>
	<b>Byron</b>	<b>Mount Barker</b>					

**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.

## 7.1.2 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 2018–19 to 2022–23.

The Major utility group reported a slight decrease (2%) in the number of breaks per 100 km of water mains, with 6 out of the 15 Major utilities reporting an increase from 2021–22 to 2022–23 (Water Corporation – Perth was the only utility that reported no change). Sydney Water Corporation reported the largest increase (19.8%), while Logan City Council reported the largest decrease (28.8%) from 2021–22 to 2022–23.



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

## 7.2 Number of sewer mains breaks and chokes per 100 km – A14 and number of 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 (for example, 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>7</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
- 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 sewer mains breaks and chokes for all utilities reporting in 2022–23 are presented in Appendix A, Table A14. Property connection sewer breaks and chokes for all utilities reporting in 2022–23 are presented in Appendix A, Table A15.

### 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 2022–23, there was a national median of 14.3 sewer main breaks and chokes per 100 km of sewer main, which was a 14% decrease from 2021–22 (Table 7.2). There was an 11% decrease in the sewer breaks and chokes per 1,000 properties (Table 7.3). The decrease in median sewer breaks and chokes was due to a decrease in all size groups while the decrease in median number of property connection sewer breaks and chokes was due to a decrease in all size groups except the Large size group.

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<sup>7</sup> For such utilities, the property owner is responsible for the property's sewer connections.

**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 2021–22		Median		Change in median from 2021–22 (%)
	High	Low	Increase	Decrease	2021–22	2022–23	
Major	49.8	4.4	2	13	27.3	22.5	-18%
	Barwon Water	Gold Coast					
Large	45.8	4.2	4	8	15.9	14.6	-9%
	Townsville	Gippsland Water					
Medium	75.0	1.9	3	17	17.5	11.5	-34%
	Albury	Mackay					
Small	219.0	0.9	10	16	12.3	11.8	-5%
	Snowy Monaro	WC (Busselton) (S)					
<b>All size groups (national)</b>	<b>219.0</b>	<b>0.9</b>	<b>19</b>	<b>54</b>	<b>16.7</b>	<b>14.3</b>	<b>-14%</b>
	<b>Snowy Monaro</b>	<b>WC (Busselton) (S)</b>					

**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.

**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 2021–21		Median		Change in median from 2021–22 (%)
	High	Low	Increase	Decrease	2021–22	2022–23	
Major	31.0	0.1	0	14	4.0	3.2	-20%
	SA Water	Sydney Water					
Large	6.2	0.6	4	7	2.1	3.0	43%
	Townsville	Redland City					
Medium	21.1	0.1	10	11	4.6	3.8	-17%
	GWMWater	Port Macquarie Hastings					
Small	38.5	0	4	15	5.4	2.8	-48%
	Essential Energy	Mount Barker					
<b>All size groups (national)</b>	<b>38.5</b>	<b>0</b>	<b>18</b>	<b>47</b>	<b>3.8</b>	<b>3.4</b>	<b>-11%</b>
	<b>Essential Energy</b>	<b>Mount Barker</b>					

**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.

## 7.2.2 Results and analysis – Major utility group

Figure 7.3 shows a ranked breakdown of the sewer mains breaks and chokes (per 100 km of sewer main) for each Major utility from 2018–19 to 2022–23 and Figure 7.4 shows a ranked breakdown of property connection sewer breaks and chokes per 1,000 properties.

Only 2 of the 15 Major utilities reported an increase in sewer mains breaks and chokes per 100 km sewer main, while all reported a decrease in sewer breaks and chokes per 1,000 properties from 2021–22 to 2022–23. Sydney Water Corporation reported the largest decrease both in breaks and chokes per 100 km of sewer mains (33.3%, Figure 7.3) and in sewer breaks and chokes per 1,000 properties (50.0%, Figure 7.4) compared to 2021–22. The overall decrease in sewer main breaks and chokes is consistent with the continuation of above-average rainfall for most of Australia in 2022–23, leading to wet soil conditions and a decreased risk of breaks and chokes.

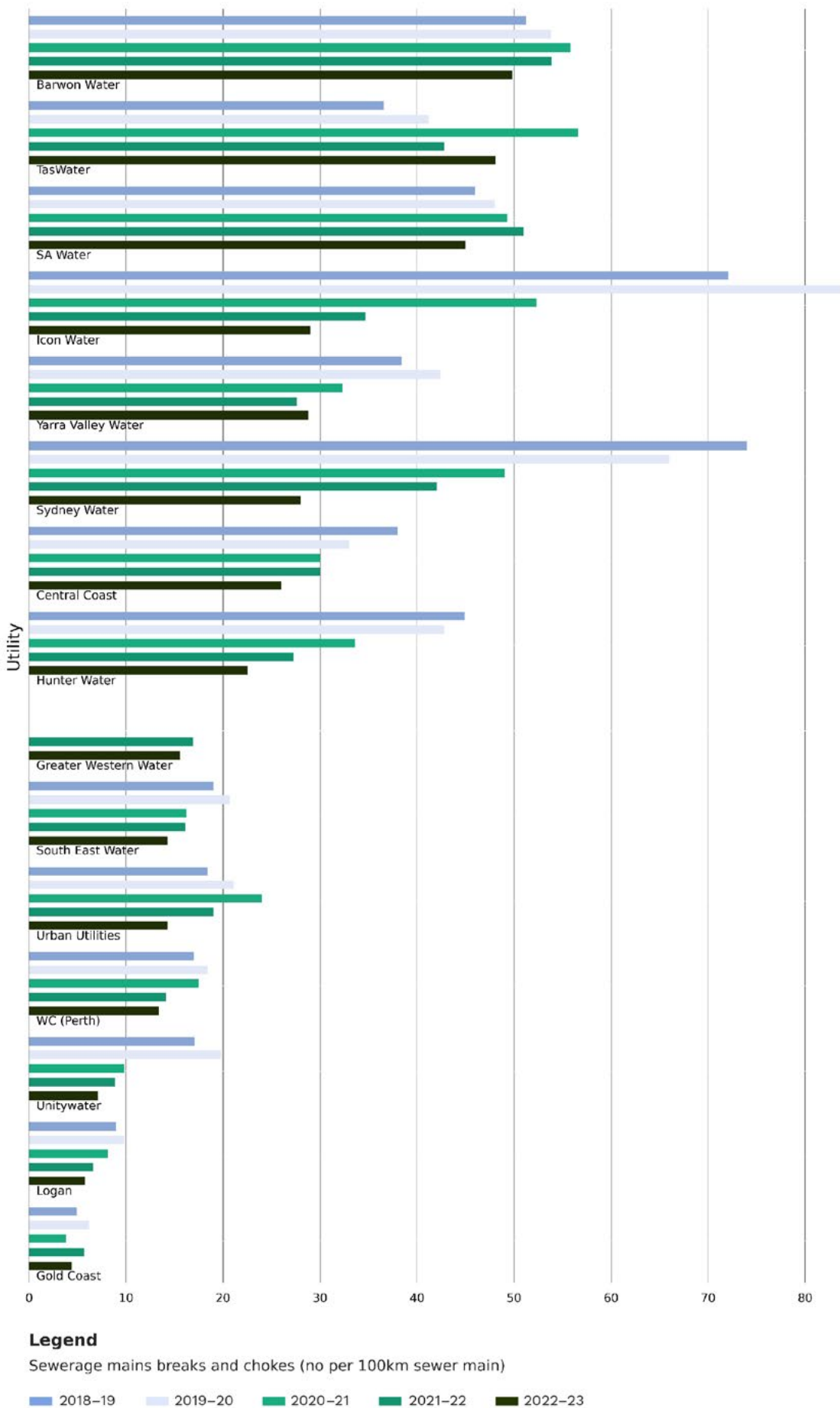


Figure 7.3 Sewer mains breaks and chokes per 100 km of sewer main – Major utility group

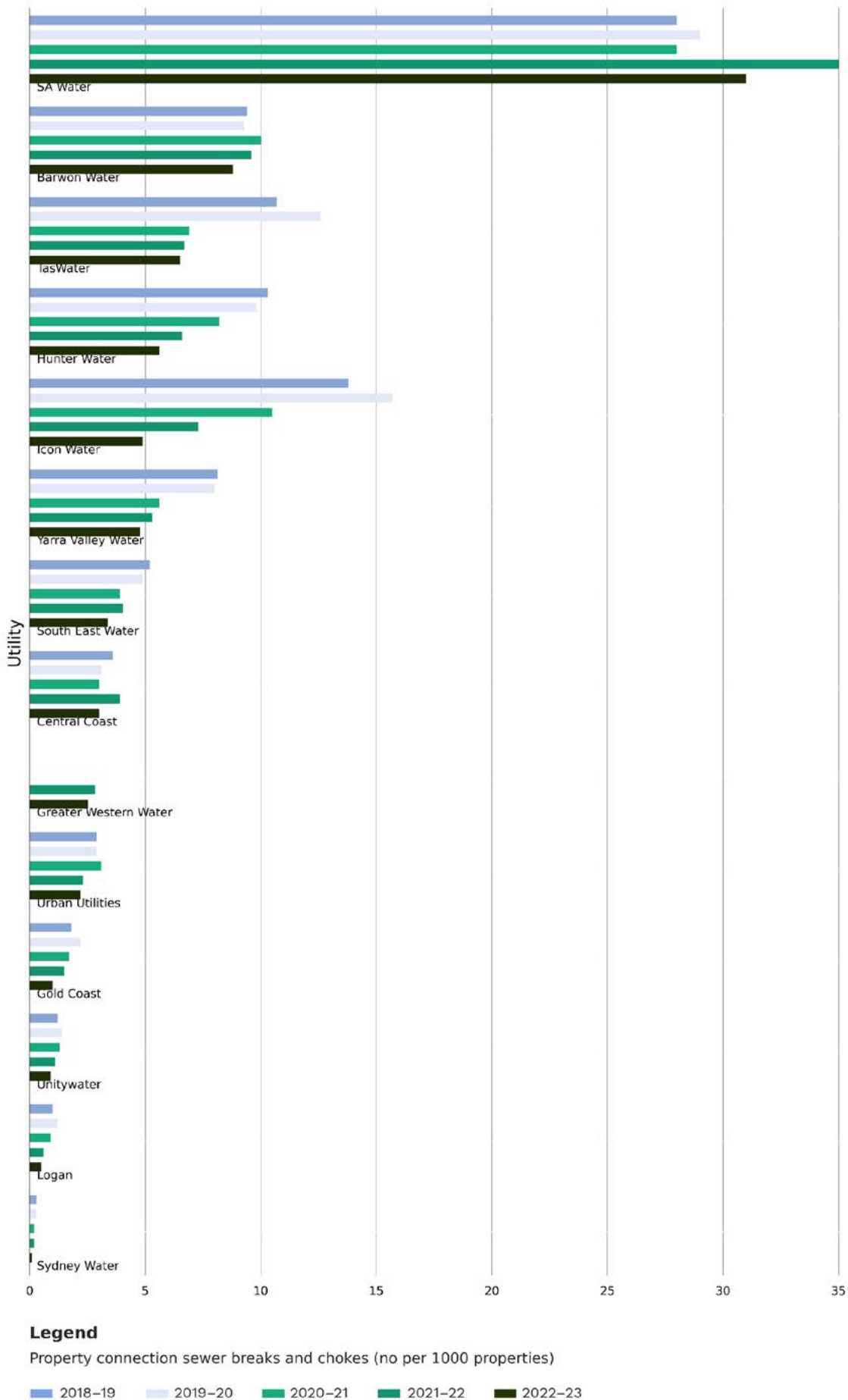


Figure 7.4 Property connection sewer breaks and chokes per 1,000 properties – Major utility group



## 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 2022–23 is presented in Appendix A, Table A16.

### 7.3.1 Key findings

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

From 2021–22 to 2022–23, the national median across all size groups increased slightly by 1% to 72 L/service connection/day.

As in previous years, Cassowary Coast Regional Council in the Small size group reported the highest real losses among all utilities (415.7 L/service connection/day in 2022–23), with a 16% increase from the previous year.

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

Utility group	Range		No. utilities with increase/decrease from 2021–22		Median		Change in median from 2021–22 (%)
	High	Low	Increase	Decrease	2021–22	2022–23	
Major	319.0	0.1	11	3	65.8	70.5	7%
	TasWater	Greater Western Water					
Large	362.0	16.2	7	5	68.2	66.5	-2%
	P&W (Darwin)	Redland City					
Medium	220.8	0.1	7	12	65.5	60.0	-8%
	Fitzroy River Water	Multiple utilities					
Small	415.7	18.0	14	10	107.0	140.0	31%
	Cassowary Coast	Westernport Water					
<b>All size groups (national)</b>	<b>415.7</b>	<b>0.1</b>	<b>39</b>	<b>30</b>	<b>71.5</b>	<b>72.0</b>	<b>1%</b>
	<b>Cassowary Coast</b>	<b>Multiple utilities</b>					

**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 2012–13 to 2022–23. The figure highlights a larger range of changes among utilities that have reported, compared to the previous year. The median for 2022–23 has remained almost the same as the previous year, but the change range was the largest since 2012–13.

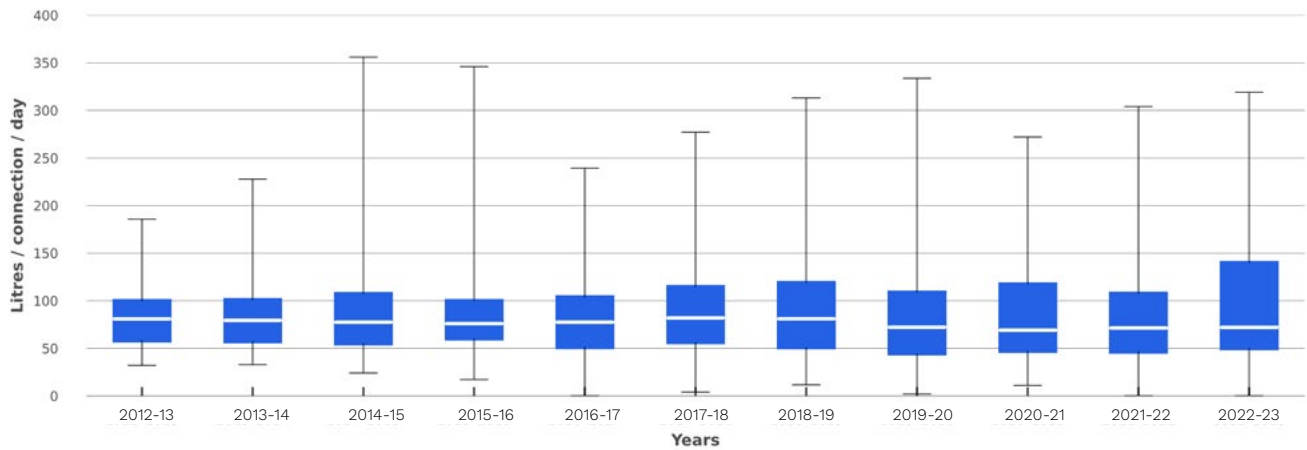


Figure 7.5 Real losses (L/service connection/day)

### 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 2018–19 to 2022–23. Eleven utilities reported an increase in real losses between 2021–22 and 2022–23 with Urban Utilities remaining unchanged. Barwon Water reported the highest increase (96.7%), from 30 L/service connection/day in 2021–22 to 59 L/service connection/day in 2022–23 while Logan City Council reported the highest decrease (24.0%), from 70.9 L/service connection/day in 2021–22 to 53.9 L/service connection/day in 2022–23.

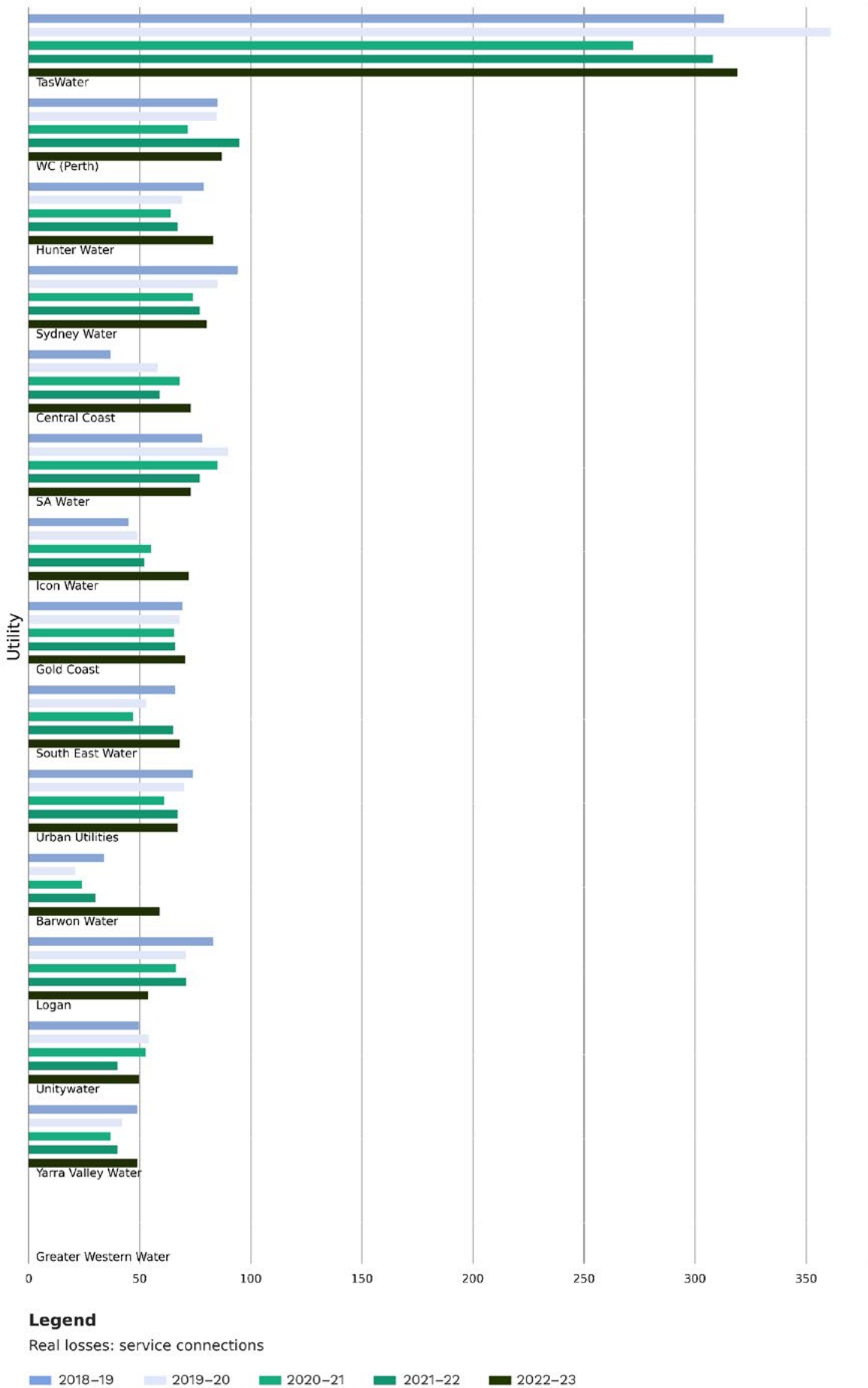


Figure 7.6 Real losses: service connections (L/service connection/day) – Major utility group