

## 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>9</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 2023–24 are shown in Appendix A, Table A10.

#### 7.1.1. Key findings

Figure 7.1 shows that the national median number of main breaks in 2023–24 remained unchanged from 2022–23, following the modest increases since 2021–22.

Table 7.1 shows a summary of the number of water main breaks per 100 km of water main by utility size group. The largest increase (90.2%) was reported in the Medium size group by Rockhampton Regional Council (Queensland), whereas the Small size group reported the largest decrease of 94.8% in Byron Shire Council in New South Wales. Additionally, TasWater (Tasmania) within the Major size group reported the highest number of water main breaks, bursts and leaks per 100 km of water (42.8), while Goulburn Mulwaree Council (New South Wales) in the Small size group reported the lowest number (1.1).

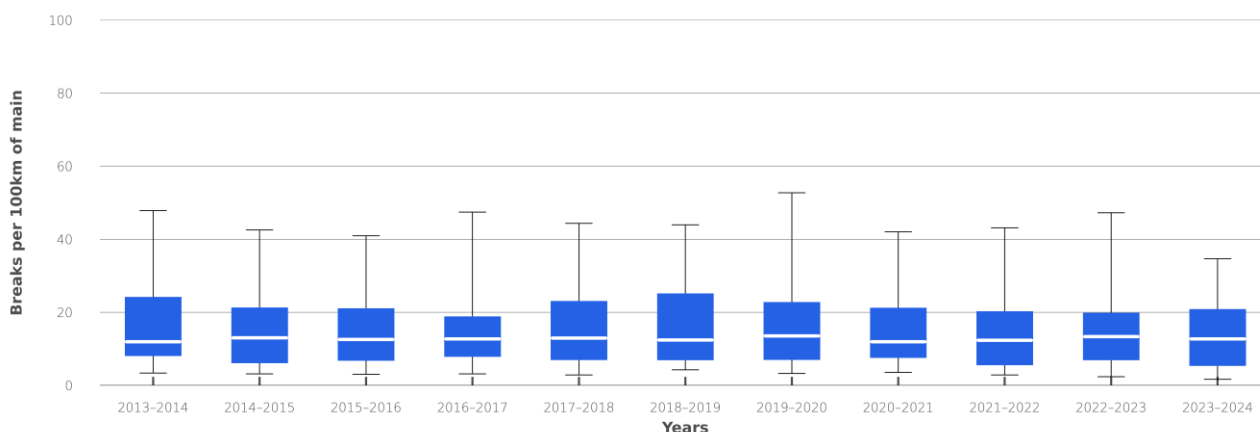


Figure 7.1 Number of water main breaks, bursts and leaks per 100 km of water mains

<sup>9</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 2022–23		Median		Change in median from 2022–23 (%)
	High	Low	Increase	Decrease	2022–23	2023–24	
Major	42.8	3.5	7	7	16.8	17.9	7
	TasWater	Logan					
Large	25.0	2.2	7	5	16.4	15.0	-9
	Coliban Water	WC (Mandurah)					
Medium	39.8	1.5	10	11	10.0	11.6	17
	GWMWater	Clarence Valley					
Small	31.2	1.1	10	17	12.7	10.8	-15
	Cassowary Coast	Goulburn Mulwaree					
<b>All size groups (national)</b>	<b>42.8</b>	<b>1.1</b>	<b>34</b>	<b>40</b>	<b>13.3</b>	<b>12.7</b>	<b>-5</b>
	<b>TasWater</b>	<b>Goulburn Mulwaree</b>					

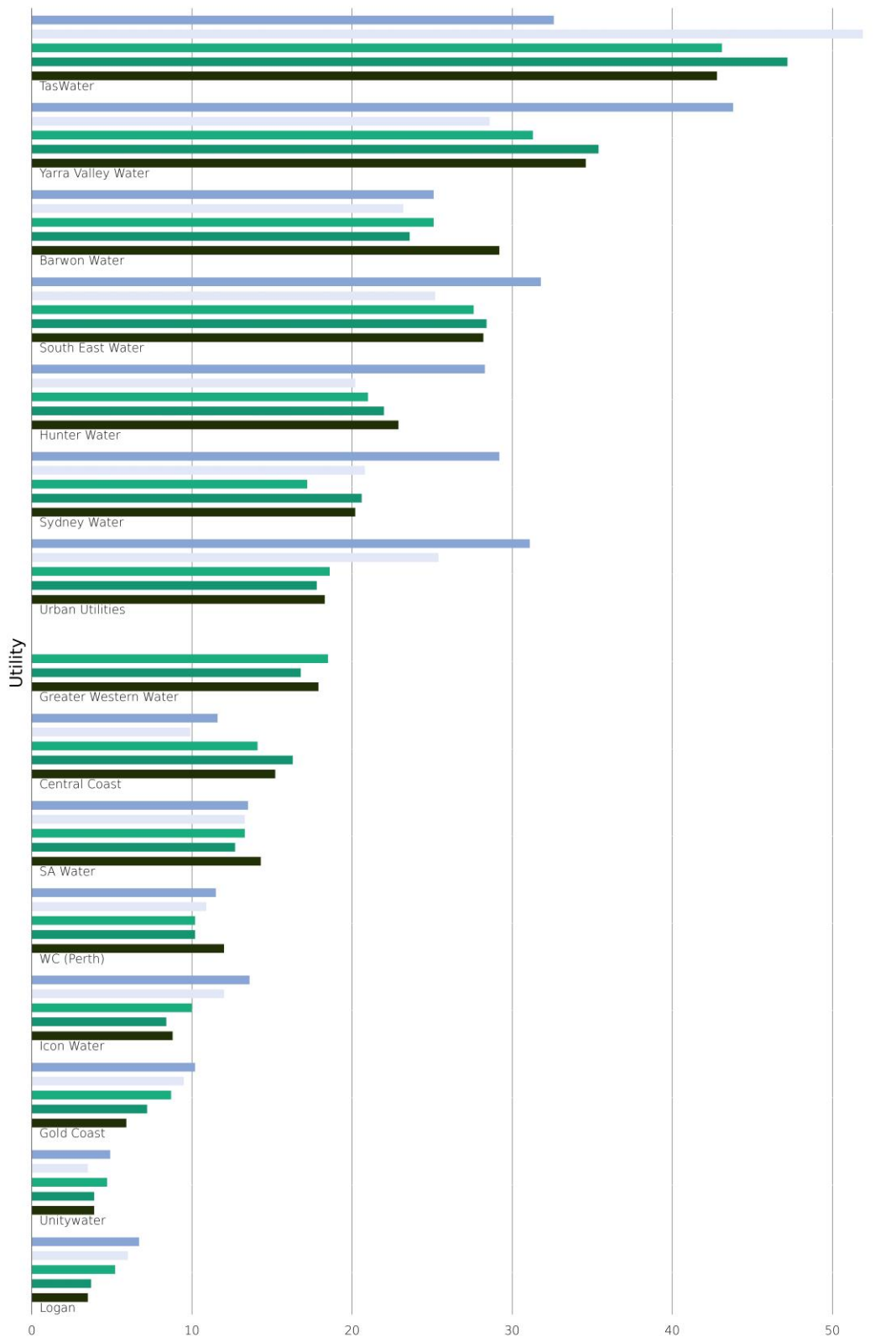
**Note:** The median for water main breaks, burst and leaks per 100 km of water mains in each year was calculated using data from all utilities (dual-service and single-service providers) reporting data against A8 in that year.

### 7.1.2. Results and analysis – Major utility group

Figure 7.2 shows a ranked breakdown of the water main breaks for each utility in the Major utility group from 2019–20 to 2023–24.

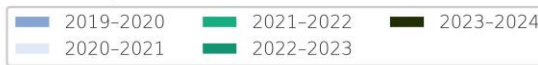
The Major utility group reported an increase (7%) in the number of breaks per 100 km of water mains, with 7 out of the 15 Major utilities reporting a decrease from 2022–23 (Unitywater in Queensland was the only utility that reported no change). Barwon Water (Victoria) reported the largest increase (23.7%), while the City of Gold Coast (Queensland) reported the largest decrease (18.1%) from 2022–23.

As in previous years, TasWater (Tasmania) reported the highest number of breaks per 100 km of water mains (42.8) followed by Yarra Valley Water Corporation in Victoria (34.6). However, both utilities saw decreases in their number of breaks per 100 km of water mains, with reductions of 9.3% and 2.3%, respectively from 2022–23.



**Legend**

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



**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>10</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 2023–24 are presented in Appendix A, Table A11. Property connection sewer breaks and chokes for all utilities reporting in 2023–24 are presented in Appendix A, Table A12.

### 7.2.1. Key findings

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

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

---

<sup>10</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 2022–23		Median		Change in median from 2022–23 (%)
	High	Low	Increase	Decrease	2022–23	2023–24	
Major	63.9	5.0	13	2	22.5	25.8	15
	TasWater	Gold Coast					
Large	42.8	4.9	4	8	14.6	13.2	-10
	Townsville	Gippsland Water					
Medium	94.0	1.1	9	10	11.5	10.6	-8
	Albury	Mackay					
Small	133.0	2.0	14	12	11.8	15.0	27
	Essential Energy	Bega Valley					
<b>All size groups (national)</b>	<b>133.0</b>	<b>1.1</b>	<b>40</b>	<b>32</b>	<b>14.3</b>	<b>14.8</b>	<b>3</b>
	<b>Essential Energy</b>	<b>Mackay</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 2022–23		Median		Change in median from 2022–23 (%)
	High	Low	Increase	Decrease	2022–23	2023–24	
Major	33.00	0.17	14	0	3.19	3.81	19
	SA Water	Sydney Water					
Large	5.90	0.85	6	3	3.00	2.60	-13
	Townsville	Shoalhaven					
Medium	23.44	0.00	8	12	3.80	3.31	-13
	GWMWater	Albury					
Small	44.87	0.00	13	7	2.80	3.40	21
	Essential Energy	Mount Barker					
<b>All size groups (national)</b>	<b>44.87</b>	<b>0.00</b>	<b>41</b>	<b>22</b>	<b>3.39</b>	<b>3.40</b>	<b>0</b>
	<b>Essential Energy</b>	<b>Multiple utilities</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.

In 2023–24, there was a national median of 14.8 sewer main breaks and chokes per 100 km of sewer main, representing a 3% increase from 2022–23 (Table 7.2) with 40 utilities reporting an increase and 32 utilities reporting a decrease. The overall median of sewer breaks and chokes per 1,000 properties (Table 7.3) remained stable, with a small rise from 3.39 in 2022–23 to 3.40 in 2023–24. An increase was reported by 41 utilities, and 22 utilities reported a decrease.

The increase in the median number of sewer breaks and chokes was greatest in the Small size group followed by the Major size group.

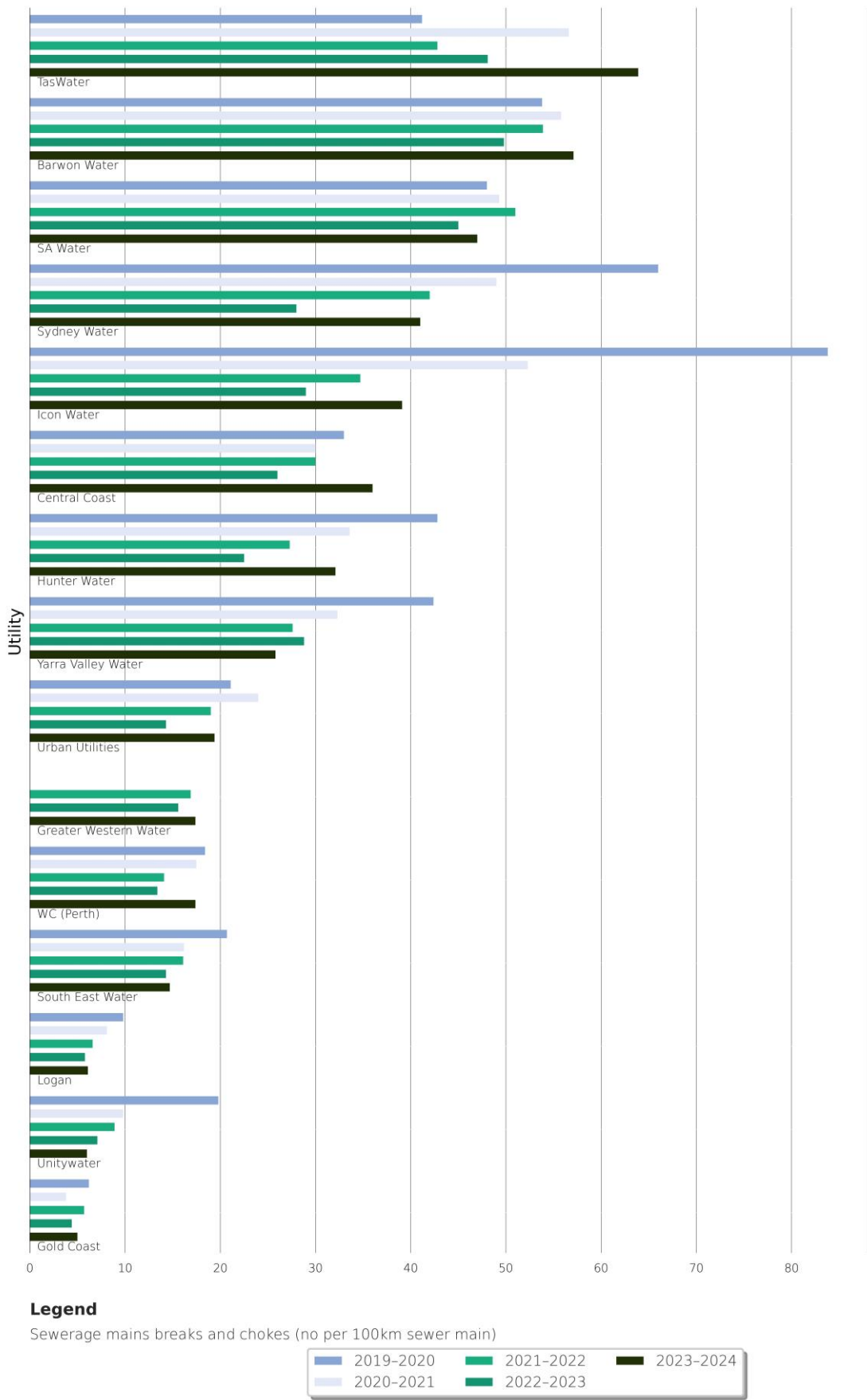
Essential Energy in New South Wales from the Small size group, reported the highest number of property connection sewer breaks and chokes per 1,000 properties (44.8). In contrast, Albury City Council in New South Wales from the Medium size group reported no property connection sewer breaks and chokes, while Mount Barker District Council in South Australia from the Small size group reported just one incident during the reporting period.

### **7.2.2. Results and analysis – Major utility group**

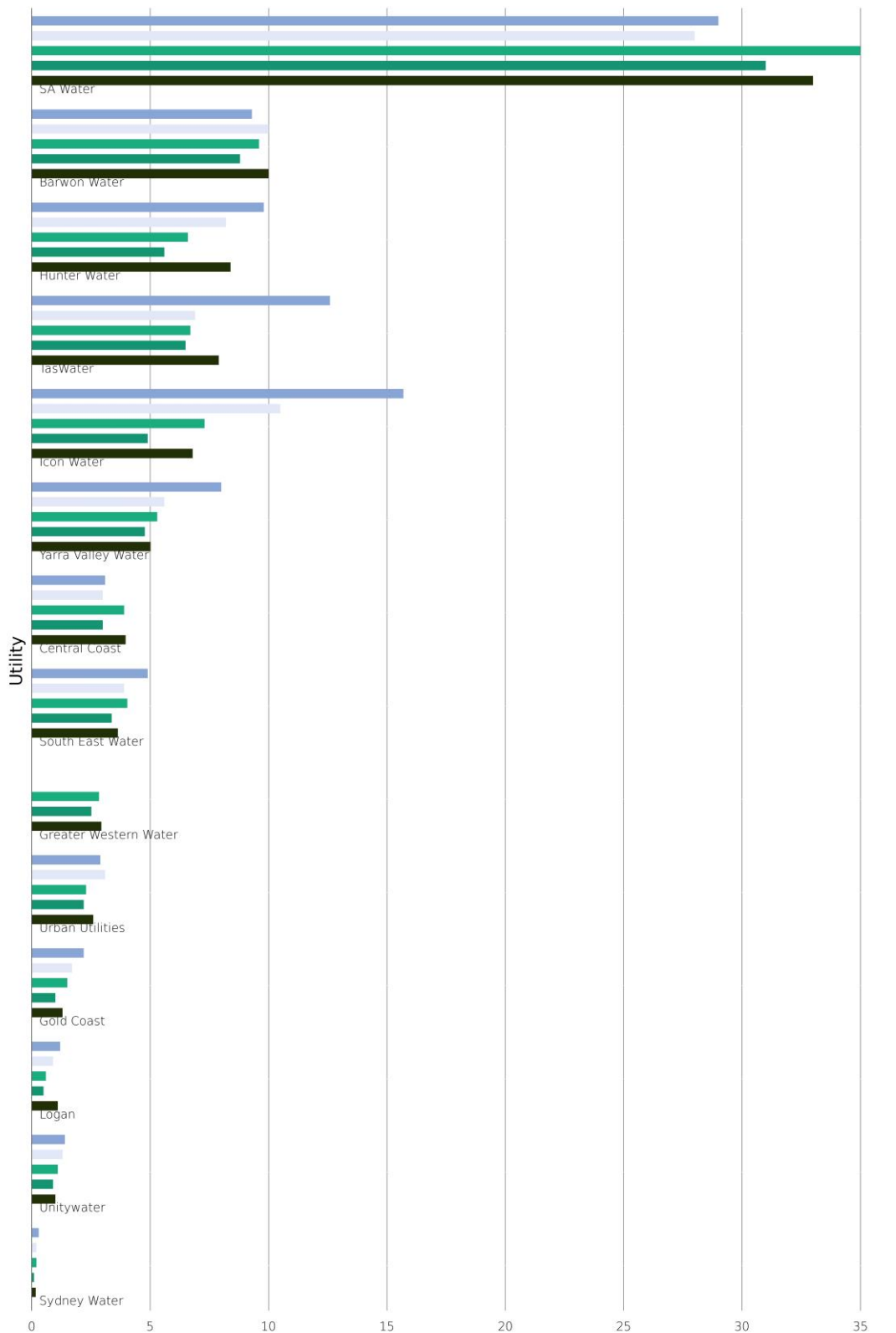
Figure 7.3 shows a ranked breakdown of the sewer mains breaks and chokes (per 100 km of sewer main) for each Major utility from 2019–20 to 2023–24 and Figure 7.4 shows a ranked breakdown of property connection sewer breaks and chokes per 1,000 properties.

Only 2 of the 15 Major utilities reported a decrease in sewer mains breaks and chokes per 100 km sewer main, while all utilities reported an increase in the number of property connection sewer breaks and chokes per 1,000 properties from 2022–23 to 2023–24.

Sydney Water Corporation (New South Wales) reported the largest increase in breaks and chokes per 100 km of sewer mains (46.4%, Figure 7.3) while it had the smallest property connection sewer breaks and chokes per 1,000 properties (0.2, Figure 7.4). SA Water Corporation (South Australia) reported the largest number of property connection sewer breaks and chokes per 1,000 properties (33, Figure 7.4) while TasWater (Tasmania) reported the largest number of sewer mains breaks and chokes per 100 km of sewer main (63.9, Figure 7.3) compared to 2022–23.

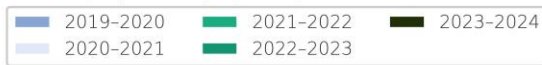


**Figure 7.3 Sewer mains breaks and chokes per 100 km of sewer main – Major utility group**



**Legend**

Property connection sewer breaks and chokes (no per 1000 properties)



**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 2023–24 is presented in Appendix A, Table A13.

#### 7.3.1. Key findings

Table 7.4 shows a summary of the real losses by utility size group. From 2022–23 to 2023–24, the national median across all size groups increased by 3% to 76.0 L/service connection/day.

As in previous years, Cassowary Coast Regional Council (Queensland) in the Small size group reported the highest real losses among all utilities (457.7 L/service connection/day in 2023–24), with a 10.1% increase from the previous year. High losses for this service provider are due to aging infrastructure, long mains, customer meter under reads, long periods of wet weather creating difficult conditions for leak detection, and staff shortages. Westernport Water in Victoria, Queanbeyan–Palerang Regional Council and Goulburn Mulwree Council both in New South Wales reported the lowest Real losses across the country, at 5, 9 and 9.5 L/service connection/day, respectively.

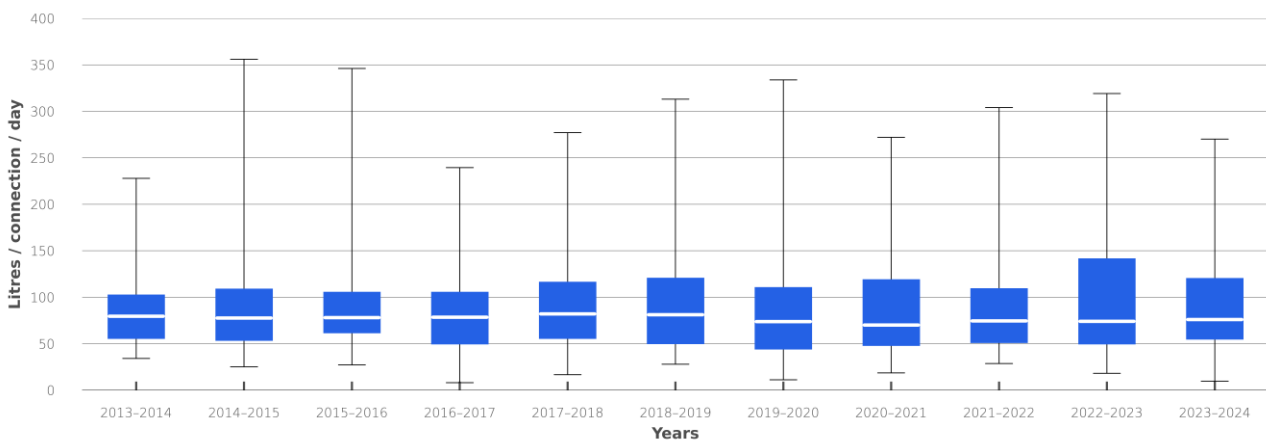
**Table 7.4 Overview of results: Real losses: service connections (L/service connection/day)**

Utility group	Range		No. utilities with increase/decrease from 2022–23		Median		Change in median from 2022–23 (%)
	High	Low	Increase	Decrease	2022–23	2023–24	
Major	89.0	39.3	5	6	72.0	68.8	-4
	WC (Perth)	Logan					
Large	270.0	35.9	8	4	66.5	78.5	18
	P&W (Darwin)	Toowoomba					
Medium	146.1	9.0	9	10	69.0	75.7	10
	Fitzroy River Water	Queanbeyan					
Small	457.7	5.0	11	14	140.0	104.5	-25
	Cassowary Coast	Westernport Water					
<b>All size groups (national)</b>	<b>457.7</b>	<b>5.0</b>	<b>33</b>	<b>34</b>	<b>74.0</b>	<b>76.0</b>	<b>3</b>
	<b>Cassowary Coast</b>	<b>Westernport Water</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 2013–14 to 2023–24. The figure highlights a smaller range of changes among utilities that have reported, compared to the previous year. The median for 2023–24 has increased

by almost 3% from the previous year, with the Large group reporting the highest increase percentage of 18% and Small group reporting the largest decrease percentage of 25% from 2022–23.



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

**7.3.2. Results and analysis – Major utility group**

Figure 7.6 shows a ranked breakdown of the real losses per annum for each Major utility from 2019–20 to 2023–24. Five utilities reported an increase in real losses from 2022–23, while Barwon Water (Victoria), Greater Western Water (Victoria), and SA Water Corporation (South Australia) remained unchanged. Unitywater (Queensland) reported the highest increase (20.1%), from 49.8 L/service connection/day in 2022–23 to 59.8 L/service connection/day in 2023–24. Conversely, Logan City Council (Queensland) reported the highest decrease (27.1%), from 53.9 L/service connection/day in 2022–23 to 39.3 L/service connection/day in 2023–24. TasWater (Tasmania) did not report to this indicator in 2023–24 due to a failure in auditing.

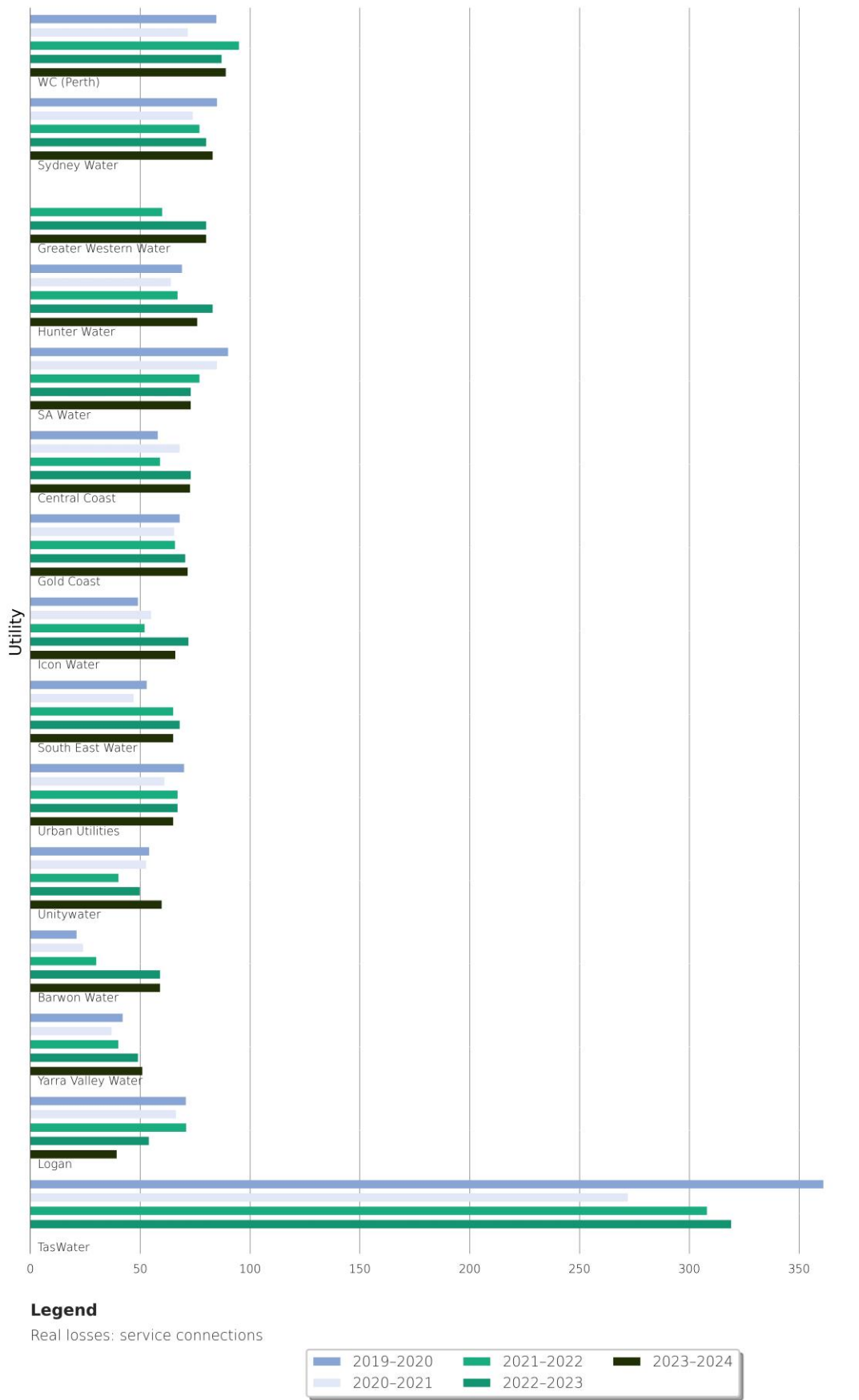


Figure 7.6 Real losses: service connections (L/service connection/day) – Major utility group