

2 Major urban centres

This chapter provides comparative tables and figures about a selection of key indicators for major urban centres, aligned with a capital city and the surrounding area.¹⁰

The figures and tables are compiled using data supplied by the utilities detailed in Table 2.1, exceptions are indicated in the table notes.

Utilities' structures vary, and the figures in this chapter should be treated with some caution and read in conjunction with the notes for each of the tables. For example, to provide figures which represent Sydney, Melbourne, and South East Queensland, it may be necessary to aggregate the numbers for both bulk water authorities and utilities servicing those areas. The historical values for all financial indicators have been adjusted using consumer price index (CPI) data to facilitate comparisons in real terms.

Table 2.1 Data source for capital city analysis

| Major urban centre | Utility data |
|-----------------------|--|
| Perth | Water Corporation—Perth |
| Adelaide | SA Water Corporation |
| Canberra | Icon Water |
| South East Queensland | Seqwater (B), Queensland Urban Utilities, Unitywater, Gold Coast, Redland, and Logan City Councils |
| Sydney | WaterNSW (B), Sydney Water Corporation |
| Melbourne | Melbourne Water (B), City West Water, South East Water, Yarra Valley Water |
| Hobart | No data—TasWater services this area; performance data is available only on an aggregated basis for the entire State of Tasmania. |
| Darwin | Power and Water—Darwin |

2.1 Water resources

2.1.1 Volume of water sourced—W1, W2, W3.1, W4

The volume of water sourced from surface water (W1), groundwater (W2), desalination (W3.1), and recycled water (W4) for each city is shown in Table 2.2.

Nationally, there was an average 3 per cent increase in the total volume of water sourced between 2015–16 and 2016–17. Melbourne reported the largest increase by volume, sourcing an additional 30,214 ML (7 per cent) in 2016–17, using water from the Victorian Desalination Plant for the first time. The plant delivered 46,209 ML of water to the Melbourne system, decreasing demand on falling surface water storages and offsetting a decrease in the volume of water sourced from recycling.

Adelaide reported an 11 per cent (16,512 ML) decrease in its total volume of water sourced, attributable to a wetter than average Spring and Summer, including the wettest December on record.

Through its increasing use of desalination and reliance on ground water, the Water Corporation—Perth returned or 'banked' a net 8,531 ML of water to surface water storages in the Perth region.

Melbourne reported a 69 per cent decrease in its volume of water sourced from recycling. Usage was impacted by wet conditions during the irrigation season (reducing demand for recycled water) and the reduced capacity of one of South East Water's recycling plants. However, the majority of the decrease is explained by a clarification of the definition of recycled water used for on-site purposes. Historically Melbourne Water included all recycled water sourced from its own wastewater treatment plants. In 2016–17 Melbourne Water's volume of recycled water, reported under W4, only includes internally sourced recycled water used for dust suppression.

¹⁰ The South East Queensland urban centre is an exception as it includes Brisbane, Logan, Redlands, and the Gold Coast.

Table 2.2 Volume of water sourced in each urban centre (ML)

| Major urban centre | Surface water (W1) | | Groundwater (W2) | | Desalination (W3.1) | | Recycled water (W4) | | Total | |
|-----------------------|--------------------|----------------|------------------|---------|---------------------|---------|---------------------|---------|---------|---------|
| | 2015–16 | 2016–17 | 2015–16 | 2016–17 | 2015–16 | 2016–17 | 2015–16 | 2016–17 | 2015–16 | 2016–17 |
| Adelaide | 144,346 | 131,741 | 0 | 0 | 7,686 | 4,112 | 4,373 | 4,040 | 156,405 | 139,893 |
| Canberra | 50,403 | 49,916 | 0 | 0 | 0 | 0 | 4,056 | 4,313 | 54,459 | 54,229 |
| Darwin | 38,034 | 34,818 | 5,758 | 5,396 | 0 | 0 | 80 | 541 | 43,872 | 40,755 |
| Melbourne | 432,886 | 428,407 | 0 | 0 | 0 | 46,209 | 16,717 | 5,201 | 449,603 | 479,817 |
| Perth | 20,100 | 0 ^a | 136,879 | 139,598 | 138,645 | 149,823 | 8,633 | 8,109 | 304,257 | 288,999 |
| South East Queensland | 289,524 | 299,372 | 8,730 | 7,686 | 1,524 | 1,562 | 16,739 | 16,177 | 316,517 | 324,797 |
| Sydney | 535,587 | 558,226 | 0 | 0 | 0 | 0 | 38,465 | 33,481 | 574,052 | 591,707 |

Table notes

^a Perth's zero volume of surface water reflects the Water Corporation transferring more water into surface water storages than it extracted. In net terms Water Corporation returned 8,531ML of water to surface water storages in the Perth region in 2016–17.

Sydney surface water includes the total volume of Sydney Water's surface water and the water it received from bulk suppliers (W5).

Melbourne's surface water is that sourced by Melbourne Water and South East Water while its recycled water is the total sourced by Melbourne Water and the three retailers (Yarra Valley Water, South East Water, and City West Water).

The volume of South East Queensland surface water, groundwater, and desalinated water is derived from Seqwater.

The volume of South East Queensland recycled water is the total derived from Seqwater and the retailers (Qld Urban Utilities, Unitywater, Gold Coast and Redland City councils).

2.1.2 Average annual residential water supplied—W12

Table 2.3 reports the average volume (kL/property) of residential water supplied to customers in each major urban centre.

The volume of residential water supplied decreased in all urban centres with the exception of Sydney, which reported a small increase (2 per cent).

Adelaide reported the largest decrease (17 per cent). This is attributed to the higher than average rainfalls experienced in the Adelaide region in 2016–17.

Table 2.3 Average annual residential water supplied (kL/property)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|------------------------------------|---------|---------|---------|---------|---------|-----------------------|
| Adelaide | 193 | 183 | 186 | 206 | 171 | -17 |
| Canberra | 199 | 203 | 188 | 195 | 190 | -3 |
| Darwin | 454 | 407 | 409 | 405 | 361 | -11 |
| Melbourne | 152 | 150 | 149 | 154 | 149 | -3 |
| Perth | 249 | 254 | 244 | 240 | 223 | -7 |
| South East Queensland ^a | 156 | 164 | 160 | 159 | 158 | -1 |
| Sydney | 198 | 206 | 201 | 201 | 206 | 2 |

Table notes

^a Redland did not report against this indicator in 2012–13 and 2013–14.

The figures exclude bulk utilities because they do not supply to customers.

Melbourne and South East Queensland figures are the weighted averages for their respective retailers (i.e. W8/C2—Total connected residential properties: water supply).

2.1.3 Total recycled water supplied—W26

Table 2.4 reports the total volume of recycled water supplied to customers, aggregated for the major urban centres. Unlike W4 it includes all recycled water supplied.

Adelaide's total volume of recycled water supplied decreased by 25 per cent in 2016–17. Above average Spring and Summer rainfall in 2016–17 resulted in less water being reused for agricultural irrigation purposes.

Sydney also reported a decrease in recycled water supply. The 12 per cent decrease was a result of a reduction in recycled water supplied to commercial, industrial and municipal customers (W21) and to the environment (W23).

Operational issues at Darwin's wastewater treatment plant in 2015–16 resulted in a reduced supply of recycled water. With these issues resolved Darwin's recycled water supply increased by 461 ML in 2016–17, returning to and exceeding historical supply volumes.

See Section 3—Water resources for recycled water supplied by all utilities.

Table 2.4 Total recycled water supplied (ML)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|---------------------|---------------------|---------------------|---------------------|---------|-----------------------|
| Adelaide | 28,393 | 25,515 | 29,177 | 28,481 | 21,316 | -25 |
| Canberra | 4,416 | 4,372 | 4,352 | 4,053 | 4,404 | 9 |
| Darwin | 499 | 347 | 492 | 80 | 541 | 576 |
| Melbourne | 29,734 | 27,890 | 36,428 | 34,892 | 32,442 | -7 |
| Perth | 10,272 | 10,029 | 9,354 | 10,212 | 9,568 | -6 |
| South East Queensland | 23,136 ^a | 23,082 ^a | 18,774 ^b | 19,822 ^b | 14,755 | -26 |
| Sydney | 46,951 | 46,943 | 43,075 | 43,342 | 38,340 | -12 |

Table notes

^a Redland did not report total recycled water data in 2012–13, 2013–14 and 2015–16.

^b Seqwater did not report total recycled water data in 2014–15 and 2015–16.

Melbourne and South East Queensland figures for W26 are the aggregated figures for the bulk utility and the retailers.

2.2 Pricing

2.2.1 Typical residential bill—P8

Table 2.5 reports the typical residential bill received by customers in each major urban centre, including water and sewerage services.

Typical residential bills fell or remained consistent with 2015–16 across all major urban centres. With the exception of Sydney, decreased water usage was a key driver of the reported decreases. Sydney's decrease was driven by the Independent Pricing and Regulatory Tribunal's (IPART) review of residential pricing, which resulted in a \$100 per year decrease to residential bills from 1 July 2016¹¹.

See Section 4—Pricing for the typical bills charged by all utilities.

11 2016, IPART, Water—Determination June 2016, Sydney Water Corporation

Table 2.5 Typical residential bill: water and sewerage (\$)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|--------------------|--------------------|---------|---------|---------|-----------------------|
| Adelaide | 1,468 | 1,345 | 1,367 | 1,393 | 1,165 | -16 |
| Canberra | 1,265 | 1,153 | 1,131 | 1,152 | 1,136 | -1 |
| Darwin | 1,914 | 1,872 | 1,930 | 1,914 | 1,796 | -6 |
| Melbourne | 955 | 1,142 | 1,009 | 1,045 | 1,003 | -4 |
| Perth | 1,299 | 1,350 | 1,377 | 1,393 | 1,386 | -1 |
| South East Queensland | 1,314 ^a | 1,342 ^a | 1,417 | 1,410 | 1,408 | 0 |
| Sydney | 1,197 | 1,198 | 1,192 | 1,189 | 1,085 | -9 |

Table notes

^a Redland did not report against this indicator in 2012–13 and 2013–14

Melbourne and South East Queensland figures are the weighted average of the retail utilities (i.e. P3/C2—Connected residential properties: water supply and P6/C6—Connected residential properties: sewerage).

The figures exclude bulk utilities as they do not supply to customers.

2.3 Environment

2.3.1 Total net greenhouse gas emissions—E12

The contribution of the utilities' operations to greenhouse gas (GHG) emissions, aggregated by major urban centre, is reported in Table 2.6.

Total net GHG emissions fluctuated widely across major urban centres. Emissions increased for Sydney (22 per cent) and Darwin (17 per cent), while falling significantly for Adelaide (41 per cent).

The expiry of NSW Greenhouse Gas Abatement Certificates (NGACs) was the primary driver of Sydney Water's increases.¹² Adelaide's decrease in net greenhouse gas emissions is attributed to a combination of decreased electricity usage and emissions reduction initiatives by SA Water Corporation. The decreased electricity usage was the result of decreased pumping requirements in the utility's network, driven by above-average rainfall. The above-average rainfall both decreased water usage in the system and increased the availability of surface water in the regions surface water storages. SA Water Corporation's initiatives to reduce greenhouse gas emissions include investment in energy efficiency, increased use of renewable energy (hydro and biogas), and carbon sequestration through bio-sequestration plantings.

See Section 8—Environment for total net greenhouse gas emissions by all utilities.

Table 2.6 Total net greenhouse gas emissions (net tonnes CO₂ equivalent per 1,000 properties)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|---------|---------|---------|---------|---------|-----------------------|
| Adelaide | 422 | 258 | 299 | 421 | 250 | -41 |
| Canberra | 288 | 260 | 257 | 255 | 242 | -5 |
| Darwin | 219 | 205 | 165 | 154 | 179 | 17 |
| Melbourne | 253 | 229 | 215 | 291 | 266 | -9 |
| Perth | 663 | 731 | 738 | 817 | 828 | 1 |
| South East Queensland | | | | | | |
| Sydney | 85 | 85 | 84 | 144 | 176 | 22 |

Table notes

Melbourne figures are the weighted average of the three retailers (i.e. E12/C4—Total connected properties) plus Melbourne Water's emissions, expressed on a per-connection basis.

No data was available for South East Queensland.

¹² Sydney Water Annual Report 2016–17, Energy use and greenhouse gas emissions, page 38

2.4 Finance

2.4.1 Combined operating cost of water and sewerage—F13

Table 2.7 reports the combined operating cost of the utilities' water and sewerage operations, aggregated by major urban centre.

In real terms combined operating costs fell across many of the major urban centres. Darwin reported a 16 per cent decrease, driven by a reduction in corporate overheads, and labour costs.

Melbourne reported a 9 per cent decrease in operating costs. This was a result of an efficiency review of Victoria's urban water corporations and an Essential Services Commission price review of Melbourne Water's services in 2016, Melbourne Water's bulk water and sewerage prices to metropolitan retailers were reduced from 2017 onwards.

See Section 5—Finance for combined operating for all utilities.

Table 2.7 Combined operating cost: water and sewerage (\$/property)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|--------------------|--------------------|---------|------------------|------------------|-----------------------|
| Adelaide | 651 | 629 | 570 | 586 | 562 | -4 |
| Canberra | 835 | 776 | 787 | 933 ^b | 971 ^b | 4 |
| Darwin | 1,182 | 1,054 | | 1,141 | 962 | -16 |
| Melbourne | 786 | 1,053 | 938 | 984 | 900 | -9 |
| Perth | 597 | 614 | 597 | 607 | 587 | -3 |
| South East Queensland | 1,031 ^a | 1,117 ^a | 1,115 | 1,102 | 1,107 | 0 |
| Sydney | 708 | 698 | 685 | 701 | 673 | -4 |

Table notes

^a Redland did not report against this indicator in 2012–13 and 2013–14

^b Canberra figures for the 2015–16 and 2016–17 years include a water abstraction charge and a utilities network facility tax
Sydney figures are for Sydney Water and include the bulk water purchases from WaterNSW.

2.4.2 Total capital expenditure for water and sewerage—F16

Table 2.8 reports the combined capital expenditure related to the utilities' water and sewerage operations, aggregated by major urban centre.

Significant capital investment in the replacement of aging infrastructure and the upgrading of wastewater treatment facilities saw South East Queensland and Perth respectively invest an additional \$152 million (37 per cent) and \$136 million (46 per cent) in 2016–17.

See Section 5—Finance for combined capital expenditure for all utilities.

Table 2.8 Total capital expenditure: water and sewerage (\$000)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|----------------------|----------------------|---------|---------|---------|-----------------------|
| Adelaide | 347,239 | 197,116 | 156,859 | 185,781 | 131,001 | -29 |
| Canberra | 147,791 | 61,250 | 50,460 | 85,120 | 91,820 | 8 |
| Darwin | 66,789 | 26,401 | | 49,378 | 22,244 | -55 |
| Melbourne | 758,514 | 628,818 | 707,493 | 739,717 | 791,985 | 7 |
| Perth | 520,249 | 270,738 | 362,680 | 298,905 | 435,126 | 46 |
| South East Queensland | 673,740 ^a | 533,833 ^a | 502,815 | 411,041 | 563,211 | 37 |
| Sydney | 735,796 | 648,981 | 661,658 | 675,345 | 648,285 | -4 |

Table notes

^a Redland did not report against this indicator in 2012–13 and 2013–14

Melbourne, Sydney, and South East Queensland figures are the aggregate for the bulk utility and the respective retailers.

2.5 Customers

2.5.1 Total water and sewerage complaints—C13

The total number of complaints for water and sewerage services, received by utilities and aggregated by major urban centre is reported in Table 2.9.

Customer satisfaction, as measured by the total number of complaints for water and sewerage services, remains consistent with 2015–16.

A reported 31 per cent increase in complaints in Melbourne was driven by a change to the interpretation of the complaints indicators by Yarra Valley Water. Due to the nature of the change Yarra Valley Water is not able to restate its historical figures and comparisons with previous year should be interpreted with caution.

See Section 6—Customers for water and sewerage complaints for all utilities.

Table 2.9 Total water and sewerage complaints (per 1,000 properties)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|------------------|------------------|---------|---------|---------|-----------------------|
| Adelaide | 2.4 | | | 1.6 | 2.5 | 56 |
| Canberra | 4.8 | 4.0 | 4.3 | 3.8 | 4.3 | 13 |
| Darwin | 37.5 | 49.9 | 39.5 | 86.2 | 85.1 | -1 |
| Melbourne | 7.4 | 5.3 | 4.1 | 4.8 | 6.3 | 31 |
| Perth | 0.6 | 1.0 | 0.8 | 0.8 | 0.8 | 0 |
| South East Queensland | 2.1 ^a | 6.6 ^b | 3.8 | 4.3 | 4.7 | 9 |
| Sydney | 3.9 | 3.2 | 2.7 | 2.6 | 2.1 | -19 |

Table notes

^a 2012–13 only includes data from Queensland Urban Utilities.

^b 2013–14 only includes data from Queensland Urban Utilities, Gold Coast City Council, and Unitywater.

2.5.2 Average duration of an unplanned interruption to water supply—C15

Table 2.10 reports the average duration of unplanned interruptions to water supply in a utility's operation, aggregated by major urban centre.

South East Queensland reported a 13 per cent increase in its durations of unplanned interruptions to water supply. This was driven by an increased number of mains breaks.

See Section 6—Customers for unplanned interruption to water supply for all utilities.

Table 2.10 Average duration of an unplanned interruption: water (minutes)

| Major urban centre | 2012–13 | 2013–14 | 2014–15 | 2015–16 | 2016–17 | Change from 2015–16 % |
|-----------------------|------------------|------------------|---------|---------|---------|-----------------------|
| Adelaide | 158 | 153 | 165 | 189 | 195 | 3 |
| Canberra | 148 | 104 | 120 | 135 | 135 | 0 |
| Darwin | | | 94 | | | |
| Melbourne | 103 | 99 | 99 | 106 | 106 | 0 |
| Perth | 130 | 117 | 96 | 108 | 103 | -5 |
| South East Queensland | 106 ^a | 104 ^b | 137 | 128 | 144 | 13 |
| Sydney | 153 | 151 | 147 | 136 | 133 | -2 |

Table notes

^a 2012–13 data for South East Queensland is based on data from Queensland Urban Utilities.

^b 2013–14 data for South East Queensland is based data from Queensland Urban Utilities, Gold Coast City Council, and Logan City Council.