7 Pricing

7 Pricing

7.1 P3, P6, P8 – Typical residential bill

Introduction

The typical bills presented in this section record the sum of fixed and variable water and sewerage charges for a customer using each utility's average residential water supplied (indicator W12). In many instances, prices are approved by a government regulator, after a review process into the efficiency and prudence of expenditure and demand forecasts, and appropriateness of proposed service standards.

Typical residential bills generally increase as the size of the utility decreases, due to a number of factors including economies of scale, sharing fixed costs and distance to transport water. The typical residential bill is also influenced by the mix of fixed and variable charges and level of water consumption. All utilities now have some form of two-part (i.e. fixed and variable) water charge with some also having a volumetric component on sewerage charges.

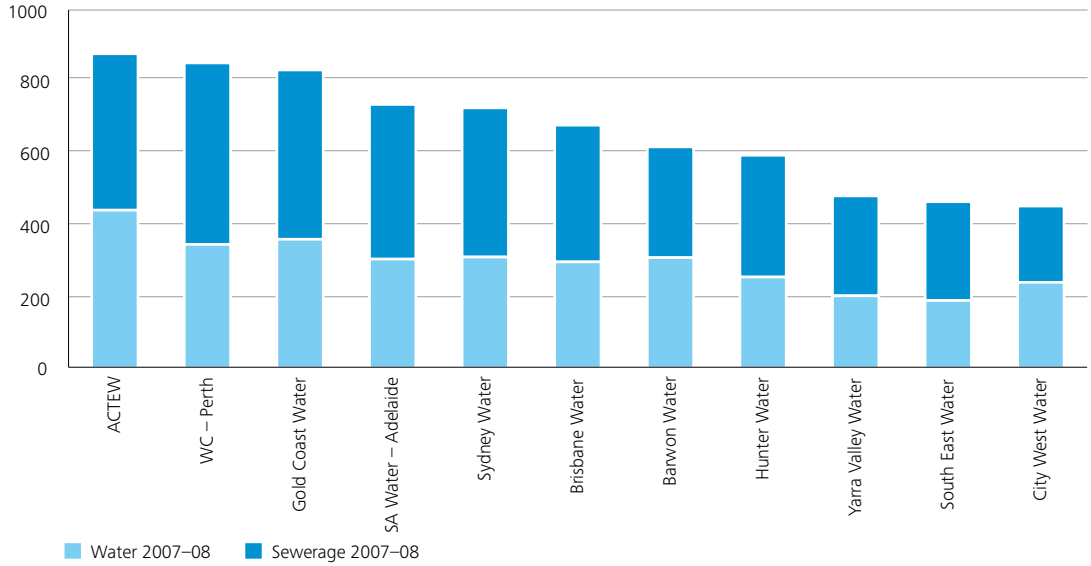
Table 7.1.1 Overview of results – P8 Typical residential bill (water & sewerage)

Size grouping	High	Average	Low
100,000+ connected properties	ACTEW 866	658	City West Water 446
50,000 to 100,000 connected properties	Ipswich Water 904	686	Goulburn Valley Water 512
20,000 to 50,000 connected properties	Coffs Harbour 1,028	772[1]	Lower Murray Water 547[1]
10,000 to 20,000 connected properties	Byron 1,051	871[2]	Ballina 699[2]

[1] Excludes Wagga Wagga (sewerage only) and Riverina Water (water only)
[2] Excludes WC – Bunbury and City of Kalgoorlie-Boulder (sewerage only) and Goldenfields Water (reticulation), WC – Kalgoorlie-Boulder, WC – Geraldton, Busselton and Aqwest-Bunbury (water only)

Results and analysis

Figure 7.1.1 – P3 Typical residential bill – water and P6 typical residential bill – sewerage
For utilities with 100,000+ connected properties



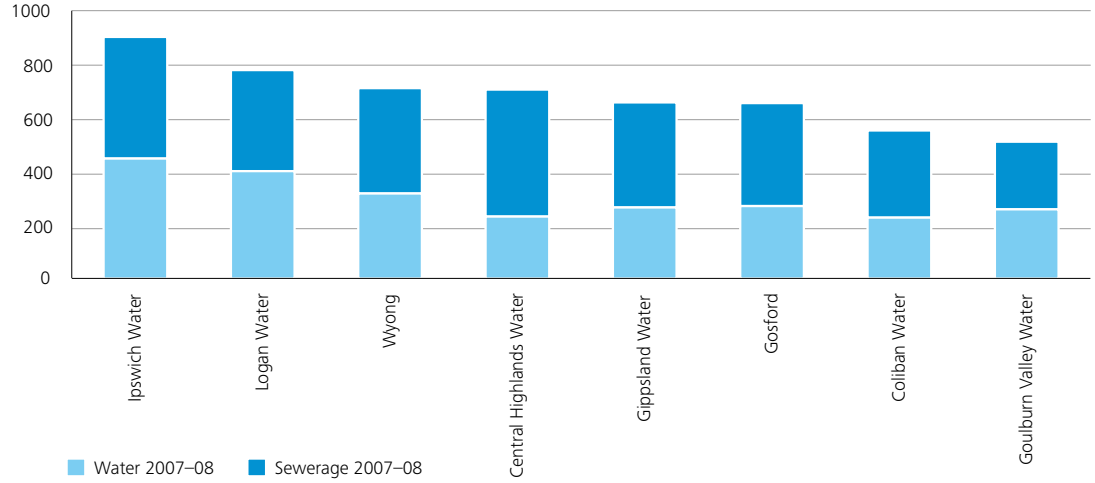
- The order of utilities (from highest to lowest) was similar to 2006–07, with the only change being ACTEW moving from third highest to highest.

- The three Melbourne retailers again had the three lowest residential bills. Yarra Valley Water, with the highest residential bill of the three Melbourne retailers, was still 20% below the next highest utility, Hunter Water. In the current metropolitan Melbourne price review, the retailers have proposed that annual bills will approximately double (in real terms) by the end of 2012–13.

- Half of the utilities experienced reductions in the typical residential bill, as falling water consumption (see the section on average annual residential water supplied) had an impact on the volumetric component of residential bills. ACTEW had the highest real increase at 11%, whilst Yarra Valley Water's typical residential bill decreased by 7%, despite prices increasing by 1.6%. This is due to a fall in water consumption.

- On average, residential bills in this size grouping are more weighted towards sewerage, with the average water component across utilities being $291 compared with the average sewerage component of $367. Only City West Water had a relatively higher water component (53%), whilst for the majority of utilities the water component was between 40% and 44%.

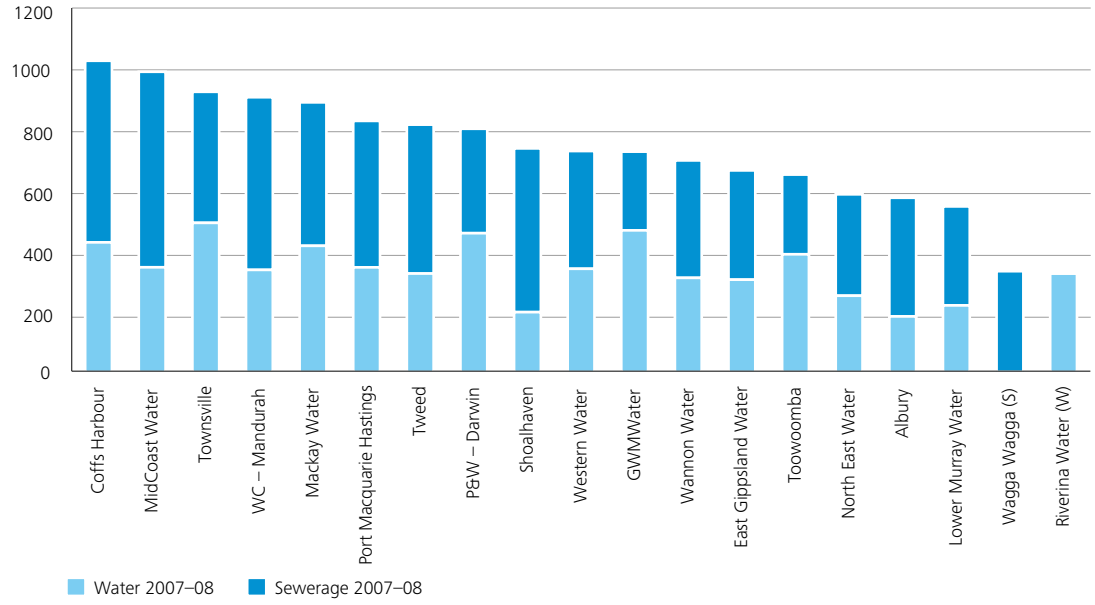
Figure 7.1.2 – P3 Typical residential bill – water and P6 typical residential bill – sewerage
For utilities with between 50,000 and 100,000 connected properties



- Despite decreases in the amount of water supplied to residential properties (except Wyong, which increased by 5%), typical residential bills were mostly higher (in real terms) in 2007–08 than in 2006–07. Increases ranged between 1% and 7%, whilst Goulburn Valley Water recorded a real reduction of 3%.

- On average, annual residential bills in this size grouping are more weighted towards sewerage, with the average water component across utilities being $303 compared with the average sewerage component of $382. The water component of several utilities' annual bills was around 40% of total, whilst for Central Highlands Water, it was just 33%. This was influenced by Central Highlands Water's low average residential water supplied, which at 127 kL per customer per annum is one of the lowest in the country.

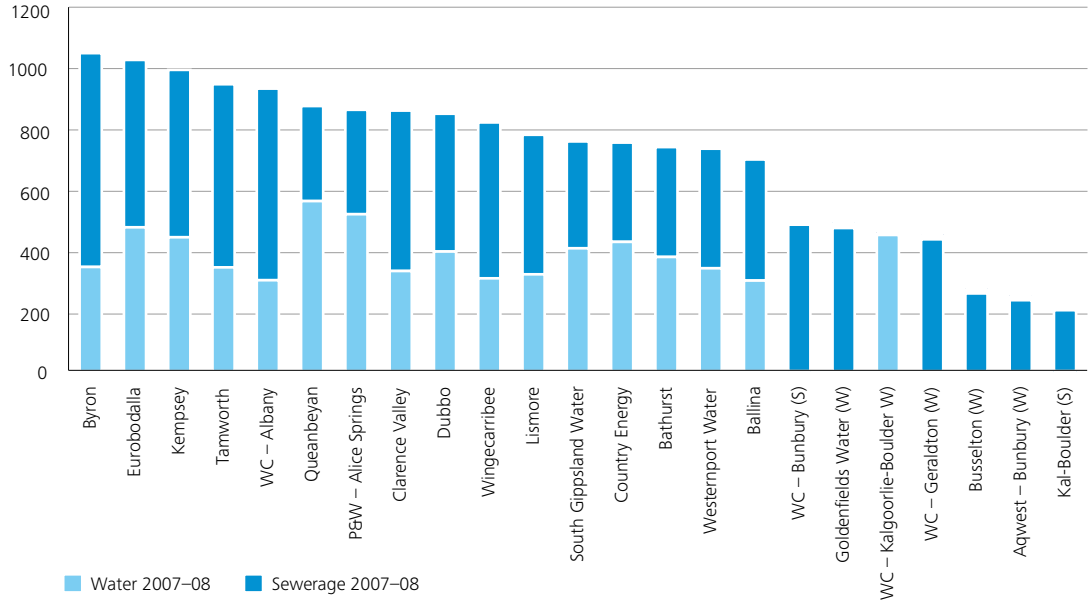
Figure 7.1.3 – P3 Typical residential bill – water and P6 typical residential bill – sewerage
For utilities with between 20,000 and 50,000 connected properties



- Of the 15 utilities that can be compared with the 2006–07 report, four reported zero change (in real terms) in typical residential bills, five reported increases in real annual bills of between 1% and 8% and six reported real decreases of between 2% and 16%. Lower Murray Water recorded a 16% fall, influenced by a 38% reduction in the average volume of residential water supplied.

- Only four out of 17 utilities that provide water and sewerage services had annual bills with a water component of 50% or more. Two of these utilities reported that water was responsible for 60% or more of their bills—GWMWater (64%) and Toowoomba (60%).

Figure 7.1.4 – P3 Typical residential bill – water and P6 typical residential bill – sewerage
For utilities with between 10,000 and 20,000 connected properties



- Of the 16 utilities providing water and sewerage services, 11 had real increases in typical residential bills, ranging from 1% (South Gippsland Water) to 9% (Clarence Valley). Lismore's annual bill did not change in real terms and the remaining six utilities had real annual bill decreases of between 1% (Water Corporation – Albany) and 10% (Dubbo).

- The majority of the annual bill incurred by connected properties in this size grouping, like the others, is related to sewerage services. Of the utilities providing both services, the average water component is $386 compared with $469 for sewerage.

- Five out of 16 utilities providing water and sewerage services had higher water components than sewerage. Of these, Queanbeyan (64% water) and Power and Water Corporation (Alice Springs) (60%) had total bills comprising 60% water or higher. Queanbeyan has a relatively high fixed water service charge ($254), which contributed to its result.

8 Environment

8 Environment

8.1 E12 – Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)

Introduction

This indicator reports the contribution of the utility's operations to greenhouse gas emissions. Utilities' calculations are required to have reference to the *National Greenhouse Accounts* (NGA) Factors, published by the Commonwealth Department of Climate Change in January 2008. Greenhouse emissions are reported in net terms, that is, they deduct any carbon sequestration volumes through activities such as the purchase of carbon offsets.

The NGA outline three distinct types of emissions factors which may need to be calculated to estimate the full greenhouse impact of an organisation's activities. The three factors are:

- Direct emission factors (scope 1), which calculate the kilograms of carbon dioxide equivalent emitted per unit of activity, at the point of emission release.
- Indirect emission factors (scope 2), which calculate the greenhouse impact of purchasing and consuming electricity (i.e. the impact of burning fuels such as coal or gas at the power station).
- Various emission factors (scope 3), which include the impact of various activities such as disposal of waste, employee business travel, transportation of products, etc.

Comparing different utilities' net greenhouse gas emissions is a difficult exercise and should be undertaken with caution due to the number of variables impacting greenhouse emissions. These include the source of water, gravity versus pumped networks, geographic conditions (which influences the need for pumping), the extent of large customers and industry within a customer base, the prevailing greenhouse policy in the respective jurisdictions, and the method of calculation. A feature of the results is that there is significant variation between utilities' reported net greenhouse gas emissions. Further, many utilities have only been reporting this indicator for the last few years (since the National Performance Report began), so it is difficult to comment on emerging trends.

For these reasons, no commentary is provided on the comparison between utilities. Commentary is focused on year-to-year movements reported by a utility, or in cases where known factors contribute to greenhouse emissions, these are noted.

Table 8.1.1 – Overview of results – E12 Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)

Size grouping	High	Average	Low
100,000+ connected properties	SA Water – Adelaide 994	325	City West Water[1] 10
50,000 to 100,000 connected properties	Gippsland Water 1,280	579	Cairns Water 251
20,000 to 50,000 connected properties	Wannon Water 927	472	WC – Mandurah 205
10,000 to 20,000 connected properties	SA Water – Whyalla 4,696	955	Queanbeyan 204

[1] The Melbourne water retailers have relatively low greenhouse gas emissions due to Melbourne Water carrying out a range of functions that other utilities undertake themselves. Melbourne Water's net greenhouse gas emissions were 175 tonnes per 1,000 properties.

Results and analysis

Table 8.1.2 – E12 Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)
For utilities with 100,000+ connected properties

Utility	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
ACTEW	279	223	220	220	287	357
Barwon Water			454	450	457	414
Brisbane Water						333
City West Water			24	26	21	10
Gold Coast Water	406	459	425	328	369	380
Hunter Water	396	393	390	362	371	333
Melbourne Water	314	337	257	216	167	175
SA Water – Adelaide	925	581	573	533	845	994
South East Water	60	58	54	55	47	43
Sydney Water						240
Water Corporation – Perth					433	584
Yarra Valley Water	38	39	40	23	22	38

Note: Although Melbourne Water is a bulk utility, it has been included in the above table because its emissions are largely driven by the services it provides to City West Water, South East Water and Yarra Valley Water. It has been calculated by taking Melbourne Water's total tonnes of net greenhouse gas emissions, divided by the total number of connected properties serviced by the three Melbourne retailers.

- SA Water's emissions have almost doubled over the last two years, which is influenced by increased pumping from the River Murray due to drier conditions.
- Water Corporation purchases renewable energy for the purposes of operating the Perth Seawater Desalination Plant, and therefore emissions from the plant are not a factor in Water Corporation's net greenhouse emissions as reported in Table 8.1.2.

Table 8.1.3 – E12 Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)
For utilities with between 50,000 and 100,000 connected properties

Utility	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Cairns Water					240	251
Central Highlands Water			956	893	803	449
Coliban Water			258	644	481	688
Gippsland Water	634	823	824	813	1,245	1,280
Gosford	402	367	372	432	386	380
Goulburn Valley Water	1,400	1,224	1,226	895	694	565
Logan Water					455	440

- Gippsland Water is located in Victoria's Latrobe Valley, which is home to a number of large industrial customers that require large volumes of water to be delivered. The emissions involved in delivering this water, as a proportion of Gippsland Water's otherwise relatively small customer base, influences its greenhouse gas emissions per 1,000 properties.

Table 8.1.4 – E12 Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)
For utilities with between 20,000 and 50,000 connected properties

Utility	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Albury				975	401	282
East Gippsland Water				429	396	392
GWMWater				492	530	486
Lower Murray Water				1,100	1,088	727
MidCoast Water					324	321
North East Water				781	742	561
Power and Water – Darwin						509
Shoalhaven					394	389
Tweed					408	375
Wannon Water				678	1,056	927
WC – Mandurah					183	205
Western Water			675	505	518	490

- Most utilities in this size grouping that have reported for more than one year are showing a general trend of declining greenhouse gas emissions.

- Lower Murray Water's reduction in net greenhouse gas emissions is due to the purchase of carbon offsets, reduced water allocations and water restrictions, which reduced the electricity required to pump water.[33]

Table 8.1.5 – E12 Total net greenhouse gas emissions (net tonnes CO_2-equivalents) (per 1,000 properties)
For utilities with between 10,000 and 20,000 connected properties

Utility	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Kalgoorlie-Boulder (S)					454	388
Dubbo					722	722
Eurobodalla					347	346
Kempsey					344	340
Orange					521	505
P&W – Alice Springs						831
Queanbeyan					210	204
SA Water – Mount Gambier						499
SA Water – Whyalla						4,696
South Gippsland Water				285	530	394
Water Corporation – Albany					693	724
WC – Kalgoorlie-Boulder (W)					2,578	2,429
Westernport Water				356	327	341

- Similar to Gippsland Water in the previous size grouping, SA Water (Whyalla) has a large industrial customer base with high water demand, and the emissions generated by delivering this water are spread across a relatively small total customer base, resulting in a high emissions volume per property.

- There are limited prior years available, making it difficult to comment on trends between years. For this reason, no other commentary has been prepared for this size grouping.

[33] Lower Murray Water 2008, Annual Report 2007/08 (Lower Murray 2008), p.29

8.2 E13 – Sewer overflows to the environment (per 100 km of sewer main)

Introduction

A sewer overflow occurs when untreated sewage discharges from the sewerage system under a water utility's control, to the external environment. Sewer overflows tend to be higher during times of severe storms and wet weather. The condition of the sewerage assets (see sewer main breaks and chokes) is also a factor in the number of sewer overflows experienced.

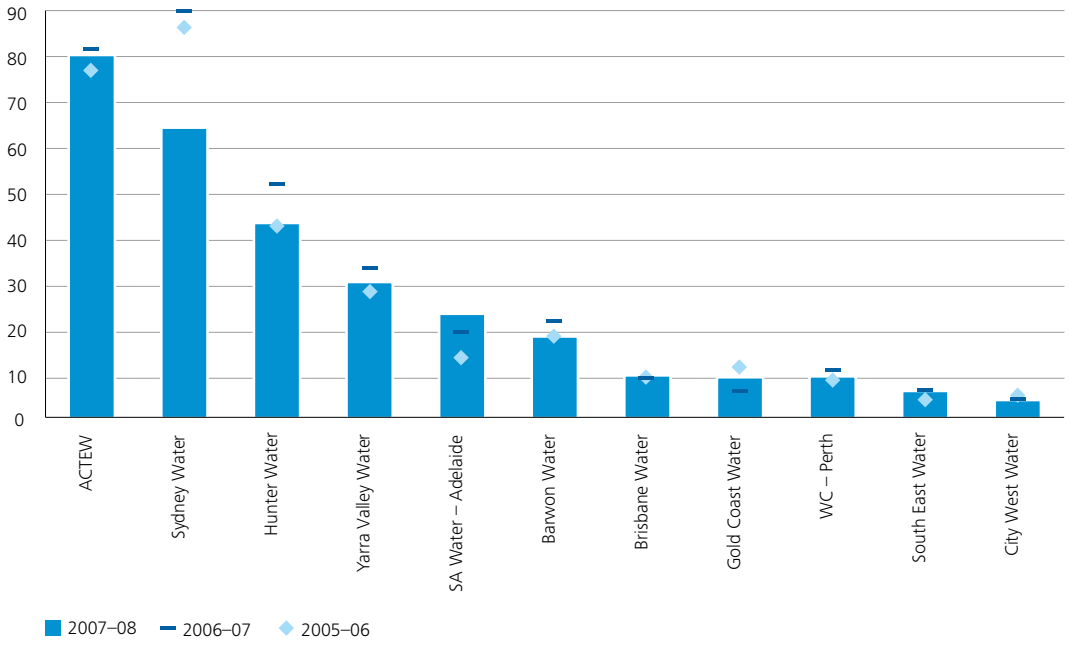
Table 8.2.1 – Overview of results – E13 Sewer overflows to the environment (per 100 km of sewer main)

Size grouping	High	Average	Low
100,000+ connected properties	ACTEW 80	27	City West Water 4
50,000 to 100,000 connected properties	Gosford 35	16	Goulburn Valley Water 4
20,000 to 50,000 connected properties	Wagga Wagga (S) 37	10	North East Water, Port Macquarie Hastings 1
10,000 to 20,000 connected properties	Bathurst 40	12	P&W – Alice Springs 2

Results and analysis

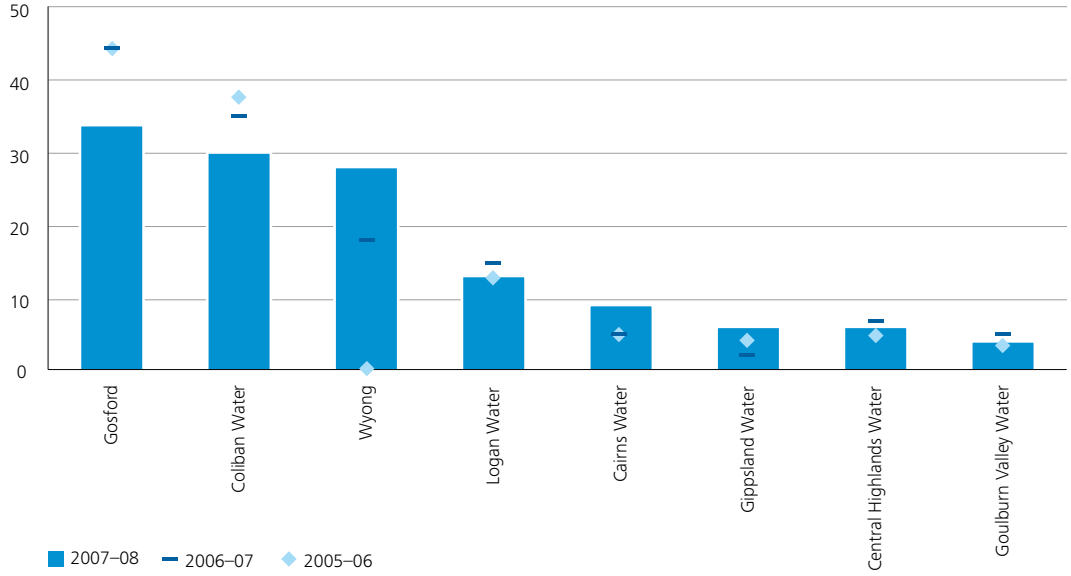
Figure 8.2.1 – E13 Sewer overflows to the environment (per 100 km of sewer main)

For utilities with 100,000+ connected properties



- In general, most utilities' performance relative to the other utilities remained the same as 2006–07. There was also a general correlation between sewer overflows and sewer main breaks and chokes (indicator A12), although City West Water recorded relatively lower sewer main breaks than sewer overflows whilst Gold Coast Water recorded relatively higher.
- Sydney Water's number of overflows fell 29% in 2007–08, which as noted in section 5.2, may have been influenced by its 'SewerFix' program.
- ACTEW reported 25% more sewer overflows than Sydney Water, the next highest utility, and has not recorded major changes in performance over the last three years. ACTEW's performance mirrors its relatively higher number of sewer main breaks and chokes.

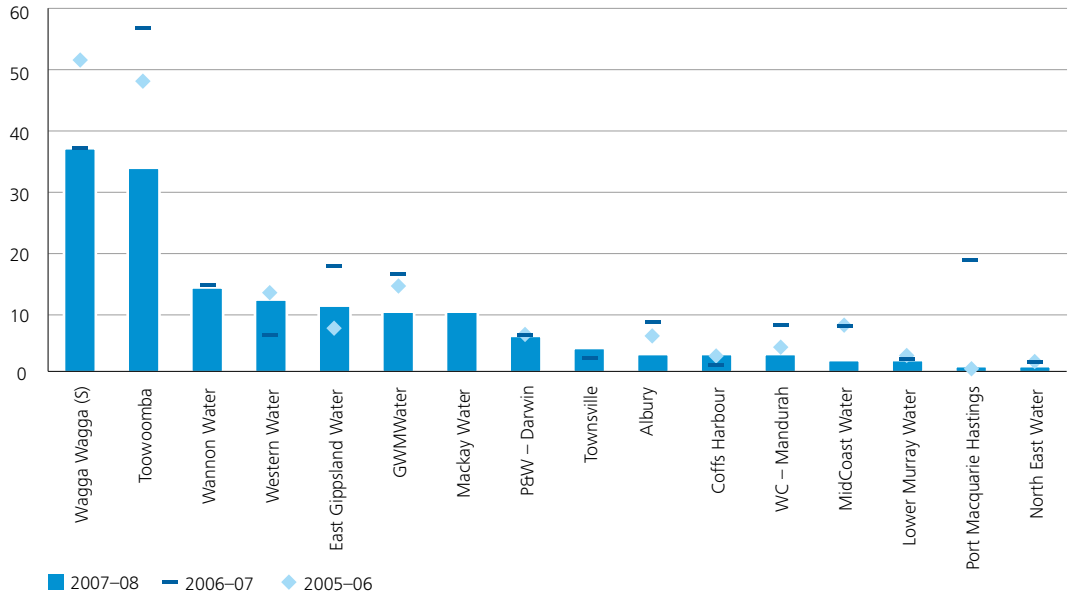
Figure 8.2.2 – E13 Sewer overflows to the environment (per 100 km of sewer main)
For utilities with between 50,000 and 100,000 connected properties



- Although Gosford and Coliban Water recorded the highest and second highest number of sewer overflows for the third consecutive year, both utilities recorded lower overflows in 2007–08, with Gosford declining 20% and Coliban Water declining 14% (see section 5.2 for further discussion).

- Goulburn Valley Water has recorded the lowest or second lowest number of sewer overflows in the past three years and in 2007–08 reduced its number of sewer overflows by 20% compared with 2006–07.

Figure 8.2.3 – E13 Sewer overflows to the environment (per 100 km of sewer main)
For utilities with between 20,000 and 50,000 connected properties

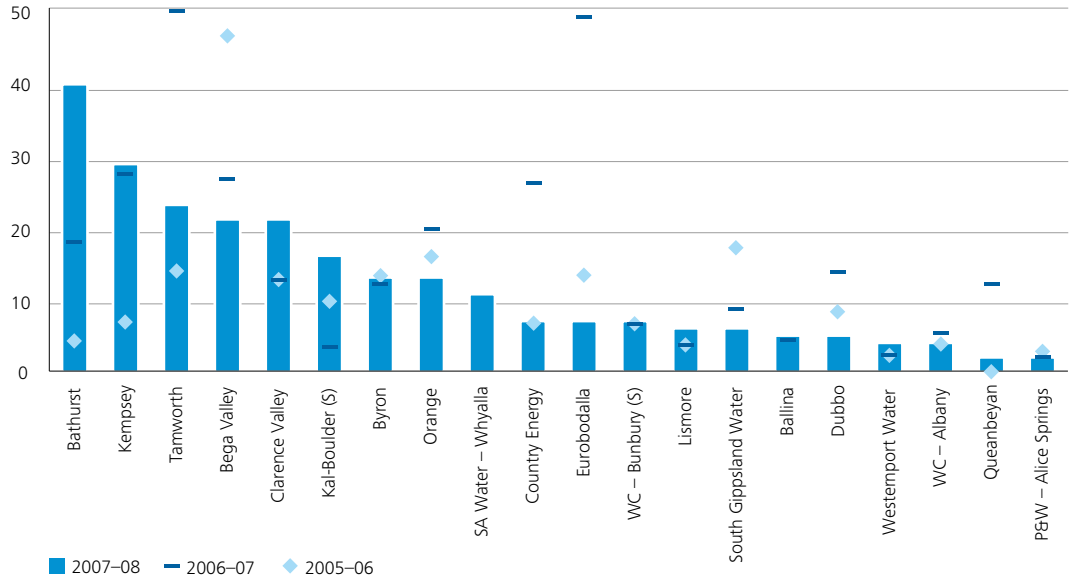


- Wagga Wagga and Toowoomba both reported a significantly higher number of sewer overflows compared with other utilities in the size grouping, although Toowoomba significantly reduced overflows compared with 2006–07. Toowoomba's sewer overflows are attributable to a combination of reticulation age, a high proportion of vitrified clay (VC) sewers and a heavily treed urban landscape.

- Although Albury recorded the highest number of sewer main breaks and chokes in the size grouping (indicator A12), it was in the lower half of utilities recording sewer overflows and experienced a 63% reduction in overflows compared with 2006–07.

- Port Macquarie-Hastings recorded a significant reduction in the number of sewer overflows in 2007–08 compared with 2006–07, with overflows falling by more than 90%.

Figure 8.2.4 – E13 Sewer overflows to the environment (per 100 km of sewer main)
For utilities with between 10,000 and 20,000 connected properties



- There is a large degree of variation within this size grouping, both between utilities, but also within the same utility when comparing year-on-year performance. Of the 19 utilities that reported on this indicator in both 2007–08 and 2006–07, ten recorded results in 2007–08 that were +/- 50% or more different from 2006–07. Only six utilities were within 20% of their 2006–07 number of overflows (and only three within 10%).

Bulk utilities

- Melbourne Water was the only bulk utility to report this indicator, reporting two overflows per 100 km of main in 2007–08 (compared with zero in 2006–07 and two in 2005–06).

9 Health

9 Health

9.1 H3 – Per cent of population where microbiological compliance was achieved

Introduction

This indicator reports the percentage of population serviced by the utility where microbiological compliance was achieved. Compliance is assessed against the Australian Drinking Water Guidelines (2004) or licence conditions imposed on the utility. Typically, utilities record very high and often 100% compliance, but occasionally there are unforseen events that result in lower compliance. The cause of non-compliance is not always traceable.

Since the majority of utilities (82%) reported 100% compliance, a table with the overview of results has not been prepared.

Results and analysis

Utility	2005–06	2006–07	2007–08
ACTEW	100.0	100.0	100.0
Barwon Water	99.8	100.0	100.0
Brisbane Water	100.0	100.0	100.0
City West Water	100.0	100.0	100.0
Gold Coast Water	100.0	100.0	96.6
Hunter Water	99.6	99.8	100.0
SA Water – Adelaide	100.0	100.0	100.0
South East Water	100.0	100.0	100.0
Sydney Water	100.0	100.0	100.0
WC – Perth	100.0	100.0	100.0
Yarra Valley Water	100.0	99.7	100.0

- All utilities recorded 100% compliance in 2007–08 except Gold Coast Water.
- The two utilities that recorded close to, but not exactly 100% compliance in 2006–07, both increased compliance to 100% in 2007–08.

Table 9.1.2 – H3 Per cent of population where microbiological compliance was achieved
For utilities with between 50,000 and 100,000 connected properties

Utility	2005–06	2006–07	2007–08
Central Highlands Water	98.0	100.0	100.0
Coliban Water	100.0	100.0	99.9
Gippsland Water	100.0	100.0	100.0
Gosford	100.0	100.0	100.0
Goulburn Valley Water	100.0	100.0	100.0
Ipswich Water			100.0
Logan Water	100.0	100.0	100.0
Wyong	100.0	100.0	100.0

- All utilities recorded 100% compliance in 2007–08 except Coliban Water, which was due to two non-compliant tests, which were investigated, but no cause identified.[34]

[34] Coliban 2008a, p.30

Table 9.1.3 – H3 Per cent of population where microbiological compliance was achieved
For utilities with between 20,000 and 50,000 connected properties

Utility	2005–06	2006–07	2007–08
Albury	100.0	100.0	75.0
Coffs Harbour	100.0	100.0	100.0
East Gippsland Water	100.0	95.0	100.0
GWMWater	98.9	100.0	100.0
Lower Murray Water	98.9	100.0	100.0
Mackay Water			99.0
MidCoast Water	100.0	100.0	91.0
North East Water	93.2	97.0	98.5
Power and Water – Darwin	100.0	100.0	100.0
Port Macquarie Hastings	100.0	100.0	97.0
Riverina Water (W)		99.0	98.8
Shoalhaven	100.0	100.0	100.0
Townsville		100.0	100.0
Tweed		98.0	100.0
Wannon Water		99.8	100.0
Water Corporation – Mandurah	100.0	100.0	100.0
Western Water	100.0	100.0	100.0

- Albury failed to comply with the required microbiological water quality for 25% of its population, resulting in boil water alerts in May 2008 for the suburb of Lavington. This failure is believed to be caused by bird droppings in reservoirs servicing the Lavington zone, accompanied by low alkalinity and extended reservoir turnover time due to water restrictions. Albury has addressed this matter with improved reservoir maintenance and improved monitoring of water quality. Albury is preparing a Drinking Water Quality Management Plan and is also examining the need for upgrading of its water treatment processes.

- Utilities in this size grouping generally achieved 100% compliance or close to 100%. Aside from Albury, only MidCoast Water had a material reduction in compliance, falling from 100% to 91%. MidCoast Water reported in December 2007 that high *e. coli* readings were detected at Bulahdelah on 27 November 2007 due to an electrical fault at the raw water pumping station.

- Utilities that recorded less than 100% compliance in 2006–07 all improved in 2007–08, (except Riverina Water, which was approximately the same) with the majority achieving 100%.

Table 9.1.4 – H3 Per cent of population where microbiological compliance was achieved
For utilities with between 10,000 and 20,000 connected properties

Utility	2005–06	2006–07	2007–08
Aqwest-Bunbury (W)		100.0	100.0
Ballina	100.0	100.0	100.0
Bathurst	100.0	99.0	100.0
Bega Valley	100.0	100.0	100.0
Busselton (W)	100.0	100.0	100.0
Byron	100.0	100.0	100.0
Clarence Valley			98.0
Country Energy	100.0	100.0	100.0
Dubbo	100.0	99.0	100.0
Goldenfields Water (W)	100.0	100.0	100.0
Kempsey	100.0	99.0	100.0
Lismore		97.0	100.0
Orange	100.0	100.0	100.0
Power and Water – Alice Springs	100.0	100.0	100.0
Queanbeyan	100.0	100.0	100.0
SA Water – Mount Gambier	100.0	100.0	100.0
SA Water – Whyalla	100.0	100.0	100.0
South Gippsland Water	100.0	100.0	100.0
Tamworth	95.1	100.0	98.0
Water Corporation – Albany	100.0	100.0	100.0
Water Corporation – Geraldton (W)	100.0	100.0	100.0
Water Corporation – Kalgoorlie-Boulder (W)	100.0	100.0	100.0
Westernport Water		100.0	99.8
Wingecarribee	100.0	100.0	100.0

- Only three utilities did not achieve 100% compliance in 2007–08, and no utilities recorded less than 98% compliance.
- Utilities that recorded compliance close to, but not quite 100% in 2006–07 achieved 100% compliance in 2007–08.

Bulk utilities

- Four bulk utilities reported on this indicator. Fish River Water, Hobart Water and Rous Water all recorded 100% compliance, whilst Goldenfields Water recorded 95% compliance.