ESSENTIAL SERVICES COMMISSION

Water performance report 2016-17

Performance of Victorian urban water and sewerage businesses

1 March 2018

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What we found in 2016-17

Victoria's 16 urban water businesses operate across a diverse range of geographic, environmental and social conditions. In this report, we examine the 2016-17 performance of the Victorian urban water sector, both as a whole and as individual businesses. We compare the businesses with each other, and against their own previous performance.

In 2016-17, a typical Victorian residential water customer:

- **Received high quality drinking water.** Almost all Victorian customers received water that was fully compliant with safe drinking water regulations.
- **Used less water.** Average household use was down 6 per cent from 2015-16 due to higher rainfall this year, which also reduced the demand for recycled water.
- **Received lower bills.** A typical bill for owner occupiers fell 3 per cent, with the variable component reflecting the lower average water usage. Meanwhile a typical bill for tenants fell 6 per cent – tenants don't pay the fixed component, so their bill fully reflects the lower usage.
- **Received consistent service levels.** Water and sewer network reliability was similar to prior years. The small increase in average time without water supply was due mainly to planned works, which are communicated to customers in advance. The above average rainfall entering the sewer network resulted in more minor sewer spills.
- **Received support if experiencing payment difficulties.** Customers continued to access a range of support programs offered by the water businesses and the government.

Overall, we consider Victoria's 2.7 million customers continue to receive good service from their water businesses, even though there is considerable variation in performance across the various indicators owing to the diverse operational conditions across the state. The better performers across a number of key areas were East Gippsland Water, Goulburn Valley Water and South East Water.

Have your say on future prices and services

Right now, the water businesses are looking to the future. We are currently reviewing price submissions from 17 water businesses, which set out the services and prices they propose to deliver from 1 July 2018.

Most businesses have proposed flat or lower prices while maintaining or improving customer service levels, representing a genuine improvement in customer value. This follows their extensive engagement to understand what their customers value most, and to shape their proposals towards delivering these priority customer outcomes.

Future performance reporting by Victoria's water businesses will align with delivery of these outcomes, and our annual comparative performance report will evolve to reflect this new customer-centric approach.

Read more about the 17 water businesses' price proposals, our review timeline and our stakeholder submission process at www.esc.vic.gov.au/waterpricereview.

Read all of our 2016–17 water performance resources

Find all of our 2016-17 performance information at www.esc.vic.gov.au/water/annual-performance-reports, including:

- this report comparing the performance of the 16 urban water businesses
- a supplement discussing how water businesses are tracking on major project delivery
- water business profiles that provide a snapshot of each business's performance
- a summary of the data behind our tables and charts in this report.

Contents

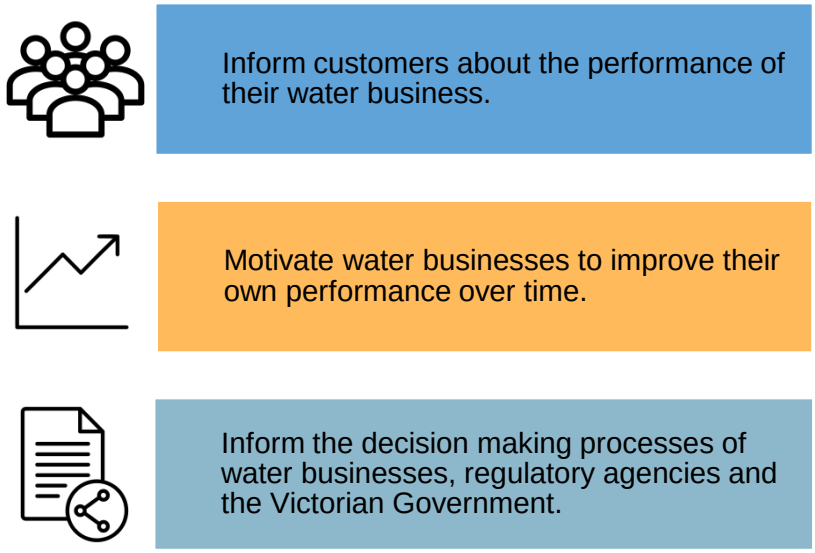
1. Why we do this

1.1. Who we are

The Essential Services Commission is the economic regulator of the Victorian water sector. One of our regulatory function is to monitor and to report publicly on the performance of the Victorian Government-owned water businesses.[1]

This report covers the key performance indicators for the 16 Victorian urban water businesses for the 2016-17 financial year, and excludes the rural water businesses.[2]

Figure 1.1 Importance of performance reporting



We are responsible for regulating service standards and conditions of supply, see Figure 1.2. However, we do not regulate or drive performance in the areas of water conservation, the environment and water quality, although some of these areas are covered in our report.

The Environment Protection Authority Victoria (EPA) is responsible for regulating environmental standards. The Department of Environment, Land, Water and Planning is responsible for water conservation measures, and the Department of Health and Human Services is responsible for drinking water quality standards.

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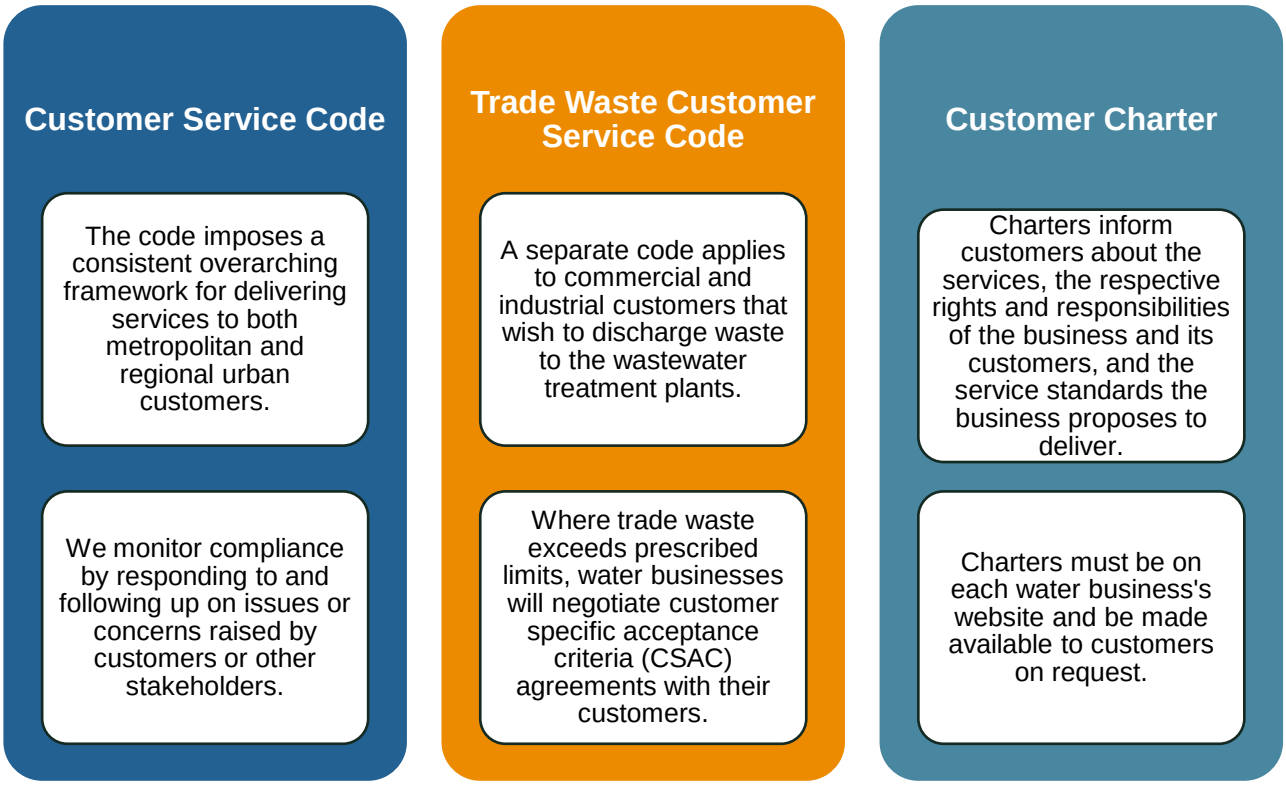
[1] Clause 18 of the *Water Industry Regulatory Order* (WIRO) 2014

[2] As well as excluding the rural activities of GWMWater and Lower Murray Water, which provide both urban and rural services.

Figure 1.2 How we regulate service standards



The codes are available on our website (www.esc.vic.gov.au/water-codes-and-guidelines/).

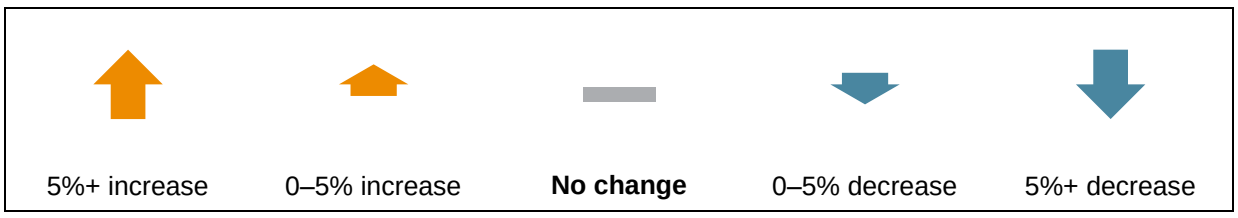
1.2. Our data

This report is based on two principal sources of information:

- Performance data reported by the businesses against key performance indicators specified by us, and comments from the businesses explaining their performance.
- The findings of regulatory audits on the reliability of the performance indicator data reported by the businesses. Where data has not passed the audit requirements, it has been excluded from this report or qualified in our discussion.

We use snapshots alongside some indicators to highlight changes made at metropolitan Melbourne and regional Victoria level, and the state-wide trends. Depending on the indicator, an increase could be an improvement or deterioration in performance.

Figure 1.3 Snapshot (key to symbols)

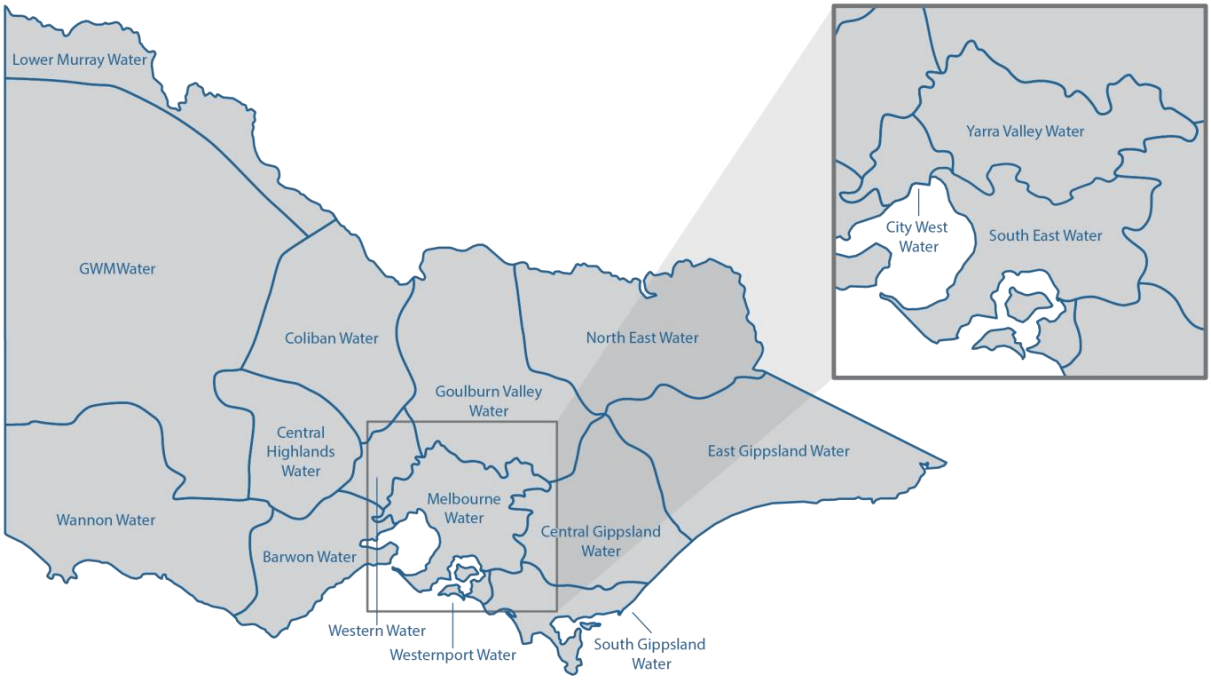


2. The Victorian water industry

There are 19 water businesses in Victoria, each with a clearly defined geographic region for servicing customers. As a result, the businesses do not compete directly for each other's customers, unlike the gas or electricity retailers. The water businesses are diverse in terms of size, the services they provide and the environments in which they operate. Figure 2.1 shows the urban water business boundaries.

All 19 businesses are owned by the Victorian Government. Note that this report does not cover the rural water businesses or the rural activities of GWMWater and Lower Murray Water.

Figure 2.1 Victorian urban water businesses

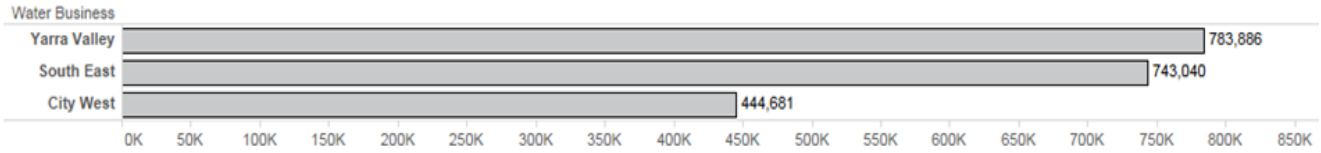


2.1. Melbourne's urban water businesses

Three metropolitan retailers (City West Water, South East Water and Yarra Valley Water) and one bulk water company (Melbourne Water) service the Melbourne area. These metropolitan water businesses together service 74 per cent of the 2.7 million customers in Victoria.

Figure 2.2 Number of water customers in metropolitan Melbourne

Residential and non-residential



The three metropolitan retailers handle:

- distribution of water and sewerage services
- meter reading, billing and customer service
- some sewage collection and treatment
- billing metropolitan customers for drainage services on behalf of Melbourne Water, and the parks charge on behalf of the Minister for Water
- trade waste services to commercial and industrial customers.

Melbourne Water does not provide services direct to customers. Instead it provides:

- bulk (wholesale) water and sewage treatment services for the three metropolitan retailers and a number of regional businesses
- drainage services, as well as managing rivers and lakes throughout Melbourne.

2.2. Regional urban water businesses

Thirteen water businesses provide water and sewerage services to urban customers throughout regional Victoria, including:

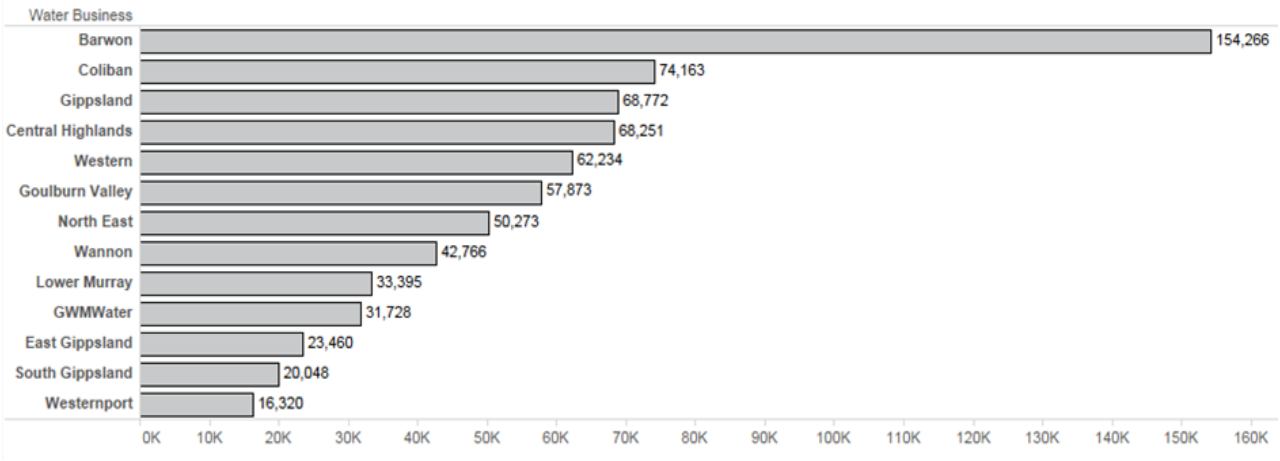
- harvesting bulk water
- treating and delivering water for human use
- treating and disposing of sewage
- meter reading, billing and customer service
- trade waste services for a relatively small number of industrial customers.

Each business is responsible for serving a number of supply areas (regional cities or towns), often across a number of catchments. This often requires a business to use a number of discrete water supply systems.

The regional water businesses serve 26 per cent of the 2.7 million customers in Victoria.

Figure 2.3 Number of water customers in regional Victoria

Residential and non-residential



3. How much are households using and paying for water?

This chapter looks at the average water use of households and typical bills at the average usage level across Victoria.

We also discuss how customers are paying their bills. Government support and water business assistance programs are available where customers are experiencing payment difficulties. If bills remain unpaid, customers may face water supply restrictions or legal action.

3.1. 2016-17 at a glance

Household water use reduced by 6 per cent because above average rainfall reduced the demand for water.

Typical bills for owner occupiers fell 3 per cent due to a fall in the variable component from lower water use.

Typical bills for tenants fell 6 per cent, consistent with the lower water use and tenants only paying the variable charges.

Across the state, 28 per cent of customers received concessions for their bills, similar to last year.

Customers continued to receive grant assistance from the Victorian Government to help with one-off bill payments.

Water businesses awarded slightly fewer hardship grants to customers, but increased the value of their grants compared to 2015-16.

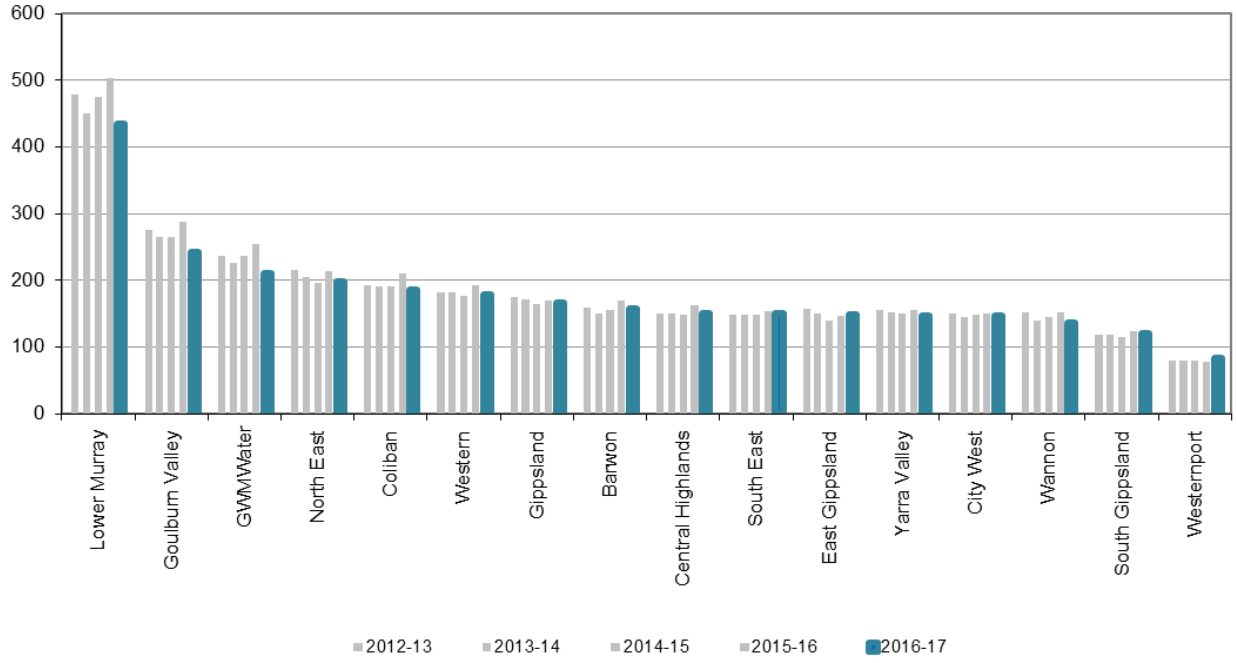
Fewer customers faced water supply restrictions or legal actions for non-payment of bills than in 2015-16.

3.2. Average household water use

Water use varies around the state due to different climates, household demographics, property sizes, and any water restrictions that may be in place.

Figure 3.1 Average household use

Kilolitres per household



Snapshot (average household water use, kilolitres)

State-wide average		-5.6%	Metro average		-3.7%	Regional average		-9.6%
2016-17	157		2016-17	148		2016-17	183	
2015-16	167		2015-16	154		2015-16	202	

Key observations

- The weighted average annual household water use decreased by 5.6 per cent to 157 kilolitres in 2016-17.[3] The decrease was greater for regional Victoria than for metropolitan Melbourne.
- In regional Victoria, Lower Murray Water, Goulburn Valley Water and GWMWater recorded their lowest average water usage since 2011-12. They attributed their decreases of 14 to 18 per cent to the above average rainfall for 2016-17, which reduced the water demand from customers.

[3] A weighted average reflects the size of each water business and its relative contribution to the overall average.

- East Gippsland Water and Westernport Water were the only two water businesses to record an increase in household water use.
- The state's lowest average annual water use of 143 kilolitres was recorded in 2010-11 at the end of the millennium drought.

3.3. Typical household bills

Household bills across Victoria vary due to: the cost to service different regions, sources of water, historical decisions about tariff structures and the average volume of water used.

Bills are a combination of how much water is used, prices for fixed- and variable-rate charges, and other charges. Owner occupier households pay both fixed and variable charges for their bills. Landlords pay the fixed charges for their property and the tenants only pay the variable charges. Only metropolitan Melbourne households have a variable sewerage charge.

Some water businesses applied a rebate to residential bills from 2014 to 2017. For many water users, this rebate was shown as an annual credit on their water bills.[4]

How typical bills are calculated

Typical household bills shown for each year are in that year's dollars (that is, they are not adjusted for inflation). We use each business's average household usage (Figure 3.1) to calculate an indicative household bill for water and sewerage services. This includes both the fixed and variable water and sewerage charges, and any applicable rebate.

We have excluded the metropolitan drainage charges for Melbourne Water and the metropolitan parks charges set by the Minister for Water.

For regional businesses with multiple pricing zones, we used the prices in the largest town to calculate each business's typical household bill.

Figures 3.2 to 3.4 show typical bills for owner occupiers and Figures 3.5 to 3.7 show typical bills for tenants.

[4] These rebates will end in 2017-18. The efficiency savings made by businesses to fund the rebates are proposed to be captured in lower prices from 1 July 2018, as noted on page ii.

Want more information?

We have an interactive bill estimator available at www.esc.vic.gov.au/water/prices/water-bill-calculator/, where an indicative bill can be calculated for any annual water usage, and compared across all water businesses.

Our website also explains some key terms for understanding bills, and describes how we regulate prices, visit www.esc.vic.gov.au/water/prices/.

Figure 3.2 Typical household bills – metropolitan owner occupiers

$, including inflation

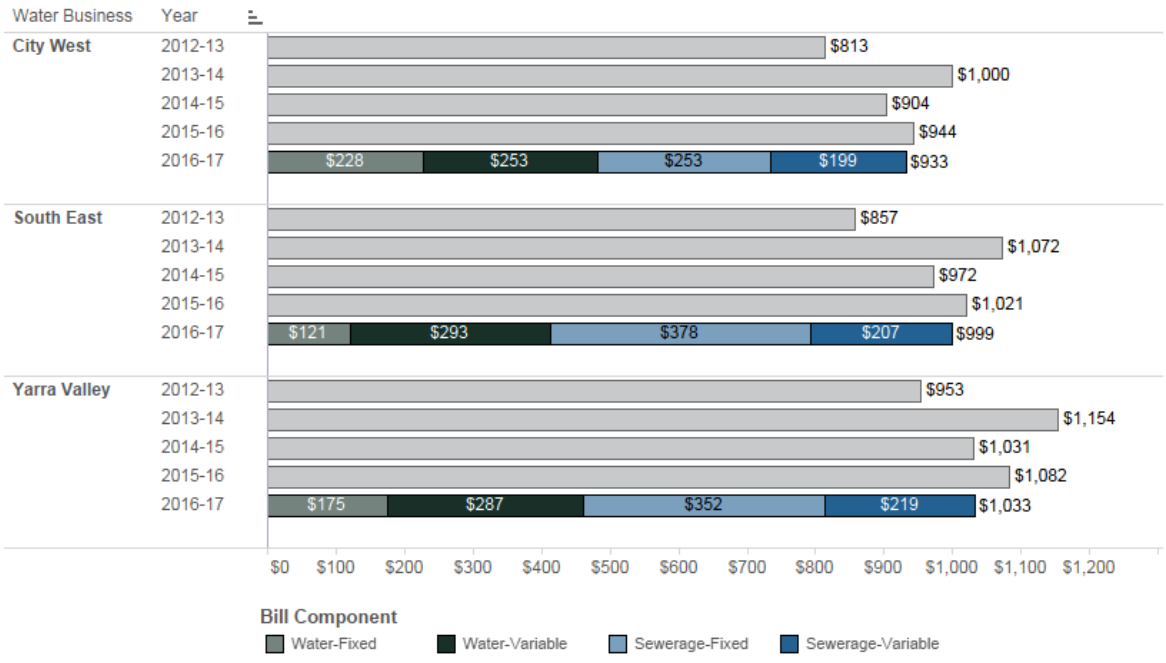


Figure 3.3 Typical household bills – regional owner occupiers, part I

$, including inflation

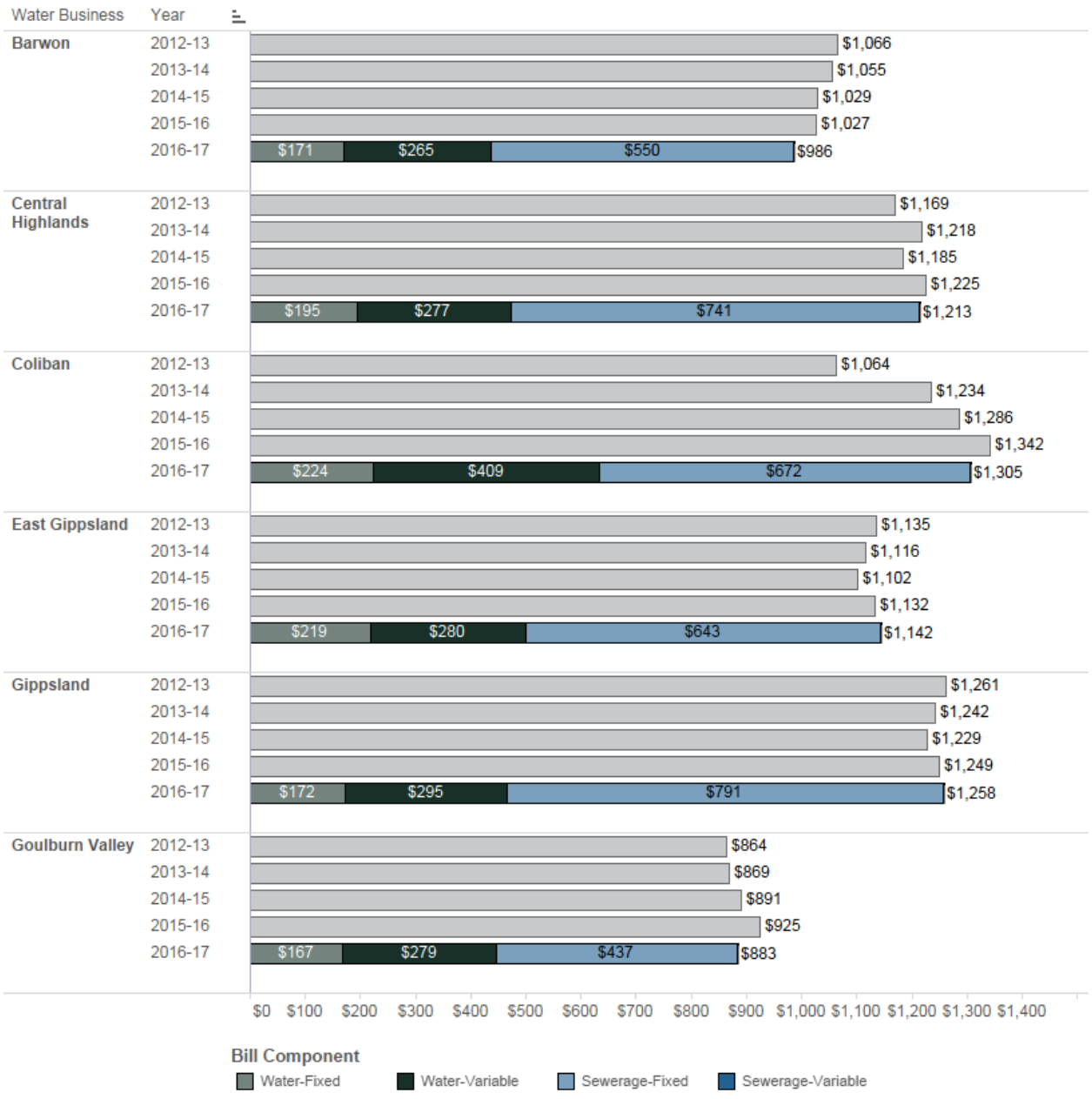
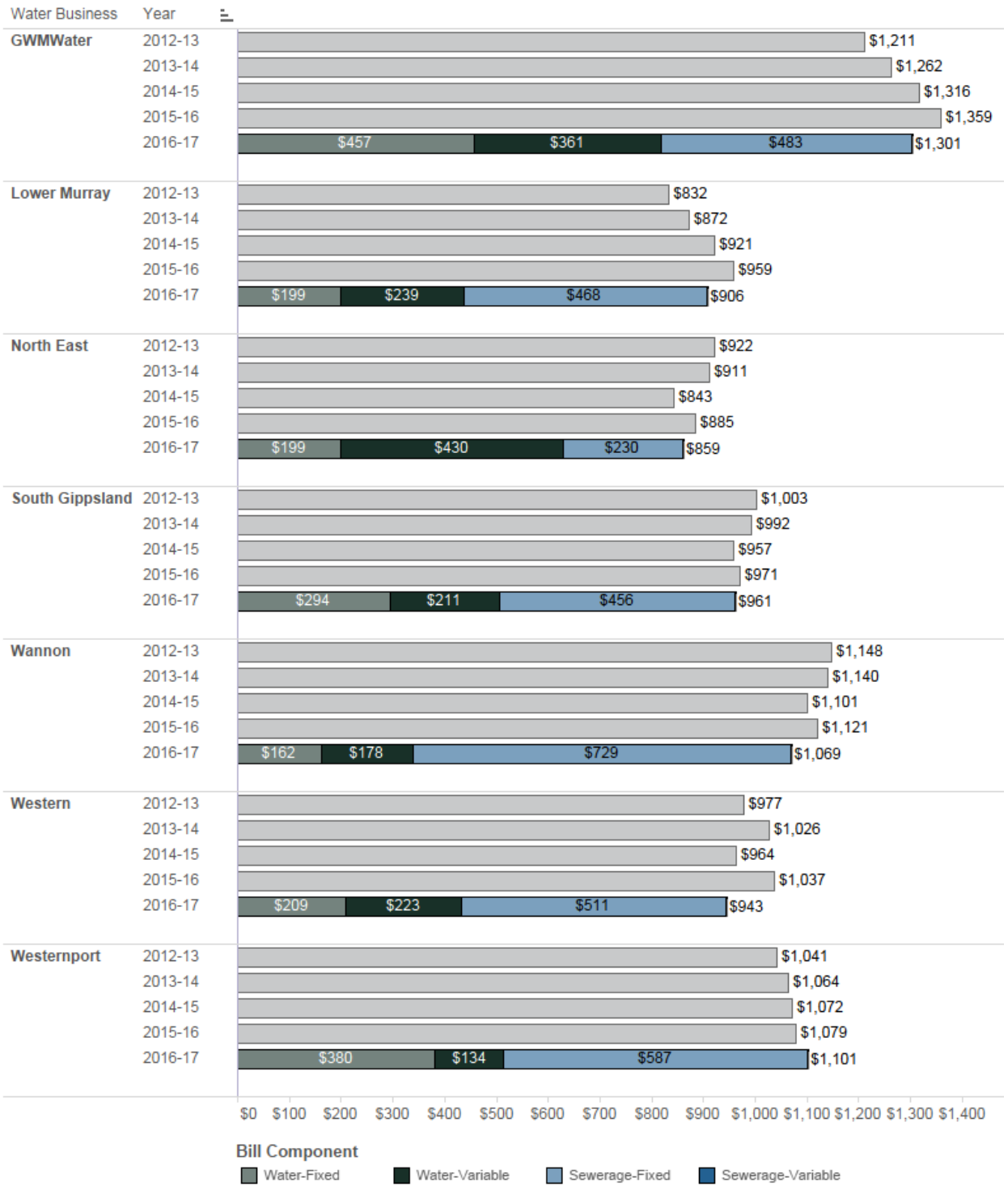


Figure 3.4 Typical household bills – regional owner occupiers, part II

$, including inflation



Key observations

- State-wide, typical household bills for owner occupiers decreased by $32 (or 3 per cent), from $1,048 in 2015-16 to $1,016 in 2016-17, consistent for both metropolitan and regional businesses. The typical household bill across businesses ranged from $859 to $1305.
- As in 2014-15 and 2015-16, North East Water ($859) reported the lowest typical bill. This was closely followed by Goulburn Valley Water ($883) and Lower Murray Water ($906).
- Coliban Water ($1305) had the highest typical bill, followed by GWMWater ($1301) and Gippsland Water ($1258).
- Most regional and metropolitan businesses' 2016-17 tariffs remained relatively flat, with the decrease in bills relating to the lower average water use. As a result, most businesses recorded a decrease in the typical bill including inflation – the exceptions were Westernport Water which increased by $22, East Gippsland Water which recorded a $10 increase, and Gippsland Water with a $9 increase. Both Westernport Water and East Gippsland Water reported higher water usage, while Gippsland Water and Westernport Water had a slight increase in their tariffs.
- For the metropolitan businesses, Yarra Valley Water had the largest bill decrease of 5 per cent, while City West Water had the smallest decrease of 1 per cent (and also the smallest decrease in water use).
- Western Water recorded the biggest bill decrease (9.1 per cent) followed by Wannon Water (4.6 per cent) and Goulburn Valley Water (4.5 per cent) – noting that Wannon Water and Goulburn Valley Water were also among those with the largest average usage decreases. Western Water also lowered its fixed charges by 10 per cent, which reflects a reduction in the bulk costs it paid Melbourne Water in 2016–17.

Figure 3.5 Typical household bills – metropolitan tenants

$, including inflation

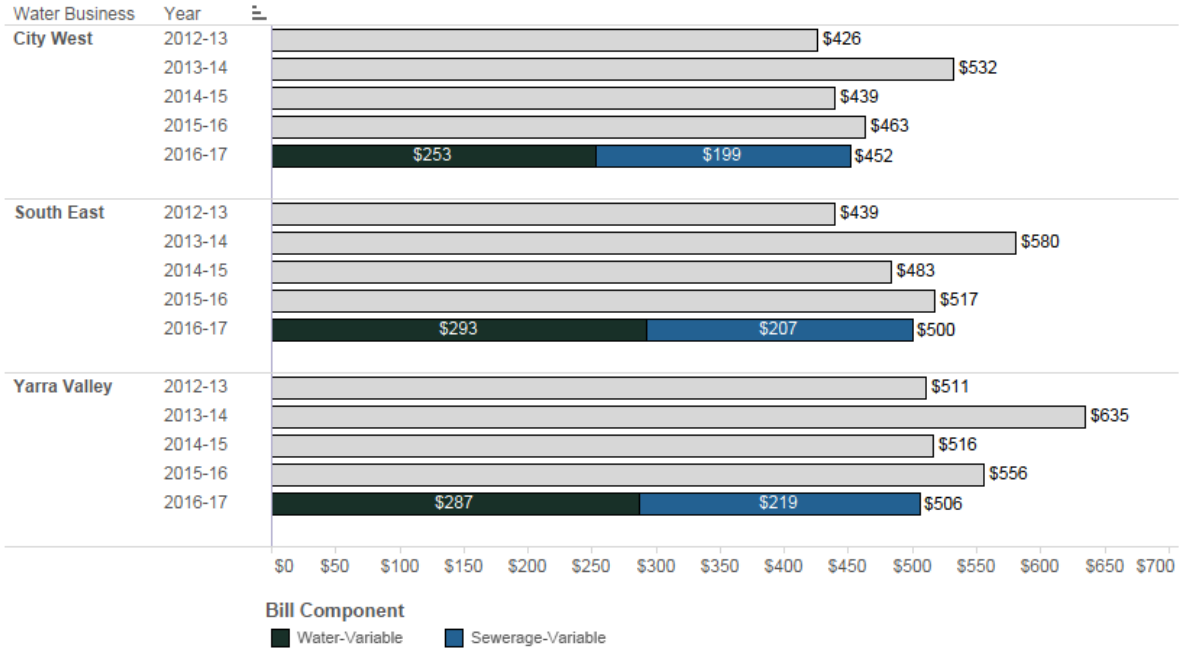


Figure 3.6 Typical household bills – regional tenants, part I

$, including inflation

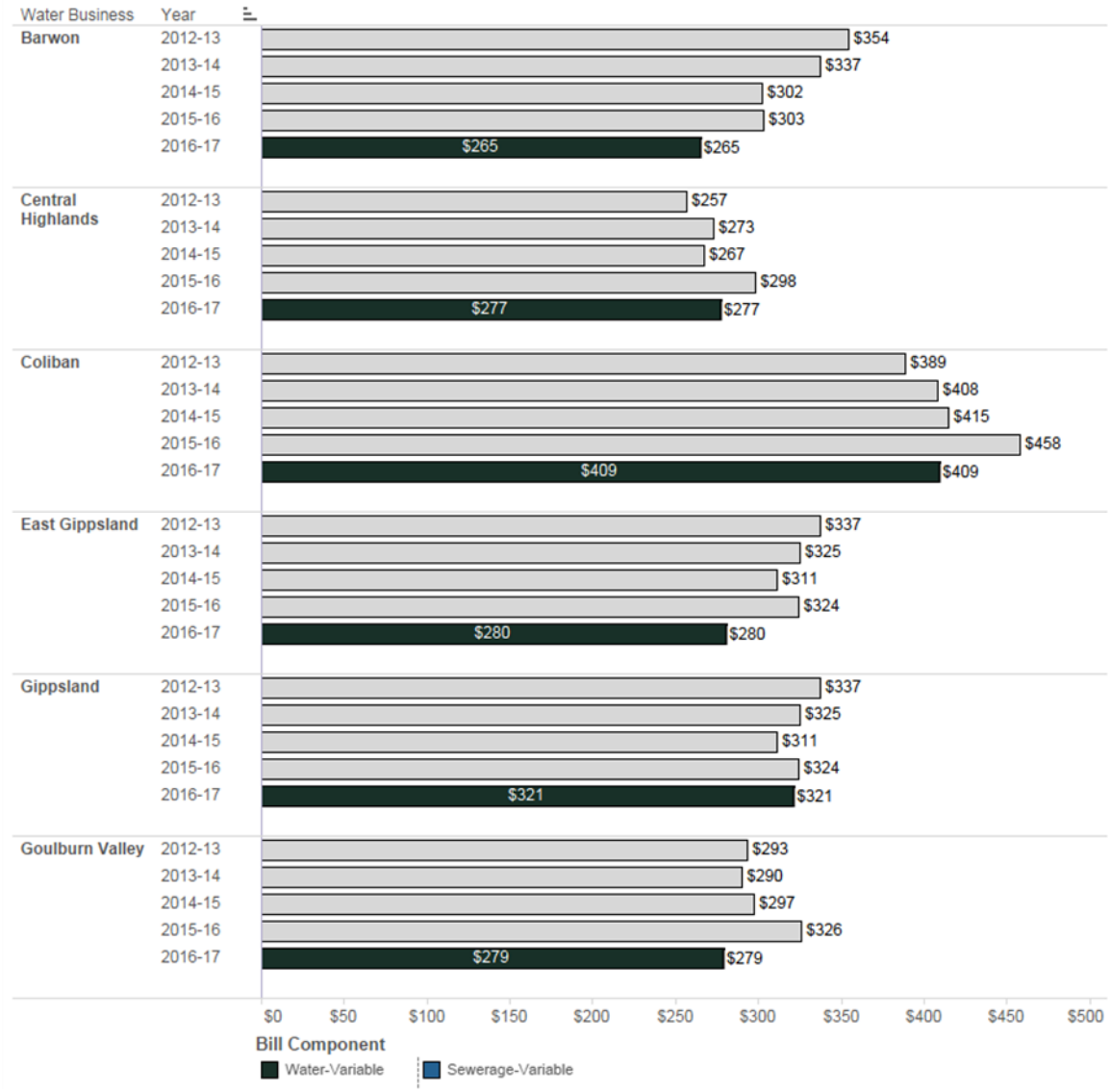
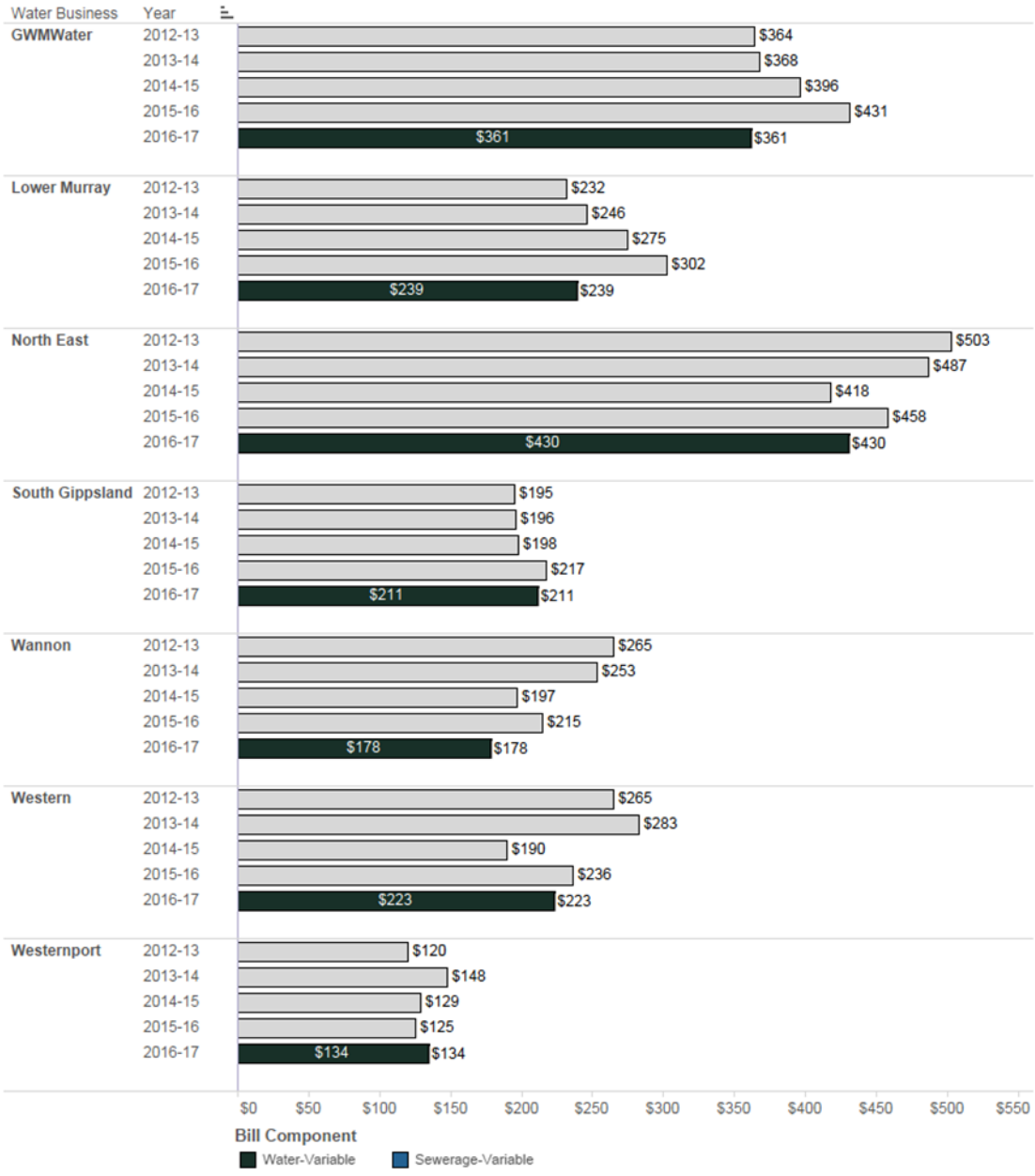


Figure 3.7 Typical household bills – regional tenants, part I

$, including inflation



Key observations

- Nearly all water businesses recorded decreases in tenants' typical household bills in 2016-17, with the typical bill decreasing by 6 per cent or $29 (including inflation). Metropolitan and regional businesses reported decreases of 6 per cent and 9 per cent respectively.
- Tenants' average household bills ranged from $134 (Westernport Water, which has a high proportion of fixed charges and low average water use) to $506 (Yarra Valley Water) in 2016-17.
- Westernport Water recorded a bill increase of 8 per cent, which was due to a 1 per cent rise in the variable charges and higher average water usage.
- Lower Murray Water reported the largest bill decrease (21 per cent), consistent with the lower average water use per household and 2 per cent decrease in its variable charge.
- The 2016-17 tariffs for the variable component of the water bills, for which tenants are responsible, increased an average of 1 per cent for regional businesses. The metropolitan businesses also had a 1 per cent increase.

3.4. Concession customers

Twenty-eight per cent of residential customers have a concession applied to their water bills.[5]

The Victorian Government, through the Department of Health and Human Services, provides concessions to assist low income households with water and sewerage bills at their principal place of residence. In 2016-17, over $167.6 million was contributed as concessions to urban water bills.

The number of concession households increased by approximately 1,200 (0.2 per cent), from 686,000 in 2015-16 to 687,200 in 2016-17.

Customers holding a concession card can contact their water business to apply for a concession. Concessions may be applied retrospectively.

[5] Concession data sourced from the Department of Health and Human Services.

3.5. Customers on flexible payment plans

Instalment plans are alternative payment arrangements offered by water businesses to help customers experiencing affordability issues. Payment arrangements may include giving customers the ability to pay off their bill in monthly instalments. These kinds of arrangements provide customers with flexibility to better manage their bill payments.

Water businesses must assist customers experiencing payment difficulties on a case-by-case basis by:

- providing alternative payment arrangements in accordance with a customer's capacity to pay, or redirecting the bill to another person to pay
- offering to extend the due date for some or all of an amount owed.

For 2016-17 reporting, this performance indicator changed from number of customers entering instalment plans in a 12 month period to the number of customers on instalment plans at a snapshot in time. Some businesses may have customers on several short term instalment plans within a year, while others may have their customers on longer instalment plans. We consider that a snapshot measure enables a better comparison between water businesses (see Table 3.1).

Key observations

- The revised indicator definition for 2016-17 caused a change in how water businesses reported their number of customers on instalment plans. This means we have a new baseline to compare performance for future reporting years.
- Gippsland Water and Western Water reported the greatest percentage of customers on instalment plans.
  - Gippsland Water noted its concentrated effort to help customers enter instalment plans and its hardship program. Gippsland Water advised it had seen a marked increase in the number of customers identified as being in genuine hardship, which is a reflection of the social challenges being faced by the region.
  - Western Water was targeting instalment plans in 2016-17, particularly to increase the number of Direct Debits and Centrepay arrangements for more secure payment plans.

Table 3.1 Residential customers on instalment plans

Number of customers as at 30 June 2017

	Concession	Non-concession	Total customers on instalment plans	Percentage of all customers
City West	7,130	19,962	27,092	6.7%
South East	9,730	21,285	31,015	4.5%
Yarra Valley	16,760	27,077	43,837	6.0%
Barwon	2,507	2,378	4,885	3.4%
Central Highlands	2,159	2,382	4,541	7.2%
Coliban	2,250	2,143	4,393	6.5%
East Gippsland	204	358	562	2.7%
Gippsland	3,505	3,388	6,893	11.0%
Goulburn Valley	1,926	1,183	3,109	6.0%
GWMWater	709	1,102	1,811	6.7%
Lower Murray	705	398	1,103	3.7%
North East	1,334	1,081	2,415	5.3%
South Gippsland	296	227	523	3.1%
Wannon	1,369	1,105	2,474	6.8%
Western	2,739	4,374	7,113	12.0%
Westernport	74	183	257	1.7%
Statewide	**53,397**	**88,626**	**142,023**	**5.8%**

3.6. Government-funded grants scheme – URGS

The Department of Health and Human Services administers the URGS (Utility Relief Grants Scheme), which provides one-off financial contributions towards a bill of a customer experiencing payment difficulties. The URGS payment is generally used for a short-term financial crisis. It is different from the hardship programs provided by the water businesses to customers who experience ongoing financial hardship.

Water businesses must assist customers experiencing payment difficulties on a case-by-case basis by appropriately referring customers to government funded assistance programs or to an independent financial counsellor. This includes assisting eligible customers to apply to the department for an URGS grant.

Table 3.2 URGS in 2016-17

Residential customers

	Number of grants approved	Percentage of grants initiated that are approved	Average value of grant paid	Percentage of customers
City West	779	53%	$430	0.2
South East	1,905	55%	$436	0.3
Yarra Valley	2,479	61%	$435	0.3
Barwon	206	54%	$393	0.1
Central Highlands	288	93%	$389	0.5
Coliban	628	92%	$412	0.9
East Gippsland	117	87%	$452	0.6
Gippsland	272	92%	$429	0.4
Goulburn Valley	361	88%	$362	0.7
GWMWater	62	86%	$441	0.2
Lower Murray	47	70%	$361	0.2
North East	233	47%	$347	0.5
South Gippsland	34	46%	$380	0.2
Wannon	195	93%	$398	0.5
Western	318	62%	$458	0.5
Westernport	37	49%	$453	0.2
Statewide	**7,961**	**63%**	**$424**	**0.3**

Source: Department of Health and Human Services

Percentage of customers refers to the number of grants approved per the relevant water business's own residential customer base.

Key Observations

- The number of URGS grants approved increased by 8 per cent from 7,383 in 2015-16 to 7,961 in 2016-17, while the proportion of customers receiving grants remained at 0.3 per cent.
- The average value of grants ranged from $347 (for customers of North East Water) to $458 for (Western Water). Almost a third of all URGS payments went to Yarra Valley Water customers, with a total of $1.07 million paid across 2,479 customers.
- More than 90 per cent of grant applications were approved for customers of Central Highlands Water, Coliban Water, Gippsland Water and Wannon Water.

- Coliban Water, which reported the highest rate of URGS uptake in 2014-15 and 2015-16, again recorded the highest rate in 2016-17, at 0.9 per cent of customers (previously 0.81 per cent of customers in 2015-16).

3.7. Water business hardship grants

Hardship grants are another approach used by water businesses to assist customers experiencing payment difficulties. These often take the form of co-payment schemes, where the water business will waive a periodic payment if the customer meets a set number of scheduled payments, with the waived payment counted as a hardship grant.

Table 3.3 Hardship grants in 2016-17

Residential and non-residential customers, excluding inflation

	Per 100 customers, 2016–17	Change from 2015-16	Average value of grant paid, 2016–17	Change from 2015-16
City West	0.12	+0.04	$687	-$135
South East	0.09	-0.07	$274	+$146
Yarra Valley	0.95	-0.03	$212	+$19
Barwon	0.81	-1.16	$79	+$44
Central Highlands	0.41	+0.05	$226	+$153
Coliban	0.68	+0.08	$297	+$105
East Gippsland	1.22	-0.12	$151	+$3
Gippsland	0.07	+0.01	$628	+$291
Goulburn Valley	0.85	+0.18	$307	-$230
GWMWater	0.18	-0.07	$36	-$12
Lower Murray	-	-	-	-
North East	0.11	-0.01	$436	-$77
South Gippsland	0.02	-	$3000	+$2423
Wannon	0.57	-0.14	$204	-$35
Western	0.67	+0.08	$406	-$9
Westernport	0.01	-0.02	$1680	-$214
Statewide	**0.46**	**-0.08**	**$238**	**+$54**

Snapshot (hardship grants approved, per 100 customers)

State-wide average		-15.8%	Metro average		-6.5%	Regional average		-32.3%
2016-17	0.46		2016-17	0.44		2016-17	0.51	
2015-16	0.55		2015-16	0.47		2015-16	0.76	

Key Observations

- Across the state, water businesses approved hardship grants for 11,380 customers in 2016-17, representing 0.46 grants per 100 customers.
- Barwon Water and South East Water both reported significantly lower rates of hardship grants due to changes in their reporting methods.
  - Barwon Water overstated results in 2015-16, by reporting number of grants instead of number of customers receiving grants.
  - South East Water previously included customers supported through its plumbing assistance program, however these are not considered hardship grants and have been removed for 2016-17.
- The average value of hardship grants across businesses ranged from $36 (GWMWater) to $3000 (South Gippsland Water) in 2016-17, with an overall average of $238 – an increase of 29 per cent from 2015-16.
  - GWMWater offered its customers interest-free payment arrangements, which make up the majority of its program. It also offered its Bonus Credit Program, but not all eligible customers completed and returned agreements to join.
  - South Gippsland Water reported a $3,000 average grant value for three customers, which it attributed to further assistance for customers in the dairy industry, as well as an increased focus on customers experiencing hardship.
- Central Highlands Water more than doubled the average value of grants paid to customers.
  - Central Highlands Water advised additional government funding allowed it to provide larger grants in 2016-17. It also noted its community engagement has improved awareness of hardship assistance available, including provisions for those affected by family violence.

3.8. Actions for non-payment of bills

Water legislation allows water businesses to limit the water flowrate to non-paying customers by inserting a restriction device in the customer's water supply line. Water businesses may also take legal action against customers to recover unpaid debt.

Water businesses must assist customers experiencing payment difficulties on a case-by-case basis by:

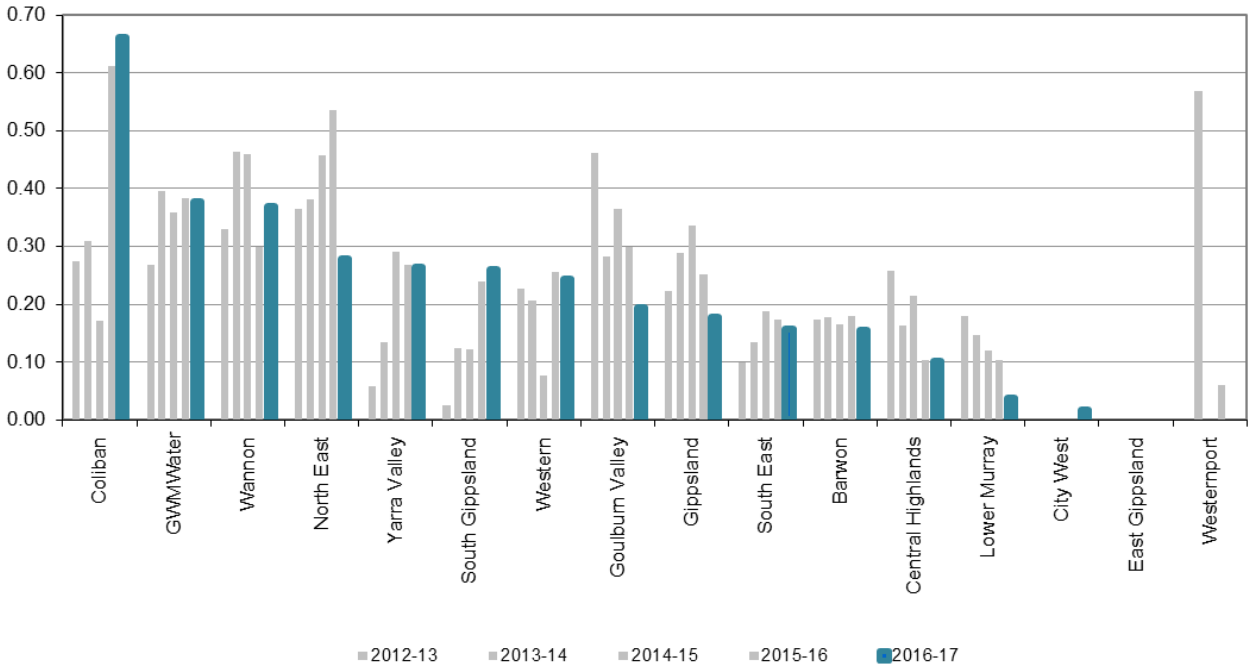
- observing minimum periods of notice before applying supply restrictions or pursuing legal action to recover outstanding debts
- not restricting water supply of a customer or pursuing legal action before first taking additional steps to secure payment, including making a reasonable attempt to contact the person, offering a payment arrangement and resolving any dispute over the outstanding amount.

Our Customer Service Code sets out the procedures water businesses are required to follow before restricting a customer's water supply or taking legal action.

Water businesses reported that 4,931 residential customers experienced water supply restrictions and legal action in 2016-17, which is 0.18 per cent of Victorian customers.

Figure 3.8 Water supply restrictions for non-payment of bills

Residential, per 100 customers



Snapshot (water supply restrictions, per 100 customers)

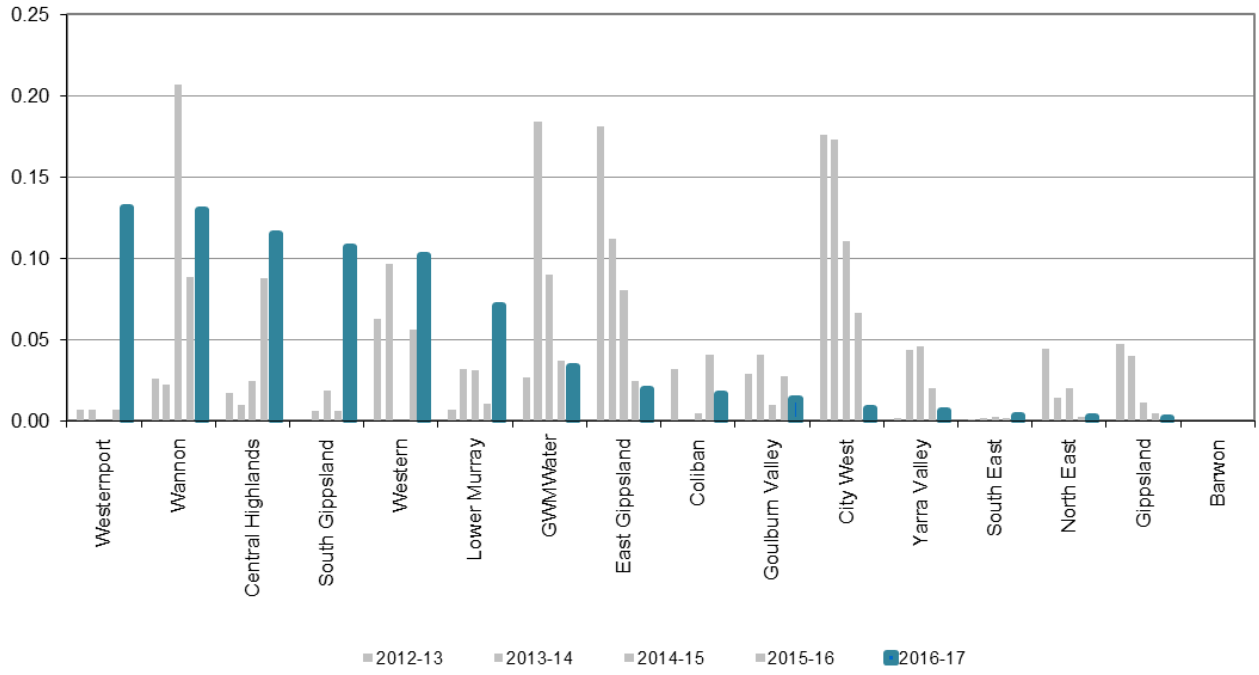
State-wide average		-6.7%	Metro average		-2.9%	Regional average		-13.3%
2016-17	0.19		2016-17	0.17		2016-17	0.24	
2015-16	0.20		2015-16	0.17		2015-16	0.27	

Key observations

- A total of 4,568 residential customers had their water supply restricted for non-payment of water bills in 2016-17. This represented a 6.7 per cent decrease (or 211 less residential customers) from 2015-16.
- Restrictions for metropolitan customers were down 2.9 per cent this year, following an 8 per cent decrease in 2015-16. Similarly, eight regional businesses reported a decrease in the number of restrictions they applied this year, with an overall 13.3 per cent decrease in the regional average.
- Lower Murray Water and North East Water reported large decreases in restrictions.
  - Lower Murray Water recorded a 64 per cent decrease in the number of restrictions, because it helped more customers enter into alternative payment arrangements rather than face supply restrictions.
  - North East Water reported a 48 per cent decrease because it did not have a staff member to administer the restriction process and trained an existing employee for the role. The vacant role and staff retraining lasted four months. In addition, North East Water had a new initiative to assist customers to meet their financial obligations prior to restriction.
- City West Water and Westernport Water reported that they reviewed their restriction policies in 2016-17. Westernport Water advised restrictions are scheduled to recommence in 2017-18. City West Water advised that it had started to apply a restrictions process, rather than its long-standing policy for only legal action (see Figure 3.9). Its aim was to make contact (customers with overdue bills can often avoid communication) and transfer customers to instalment plans before needing to install a restriction device.

Figure 3.9 Legal actions for non-payment of bills

Residential, per 100 customers



Snapshot (legal actions, per 100 customers)

State-wide average		-32.2%	Metro average		-65.7%	Regional average		41.9%
2016-17	0.02	↓	2016-17	0.01	↓	2016-17	0.04	↑
2015-16	0.03		2015-16	0.02		2015-16	0.03	

Key observations

- Westernport Water reported the highest rate of 0.13 legal actions per 100 customers, a significant increase from 2015-16. Westernport Water advised it had an increased focus on debt collection activity in 2016-17, following limited activity in previous years.
- South Gippsland Water had an increase from 0.01 legal actions per 100 customers in 2015-16 to 0.11 in 2016-17. South Gippsland Water attributed the increase to taking action against individuals with multiple property accounts. For example, an individual with three accounts under legal action is counted as three customers.
- Lower Murray Water has increased the rate of legal actions off a low base. It reported a focus on reducing the backlog of debtors, while also seeing an increase in the number of debtors owing more than $1,000.
- City West Water reported a decrease in legal actions of 88 per cent. City West Water advised it has started to manage customers through the restriction process, as mentioned under Figure 3.8.

- Yarra Valley Water reported a decrease in legal actions by 71 per cent. Yarra Valley Water advised it refined its collection strategy to make legal action more selective, focusing on higher value outstanding accounts.
- The average level of debt at the time of legal action ranged from $796 (North East Water) to $4,881 Yarra Valley Water, with a state-wide average of $2,186 in 2016-17. This data is available in our data summary.

4. How do water businesses respond to their customers?

This chapter explores how water businesses manage enquiries to their call centres. We also examine the most common areas for complaints made to water businesses and when customers take their complaints to the ombudsman.

Our Customer Service Code places obligations on businesses for responding to enquiries or complaints and providing appropriate service. These obligations include having policies, practices and procedures for handling customers' complaints and disputes, and providing certain information to customers on request. Specific details can be found in each water business's Customer Charter, which is available on its website.

4.1. 2016-17 at a glance

The service delivery of water business call centres was consistent with 2015-16.

Customers connected to call centre operators faster than last year.

The number of complaints made to water businesses increased from 2015-16, but overall few customers had cause for complaint.

Fewer complaints were made to the Energy and Water Ombudsman (Victoria) about water businesses than in 2015-16.

4.2. Responsiveness of call centres

We asked Customer Service Benchmarking Australia (CSBA) to independently benchmark the call centre performance of Victorian water businesses. Posing as genuine customers with general enquiries, trained CSBA mystery shoppers contacted the water businesses via the account line and rated each interaction according to CSBA's own Customer Service Index (see Table 4.1).

Table 4.1 CSBA customer service index

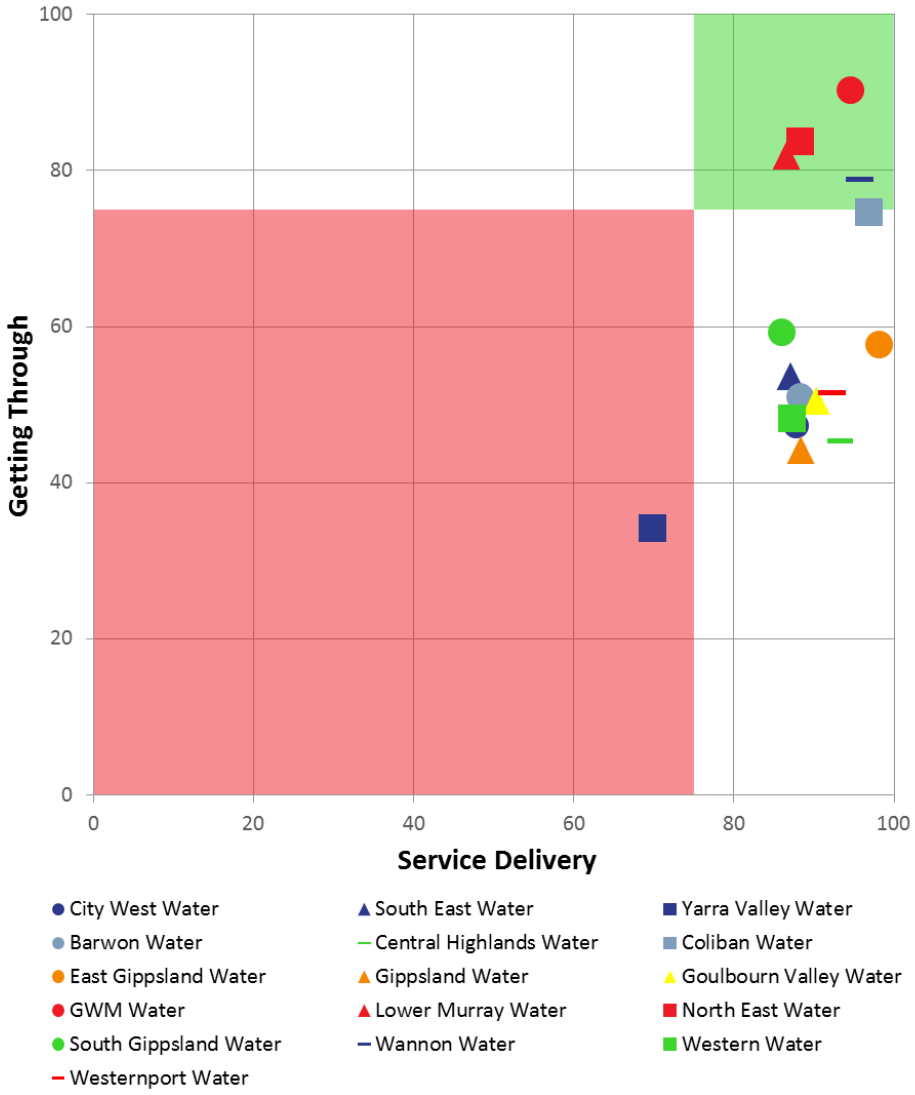
Metrics for 'getting through'	Metrics for 'service delivery'
Call centre connect times • CSBA's 'mystery caller' survey reports an average connect time, inclusive of Integrated Voice Response (IVR) time. • The CSBA caller listens to each menu in the IVR system in full before selecting the relevant option. • Calls are only made to a business's account line, where both account and fault lines are available. CSBA measures **the duration** of connect time (ring time, queue time and IVR time) and also transfer time if needing to speak with multiple operators to resolve the query.	**Agent manner** CSBA classifies agent (operator) manner as Acceptable or Unacceptable using four mutually exclusive ratings: • Acceptable – interested, helpful and warm (best practice agent manner) – businesslike and unemotive • Unacceptable – laidback and easy going – disinterested and curt. **Score: out of 100**
Greeting quality CSBA measures greeting quality according to an index comprising: • welcome salutation • giving the business name • giving the agent's name • making an offer to help the caller • sign off. **Score: out of 100**	**Enquiry handling skills** CSBA measures four key enquiry handling skills: • ability to probe to clarify customer needs • product service knowledge • agent provides a clear outcome for the enquiry • agent is helpful and courteous. **Score: out of 100**
Index score for 'getting through' Index out of 100 based on connect times, greeting quality and proportion of successful calls.	**Index score for 'service delivery'** Index out of 100 based on agent manner, enquiry handling skills and proportion of successful calls.

CSBA presents each business's performance on its Customer Service Grid (Figure 4.1), with the overall customer experience falling into one of four 'quadrants':

- Satisfied quadrant (green) is where callers are relatively pleased.
- Dissatisfied quadrant (red) is where callers are likely to feel frustrated.
- Annoyed quadrant (white – upper left) highlights where calls are answered quickly, but there was inconsistent enquiry resolution or unacceptable operator manner.
- Restless quadrant (white – lower right) is where callers are likely to be frustrated due to a lengthy connect time, despite acceptable service or enquiry resolution.

Figure 4.1 Benchmarking call centre performance

CSBA's customer service grid, scores out of 100



Source: CSBA provided 2016-17 results for Victorian water businesses

Overall the performance of the Victorian water sector's call centres in 2016-17 was consistent with the prior year's results.

The same four regional water businesses (GWMWater, North East Water, Lower Murray Water and Wannon Water) were placed in the satisfied quadrant, with Coliban Water sitting on the edge – all nearly identical to the positions in 2015-16. GWMWater showed improvements in the 'getting through' index to establish a leading position in the overall benchmarking results, while Wannon Water showed a decline in this index.

The majority of businesses were situated in the 'restless' quadrant, similar to last year. South Gippsland Water dropped slightly on both indices while East Gippsland Water achieved gains on service delivery.

Yarra Valley Water remained in the 'dissatisfied' quadrant with the longest average connect time (2 minutes and 12 seconds). Yarra Valley Water had a large percentage of timed out calls (25 per cent), affecting scores for both 'getting through' and 'service delivery' indices.

New call centre benchmarking approach for 2017-18

From 2017-18, we have adopted CSBA's new SenseCX approach for scoring mystery shopper calls. Calls are scored out of 100 on three pillars: **ease** of dealing with the agent, **sentiment** from the interactions with the agent and **success** of query resolution.

Figure 4.2 shows the de-identified results for the 16 urban water businesses from calls conducted between July and December 2017. We will publish identifiable results in our 2017-18 report, when a full year of data has been collected.

Figure 4.2 2017-18 call centre snapshot

Rank	Total		Ease	Sentiment	Success
1	59%	59%	44	67	67
2	56%	56%	38	63	65
3	55%	55%	40	62	62
4	54%	54%	35	67	60
5	52%	52%	32	59	62
5	52%	52%	32	65	59
7	51%	51%	31	58	61
8	50%	50%	31	59	58
8	50%	50%	33	61	57
8	50%	50%	29	58	61
8	50%	50%	30	59	60
8	50%	50%	31	61	57
13	48%	48%	28	56	59
13	48%	48%	29	54	59
13	48%	48%	33	57	54
13	48%	48%	26	55	61
Average	**51%**		**33**	**60**	**60**

As shown in Figure 4.2, the three new measures have reset the benchmark for the Victorian water sector compared to the grid positions shown in Figure 4.1. Other utility companies, as well as cross-sector companies, are receiving similar scores under CSBA's new approach.

We believe that the new measures better capture customer interactions with call centre staff. The new benchmark also reduces the bunching at the top of the service delivery index (Figure 4.1), and provides a greater opportunity for all water businesses to improve their call centre performance.

Businesses can use this data to inform their continual development of staff to improve the experience for customers.

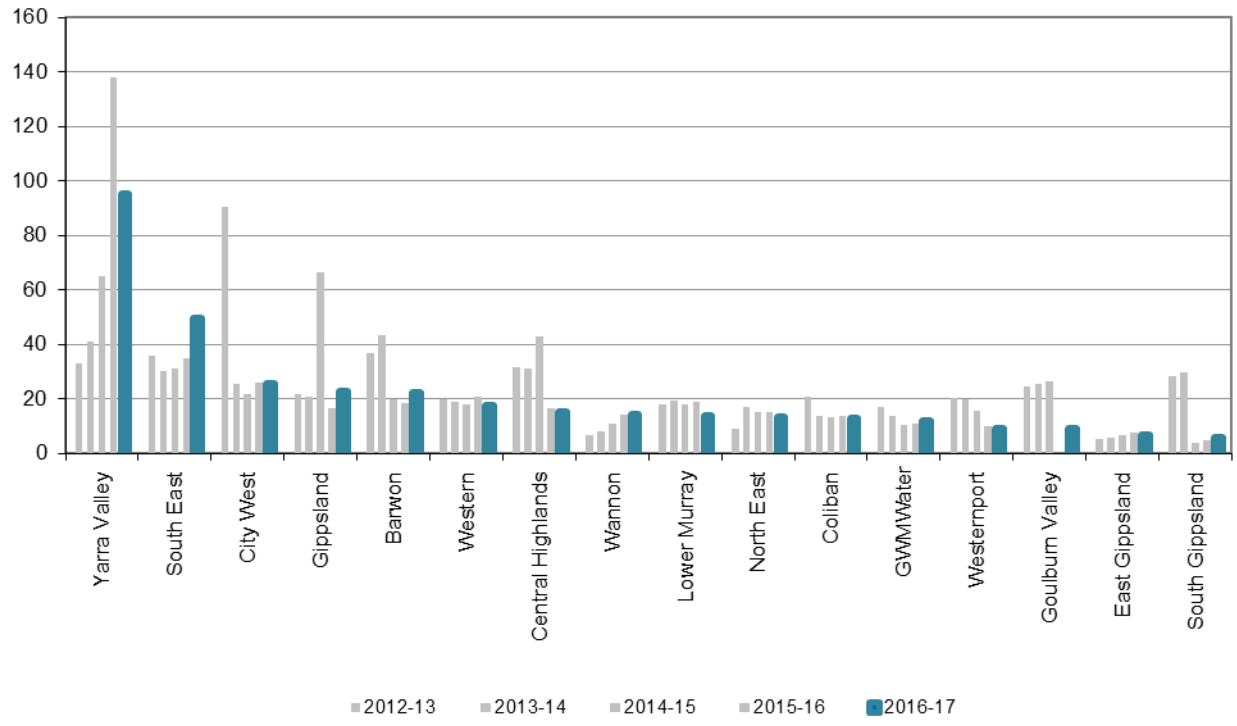
4.3. Average connect time to reach call centres

Water businesses monitor the time taken for customers to connect to an operator at their call centres, excluding time spent navigating automated interactive voice response (IVR) systems.

Businesses may use IVR systems to answer calls and allow customers to select the appropriate customer service area. This approach generally increases the time taken to connect to an operator (sometimes IVR can double the connect time), and will vary according to the number of menu options, length of recordings, and the ability to bypass the recordings if a customer is familiar with the options.

Figure 4.3 Average time taken to connect to call centres

Seconds, account and fault lines excluding IVR system times



Note: Goulburn Valley Water was unable to provide call data for 2015-16, and the first quarter of 2016-17.

Snapshot (average connect time, seconds)

State-wide average		-12.4%	Metro average		-13.6%	Regional average		8.8%
2016-17	49	↓	2016-17	61	↓	2016-17	16	↑
2015-16	55		2015-16	71		2015-16	14	

Key observations

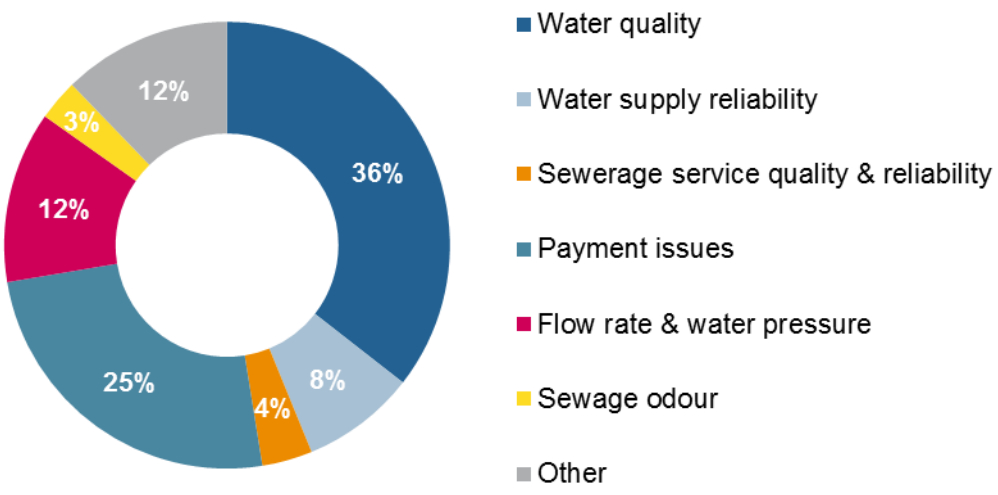
- The state-wide 12 per cent decrease in average connect times was driven by Yarra Valley Water's improvements.
  - Yarra Valley Water's average connect time improved from last year's peak, when its call centre was understaffed. Yarra Valley Water records the longest connect time, however noted its focus on achieving first call resolution means operators spend more time with customers to resolve an issue, which has seen average connect times increase across recent years.
- Nine water businesses reported reductions in their average connect time in 2016-17. Conversely, the largest increases in average connect time were recorded by Gippsland Water and South East Water.
  - Gippsland Water advised that its call centre had sought to maximise enquiries on the first call with a customer, with an increased focus on identifying customers experiencing financial stress and other forms of hardship, meaning call centre agents took longer to answer incoming calls.
  - South East Water advised that its 64 per cent increase was due to a focus on servicing its customers through digital channels (i.e. Live Chat – Web Site and Portal chat). In addition, a greater proportion of customers were able to self-serve for the more transactional enquiries, which meant the more complex enquires were directed to the call centre and in turn affected the call centre's average handling and connect times.

4.4. Complaints made to water businesses

Customer complaints can indicate dissatisfaction with the services provided by water businesses.[6] If a business cannot resolve a complaint directly with the customer, the customer may refer the matter to the Energy and Water Ombudsman (Victoria) for further investigation (see next section).

Figure 4.4 Complaints by category in 2016-17

Total complaints made to water businesses



In 2016-17, a total of 16,411 complaints were made to water businesses across Victoria, with water quality complaints representing 36 per cent of the total state-wide complaints (down from 42 per cent in 2015-16).

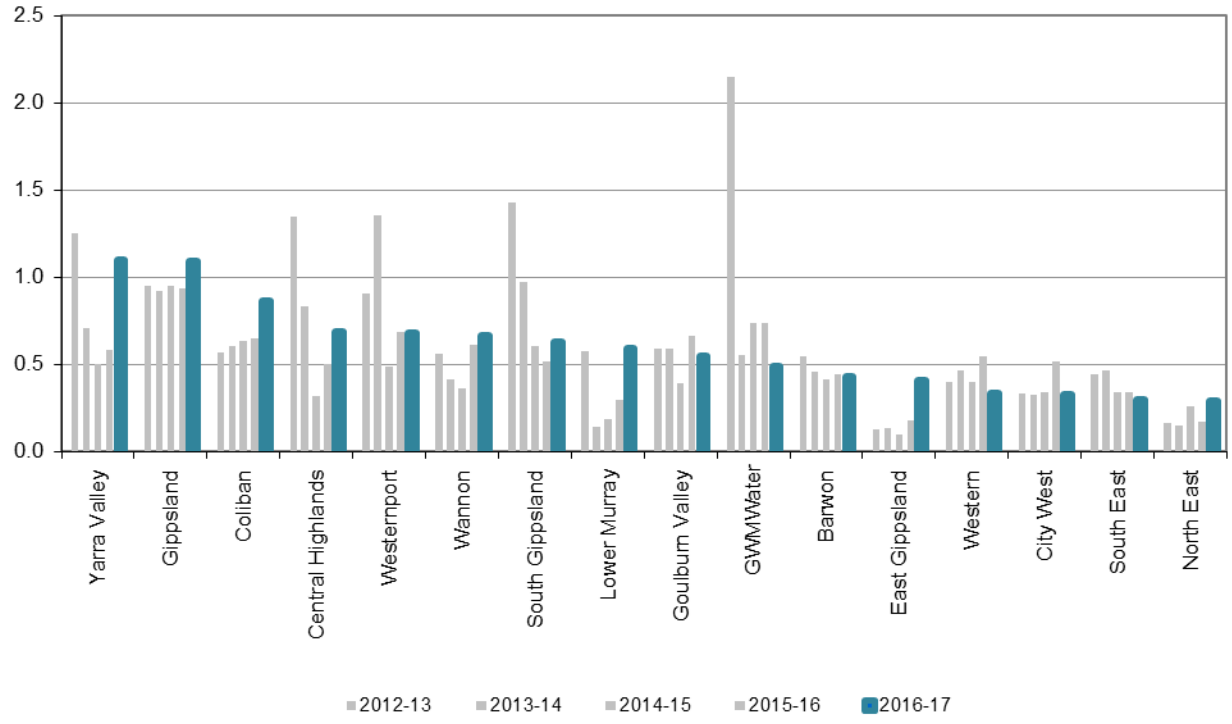
Eleven businesses reported water quality as the category with the most complaints. Of the remaining five businesses, complaints to Central Highlands Water and Westernport Water mostly related to water flowrate and pressure, City West Water and Gippsland Water reported most complaints in the 'other' category, and complaints to Yarra Valley Water predominantly related to payment issues.

Figure 4.5 shows the complaint rate for each water business.

[6] A complaint is recorded if a customer registers dissatisfaction in a complaint category. Australian Standards define a complaint as an "expression of dissatisfaction made to or about an organisation, related to its products, services, staff or handling of a complaint where a response is implicitly expected or legally required." (AS/NZS 10002:2014)

Figure 4.5 Complaints made to water businesses

Per 100 customers



Snapshot (total complaints, per 100 customers)

State-wide average		**24.3%**	**Metro average**		**30.7%**	**Regional average**		**8.8%**
2016-17	0.61		2016-17	0.62		2016-17	0.59	
2015-16	0.49		2015-16	0.48		2015-16	0.54	

Key observations

- An average of 0.61 complaints per 100 customers were made in 2016-17, up from a complaint rate of 0.49 in 2015-16. The increase in complaints recorded by Yarra Valley Water largely drove the state-wide increase and the 31 per cent increase in the metropolitan average. Meanwhile, eight of the regional businesses recorded increases in their complaint rate, with East Gippsland Water and Lower Murray Water reporting the largest increases.
  - Yarra Valley Water attributed its increase to a change in the way it differentiates complaints from enquiries. This recommendation from the 2015-16 performance data audit was implemented from October 2016, and has resulted in a large increase from 4,429 complaints in 2015-16 to 8,607 complaints in 2016-17.
  - East Gippsland Water advised it now reported all enquiries relating to water quality as complaints, rather than only those enquiries with perceived dissatisfaction – this is consistent with our reporting requirements.

  - Lower Murray Water advised that a Murray River blackwater event from November 2016 to January 2017 caused its increase in water quality complaints.[7]

- GWMWater, City West Water and Western Water saw their complaint rates decrease by a third.
  - GWMWater advised water quality complaints for taste and odour reduced because it undertook flushing, and implemented a raw water storage cleaning program and a mains swabbing program for its regulated towns. This improvement more than offset the increase in sewer reliability complaints which stemmed from ageing infrastructure in Ararat, and maintenance contractors undertaking high pressure water jetting to clean sewer pipes in Murtoa, which caused backwashes into houses.
  - City West Water returned to its usual complaint rate after a spike in payment issue complaints in 2015-16.
  - Western Water attributed its decrease in water quality complaints to a more consistent source for its water supply. Customers may be concerned by a change in the taste of their water, which can occur when the business switches from one water supply to another.

Want more information?

For more detail on complaints made to water businesses regarding water quality, see Chapter 6.

Our website explains options customers can pursue if they are unhappy with a response from their water business, visit www.esc.vic.gov.au/water/customer-enquiries-complaints/.

[7] 'Blackwater events occur when returning floodwater contains elevated levels of dissolved organic carbon … The black appearance of the water is due to the release of carbon compounds (including tannins) as the organic matter decays – similar to the process of adding water to tea leaves.'
'Blackwater', Murray-Darling Basin Authority, accessed 20 February 2017, https://www.mdba.gov.au/managing-water/water-quality/blackwater

4.5. Complaints to the Energy and Water Ombudsman (Victoria)

EWOV has a role to help resolve complaints and disputes between consumers and electricity, gas and water providers in Victoria. It reports on consumer cases that involve payment difficulties, disconnections or restrictions and debt collection or credit default. The 2016-17 results for the Victorian water sector are summarised in Table 4.2.

Customers should always first contact their water business to resolve their dispute before contacting EWOV. EWOV's website has a number of resources including fact sheets on common customer concerns, and case studies of actual customer disputes that EWOV has helped to resolve. Residential and non-residential customers can visit www.ewov.com.au or call 1800 500 509, phone lines are open between 8.30 am and 5.00 pm Monday to Friday.

Key observations

- In 2016-17, EWOV received 1,916 complaints about the metropolitan and regional urban water businesses, down 13 per cent from 2,202 complaints in 2015-16.
- Consistent with prior years, City West Water had a higher proportion of complaints-to-sector share for metropolitan Melbourne compared to South East Water and Yarra Valley Water. That is, almost a third of all complaints for metropolitan Melbourne related to City West Water, but it only services 22 per cent of the metropolitan customers.
- For regional Victoria, Western Water had the highest numbers of complaints referred to EWOV relative to its sector share, with 14 per cent of complaints while only servicing 9 per cent of regional customers.
- Lower Murray Water continued to have one of the lowest numbers of complaints to EWOV relative to its sector share, receiving 3 per cent of complaints while servicing 5 per cent of the regional customers.
- Twenty-one per cent of complaints were made to EWOV without customers first speaking with their water business. EWOV referred these complaints back to the relevant water business and did not need to provide further assistance. EWOV helped to resolve 65 per cent of complaints by referring customers to a higher level complaint resolution officer at the water business. The remaining 14 per cent of complaints required greater assistance from EWOV to investigate and resolve the issue with the customer and water business.

Table 4.2 Complaints about water businesses received by EWOV

Data provided by EWOV

Water business	Total complaints 2016-17	%	Change from 2015-16	Business's sector share	Complaints to sector share
Melbourne	44		+10	-	
City West	469	32%	-69	22%	1.44
South East	448	30%	-139	38%	0.80
Yarra Valley	558	38%	-58	40%	0.94
Total - Metropolitan	**1,475**	**100%**	**-266**	**100%**	
Barwon	55	14%	-11	22%	0.64
Central Highlands	57	14%	+15	10%	1.48
Coliban	53	13%	-24	11%	1.26
East Gippsland	9	2%	-2	3%	0.68
Gippsland	30	8%	-9	10%	0.77
Goulburn Valley	27	7%	-3	8%	0.82
GWMWater	18	5%	-5	5%	0.98
Lower Murray	11	3%	-4	5%	0.57
North East	23	6%	-12	7%	0.80
South Gippsland	11	3%	+3	3%	0.96
Wannon	35	9%	+13	6%	1.42
Western	55	14%	-	9%	1.62
Westernport	13	3%	+9	2%	1.42
Total - Regional	**397**	**100%**	**-30**	**100%**	
Total - Victoria	**1,916**		**-286**		

'Complaints to sector share' compares the proportion of complaints to the proportion of customers for each water business in metropolitan or regional Victoria. A value higher than 1 indicates a water business is receiving more complaints that its sector share, while a number less than 1 indicates a business is receiving less than its sector share.

5. How reliable are the water and sewer networks?

This chapter looks at reliability of the water and sewer networks, by exploring how often customers are without a water supply and how often sewer blockages and spills impact customers. Our measures only consider the pipe network and pumps under the control of the water businesses, and exclude the private property connections managed by customers.

5.1. 2016-17 at a glance

Water networks were reliable. Most interruptions were due to planned activities by the water businesses.

Sewer service reliability decreased slightly because higher rainfall entering sewer networks caused more minor spills.

Sewer blockage rates were unchanged while sewer spills and spills to customer properties increased.

5.2. Water service – minutes off supply

Minutes off supply is a measure of how many minutes on average a customer for each water business was without their water supply during a year. This measure only looks at interruptions to water mains, and excludes smaller ancillary pipelines or private connections.

Various factors affect average minutes off supply, including the number of interruptions, the duration of each interruption and the number of customers affected by each interruption. Whether interruptions are planned or unplanned also gives insight into the stability and reliability of the network.

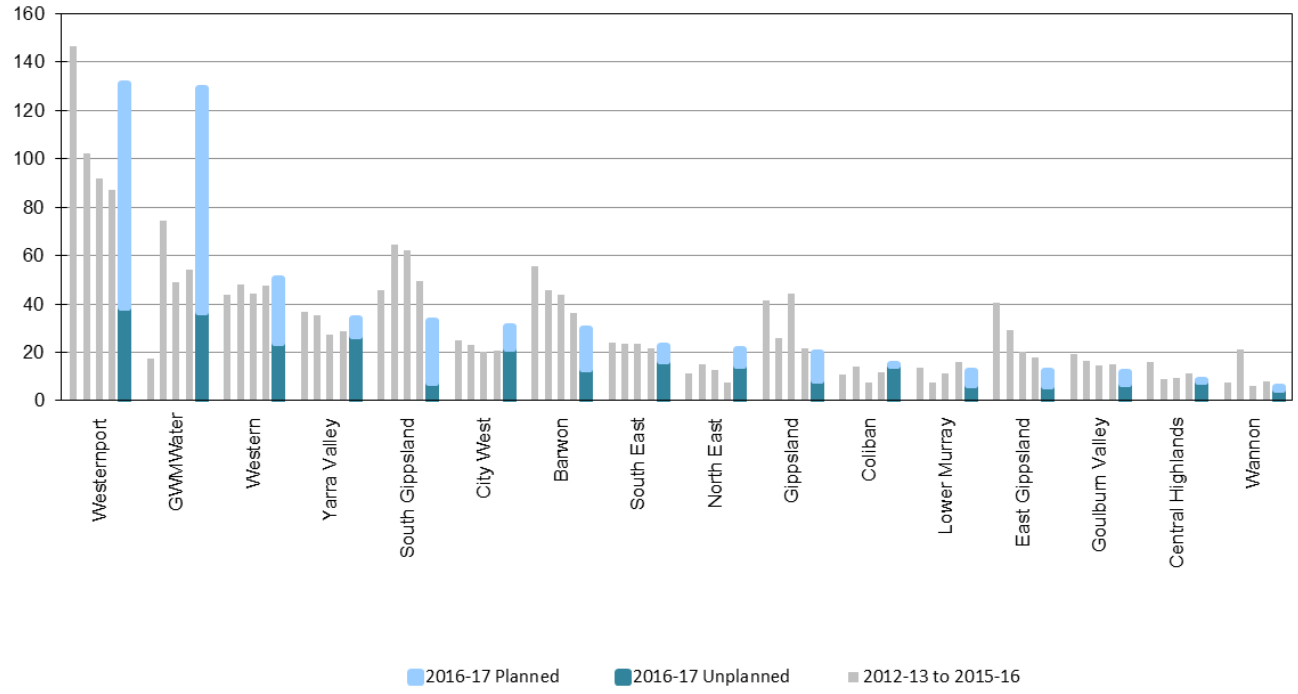
Types of interruptions – planned and unplanned

A planned interruption occurs when a customer has received at least two days' notice of an interruption to their water service. An unplanned interruption occurs when this notice was not given or the duration of a planned interruption exceeded the time estimated.

The duration of supply interruptions can be greatly affected by factors including the size and location of the pipeline, access to the worksite, the availability of work crews to attend, and the nature of the repair required.

Figure 5.1 Average minutes off water supply

Minutes per customer



Snapshot (minutes off supply, minutes per customer)

State-wide average		16.8%	Metro average		18.9%	Regional average		11.2%
2016-17	29	↑	2016-17	29	↑	2016-17	29	↑
2015-16	25		2015-16	24		2015-16	26	

Key observations

- Across Victoria, the average minutes off supply increased by 17 per cent or approximately 4 minutes, driven by increases in both metropolitan Melbourne and regional Victoria.
- Six businesses recorded average minutes off supply for their customers below 15 minutes. These businesses were Wannon Water (5.8 minutes), Central Highlands Water (8.5 minutes), Goulburn Valley Water (11.9 minutes), East Gippsland Water (12.1 minutes), Lower Murray Water (12.4 minutes) and Coliban Water (14.6 minutes).
- Four water businesses had average minutes off supply that increased by over 45 per cent in 2016-17: North East Water, GWMWater, Westernport Water and City West Water.

  - North East Water's average increased from 7.4 minutes in 2015-16 to 21.3 minutes in 2016-17. North East Water attributed the increase to its new asset management system, which improved accuracy of data reported. In addition, a single event in February 2017 affected 724 properties for 341 minutes. North East Water continues to invest in its asset management practices and systems to reduce the number of interruptions.
  - GWMWater advised that its increase in average minutes off supply from 54.2 minutes in 2015-16 to 129.1 minutes in 2016-17 was due to planned works in Ararat which affected 3,633 customers overnight, and its planned air scouring to clean water mains in Nhill.
  - Westernport Water's average increased from 87.0 minutes in 2015-16 to 130.9 minutes in 2016-17. Westernport Water advised this increase was due to its air scouring program for water main cleaning, which increased the number of planned interruptions and interruption duration.
  - In metropolitan Melbourne, City West Water's average increased from 20.8 minutes in 2015-16 to 30.6 minutes in 2016-17. City West Water advised a large number of events occurred after hours where the first respondent has turned off supply to minimise damage before an available field repair crew can attend.

- South Gippsland Water had the largest reduction in average minutes off supply, decreasing from 49.2 minutes in 2015-16 to 33.1 minutes in 2016-17, primarily due to the reduced number and frequency of unplanned interruptions. South Gippsland Water advised this was due to favourable weather conditions combined with improved infrastructure management and maintenance programs.

5.3. Sewerage service – sewer blockages

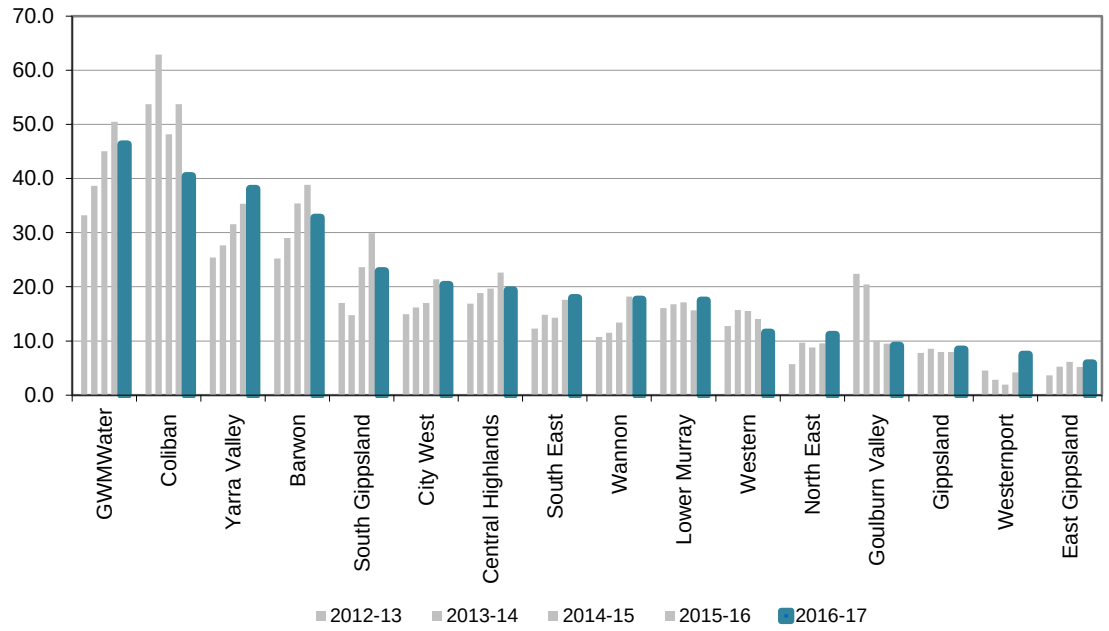
Sewer networks consist of:

- trunk and reticulation mains (core infrastructure involving large pipes and pumps to transfer sewage to treatment facilities)
- house connection branches and property drains (ancillary smaller infrastructure that transfers sewage from customers to the sewer mains)
- private connections from customers to connection branches or property drains (faults in these are the responsibility of customers).

A sewer blockage is a partial or total obstruction of a sewer main that impedes sewage flow, and does not include blockages in the ancillary infrastructure or private connections.

Figure 5.2 Sewer blockages

Blockages per 100 kilometres of sewer main



Snapshot (Sewer blockages, per 100 kilometres)

State-wide average		-2.8%	Metro average		4.1%	Regional average		-13.7%
2016-17	24.5		2016-17	26.6		2016-17	21.1	
2015-16	25.2		2015-16	25.6		2015-16	24.5	

Key observations

- The overall rate of sewer blockages across Victoria improved slightly to 24.5 sewer blockages per 100 kilometres in 2016-17, from 25.2 blockages in 2015-16.
- For the first time since reporting began, Coliban Water did not report the highest sewer blockage rate. Coliban Water attributed its 25 per cent reduction in blockages to its increased preventative and predictive maintenance programs. These programs included sewer mains cleaning, camera and acoustic inspections, sewer manhole inspections and level sensing technologies.
- South Gippsland Water recorded a 23 per cent reduction in blockages, which it attributed to its preventative maintenance programs that reline sewer mains in priority areas.
- GWMWater reported the highest sewer main blockage rate, even though it had an 8 per cent decrease from last year. The primary cause of blockages was tree root intrusions and age of sewer mains, which are the focus of future renewals programs and preventative maintenance.

5.4. Sewerage service – containment of sewer spills

Spills are a failure to contain sewage within the core sewer infrastructure. The severity of sewer spills is broken into two priority levels.

Priority 1: a major sewage spill that involves any of the following:

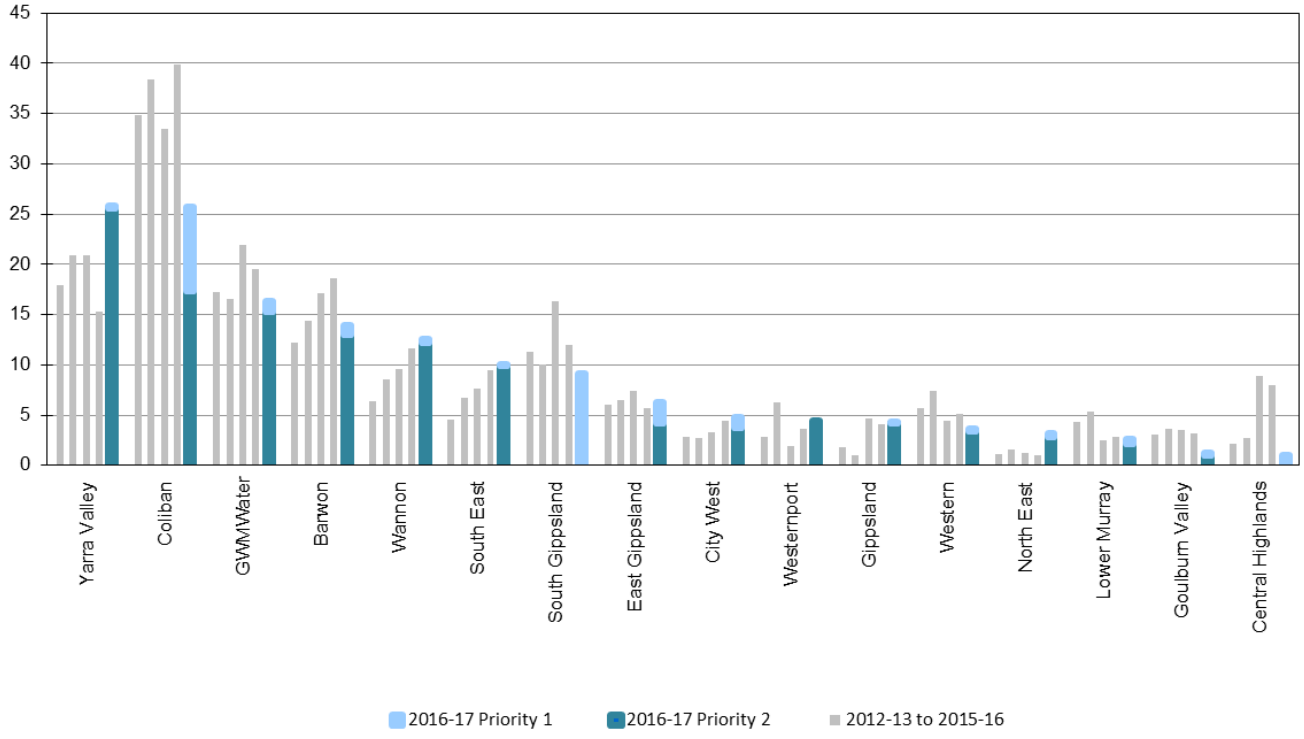
- a public health concern
- significant damage to property
- a discharge to a sensitive receiving environment
- a discharge from a sewer pipe that is 300 millimetres (or greater) in diameter, or the flow is greater than 80 litres per minute.

Priority 2: any minor failure to contain sewage within the sewerage network and any spill affecting several users that results in either:

- minor property damage
- a discharge outside a building that does not pose a health risk.

Figure 5.3 Sewer spills

Spills per 100 kilometres of sewer main



Snapshot (Sewer spills, per 100 kilometres)

State-wide average		12.4%	Metro average		42.8%	Regional average		-27.5%
2016-17	13.0		2016-17	15.6		2016-17	9.2	
2015-16	11.6		2015-16	10.9		2015-16	12.6	

Key observations

Priority 1 spills

- Almost all water businesses reported no more than a single priority 1 sewer spills per 100 kilometres of sewer main, with the exception of South Gippsland Water, Coliban Water and East Gippsland Water. South Gippsland Water classifies all sewer spills as priority 1, as it considers any spill potentially poses a health concern.
  - East Gippsland Water's priority 1 spill rate increased to 2.2 sewer spills per 100 kilometres of sewer main. East Gippsland Water advised that improved data from the field allows it to better identify spill priority, particularly around sensitive receiving environments.
  - Coliban Water reported the second highest number of priority 1 sewer spills, but decreased from 29.5 sewer spills per 100 kilometres of sewer main in 2015-16 to 8.4 spills in 2016-17. Coliban Water attributed this reduction to better classification of spill priority – spills that were previously incorrectly classified as priority 1 are now correctly classified as priority 2 after a review of how call centre staff could better query callers to ascertain the severity of spills.

Priority 2 spills

- Yarra Valley Water reported a 69 per cent increase in priority 2 spills from 15.1 spills per 100 kilometres of sewer main in 2015-16 to 25.6 in 2016-17. Yarra Valley Water advised that tree roots had penetrated its sewer pipes in search of moisture during a dry 2015-16. The wet start to 2016-2017 flushed debris sitting in the bottom of the pipes, which sometimes caught on the tree roots, resulting in blockages and spills.
- Coliban Water had a 67 per cent increase in priority 2 spills from 10.4 to 17.3 spills per 100 kilometres of sewer main. As mentioned previously, Coliban Water attributed this increase to improving its classification of priority 1 and 2 spills. In addition, the overall decrease in sewer spills is attributed to its increased maintenance programs (noted in Section 5.3).

Containing spills within five hours

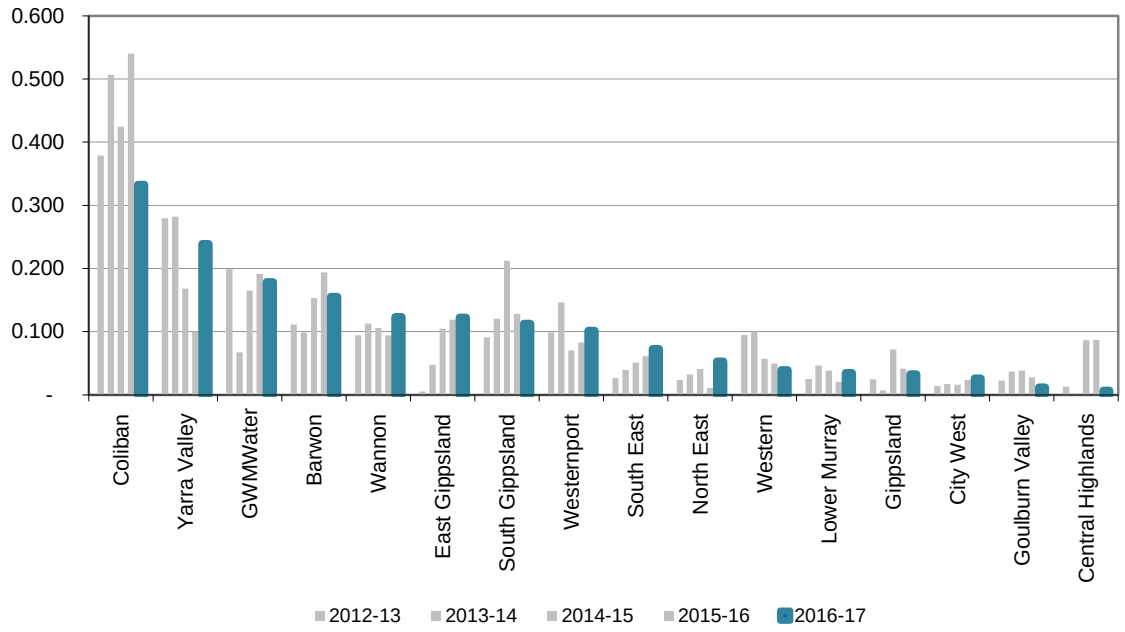
- 13 businesses contained 100 per cent of sewer spills within five hours in 2016-17, up from 10 businesses last year. The percentage of spills contained within five hours for the remaining three businesses was:
  - GWMWater — 99.1 per cent, compared to 99.2 per cent in 2015-16

– South East Water — 99.9 per cent, compared to 100 per cent in 2015-16
– Wannon Water — 99.2 per cent, compared to 94.4 per cent in 2015-16
– Yarra Valley Water — 95.2 per cent, compared to 100 per cent in 2015-16.

5.5. Sewerage service – spills to customer properties

Another measure of sewerage reliability is the number of spills that allowed sewage to discharge onto a customer's property.

Figure 5.4 Sewer spills to customer properties
Spills per 100 customers



Snapshot (Customer property sewer spills, per 100 customers)

State-wide average		39.5%	Metro average		85.6%	Regional average		-25.5%
2016-17	0.12	↑	2016-17	0.13	↑	2016-17	0.11	↓
2015-16	0.09		2015-16	0.07		2015-16	0.15	

Key observations

- Across the state, the rate of sewer spills to customer property increased from 0.09 spills per 100 customers in 2015-16 to 0.12 in 2016-17. The average metropolitan Melbourne rate increased significantly in 2016-17 driven by Yarra Valley Water's results, while the regional average decreased.
- Despite a decrease of 38 per cent in 2016-17, Coliban Water reported the highest customer property spill rate of 0.33. Coliban Water advised that it targets sewer mains that have

previously resulted in spills within a house as part of its preventative maintenance program, to reduce future sewer spill incidents.

- Central Highlands Water also reported a significant decrease in rate of sewer spills to customer property. However it advised that its recording of field data for 2014-15 to 2016-17 may not accurately capture spill details. Any changes to reported data will be audited and noted in our 2017-18 water performance report.
- Large increases were recorded by North East Water and Yarra Valley Water.
  - North East Water noted that the increasing trend was consistent with its results for sewer spills. A new asset management system, which allows staff to electronically capture data in the field, has provided more accurate reporting of events, leading to a higher reported number of spills to customer properties. North East Water also advised us that improved data capture has resulted in a higher number of events being recorded across a number of water and sewerage performance indicators – this suggests previously reported data may not have represented actual performance.
  - Yarra Valley Water attributed the increase in spills to property rate to the dry 2015-16 followed by a wet 2016-17 (previously mentioned in Section 5.4).

6. How safe is our drinking water?

This chapter looks at the quality of drinking water from the perspective of community health and wellbeing. Microbiological water quality (the presence of *E. coli*) is the most important indicator from a public health perspective. The other key indicator is turbidity, which measures cloudiness caused by fine suspended particles.

We also examine the complaints about water quality made by customers to their water businesses.

In Victoria, the governance framework for supplying safe drinking water is set out in the Safe Drinking Water Act 2003 and the Safe Drinking Water Regulations 2015, both administered by the Department of Health and Human Services.

6.1. 2016-17 at a glance

Water businesses continue to provide safe drinking water and had high compliance with the regulations.

Water quality complaints increased in some regional areas due to water colour.

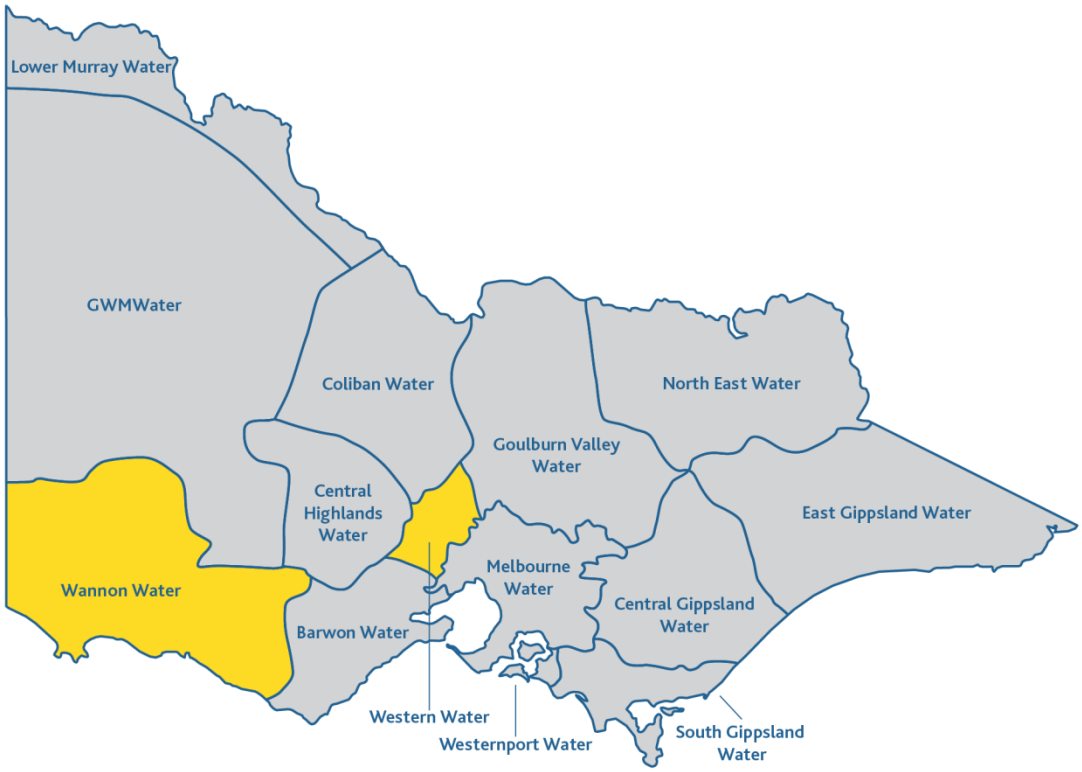
6.2. Compliance with *E. coli* regulations

The microbiological quality of drinking water is measured in terms of the number of *Escherichia coli* bacteria per 100 millilitres of drinking water. The presence of *E. coli* means water may be contaminated with faecal material. These organisms should not be present in drinking water.

The regulations require that **all** samples collected for a drinking water supply zone in any 12 month period contain no *E. coli*. Any non-compliance is measured by the proportion of customers that may be affected by the non-compliant sample for a given drinking water supply zone.

Figure 6.1 Microbiological activity (E. coli)

Percentage of customers receiving water compliant with regulations



Key: 100 per cent 99 per cent and above

Key observations

- Wannon Water and Western Water reported that 99.8 per cent of customers received water at a quality that met the *E. coli* standard.
  - Wannon Water advised that a sample for the township of Cavendish did not comply with the standard, but the system was cleared after flushing, resampling and a review of the disinfection systems. Wannon Water changed the system cleaning regime and installed additional equipment to improve the water quality for the 90 customers (0.2 per cent) in the supply zone.
  - Western Water advised that three of its 19 supply zones recorded an *E. coli* exceedance due to rainwater entering its storage tanks, affecting 99 customers (0.2 per cent).

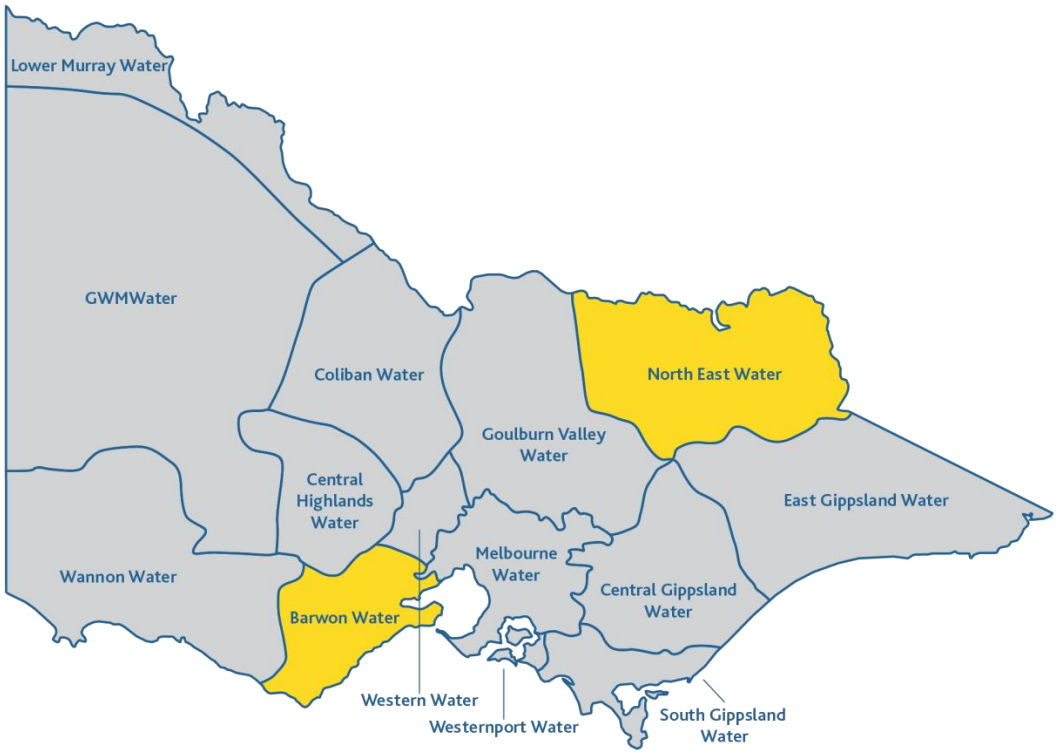
6.3. Compliance with turbidity regulations

Turbidity in water is caused by the presence of fine suspended particles of clay and silt, algae or other microscopic organisms. It is measured in Nephelometric Turbidity Units (NTU). High turbidity levels can result in water having a 'muddy' or 'milky' appearance.

The regulations require **at least** 95 per cent of samples collected for a drinking water supply zone in a 12 month period should be below 5.0 NTU. Any non-compliance is measured by the proportion of customers that may be affected by the non-compliant sample for a given drinking water supply zone.

Figure 6.2 Turbidity

Percentage of customers receiving water compliant with regulations



Key: 100 per cent 99 per cent and above

Key observations

- Barwon Water reported 99.9 per cent of customers received water compliant with the turbidity regulations and North East Water recorded compliance for 99.8 per cent of its customers.
  - Barwon Water advised that one ad hoc water quality sample was taken during the management of a one off dirty water event, resulting from planned maintenance works in Lorne which stirred up sediment in the pipe. Following flushing of the network water quality was restored to normal for the 0.38% of customers in the supply zone.
  - North East Water advised one sampling anomaly in a supply zone affected 0.2 per cent of all customers. North East Water uses customer taps as reticulation sample sites. Its investigation revealed the pipe at this particular tap had been modified by the customer, affecting the water sample and was not representative of the actual water supply.

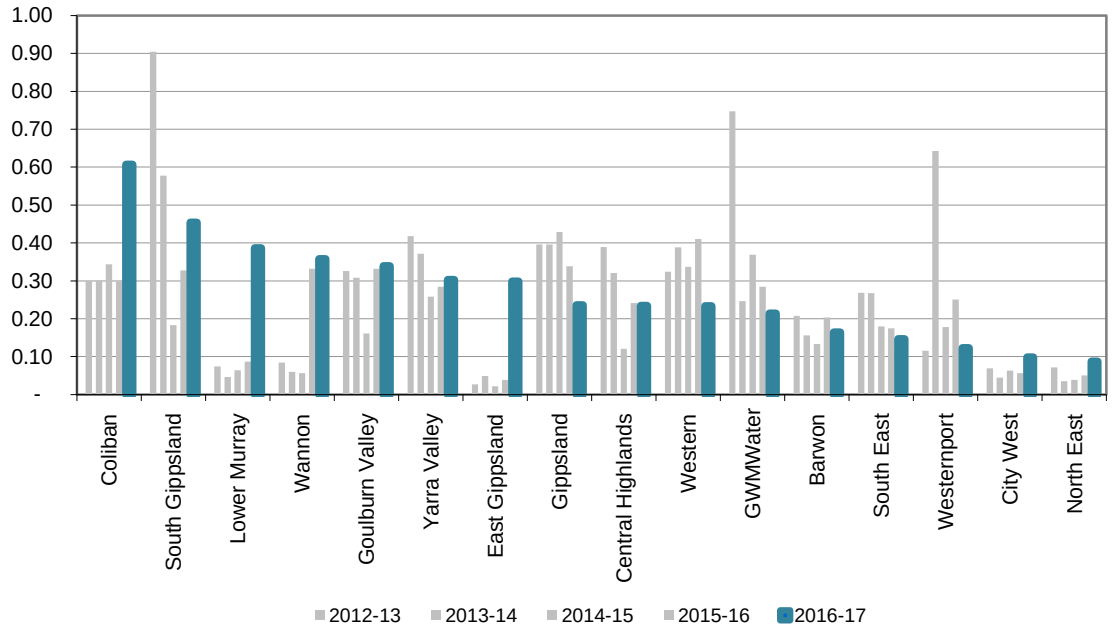
6.4. Water quality complaints made to water businesses

The number of water quality complaints is a measure of customer satisfaction with the colour, taste and odour of water supplied.

We discuss the results for all complaint categories in Section 4.4.

Figure 6.3 Water quality complaints made to water businesses

Per 100 customers



Snapshot (water quality complaints, per 100 customers)

State-wide average		4.6%	Metro average		2.7%	Regional average		8.9%
2016-17	0.22	▲	2016-17	0.20	▲	2016-17	0.28	▲
2015-16	0.21		2015-16	0.19		2015-16	0.25	

Key observations

- The 2016-17 state-wide average rate of 0.22 water quality complaints per 100 customers remains low compared to historical values, with the lowest average rate of 0.19 recorded in 2014-15. Overall a small proportion of customers had cause to make a water quality complaint, with 5,831 complaints made by the 2.7 million Victorian customers.
- Nine of the 16 businesses reported increases in their overall water quality complaint rate from 2015-16.
- The largest increase in the complaint rate was reported by East Gippsland Water, increasing from 0.04 complaints per 100 customers in 2015-16 to 0.30 in 2016-17, due to a change in reporting procedures following the 2015-16 audit. East Gippsland Water advised its reporting of

water quality complaints in prior years had excluded all enquiries relating to water quality where there was no perceived dissatisfaction by the call centre operator. This was not consistent with our reporting requirements.

- Lower Murray Water experienced increases across the three water quality complaint categories. It advised this resulted from a blackwater event due to upstream flooding in the Murray River catchment, which inundated previously dry native riverine forests and washed organic debris into the river. As a result, poor raw water quality (moderate turbidity due to suspended particles and high colour) affected the water treatment processes at all the water treatment plants.
- Coliban Water reported a doubling in its complaint rate from 2015-16 to 2016-17. Coliban Water reported that high levels of manganese in the raw water supply led to increases in complaints in Echuca and Heathcote. Coliban Water responded by chemically dosing and systematically flushing the entire distribution network to remove the discoloured water, along with any sediment and manganese deposits from the pipes.
- Meanwhile, Western Water and Westernport Water reported decreases in their respective complaint rates by about a half.
  - Western Water advised that taste and odour complaints reduced because the water supply was not switched several times as it was in the previous year. Each water supply has its own taste which can be distinguished by customers.
  - Westernport Water attributed its decrease to its air scouring program to clean its water mains as part of its preventative maintenance program.
- The largest complaints category for most businesses was colour. Conversely, taste and odour prompted the most complaints for Goulburn Valley Water, East Gippsland Water and Coliban Water.

7. How are water businesses managing their environmental impact?

This chapter looks at how water businesses reuse wastewater by creating recycled water and nutrient-rich biosolids. Water businesses also report on their volume and sources of greenhouse gas emissions.

We include Melbourne Water in this chapter as it operates part of the sewerage network and treatment plants that service metropolitan Melbourne customers. Most wastewater from City West Water, South East Water and Yarra Valley Water is transferred to either the Western Treatment Plant (Werribee) or the Eastern Treatment Plant (Bangholme).

7.1. 2016-17 at a glance

Water businesses delivered less recycled water in 2016-17 due to the higher rainfall reducing demand.

Water businesses continue to find beneficial reuse options for biosolids and run down their stockpiles.

Water businesses produced less greenhouse gas emissions in 2016-17.

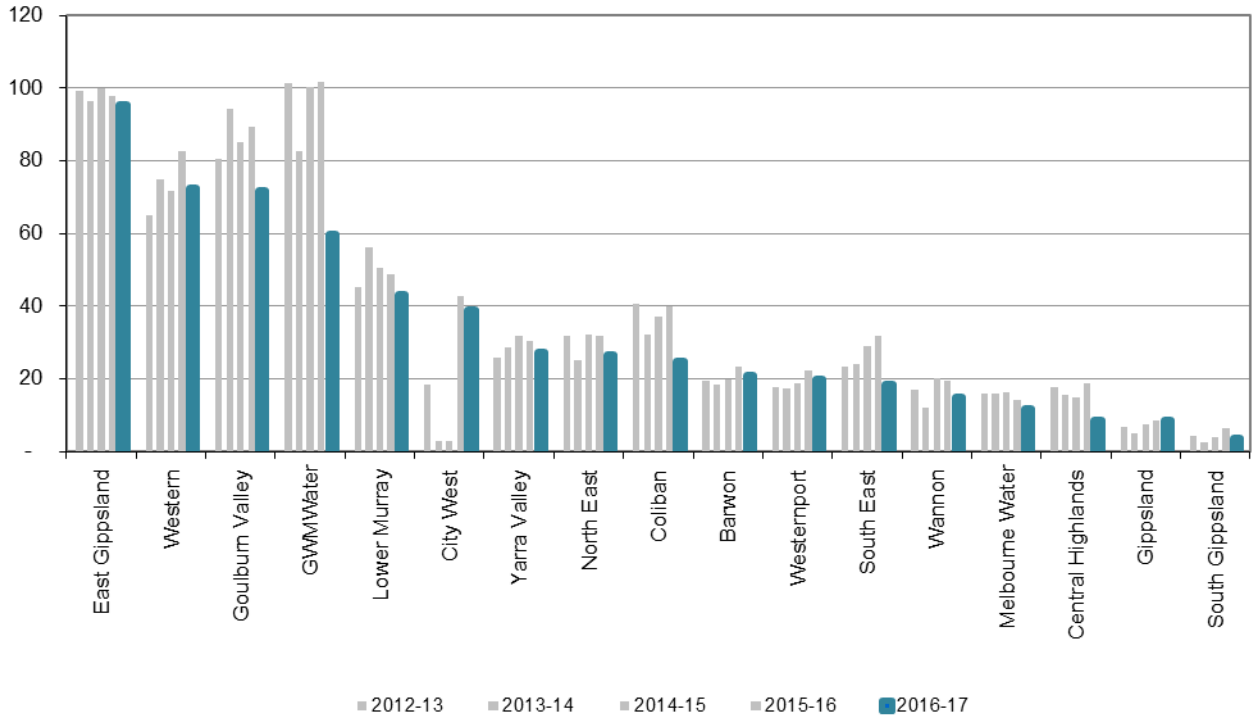
7.2. Recycled water – effluent treatment and reuse

Wastewater consists of residential and non-residential sewage, trade waste from commercial and industrial customers, and stormwater that reaches the sewer network. The wastewater treatment plants produce an effluent stream that, if unused or not recycled, is normally discharged to the environment.

Recycled water is generally used on turf farms, dairy farms, recreational lands (such as parks and golf courses) and is used in some industrial processes and for irrigation. Some businesses operate 'third pipe' recycled water supply systems to their customers, for non-potable uses such as garden watering and toilet flushing. Recycled water can also be used for beneficial environmental outcomes, such as maintaining wetlands.

Figure 7.1 Proportion of recycled water used

Recycled water used as proportion of effluent produced



Snapshot (recycled water, percentage of effluent produced)

State-wide average		-18.3%	Metro average		-17.5%	Regional average		-19.6%
2016-17	17		2016-17	13		2016-17	28	
2015-16	21		2015-16	16		2015-16	35	

Key observations

- Across the state, total effluent production increased 10 per cent from 449,374 megalitres in 2015-16 to 494,277 megalitres in 2016-17. This was consistent across both metropolitan Melbourne and regional water businesses. Melbourne Water produced 327,327 megalitres of effluent on behalf of the three metropolitan retailers.
- The proportion of effluent reused across the state decreased from 21 per cent in 2015-16 to 17 per cent in 2016-17, with volumes reused decreasing from 94,861 megalitres in 2015-16 to 85,246 megalitres in 2016-17. Melbourne Water delivered 38,846 megalitres of recycled water in 2016-17, 8 per cent less than in 2015-16.
- Water businesses have largely attributed the increase in effluent production to the increase in rainfall, which caused more wastewater to flow into the treatment plants. Similarly, businesses have advised that the increased rainfall reduced the demand for recycled water, which also led to the decrease in the proportion of effluent reused.

- Melbourne Water and GWMWater attributed their decreases in the proportion of effluent reused to the higher rainfall.
- Central Highlands Water advised there was another contributing factor – the Ballarat North treatment plant required significantly less recycled water due to an operational change within the treatment process.
- South East Water's proportion of effluent reused decreased from 32 per cent in 2015-16 to 18 per cent in in 2016-17. South East Water advised that repairs at the Boneo treatment plant meant recycled water could not be supplied to customers for most of 2016-17. In addition, the Pakenham plant had some operational issues which reduced the volume of recycled water produced.[8]
- Coliban Water noted that the difference between the two years was accentuated due to lower than average rainfall in the prior year which had increased the recycled water demand in 2015-16.

7.3. Biosolids reuse

The organic sludge (biosolids) produced during wastewater treatment can be put to beneficial reuse, such as organic-rich fertiliser, rather than disposed of as a waste to landfill. Periodically, water businesses desludge lagoons or tanks where the sludge accumulates to produce biosolids.

Reporting on biosolids

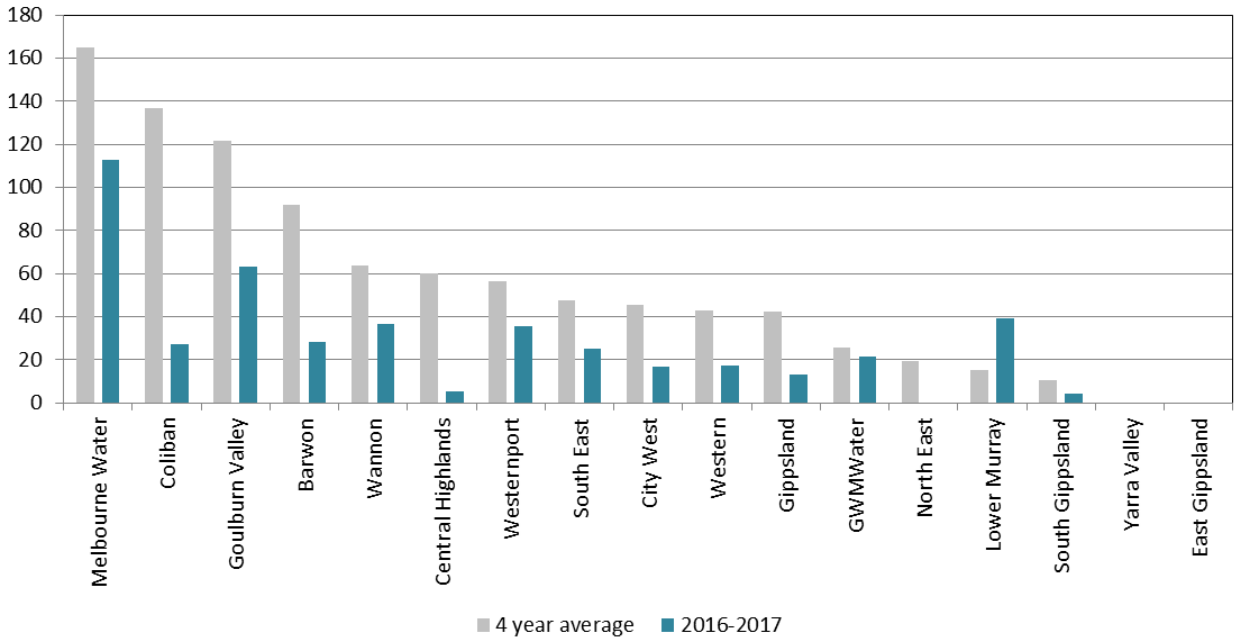
We report on biosolids produced when the sludge is physically removed from lagoons or tanks. We consider a 4 year average (including 2016-17) better demonstrates a water business's management of its biosolids (see Figure 7.2), as desludging and reuse does not occur annually.

A zero reuse rate in a given year can mean a water business has not undertaken any desludging activity or it has chosen to stockpile biosolids rather than reuse them. A reuse rate above 100 per cent indicates that a business reused more biosolids than it produced. This means the business will be reducing its stockpiles of biosolids.

[8] South East Water also advised that its reported volume of effluent produced may in fact be lower, which would lead to an increase in the proportion of effluent reused. Any changes to reported data will be audited and noted in our 2017 18 water performance report.

Figure 7.2 Proportion of biosolids reused

Percentage of biosolids reused from biosolids produced



Key observations

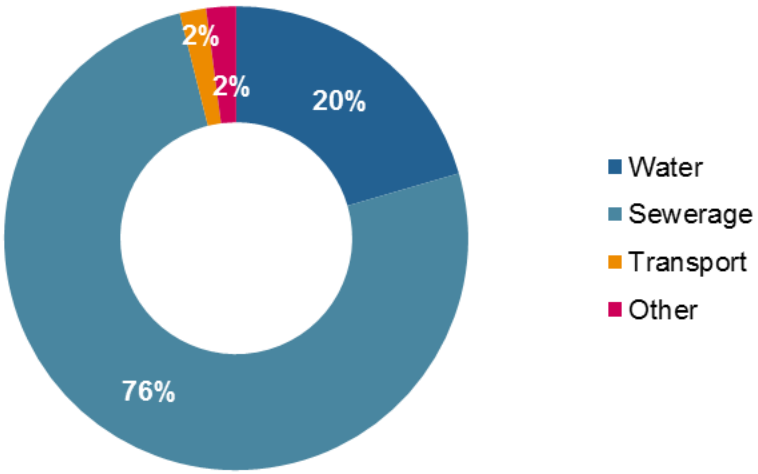
- The 2016-17 state-wide proportion of biosolids reused was 82 per cent, while the average for 2013-14 to 2016-17 was 112 per cent.
- The water businesses reported 494,277 tonnes of biosolids produced in 2016-17, up from 111,191 tonnes in 2015-16. The biosolids mass reused increased from 262,696 tonnes in 2015-16 to 403,647 tonnes in 2016-17.
- Melbourne Water reported that it continued to reuse more biosolids than it produced, by running down its stockpiles of biosolids at the Eastern Treatment Plant. 226,500 dry tonnes were used for the capping of a nearby landfill. An additional 139,500 dry tonnes were re-used as clay liners to refurbish sludge drying pans, eliminating the need to purchase these materials.
- Lower Murray Water reported its first reuse of biosolids, with 2,381 tonnes applied to a dry land agricultural property.
- Yarra Valley Water and East Gippsland Water have not reported any biosolids reuse over a four year period.
  - East Gippsland Water reuses all of its biosolids in the long term, but its lagoons are only desludged every 10 or so years.
  - Yarra Valley Water continues to investigate reuse opportunities for existing biosolids stockpiles that are financially viable.

7.4. Greenhouse gas emissions

Net carbon dioxide equivalent (CO_2-e) emissions vary with each water business's operation. Factors impacting CO_2-e emission levels include:

- the source of water (river, dam, purchase of bulk water from another business)
- the quantity of water supplied and sewage treated
- the transportation method of networks (gravity operated versus pumped network: pumping requires electricity and generates more CO_2-e)
- geographical conditions (which influence where water or sewage needs to be pumped)
- the number of large customers and the extent of industry within the customer base.

Figure 7.3 Sources of greenhouse gas emissions for the Victorian water sector
Percentage of total emissions, excluding offsets



Across Victoria, water businesses emitted 850,887 tonnes of CO_2-e in 2016-17. Reported CO_2-e emission offsets was 7,026 tonnes, which results in net emissions of 843,861 tonnes.

Sewerage services contributed 76 per cent of water businesses' gross greenhouse gas emissions, totalling 643,191 tonnes of CO_2-e (excluding offsets). Pumping is often required to move wastewater through the network to treatment locations, the wastewater treatment process is more energy intensive than for water, and the treatment process also produces methane gas.

Table 7.1 Net greenhouse gas emissions

Equivalent tonnes of CO_2, including offsets

	2012-13	2013-14	2014-15	2015-16	2016-17	Per customer
Melbourne	378,785	339,137	477,881	432,997	438,332	0.24
City West	9,841	10,310	11,102	13,708	11,227	0.03
South East	40,211	36,645	42,326	43,556	42,098	0.06
Yarra Valley	29,512	32,708	33,255	33,762	34,083	0.05
Barwon	37,960	39,943	38,849	40,504	40,604	0.29
Central Highlands	14,567	16,271	16,277	29,779	15,707	0.25
Coliban	33,017	31,648	44,006	56,374	33,645	0.50
East Gippsland	8,442	8,098	7,912	8,011	8,557	0.42
Gippsland	42,864	38,246	42,706	60,964	37,549	0.60
Goulburn Valley	46,926	48,750	49,295	44,754	40,581	0.79
GWMWater	11,966	20,401	19,087	18,419	13,496	0.50
Lower Murray	11,166	17,366	17,912	20,015	19,163	0.65
North East	39,637	41,521	41,162	43,862	37,737	0.83
South Gippsland	7,550	6,872	7,411	7,385	8,347	0.49
Wannon	30,714	29,095	31,725	32,970	28,880	0.79
Western	15,644	15,217	30,646	31,900	27,379	0.46
Westernport	6,259	6,471	6,473	6,053	6,476	0.43
Statewide total	**765,061**	**738,700**	**918,026**	**925,013**	**843,861**	**0.34**

Snapshot

State total		**-8.8%**	**Metro total**		**0.3%**	**Regional total**		**-20.7%**
2016-17	843861	↓	2016-17	525740	—	2016-17	318121	↓
2015-16	925013		2015-16	524023		2015-16	400990	

Key observations

- Across the state, net greenhouse emissions within water businesses has decreased from 925,013 tonnes in 2015-16 to 843,861 tonnes in 2016-17, a reduction of 9 per cent.
- The amount of CO_2-e offset increased from 5,242 tonnes in 2015-16 to 7,062 tonnes in 2016-17, an increase of 34 per cent. This is lower than the approximate 20,000 tonnes of CO_2-e offsets in 2012-13 and 2013-14.

- Central Highlands Water and Coliban Water both reported significant decreases in emissions from water services. They attributed the reduced emissions to not needing the Goldfields Superpipe to pump water for most of the year.
- Gippsland Water's emissions dropped to historical levels following a significant spike in 2015-16, when the cogeneration plant at the Gippsland Water Factory was out-of-service for five months.
- Melbourne Water reported a rip in a methane capture cover at its Western Treatment Plant in 2014-15, which resulted in an increase in net greenhouse gas emissions. The cover was fully repaired and recommissioned on 1 February 2017.
- South Gippsland Water attributes its 13 per cent increase in net greenhouse gas emissions to the increase in sewage treated and a refined calculation method.

8. How are water businesses managing their major projects?

We examine how water businesses are managing their major projects commitments made in their price submissions for the 2013–18 period. We track whether the projects identified are completed as planned or whether the business can explain why priorities have changed over time.

The 16 urban water businesses and Melbourne Water nominated major projects for completion in the five year pricing period from 2013–18. In total, 100 major capital projects were identified.

We track how these 100 projects have been delivered against the expected start and completion dates. We also request commentary from each of the water businesses to understand how the projects are progressing and why actual completion dates may differ from those initially expected.

Table 8.1 outlines the status of major projects for each water business at the end of 2016-17.

A total of 52 major projects have been completed by the end of 2016-17, with another 10 projects still proceeding on schedule. 35 projects are either delayed or deferred, with 23 of these 35 projects now expected to be completed in the next pricing period.

Want more information?

Further commentary on the estimated schedule and actual status for each water business's individual projects can be found in the supplementary paper *Status of major projects supplement: 2016-17 water performance report*.

This supplement can be found at www.esc.vic.gov.au/water/annual-performance-reports.

Table 8.1 2016-17 snapshot of major projects scheduled for 2013–18

	No. major projects	Completed on time	On-schedule	Completed late	Cancelled	Deferred	Delayed
Melbourne Water	6	2		2			2
City West	4	3					1
South East	6	1	1	3		1	
Yarra Valley	5	1	1	1		1	1
Barwon	7	4			1	1	1
Central Highlands	7	3	4				
Coliban	7	3		1			3
East Gippsland	4	1	1			2	
Gippsland	3	2		1			
Goulburn Valley	6	2				3	1
GWMWater	8	6		1		1	
Lower Murray	6	3				1	2
North East	5	1	1	2		1	
South Gippsland	5	1		1		1	2
Wannon	7		1	4		2	
Western	8				2	4	2
Westernport	6	2	1	1		1	1
TOTAL	**100**	**35**	**10**	**17**	**3**	**19**	**16**

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