Queensland's Urban Potable Water and Sewerage Benchmarking Report 2016/17

This is the seventh annual Urban Potable Water and Sewerage Benchmarking Report to be produced by ***qldwater*** for Queensland. It contains a suite of indicators and benchmarking data for 71 of Queensland's urban water/sewerage utilities. The data is presented in figures which provide comparative information to enable each Service Provider to compare its performance against that of similar sized Service Providers.

The report is divided into two areas (i.e. Sewerage Services and Potable Water Supply) and looks at aspects of capacity and viability, customer service, condition of assets, management and performance.

Queensland (along with NSW) differs from other States and Territories in Australia in that its drinking water and wastewater services are primarily the responsibility of local government. In Queensland, urban services are provided by 69 councils and two council-owned Distribution Retail Entities (DREs) compared to other States and Territories that typically have either a single authority or a number of regional statutory authorities.

During 2016/17 Queensland's council-owned Service Providers spend around $2 billion operating the $39B worth of water and sewerage infrastructure under their control. This infrastructure includes approximately:

- 381 water treatment plants which can produce around 1,600 ML of drinking water per day
- 285 sewage treatment plants
- 43,960 km of water mains
- 35,090 km of sewerage mains and channels
- 552 bores, 76 dams and 84 weirs
- 3,689 sewage pumping stations
- 905 water pumping stations

These water and wastewater services are provided to around 1.93 million water connections and 1.74 million sewerage connections in Queensland. They are required for public health and essential services – and generally must operate continuously without disruption.

Legislative changes in 2014 resulted in a change to the reporting requirements of Service Providers in Queensland. 2014/15 was the first time that Service Providers in the State reported via the *Key Performance Indicators Framework*. This change underscored the importance of achieving good outcomes in compliance and delivering services to communities through rigorous benchmarking. This has brought Queensland in line with several other Australian jurisdictions, and with the National Performance Framework whereby larger Service Providers have been required to report annual data for some time.

This 2016/17 report uses the same indicators as the 2014/15 report but differs slightly from earlier reports as some indicators are no longer reported by all Service Providers due to these legislative changes in reporting requirements. Some indicators are now only reported by Service Providers with greater than 10,000 water connections, while others are not separated into water and sewerage components or not reported at all.

Indicators no longer reported after 2013/14:

- % of sewage volume treated that was compliant
- % of total population where microbiological compliance was achieved
- Number of sewerage service complaints (per 1,000 properties)
- Number of water service complaints (per 1,000 properties)

Indicators only reported by Service Providers with greater than 10,000 connections since 2013/14:

- Economic real rate of return (ERRR) – water[1]
- Economic real rate of return (ERRR) – sewerage
- Typical Residential Bill – water[2]
- Typical Residential Bill – sewerage
- Real water losses
- Sewage overflows reported to the environmental regulator

New indicators that commenced in 2014/15:

- (Average) Response/reaction time for incidents (water)[3]
- Number of water and sewerage complaints per 1,000 properties (in previous *Benchmarking Reports* the "number of sewerage service complaints per 1,000 properties" and "number of water service complaints per 1,000 properties" were reported)
- Typical annual residential water and sewerage bill (in previous *Benchmarking Reports* the "Typical annual residential bill" was reported by all Service Providers as separate components (sewerage and water).

Indicators no longer reported after 2016/17:

- (Average) Response/reaction time for water incidents
- (Average) Response/reaction time for sewerage incidents[4]

New indicators that commenced in 2016/17:

- Percent Customer Service Standards (CSS) response target met: water incidents
- Percent CSS response target met: sewerage incidents

qldwater strongly supports the use of performance reporting and benchmarking to assist Service Providers in the continuous improvement of the services they provide to their community. Performance reporting and benchmarking provide valuable comparative data. This data enables each Service Provider to critically examine its performance by investigating trends in its indicators and by comparing their performance against those of similar Service Providers, and particularly against high-performing Service Providers that are in a similar position and implementing the best-practices that are appropriate for their region. The

[1] ERRR (both water and sewerage) has been calculated for all councils this year from DNRME Key Performance Indicator data.
[2] Some councils with <10,000 connections have voluntarily provided their 'typical residential bill – water/sewerage' data this year.
[3] No longer reported (see footnote 1 above).
[4] These two indicators have been replaced from 2016/17 on by 'Percent CSS response target met' (separated for water and sewerage). It is essentially reporting the same thing but in a different form and with different units.

diversity of the Queensland sector means that there is a broad variety of external factors influencing efficiency and effectiveness of service providers so comparisons with those with similar cost drivers will be most useful.

External factors potentially influencing performance

There are a wide range of 'external' factors which can influence a Service Provider's performance. These factors include things such as:

- climate (e.g. rainfall patterns, evaporation, temperature)
- geography (e.g. geology (i.e. soil reactivity (shrink-swell)), typology (i.e. mountains, flood plain))
- size (e.g. population, number of connections, km^2)
- location (e.g. SEQ vs. Western Qld, dense urban vs. rural urban)
- services provided (e.g. water treatment vs. treated water imported from other supplier)
- water supply (e.g. river vs. dam vs. bore water may require different treatment, distance to supply)
- asset age (e.g. old assets may require more maintenance/repairs and be less efficient)
- regulatory requirements (e.g. sewerage treatment levels)

It is important to take these factors into account when comparing performance with other Service Providers.

One way for Service Providers to limit the effects of these external factors is to examine trends in their own performance indicators over time. It must be remembered though, that there may be changes in the external factors over time as well (e.g. wet vs. dry years).

Service Provider size as a factor in assessing Statewide 'benchmark' performance

It is important to note up front that the figures for smaller Service Providers may be skewed towards relatively higher values for indicators that standardise data by 'per property', 'per connection' or 'per 100 km of mains'. This is due to these smaller Service Providers having very low populations and relatively short main lengths which means that even small figures can be magnified when compared with larger organisations. This means that these indicators can result in small organisations comparing poorly with larger ones and in such cases benchmarking is only useful against Service Providers of a similar size.

Sewerage Services

Capacity and viability

The total reported capital expenditure on sewerage infrastructure in Queensland was $471,604,507 for 2016/17. The Statewide median capital expenditure was $235 per property. In addition, the total reported operating costs to collect and treat sewerage from across the State was $592,255,952 at a median cost of $323 per property for the State.

Capital expenditure

Capital expenditure will vary markedly from year-to-year, particularly for Service Providers with a small number of sewerage assets, but the indicator provides a snapshot of investment across the industry.

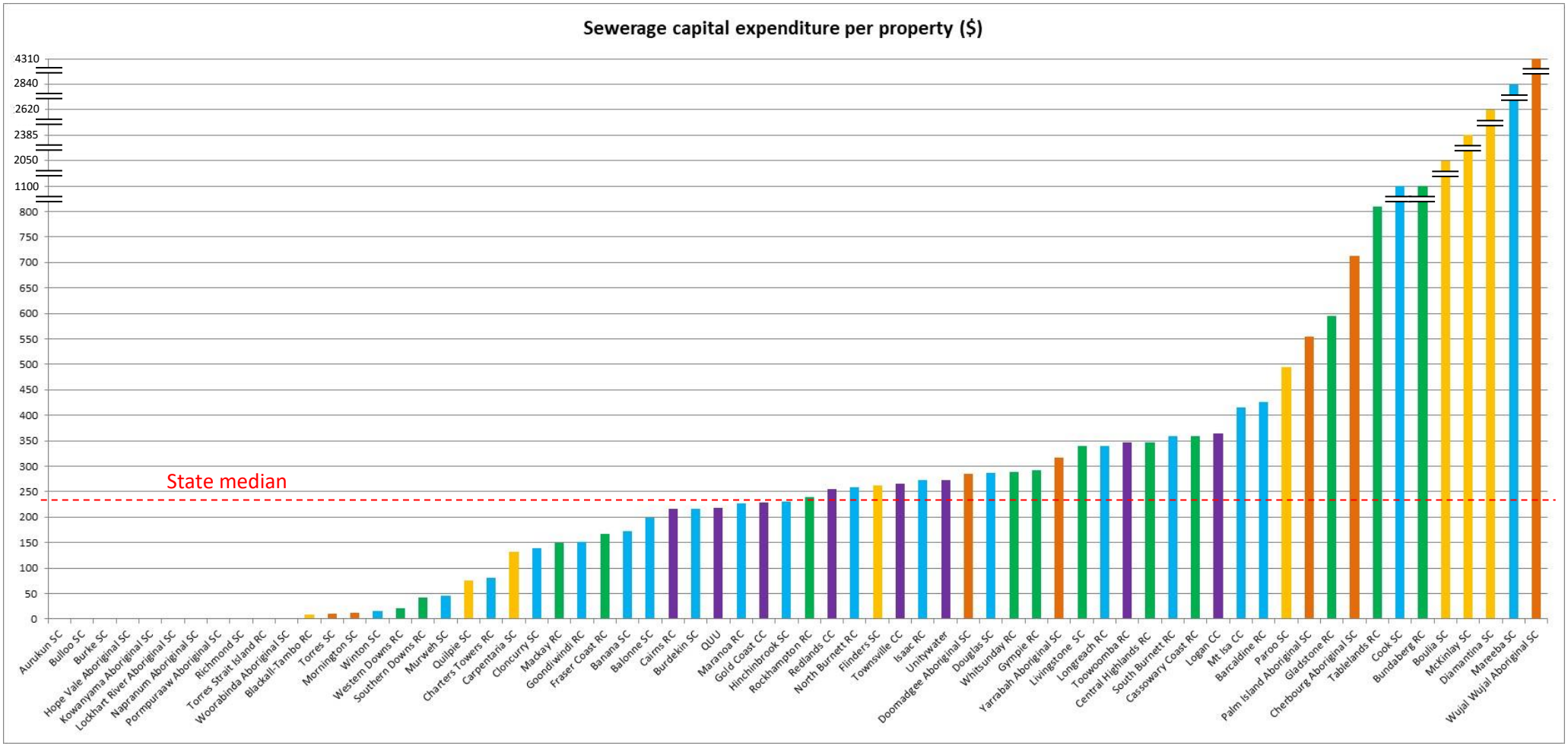

Figure 1. Sewerage capital expenditure per property ($)[5].

Note: This figure shows ranked values of sewerage capital expenditure per property ($) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[6]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for sewerage capital expenditure is $235 per property. Each bar represents one SP.

[5] Note: figures for smaller SPs may be skewed towards higher values due to their very low populations.

[6] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

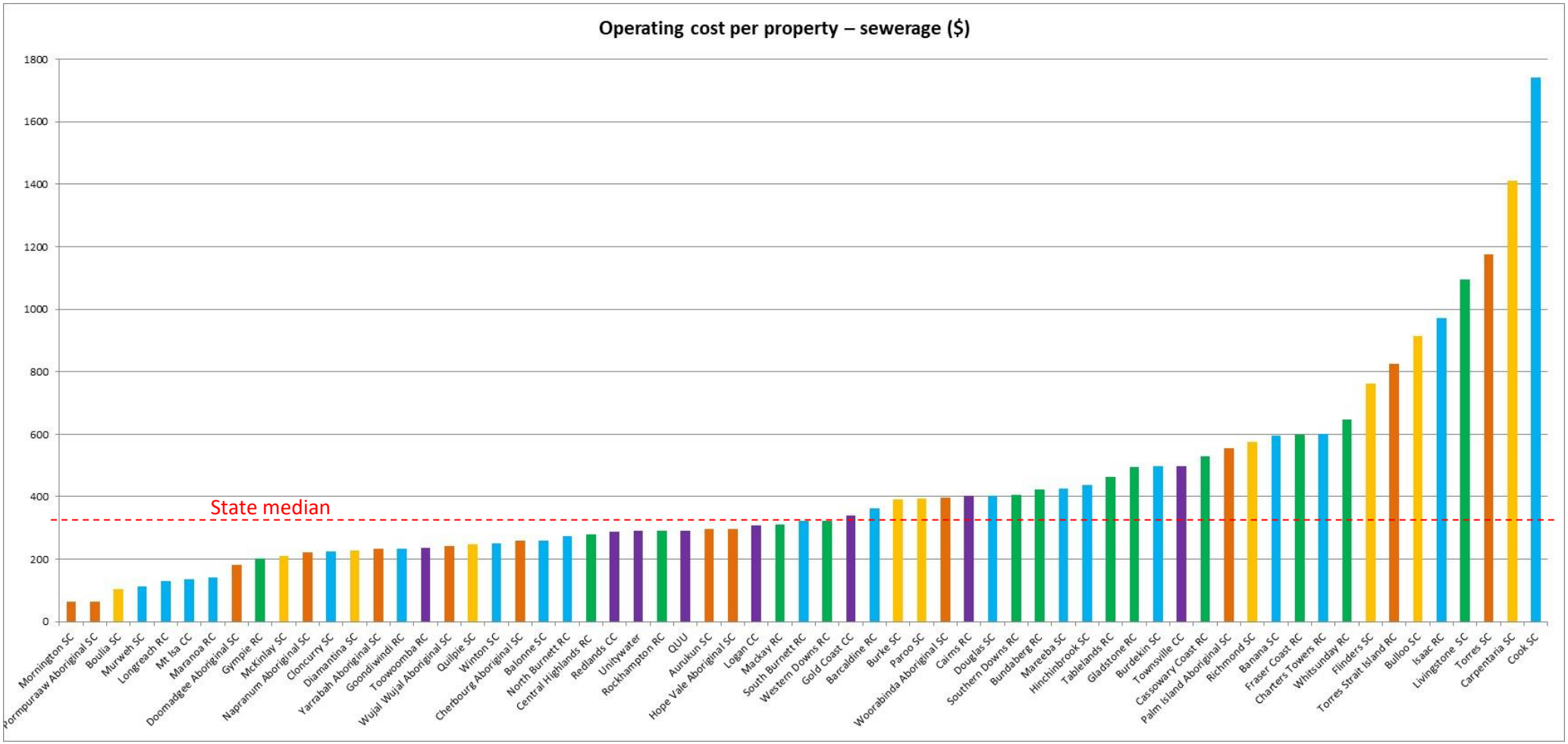

Figure 2. Operating costs per property – sewerage ($)[7].

Note: This figure shows ranked values of operating costs per property – sewerage ($) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[8]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for operating costs – sewerage is $323 per property. Each bar represents one SP.

[7] Note: figures for smaller SPs may be skewed towards higher values due to their very low populations.

[8] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

Operating costs

The 'operating cost (sewerage) per property' can be a good indication of the performance of a Service Provider. The components of operating cost (operation, maintenance and administration) are:

- Charges for bulk treatment/transfer of sewerage
- Salaries and wages
- Overheads on salaries and wages
- Materials/chemicals/energy
- Contracts
- Accommodation
- All other operating costs that would normally be reported
- Items expensed from work in progress (capitalised expense items) and pensioner remission expenses
- Competitive neutrality adjustments, they may include but not be limited to, land tax, debits tax, stamp duties and council rates

Topography will also affect operating costs through the amount of pumping needed to move the sewage to the treatment plant. With higher levels of sewage pumping come an associated increase in asset maintenance and energy costs.

Cost drivers for sewerage services

The type of treatment as well as the level of treatment (related to the discharge requirements) of sewage will affect the operating costs. With higher levels of sewerage treatment come associated increases in other costs, particularly energy.

Service Providers with a number of separate sewage systems, larger areas of low density service (i.e. low numbers of properties serviced per km of main) and those with higher numbers of, and smaller, sewerage treatment plants will generally need more employees to effectively manage their systems and thus have higher operational costs. Management of biosolids is another costly expense which is greater for large service providers, particularly if they are at a large distance from reuse or disposal sites.

The maintenance costs of sewerage infrastructure are related to several factors, such as the age and condition of the assets and the soil reactivity (shrink-swell of soils damaging pipes).

Typical annual residential bill

The 'typical annual residential bill – sewerage' is the dollar amount of the typical residential sewerage bill for the financial year, including special levies. If the bill is cost-reflective and a Service Providers' operations are run effectively and efficiently, the typical residential bill should be minimised and indicate the Service Provider is providing value for the community. However, if bills are lower than costs then a Service Provider may not be financially sustainable. The aim for a Service Provider should be to provide agreed levels of service at the lowest, but importantly sustainable, residential bill.

Note that this indicator is one of those that is now only legislatively required to be reported into separate water and sewerage components by Service Providers with greater than 10,000 connections though smaller Service Providers are still encouraged to report both values. The median typical annual residential bill for sewerage services by Service Providers with greater than 10,000 connections was $706, and $605 for all reporting entities.

The median value for the typical annual residential bill (for water and sewerage combined) is $1,373 and is reported by all Service Providers with the exception of Barcoo, Croydon, Etheridge and Mapoon Aboriginal Councils which do not provide sewerage services (see Fig. 4). The trend for smaller Service Provider's bills to be lower than large providers is opposite to the trend of decreasing cost with size demonstrated for large utilities nationally. This in part reflects the lower costs for some small service providers that do not have sewage treatment and which may have simple or no water treatment because of potable bore water supplies. Note that most aboriginal councils in Queensland do not charge water or sewerage fees and often report $0 for this indicator.

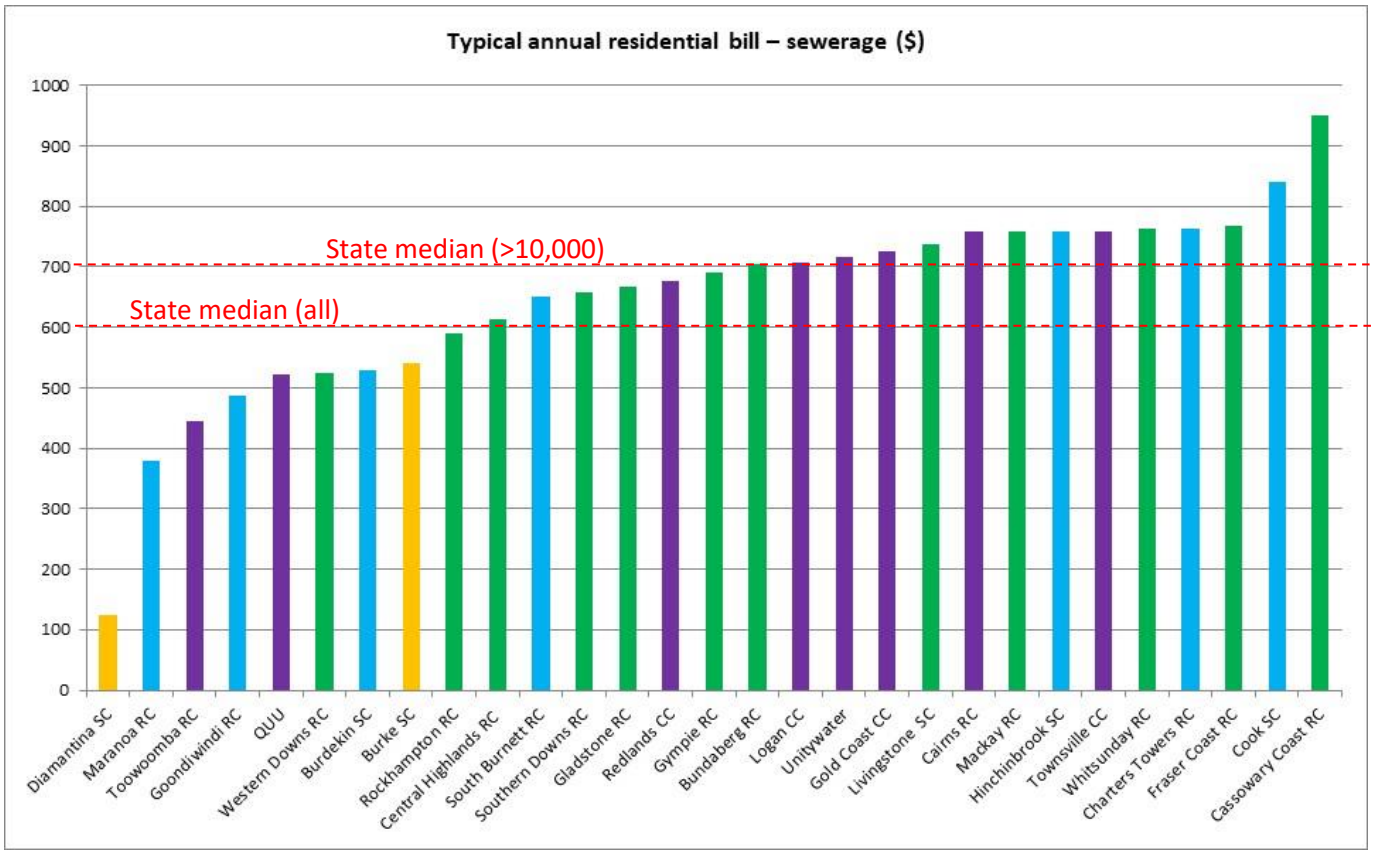

Figure 3. Typical annual residential bill – sewerage ($).

Note: This figure shows ranked values of the typical annual residential bill – sewerage ($) for each Service Provider (SP) with greater than 10,000 connections who reported in 2016/17 in 2 groups based on the number of connected properties served – large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the typical residential bill – sewerage of SPs with greater than 10,000 connections that reported in 2016/17 is $706. It also shows some smaller SPs with less than 10,000 connection who have voluntarily provided this data (small SP with less than 1,000 connections (**light orange** (non-indigenous)), medium SP with between 1,000 and 9,999 connections (**blue**). The 2016/17 Statewide median value for the typical residential bill – sewerage of all 62 SPs that reported in 2016/17 is $605. Each bar represents one SP.

Economic real rate of return

The financial performance of many, Service Providers is intricately linked with that of the owner council. This makes determining the financial performance of the sewerage operations, as an individual business unit, hard to assess particularly for small Service Providers.

In addition, an important distinction must be made between the category of (usually large) councils that are financially sustainable and can provide dividends to benefit their communities, and the small and often more remote councils. In the latter, smaller populations (and thus rate bases) can mean that funding

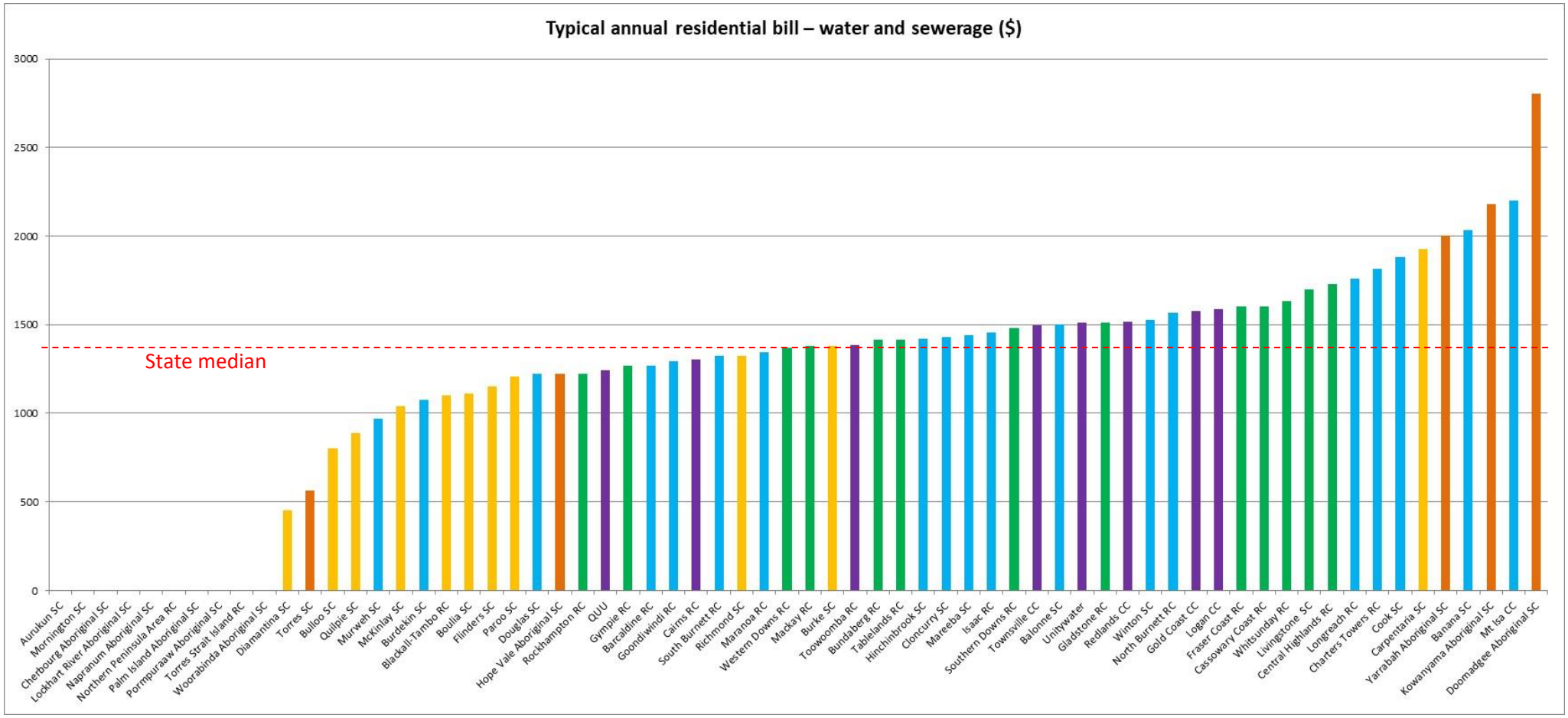

Figure 4. Typical annual residential bill – water and sewerage ($).

Note: This figure shows ranked values of the typical annual residential bill – water and sewerage ($) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (light orange (non-indigenous), **dark orange** (indigenous)[9]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the typical residential bill – water and sewerage is $1,373. Each bar represents one SP. Note that Barcoo, Croydon, Etheridge and Mapoon Aboriginal Councils do not provide sewerage services and have been excluded from this graph.

[9] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

assistance and subsidies from other council income is necessary to maintain services and, in some cases, even operating costs may not be recovered.

One comparator of financial performance is the Economic Real Rate of Return (ERRR). The ERRR (sewerage) is the revenue from sewerage business operations less operating expenses for the sewerage business divided by written down replacement cost of operational assets. An appropriate value for ERRR is difficult to determine for Service Providers but should be at least positive with a margin to allow for return on capital (NWC and WSAA, 2010). OTTER (2011) suggested that an ERRR of around 7% was required for full cost recovery in the pre-amalgamation Tasmanian urban water industry. The Productivity Commission questioned whether the NWC and the NSW Office of Water definition of full cost recovery as an ERRR "greater than or equal to zero" was sufficient (see PC, 2011, p. 386).

ERRR data is now only specifically required under the Qld KPI framework from Service Providers with greater than 10,000 water connections, however, it can be calculated from other indicators requested from all Service Providers. The data provided here are the calculated values across all service providers to allow for consistent comparison. The Statewide median value for ERRR (sewerage) for all Service Providers that provided data was 2.4%.

It is obvious from Figure 5 that small to medium (i.e. <10,000 connections) Service Providers are skewed towards the left (negative ERRR values) while large to extra-large (i.e. >10,000 connections) Service Providers are skewed towards the right (positive ERRR values). As most Aboriginal councils do not collect water or sewerage fees their ERRR value will typically be negative.

Customer service

Water and sewerage complaints

Water and sewerage complaints are no longer required to be reported separately (or broken down into sub-categories like service, billing, etc.). Water and sewerage complaints (combined) is reported by all Service Providers and shown below (Fig. 6). Unfortunately, the definition of what comprises a 'complaint' varies markedly among utilities and comparisons among Service Providers are therefore largely inappropriate. During 2016/17 a total of 22,165 water and sewerage related complaints were reported across the State. The Statewide median number of water and sewerage complaints per 1,000 properties was 17.

Response time to sewerage incidents

In previous years the average response time for sewerage incidents was reported but there is no 'ideal' response time as it varies depending on, the type of incident (e.g. emergencies should be treated faster than minor issues) and the distance to the area of concern. Response time to incidents is meant to provide an indication of customer service as no customer wants to be left waiting when they have a serious water or sewerage problem. However, as there was no consistent interpretation of the definition, or more importantly, no guidance in the definition of which 'incidents' to include in the analysis, the indicator has now been changed to report on the percentage of customer service standards achieved within target times.

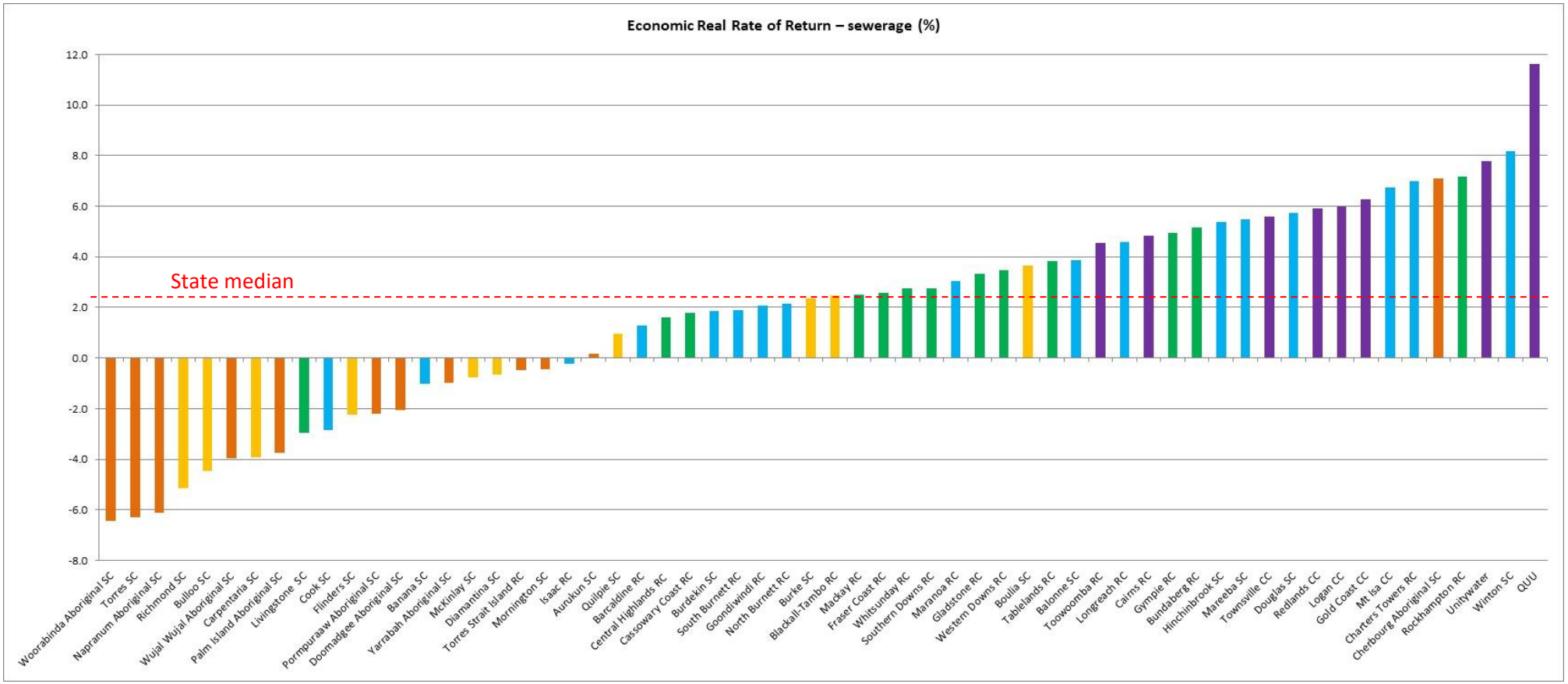

Figure 5. Economic Real Rate of Return (ERRR) – sewerage (%).

Note: This figure shows ranked calculated values of the ERRR – sewerage (%) for each Service Provider (SP) that reported appropriate data in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[10]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the ERRR – sewerage of these SPs is 2.4%. Each bar represents one SP.

[10] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

This change means that the results reported are against the specific Customer Service Standards (CSS) that Service Providers have agreed to with their customers. It thus makes the results reported independent of the specific response time taken and all the associated issues discussed above. The results reported for the 'Percent of CSS response time targets met: sewerage incidents (%)' can now be appropriately compared among Service Providers. The Statewide median for the percent of CSS response time targets met for sewerage incidents was 100%.

Condition of assets

Sewerage main breaks and chokes

The Statewide median for the number of sewer main breaks and chokes reported per 100 km of sewer mains during 2016/17 was 11.2. This indicator can provide a rough indication of the condition and age of sewerage infrastructure although data may include breaks caused by third parties (e.g. excavation).

Performance

Sewage overflows

Sewage overflow data is now only reported for Service Providers with greater than 10,000 water connections. During 2016/17 these Service Providers reported that a total of 284 sewage overflow events were reported to the environmental regulator (EHP) with a Statewide median for Service Providers with greater than 10,000 connections of 0.8 events per 100 km of mains. Overflows at pumping stations may occur in wet weather when sewage flows are increased from illegal connections to the sewer and because of stormwater infiltration. Overflows can also be caused by mechanical or power failures or blockages. Some pumping stations are designed with a capacity to overflow at such times to prevent back-up of sewage and potential overflows in private premises. The ways that sewage overflows are captured and reported varies markedly around the state meaning that comparisons between service providers are often affected more by their internal reporting processes than the condition and performance of their networks. There is also little correlation between the number of overflows and environmental outcomes because overflows must be reported regardless of size, duration or environmental impact and most occur in wet weather under conditions of heavy dilution.

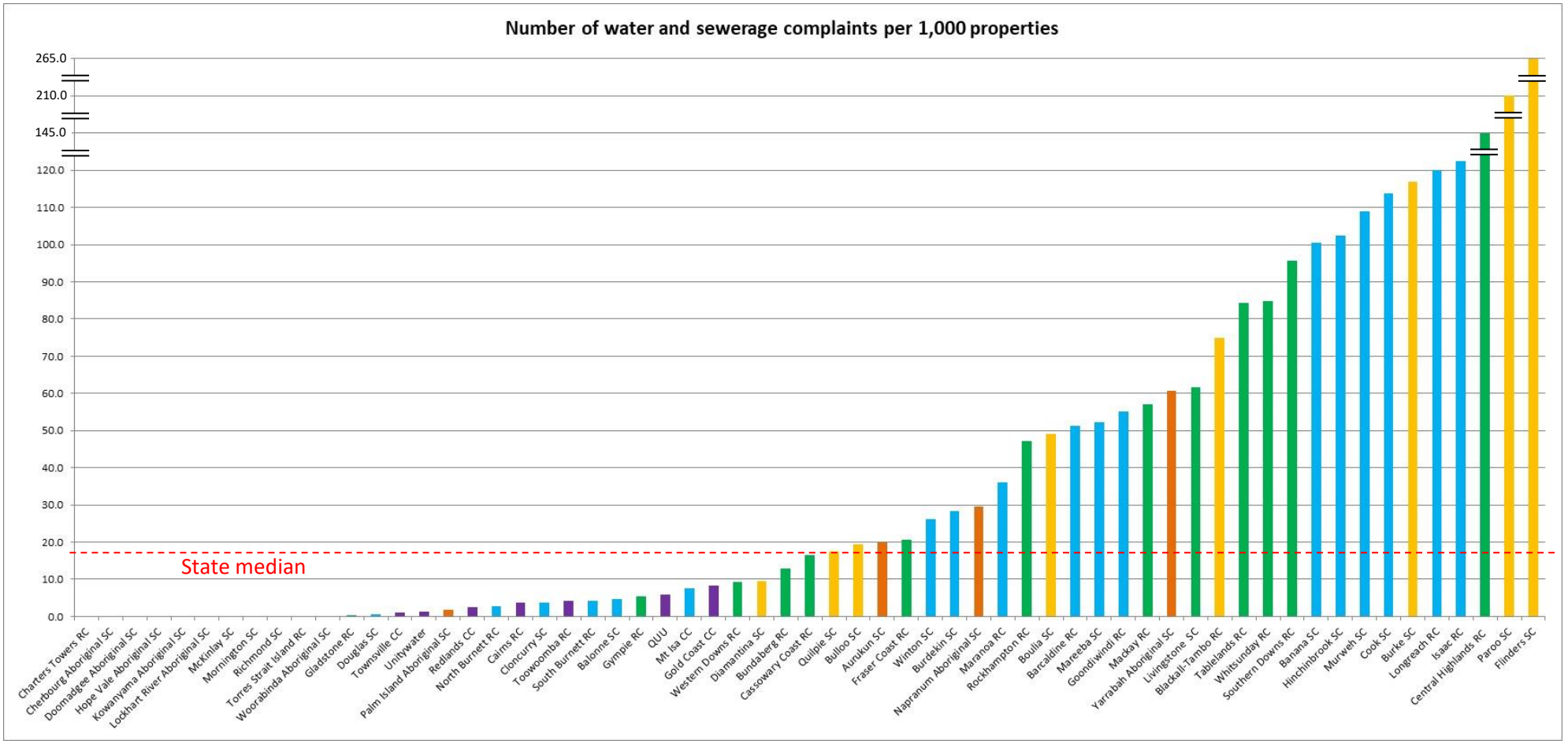

Figure 6. Number of water and sewerage complaints per 1,000 properties[11].

Note: This figure shows ranked values for the number of water and sewerage complaints per 1,000 properties for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[12]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the number of water and sewerage complaints per 1,000 properties is 17. Each bar represents one SP. Note that Barcoo, Croydon, Etheridge and Mapoon Aboriginal Councils do not provide sewerage services and have been excluded from this graph.

[11] Note: figures for smaller SPs may be skewed towards higher values due to their very low populations.

[12] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

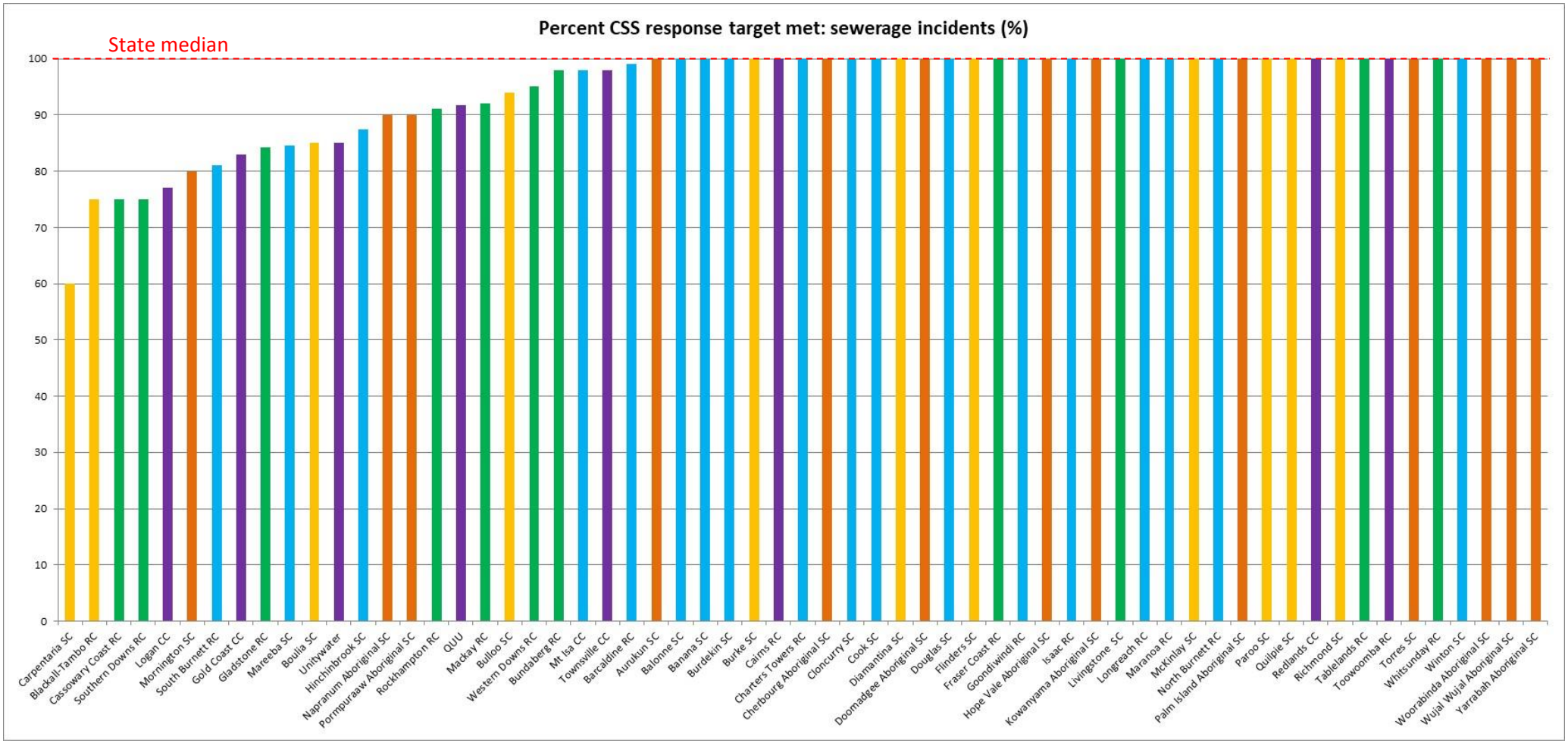

Figure 7. Percent of CSS response time targets met: sewerage incidents (%).

Note: This figure shows ranked values for the percent of Customer Service Standards (CSS) response time targets met: sewerage incidents (%) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[13]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the percent of CSS response time targets met (sewerage incidents) is 100%. Each bar represents one SP.

[13] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

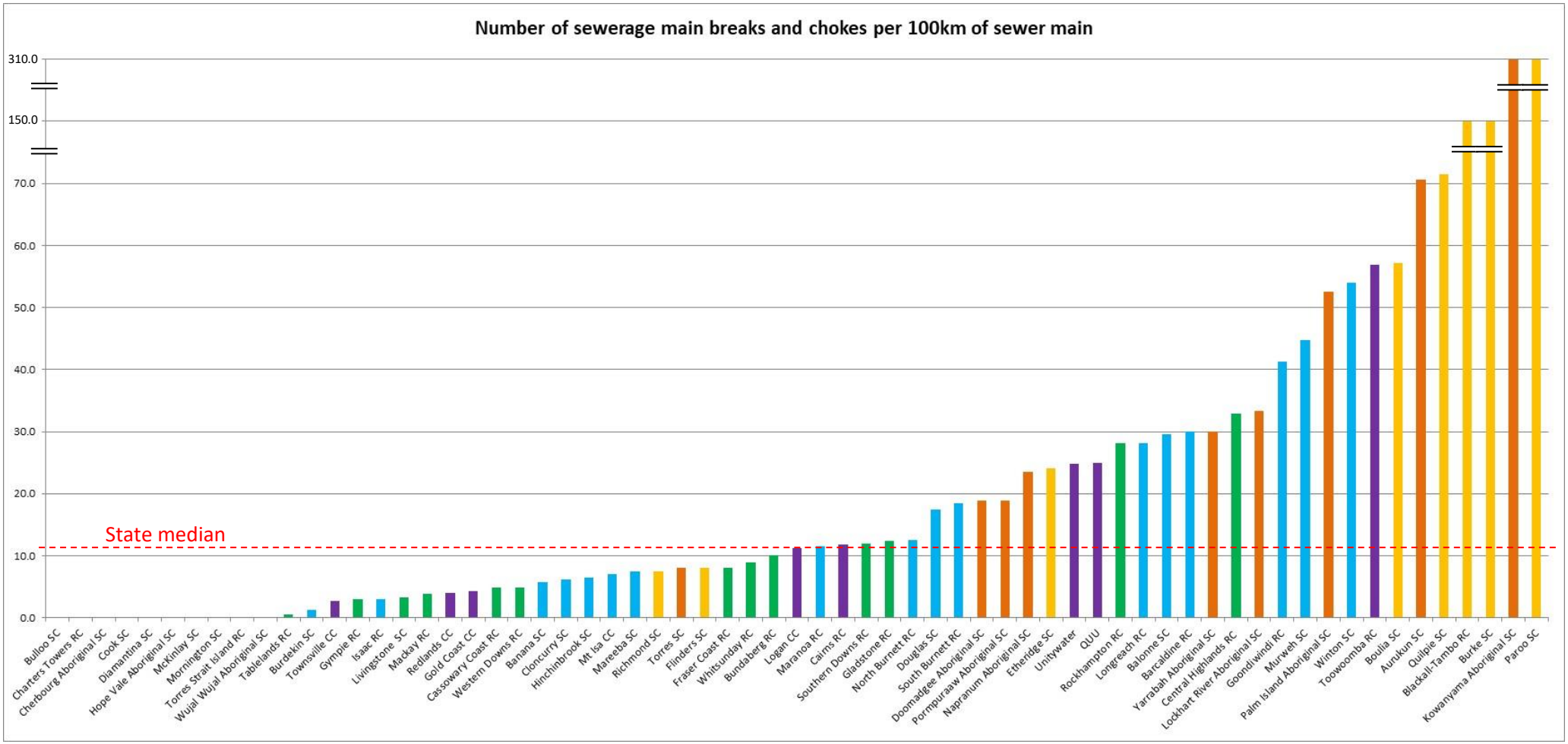

Figure 8. Number of sewerage main breaks and chokes per 100 km of sewer main[14].

Note: This figure shows ranked values for the number of sewerage main breaks and chokes per 100 km of sewer mains for each Service Provider (SP) with greater than 10,000 connections who reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (light orange (non-indigenous), dark orange (indigenous)[15]), medium SP with between 1,000 and 9,999 connections (blue), large SP with between 10,000 and 50,000 connections (green), and extra-large SP with more than 50,000 connections (purple). The 2016/17 Statewide median value for the number of sewerage main breaks and chokes is 11.2 per 100 km of sewer main. Each bar represents one SP.

[14] Note: figures for smaller SPs may be skewed towards higher values due to their relatively short main lengths.

[15] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

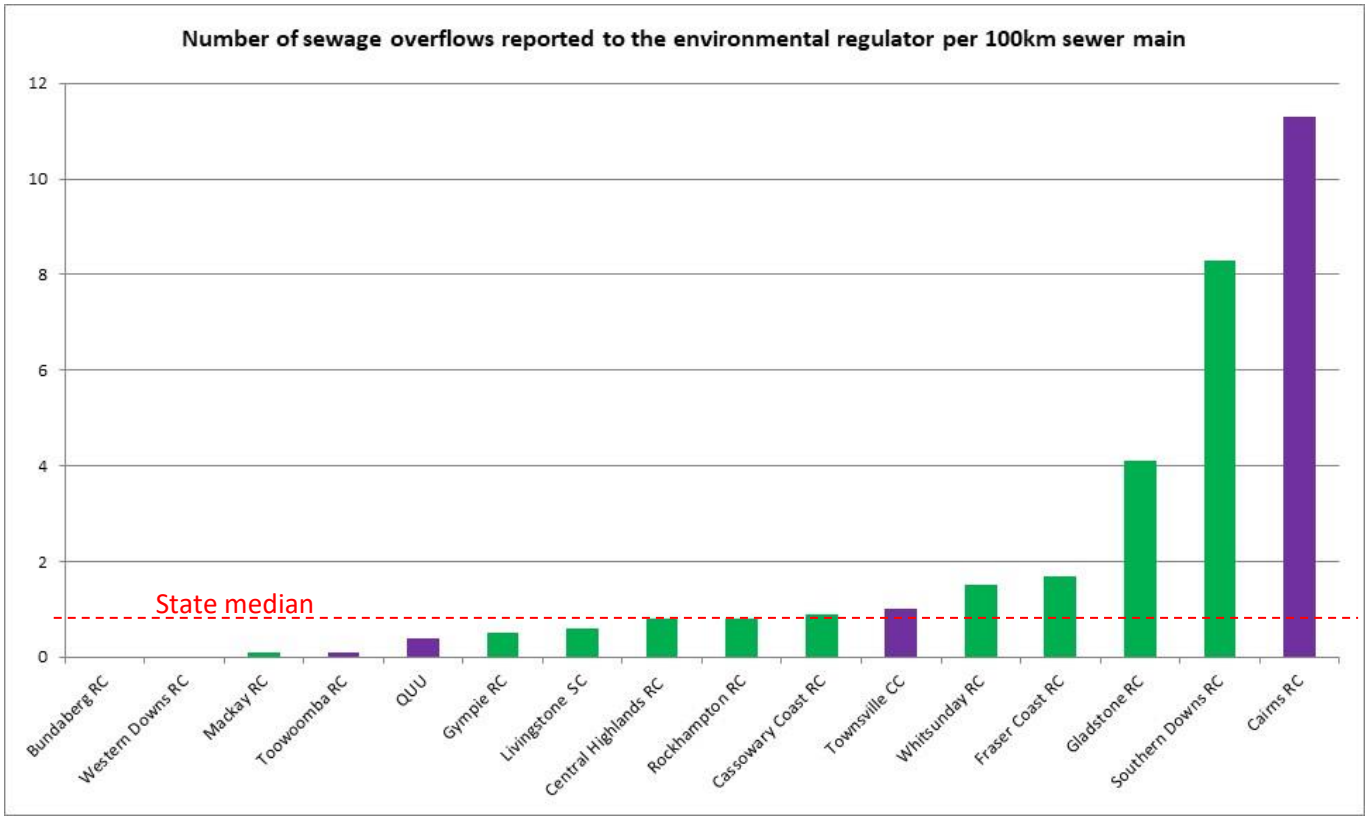

Figure 9. Number of sewage overflows reported to the environmental regulator per 100 km sewer main.

Note: This figure shows ranked values for the number of sewage overflows reported to the environmental regulator per 100 km sewer main for each Service Provider (SP) with greater than 10,000 connections who reported in 2016/17 in 2 groups based on the number of connected properties served – large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the number of sewage overflows reported to the environmental regulator for these SPs is 0.8 per 100 km sewer main. Each bar represents one SP.

Potable Water Supply

Capacity and viability

The median value of the average reported annual potable water supplied per property for the State was 515 kL in 2016/17 which is similar to previous years (502 kL in 15/16, 519 kL in 2014/15, 474 kL in 2013/14 and 509 kL in 2012/13) perhaps reflecting the ongoing drought across most of the State.

The reported total capital expenditure on water supply was $332,140,540 for 2016/17. The Statewide median for capital expenditure was $224 per property. In addition, the reported total operating costs to supply water from across the State was $1,372,782,873 at a median cost of $573 per property for the State.

Capital expenditure

Capital expenditure will vary markedly from year-to-year, particularly for Service Providers with a smaller number of water assets, but still provides a snapshot of investment across the industry.

Operating costs

Service Providers with cost reflective pricing and effective and efficient systems will have lower operating costs and thus provide better value for money to their customers. The components of operating cost (operation, maintenance and administration) are:

- Water resource access charge or resource rent tax.

- Purchases of raw, treated or recycled water
- Salaries and wages
- Overheads on salaries and wages
- Materials/chemicals/energy
- Contracts
- Accommodation
- All other operating costs that would normally be reported
- Items expensed from work in progress (capitalised expense items) and pensioner remission expenses
- Competitive neutrality adjustments, they may include but not be limited to, land tax, debits tax, stamp duties and council rates

Cost drivers for water supply

External factors beyond the control of individual organisations dramatically affect the cost of providing water services. For example, Service Providers that maintain major storage dams for their water supply have larger capital expenditure and operating costs than other service providers.

The amount and type of treatment needed for the water sourced will also affect operating costs. However, larger water treatment plants can generally reduce this cost, relative to smaller plant, through economies of scale. Service Providers with a number of separate water supply systems, larger areas of low density service (i.e. low numbers of properties serviced per km of main) and those with higher numbers of, and smaller, water treatment plants will generally need more employees and other resources to effectively manage their systems and thus have higher costs.

The topography and location of the water supply will also affect operating costs through the amount of pumping needed to move the water to the treatment plant and then on to the customer and will have a relatively greater impact on small providers. High numbers of connections within urban areas provide economies (through density) which will help to reduce this cost, relative to Service Providers with widely spaced connections.

Maintenance costs of water supply pipe infrastructure is related to several factors, such as the age, type and condition of the assets, the soil reactivity (shrink-swell impacts on buried pipes), corrosive water, water pressures and the density of connected properties.

Typical annual residential bill

The 'typical annual residential bill – water' is the dollar amount of the typical residential water bill for the financial year, including special levies. If the bill is cost-reflective and a Service Providers' operations are run as effectively and efficiently as possible, then the typical residential bill should be minimised and the Service Provider should be providing value for the community. However, if bills are lower than costs then a Service Provider may not be financially sustainable. The aim for a Service Provider should be to provide agreed levels of service at the lowest sustainable bill. Consideration of sustainability is important as there are incentives to either charge too little (e.g. to impress customers) or to charge too much (e.g. to increase returns).

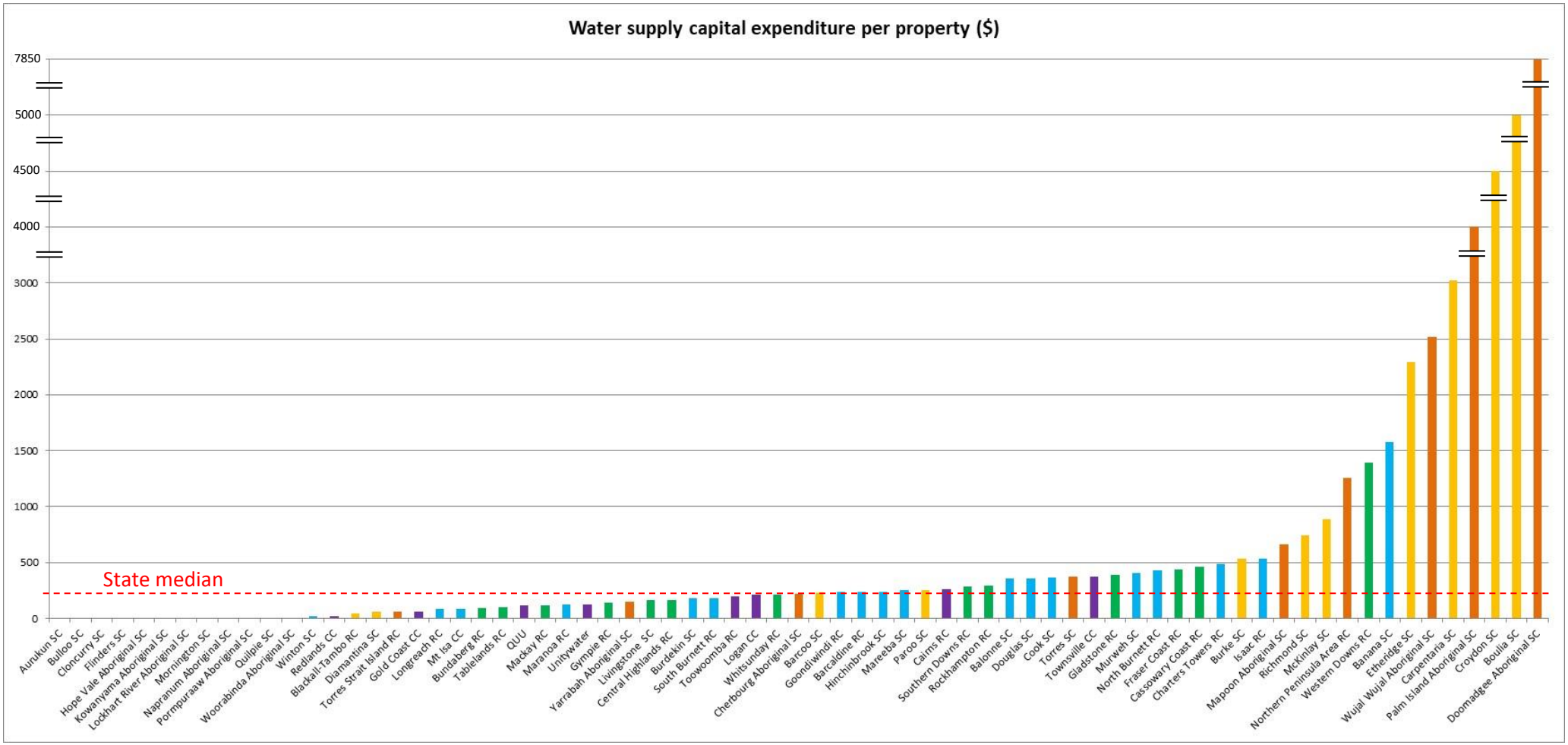

Figure 10. Water supply capital expenditure per property ($)[16].

Note: This figure shows ranked values of water supply capital expenditure per property ($) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[17]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for water supply capital expenditure is $224 per property. Each bar represents one SP.

[16] Note: figures for smaller SPs may be skewed towards higher values due to their very low populations.

[17] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

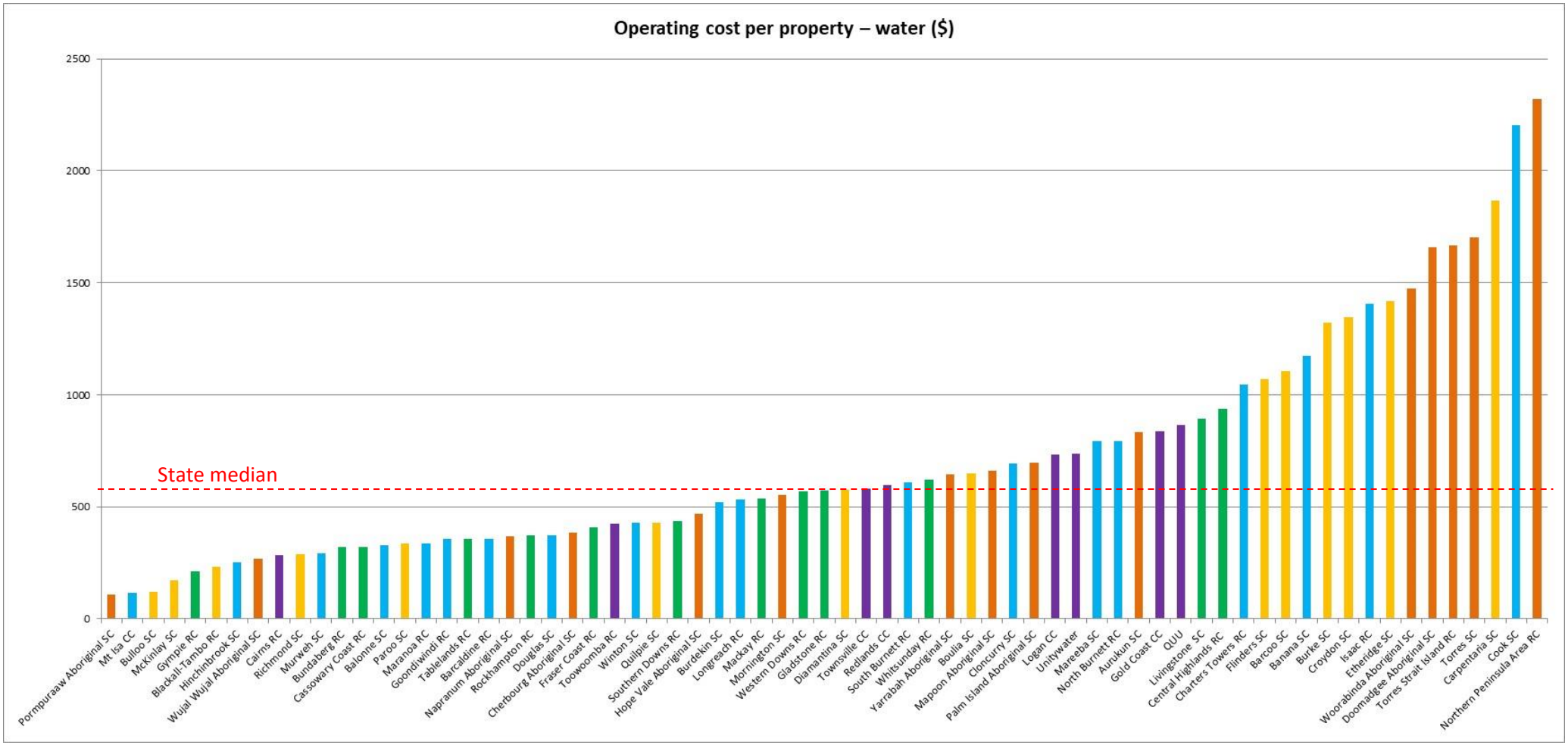

Figure 11. Operating costs per property – water ($)[18].

Note: This figure shows ranked values of operating costs per property – water ($) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[19]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for operating costs – water is $573 per property. Each bar represents one SP.

[18] Note: figures for smaller SPs may be skewed towards higher values due to their very low populations.

[19] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

This indicator is now only required to be reported as separate water and sewerage components by Service Providers with greater than 10,000 connections though smaller Service Providers are still encouraged to report both values. The median typical residential bill for water supply by Service Providers with greater than 10,000 connections was $830, and $734 for all reporting entities. The typical annual residential bill (water and sewerage combined) is reported by all Service Providers and shown in Figure 4 in the sewerage section above.

Note that most aboriginal councils in Queensland do not charge water or sewerage fees and often report $0 for this indicator.

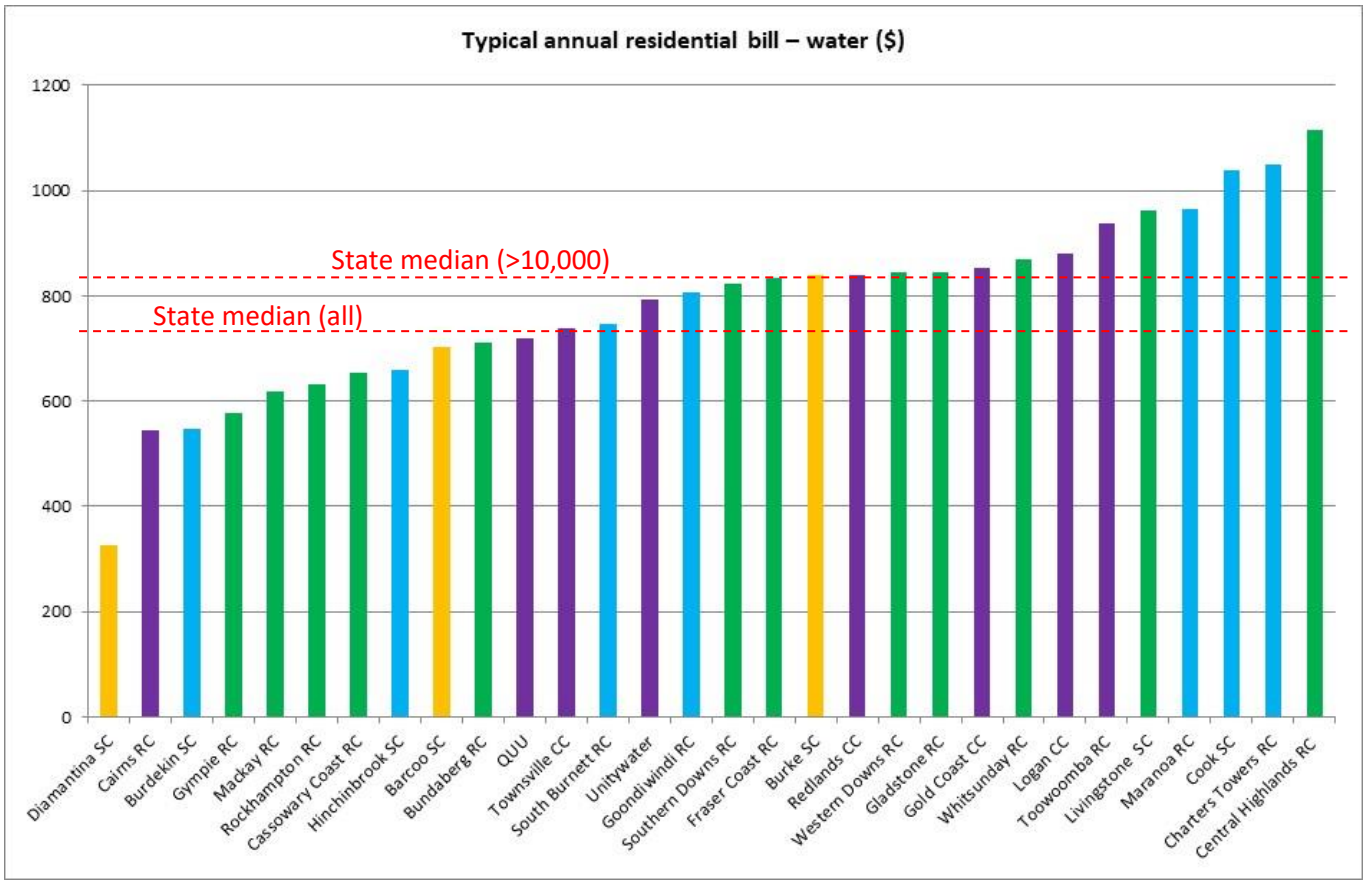

Figure 12. Typical annual residential bill – water ($).

Note: This figure shows ranked values of the typical annual residential bill – water ($) for each Service Provider (SP) with greater than 10,000 connections who reported in 2016/17 in 2 groups based on the number of connected properties served – large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the typical residential bill – water of SPs with greater than 10,000 connections that reported in 2016/17 is $830. It also shows some smaller SPs with less than 10,000 connection who have voluntarily provided this data (small SP with less than 1,000 connections (**light orange** (non-indigenous)), medium SP with between 1,000 and 9,999 connections (**blue**). The 2016/17 Statewide median value for the typical residential bill – water of all 65 SPs that reported in 2016/17 is $734. Each bar represents one SP.

Economic real rate of return

The financial performance of most Service Providers is intricately linked with their owner councils, making it difficult to assess the financial performance of the water supply operations specifically.

In addition, an important distinction must be made between the category of (usually larger) councils that can be categorised as financially sustainable and can generate dividends (return on capital) to support their communities, and the smaller and often more remote councils. In the latter, smaller populations (and thus

rate bases) can mean that capital investment in water infrastructure is difficult and relies on funding assistance and subsidies from other sources of income. In some cases even operating costs can be difficult to meet.

One comparator of financial performance is the Economic Real Rate of Return (ERRR). The ERRR (water) is the revenue from water business operations less operating expenses for the water business divided by written down replacement cost of operational water assets. An appropriate value for ERRR is difficult to determine for Service Providers but should be at least positive with a margin to allow for return on capital (NWC and WSAA, 2010). OTTER (2011) suggested that an ERRR of around 7% was required for full cost recovery in the Tasmanian urban water industry while the Productivity Commission questioned the appropriateness of NWC and NSW Office of Water definitions of full cost recovery as an ERRR "greater than or equal to zero" (see PC, 2011, p. 386).

ERRR data is now only specifically requested from Service Providers with greater than 10,000 water connections, however, it can be calculated from other indicators requested from all Service Providers. The data provided here are the calculated values. The Statewide median value for ERRR (water) for all Service Providers that provided data was 1.2%.

It is obvious from Figure 13 that small to medium (i.e. <10,000 connections) Service Providers are skewed towards the left (negative ERRR values) while large to extra-large (i.e. >10,000 connections) Service Providers are skewed towards the right (positive ERRR values).

Customer service

Water complaints

As discussed above, water and sewerage complaints are no longer required to be reported separately (or broken down into sub-categories like service, billing, etc.). Water and sewerage complaints (combined) is reported by Service Providers and is discussed within the sewerage services section of this report (see Fig. 6).

Response time to water incidents

In previous years the average response time for water incidents was reported but there is no 'ideal' response time as it varies depending on, the type of incident (e.g. emergencies should be treated faster than minor issues) and the distance to the area of concern. Response time to incidents is meant to provide an indication of customer service as no customer wants to be left waiting when they have a serious water or sewerage problem. However, as there was no consistent interpretation of the definition, or more importantly, no guidance in the definition of which 'incidents' to include in the analysis, the indicator has now been changed to report on the percentage of customer service standards achieved within target times.

This change means that the results reported are against the specific Customer Service Standards (CSS) that Service Providers have agreed to with their customers. It thus makes the results reported independent of the specific response time taken and all the associated issues discussed above. The results reported for the 'Percent of CSS response time targets met: water incidents (%)' can now be appropriately compared among Service Providers. The Statewide median for the percent of CSS response time targets met for water incidents was 100%.

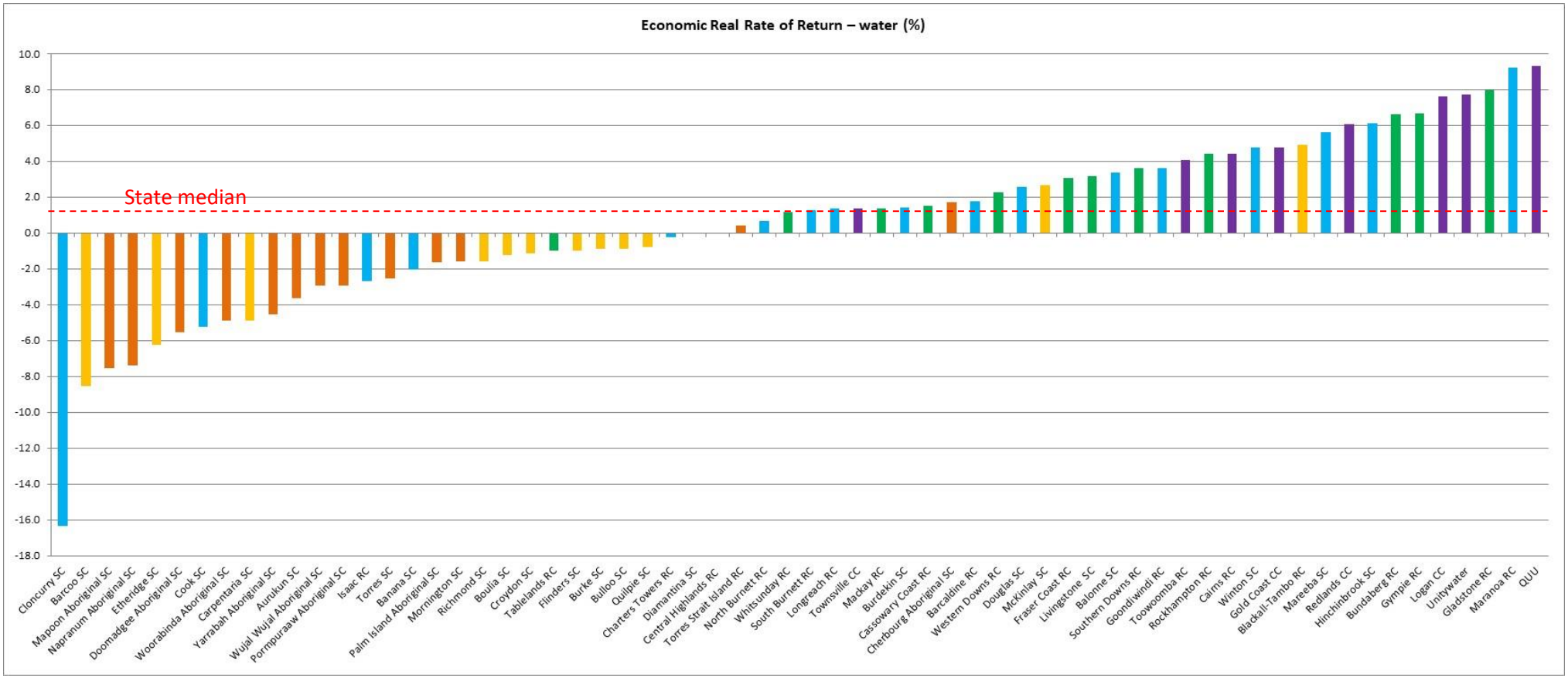

Figure 13. Economic Real Rate of Return (ERRR) – water (%).

Note: This figure shows ranked calculated values of the ERRR – water (%) for each Service Provider (SP) that reported appropriate data in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[20]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the ERRR – water of these SPs is 1.2%. Each bar represents one SP.

[20] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

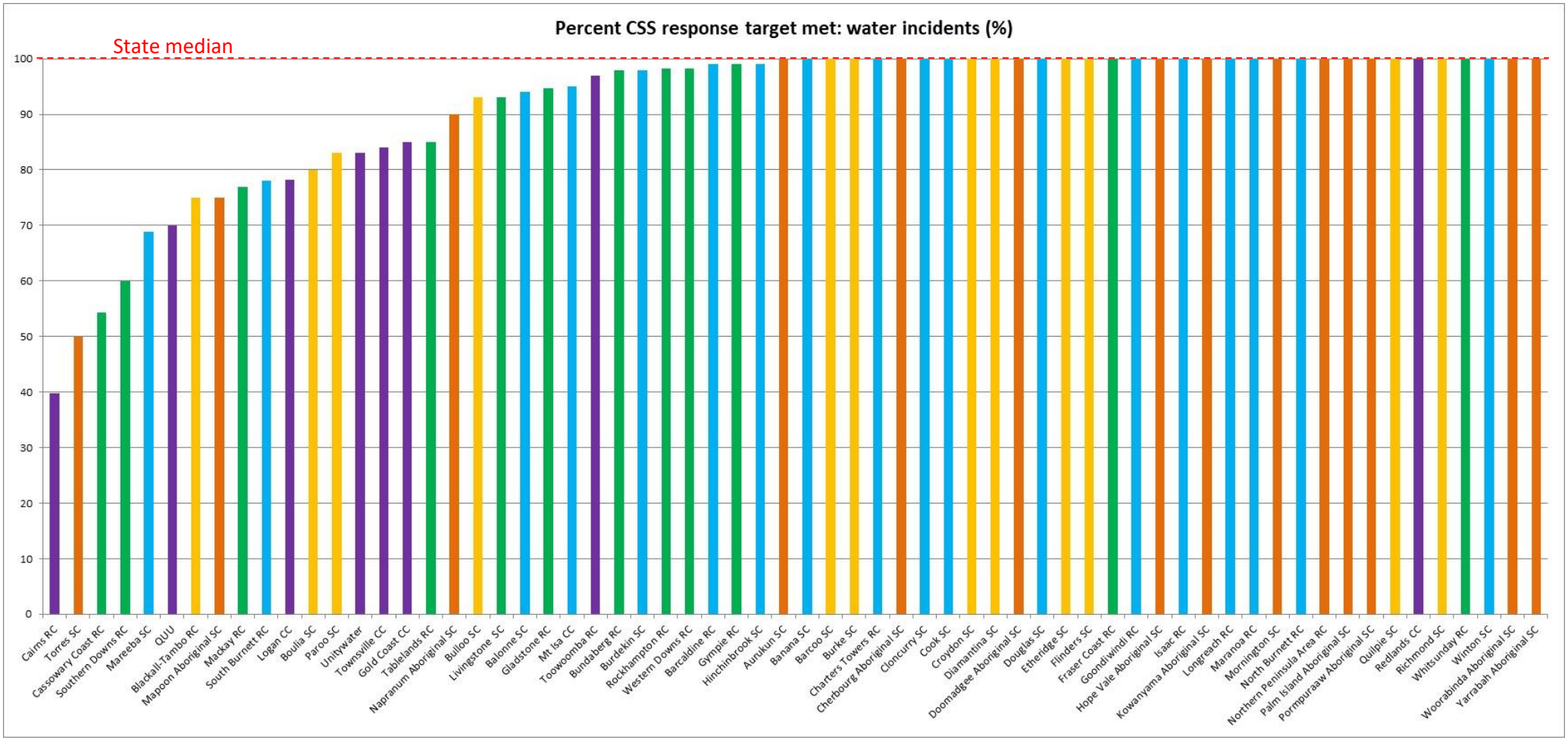

Figure 14. Percent of CSS response time targets met: water incidents (%).

Note: This figure shows ranked values for the percent of Customer Service Standards (CSS) response time targets met: water incidents (%) for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[21]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the percent of CSS response time targets met (water incidents) is 100%. Each bar represents one SP.

[21] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

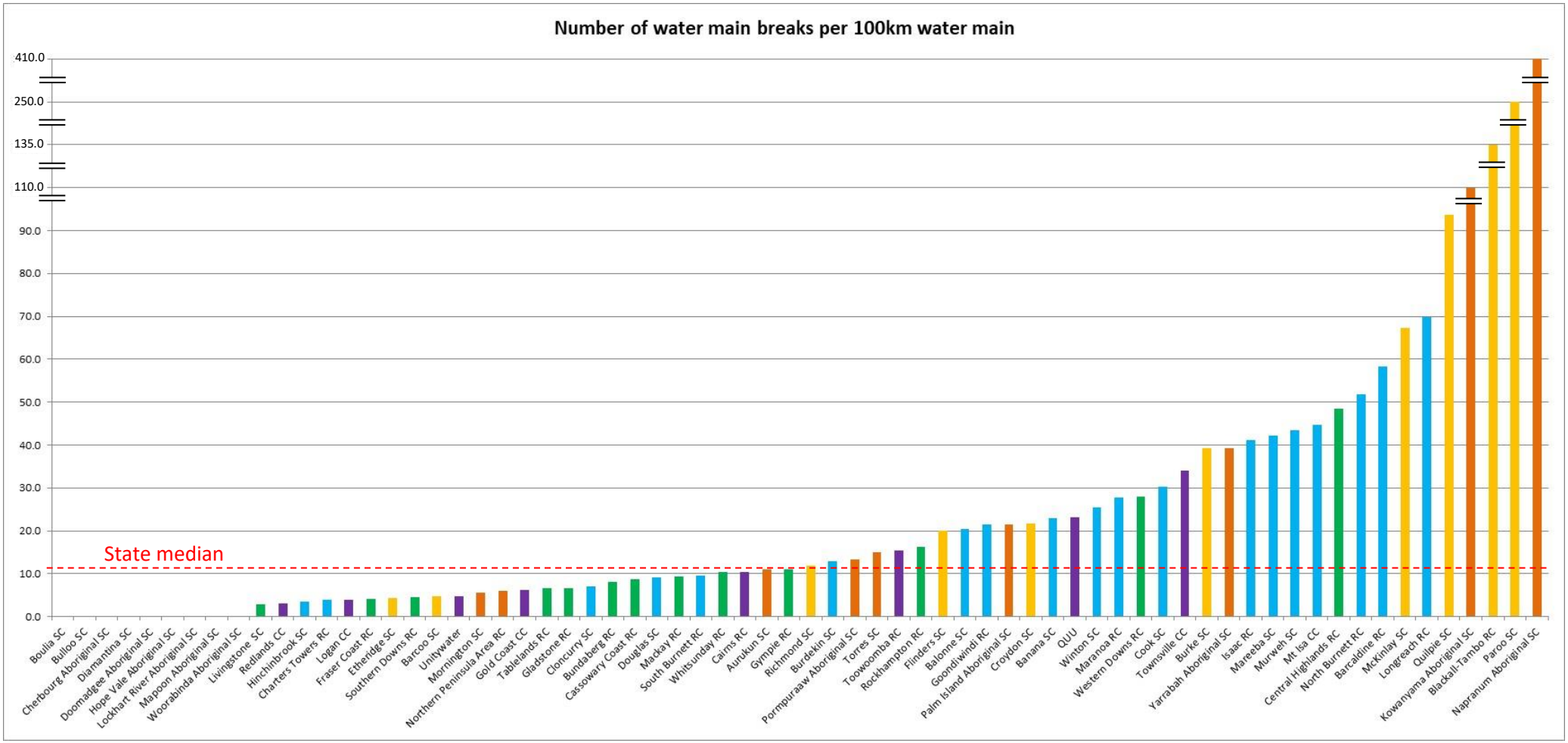

Figure 15. Number of water main breaks per 100 km of water main[22].

Note: This figure shows ranked values for the number of water main breaks per 100 km of water main for each Service Provider (SP) that reported in 2016/17 in 4 groups based on the number of connected properties served – small SP with less than 1,000 connections (**light orange** (non-indigenous), **dark orange** (indigenous)[23]), medium SP with between 1,000 and 9,999 connections (**blue**), large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for the number of water main breaks is 11.5 per 100 km of water main. Each bar represents one SP.

[22] Note: figures for smaller SPs may be skewed towards higher values due to their relatively short main lengths.
[23] Note: Torres Strait Island Region Council is a 'medium' sized indigenous council (with 1,561 water connections).

Condition of assets

Water main breaks

The Statewide median for the number of water main breaks that were recorded per 100 km of main during 2016/17 was 11.5. This indicator can provide a rough surrogate for the condition and age of water main infrastructure although data may include breaks caused by third parties (e.g. excavation).

Real water losses

Real water losses is now only required to be reported by Service Providers with greater than 10,000 connections. The Statewide median for the amount of reported real water losses for these Service Providers for 2016/17 was 76 litres per service connection per day. This equates to around 43,000 ML of potable water lost each year by these 20 Service Providers.

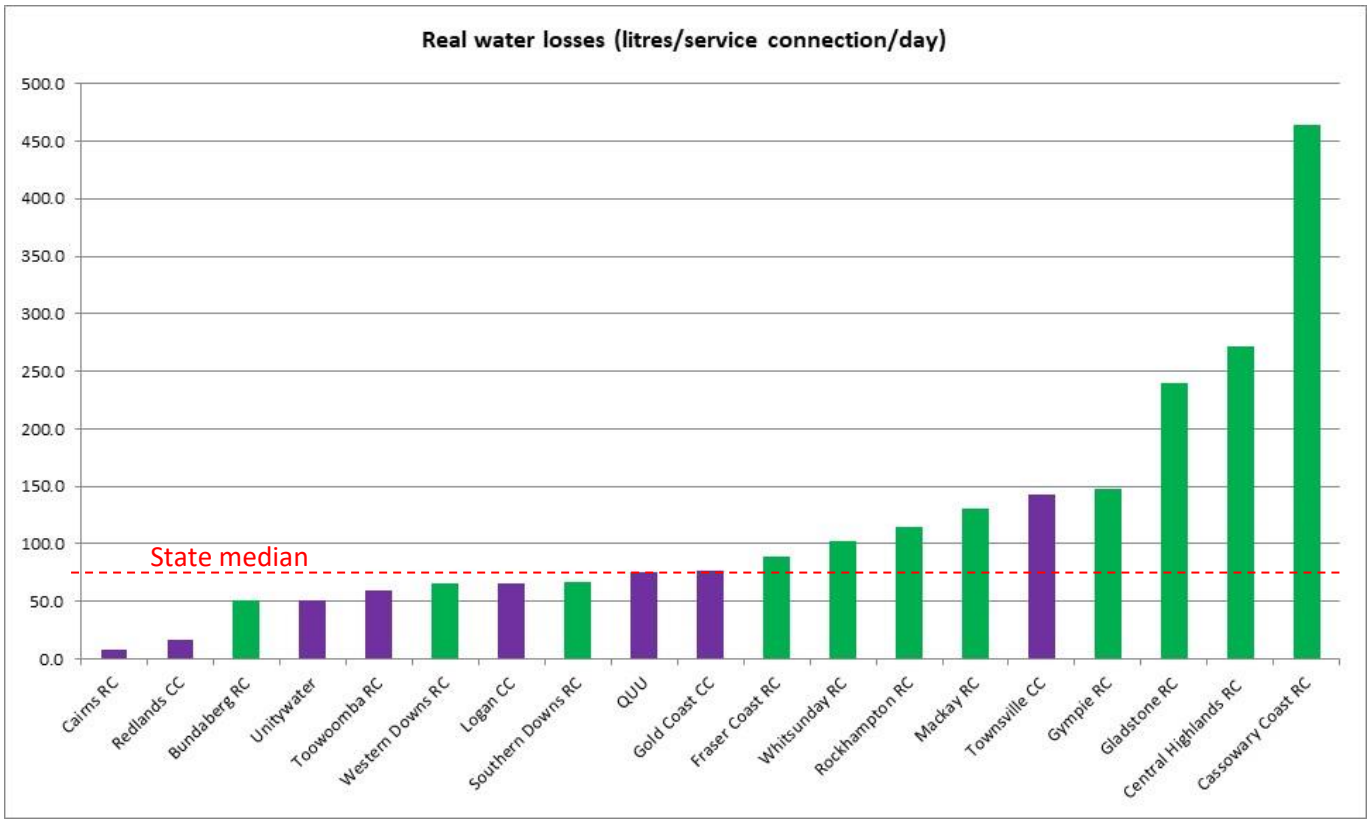

Figure 16. Real water losses (litres/service connection/day).

Note: This figure shows ranked values for real water losses (litres/service connection/day) for each Service Provider (SP) with greater than 10,000 connections who reported in 2016/17 in 2 groups based on the number of connected properties served – large SP with between 10,000 and 50,000 connections (**green**), and extra-large SP with more than 50,000 connections (**purple**). The 2016/17 Statewide median value for real water losses (litres/service connection/day) for these SPs is 76 litres per service connection per day. Each bar represents one SP.

References

NWC and WSAA (National Water Commission and Water Services Association of Australia). 2010. National Performance Report 2009-10: Urban Water Utilities, NWC, Canberra.

OTTER (Office of the Tasmanian Economic Regulator). 2011. Tasmanian Water and Sewerage State of the Industry Report 2009-10. Tasmanian Government, Hobart.

PC (Productivity Commission). 2011. Australia's Urban Water Sector, Report No. 55, Final Inquiry Report, Volume 1, Canberra.

Data used here was extracted from** qldwater's **SWIM database on 14/03/2018 as provided by Water Service Providers and The Department of Natural Resources, Mines and Energy (DNRME) but** qldwater, **DNRME** **and the WSP(s) involved offer no warranty as to its accuracy and are not liable for any loss or damage however caused, suffered or incurred by other parties in connection with the Data.