Attachment 6

Operating expenditure

30 June 2022

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6.1 Introduction

The Independent Competition and Regulatory Commission (the Commission) sets the revenue allowance and prices for regulated water and wastewater services in the Australian Capital Territory (ACT). The Commission's regulatory model uses a 'building block' approach to establish allowable prudent and efficient costs during the regulatory period (discussed in **Attachment 10: Revenue requirement**). Under the building block approach, the allowed revenue is the sum of operating expenditure (opex), capital investment costs (capex), plus allowances for forecast tax, as shown in Figure 6-1.

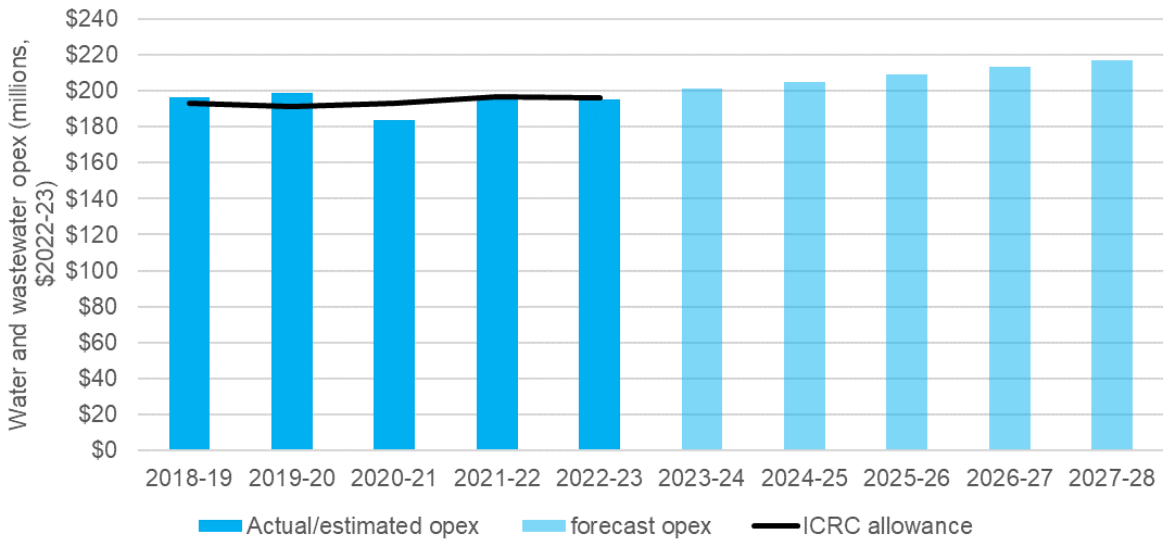
Figure 6-1: Building block approach

Opex refers to the daily operating, maintenance, and other non-capital expenses incurred in providing water and wastewater services. Opex items include managing and maintaining bulk water storage, treatment costs, distribution of water and wastewater, meter reading, customer services, billing services, planning, corporate services, and ACT Government charges and fees. Over the 2018–23 regulatory period, allowed opex accounted for around 60 per cent of the total annual revenue requirement for Icon Water.

Opex is separated into controllable and non-controllable opex. Controllable opex includes expenses Icon Water has some degree of control over, such as maintenance, operations planning, asset management and corporate costs. Controllable opex accounts for 77 per cent of the opex forecast. Non-controllable opex includes costs associated with levies payable to the ACT Government, such as the Utilities Network Facilities Tax (UNFT) and the Water Abstraction Charge (WAC). Non-controllable opex accounts for 23 per cent of our opex forecast. Non-controllable opex is subject to an annual 'true-up' as part of the annual price updates.

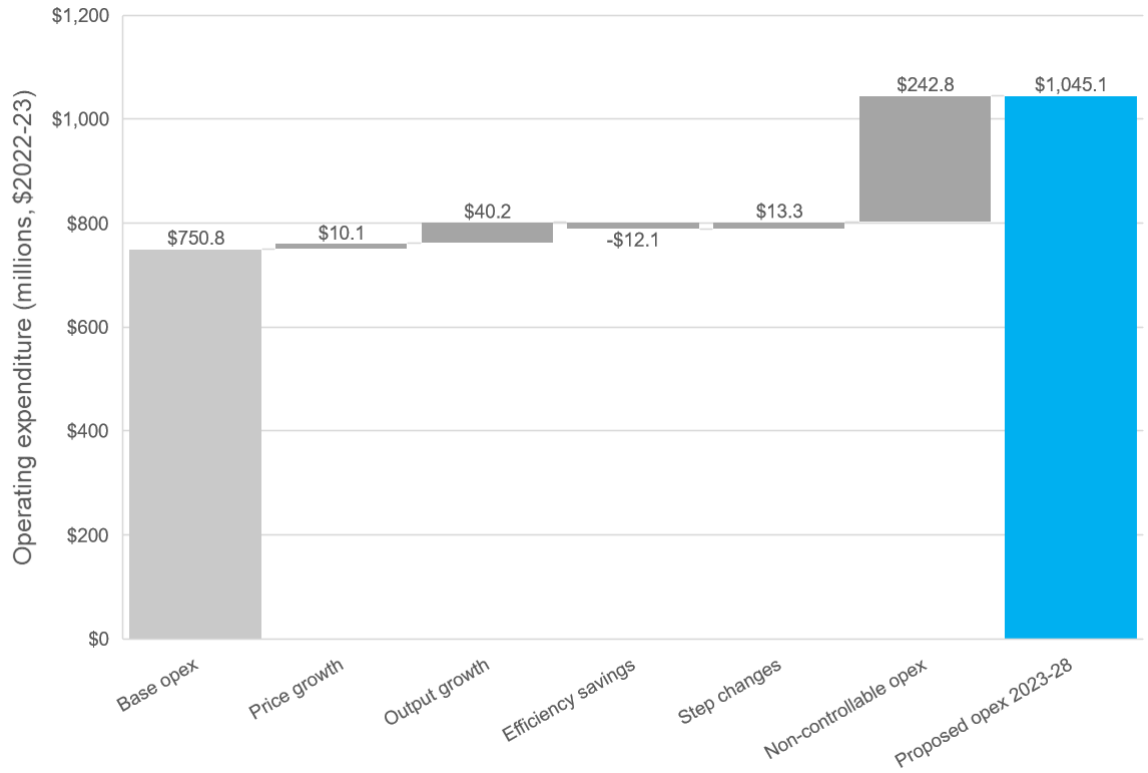
Icon Water's actual, estimated and forecast opex for 2018–28 is shown in Figure 6-2. Over the current 2018–23 regulatory period, the estimated opex is $970.9 million and expected to be $0.6 million or 0.1 per cent higher than the regulatory allowance of $970.4 million ($2022–23).

Figure 6-2: Water and wastewater total operating expenditure 2018–28 (millions, $2022–23)



We have used a base-step-trend approach to prepare our opex forecast for the 2023–28 regulatory period, consistent with the Commission's preferred approach. Our opex forecast is prudent and efficient, reflecting a real increase in prices, output (growth in the network and the ACT population), efficiency savings, step changes (increased costs for insurance premiums and keeping our critical infrastructure secure) and non-controllable opex (government fees and charges). This is shown below in Figure 6-3.

Figure 6-3: Icon Water operating expenditure (millions, $2022-23)



This attachment explains Icon Water's opex forecast for regulated water and wastewater services over the forthcoming 2023–28 regulatory period and sets out our:

- historical opex performance and benchmarking outcomes
- opex 'base-step-trend' forecasting approach
- efficient normalised base year
- trend inputs, including real cost escalators, output growth to capture increasing customer numbers and enlargement of the network
- an efficiency target to capture gains in productivity for the forthcoming regulatory period
- step changes
- forecasts for non-controllable opex
- our opex forecast for the 2023–28 period.

Box 6-1: Key points

- We have applied the base-step-trend method to forecast our opex – the Commission's preferred forecasting approach.
- The base-step-trend forecasting approach for opex enables maintenance of the network, to provide reliable water and wastewater services to the community in the context of ongoing challenges of climate change, ageing assets and a growing population.
- The opex forecast is trended from the 2021–22 base year. We expect our opex base year to be $67.7 million for water and $78.1 million for wastewater, similar to the regulatory allowance of $65.9 million for water and $78.3 million for wastewater ($nominal).
- The base year is trended to account for real price growth in labour, electricity and chemicals. The trend also captures the growth in our customer numbers, demand for water and volume of wastewater treatment.
- We have included a productivity growth rate of 0.5 per cent per annum, including efficiency savings and reducing our opex forecast by over $12.1 million in the 2023–28 regulatory period ($2022–23).
- Icon Water has included two step changes in our opex forecast for externally driven costs and to continue meeting our regulatory obligations – to account for increasing insurance premiums and additional requirements related to the security of critical infrastructure. These costs are not included in our base year or trend and cannot be absorbed in the forthcoming regulatory period.

Based on prudent and efficient costs, Icon Water's total opex forecast for the 2023–28 regulatory period is estimated to be $1,045.1 million, 7.6 per cent higher than our 2018–23 expected opex in real terms ($2022–23). The increased opex forecast is driven by growth in our network as the ACT population increases, costs associated with the security of critical infrastructure regulatory obligations, rising insurance premiums, and government fees and charges.

Over the 2023–28 regulatory period, we plan to continue delivering services at the standards that our customers expect. Operationally, this includes meeting our strategic objectives in responding to drought, climate conditions and an evolving digital landscape as we continue to engage with our customers.

Table 6-1: Customer and community engagement feedback

What we heard	Our response
The community agrees with the need to plan for the future, including investing in water security and exploring alternative water sources	With assets across our network nearing capacity and the ACT population projected to reach 482,300 by 2031–32[1], we have been undertaking strategic activities to ensure we are able to service Canberra now and into the future. Some of the upcoming decisions are driven by population growth and the need to increase capacity in our network, while others are driven by water security and drought response actions. This strategic work is ongoing and is primarily funded from our operating expenditure envelope.

[1] Australian Government Centre for Population, *State and Territory projections*, updated 20 December 2021

What we heard	Our response
There is community support for achieving greater environmental sustainability and accelerating net zero while limiting impact on customer prices	As part of our normal operations, we have a range of initiatives in place to support the environmental and improved sustainability, including the work we are doing through No opportunity wasted and our Climate Change Adaptation Plan. As part of our operations to store and supply water, we make sure the catchments that feed the storages are as healthy as possible. This includes working closely with the ACT Parks and Conservation Service to minimise impacts on water quality within the Cotter Catchment and the Googong Reservoir, co-supporting Cooma Waterwatch to monitor water quality within the Murrumbidgee River and its tributaries, and working with the Upper Murrumbidgee Catchment Network (UMCN) to identify and prioritise erosion hotspots.
The community is committed to Icon Water maintaining quality and reliable core services and is willing to pay something towards reducing interruptions or issues for those who experience them more than usual	Maintaining quality and reliable services involves a range of activities – some of which are funded through operating expenditure and others funded through capital expenditure (see **Attachment 7: Capital expenditure**). For example, the work our crews do cleaning sewer mains to help prevent chokes and blockages is a low-cost and effective intervention that reduces the need for more expensive mains renewals.
Affordability should underpin any investment decision. If we need to invest to avoid causing issues in the future, we will consider support for vulnerable customers and other impacted customer segments	In the 2018–23 regulatory period, we achieved a sizeable efficiency goal – to reduce our operating expenditure by 1.75 per cent per year – and these savings were passed onto customers through lower prices. As a business it's important that we continue to target efficiency, and in the 2023–28 regulatory period have included a further efficiency goal for our operating expenditure of 0.5 per cent per annum. Examples of initiatives in the 2023–28 regulatory period that will contribute to our efficiency over the long-term include delivery of the Digital Strategy (2021–28) and the new sourcing arrangements for corporate and customer services.
The community considers Icon Water an essential service provider. To be a valued partner in the community, customers want us to be more visible – this means being targeted in our partnering initiatives, education and supporting activities, and proactively talking about it with the community.	As part of our 2021 *Let's Talk* customer and community engagement program, we spoke with the Canberra community about our two recent community campaigns, including 'Care for water' and 'Free the poo'. Our Free the poo campaign was the standout, with participants agreeing it is easy to understand and memorable: "*It's bright, to the point, and stands out. The message conveyed is clear. I've seen it in shopping centres".* In addition, our "*current community and school education initiatives were a surprise to many participants and these activities were well received".* We will take these learnings forward into how we design our campaigns and education for 2023–28 to ensure they are targeted and effective, most of which are funded from our operating expenditure envelope. Community education will become increasingly important as we navigate complex issues with our customers such as alternative drinking water sources.

6.2 Historical opex 2018–23

6.2.1 Our opex performance

The total water and wastewater opex allowed by the Commission for the 2018–23 regulatory period was $970.4 ($2022–23).[2] The Commission's regulatory allowance comprises $540.8 million of opex for water and $429.6 million of opex for wastewater, as shown in Table 6.2.

Table 6-2: Opex allowance 2018–23 ($millions, 2022–23)

	2018–19	2019–20	2020–21	2021–22	2022–23	Total
Water						
Controllable opex	$67.1	$67.0	$67.4	$68.5	$67.9	**$337.8**
Non-controllable opex	$40.9	$39.2	$40.2	$41.3	$41.5	**$203.0**
Total opex	$108.0	$106.1	$107.5	$109.7	$109.4	**$540.8**
Wastewater						
Controllable opex	$79.9	$79.7	$80.1	$81.3	$80.6	**$401.6**
Non-controllable opex	$5.5	$5.3	$5.5	$5.8	$5.9	**$28.0**
Total opex	$85.4	$85.0	$85.6	$87.1	$86.5	**$429.6**
Water and wastewater						
Controllable opex	$147.0	$146.7	$147.5	$149.8	$148.5	**$739.5**
Non-controllable opex	$46.4	$44.4	$45.7	$47.0	$47.4	**$230.9**
Opex allowance	$193.4	$191.1	$193.2	$196.8	$195.9	**$970.4**

Source: Independent Competition and Regulatory Commission, *Final report Regulated water and sewerage services prices 2018–23*, May 2018, p. 55; Icon Water analysis.
Note: Totals may not sum due to rounding.

Icon Water's actual and estimated opex for the 2018–23 regulatory period is expected to be $970.9 million ($2022–23).[3] As shown in Table 6-3, the actual/estimated opex comprises $550.9 million of opex for water and $420.0 million opex for wastewater services.

[2] This was $925.1 million in nominal dollars, adjusted for inflation based on actual and estimated CPI.

[3] This was $925.4 million in nominal dollars, adjusted for inflation based on actual and estimated CPI.

Table 6-3: Icon Water actual/estimated opex 2018–23 ($millions, 2022–23)

	2018–19	2019–20	2020–21	2021–22	2022–23	Total
	Actual	*Actual*	*Actual*	*Estimate*	*Estimate*	
Water						
Controllable opex	$71.5	$72.3	$64.2	$70.3	$69.2	**$347.6**
Non-controllable opex	$40.5	$42.6	$39.2	$40.2	$40.8	**$203.3**
Total opex	$112.0	$114.9	$103.4	$110.6	$110.0	**$550.9**
Wastewater						
Controllable opex	$79.2	$79.0	$75.1	$81.1	$79.8	**$394.2**
Non-controllable opex	$5.1	$5.1	$5.1	$5.3	$5.3	**$25.9**
Total opex	$84.3	$84.0	$80.2	$86.4	$85.1	**$420.0**
Water and wastewater						
Controllable opex	$150.7	$151.3	$139.3	$151.4	$149.0	**$741.7**
Non-controllable opex	$45.6	$47.6	$44.3	$45.5	$46.1	**$229.2**
Total opex	$196.3	$198.9	$183.6	$196.9	$195.2	**$970.9**

Source: Icon Water (estimates at February 2022, adjusted for actual and estimated inflation).
Note: Totals may not sum due to rounding.

Notably, Icon Water's total actual/estimated opex for combined water and wastewater services is not materially different to the regulatory allowance. The total combined water and wastewater opex across the regulatory period is expected to be $0.6 million or 0.1 per cent higher than the Commission's efficient allowance in real terms. Controllable opex is expected to be $2.3 million or 0.3 per cent higher than the allowance over the five-year regulatory period. Moreover, combined water and wastewater controllable opex and non-controllable opex have remained stable in real terms over the 2018–23 regulatory period, as shown in the last rows of Table 6-3.

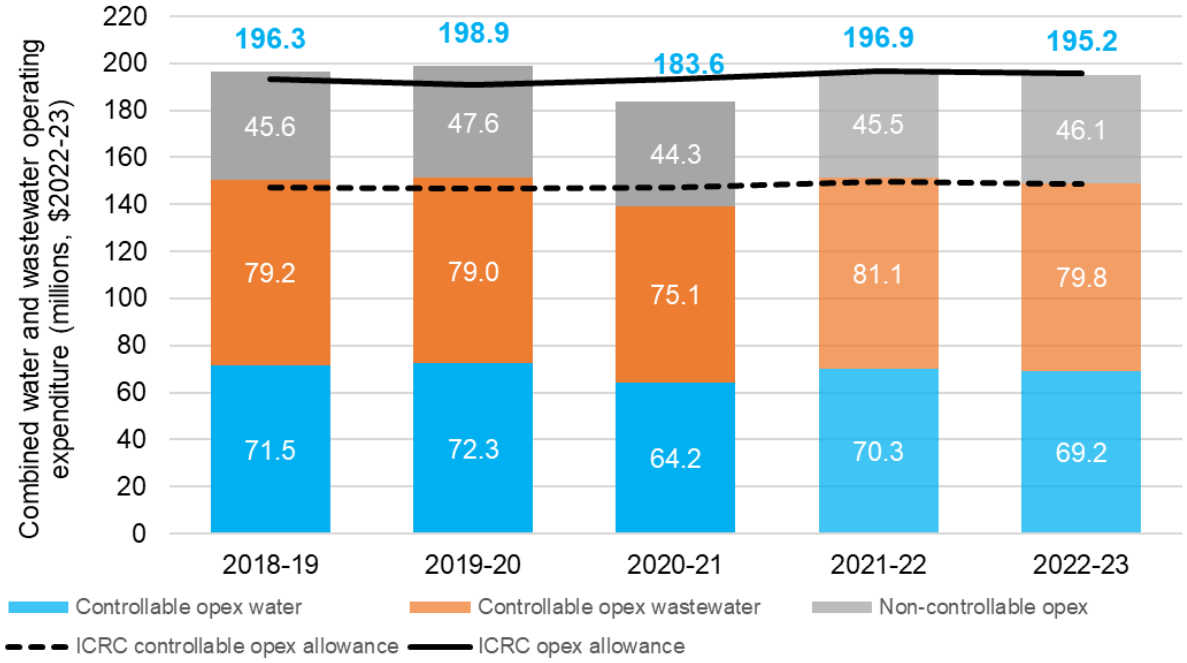
While the total actual/estimated opex is close to the regulatory allowance, there are annual variances, as shown in Figure 6-4. Differentials between actuals and the allowance arise for various reasons, including timing, where typical costs may be incurred early in the following financial year rather than in the expected financial year where the allowance is provided. Icon Water's variances are driven by a combination of factors, including:

- Higher electricity costs incurred in the first two years of the regulatory period, driven by dry climatic conditions experienced in 2018–19 and 2019–20.[4] Drier weather conditions result in higher water sales and fewer water sourcing options, requiring increased water pumping and therefore more electricity usage. Electricity costs were circa $4.0m higher per annum in 2018–19 and 2019–20 than under normal weather conditions.

[4] For example, in 2019–20, the Water Abstraction Charge was $3.3 million or 10.9 per cent higher than forecast showing higher than expected water demand (nominal).

- Controllable opex in 2020–21 for water and wastewater was $8.1 million or 5.5 per cent below the regulatory allowance ($2022–23), which did not represent a typical year of expenditure. In 2020–21, costs differed from typical expenditures by $7.1 million (nominal) due to timing and non-recurring cost reductions, including balance sheet provision releases, a temporary deferral of activity relating to the COVID-19 pandemic restrictions and timing lags associated with recruitment.
- Icon Water has absorbed higher insurance premiums, which have increased significantly above the rate of change and the inflation forecast applied to the 2018–23 regulatory allowance.

Figure 6-4: Actual/estimated opex 2018–23 (millions, $2022-23)



6.3 Opex forecasting approach

Opex is a significant component of revenue under the building block approach, which Icon Water requires in order to:

- maintain core service levels, including providing reliable water and wastewater services and safe and healthy drinking water
- be responsive to faults, and delivering on customer service expectations
- prepare and plan for the future
- care for and protect the environment, for example by incorporating the principles of ecological sustainability in investment and expenditure decisions, including effective integration of economic and environmental considerations in decision-making processes through the precautionary principle and the inter-generational equity principle[5]
- effectively meet and manage expected demand for water and wastewater services
- account for the effect of general inflation
- comply with all applicable regulatory obligations and requirements associated with the supply of water and wastewater services.

Icon Water's proposed operating expenditure for the 2023–28 regulatory period reflects the efficient and prudent costs of meeting the demand for water and wastewater services in the ACT, which is in the long-term interests of consumers in relation to quality, safety, reliability and security of services. Our forecast reflects a realistic expectation of the demand forecast and cost inputs required to supply water and wastewater services over the next regulatory period.

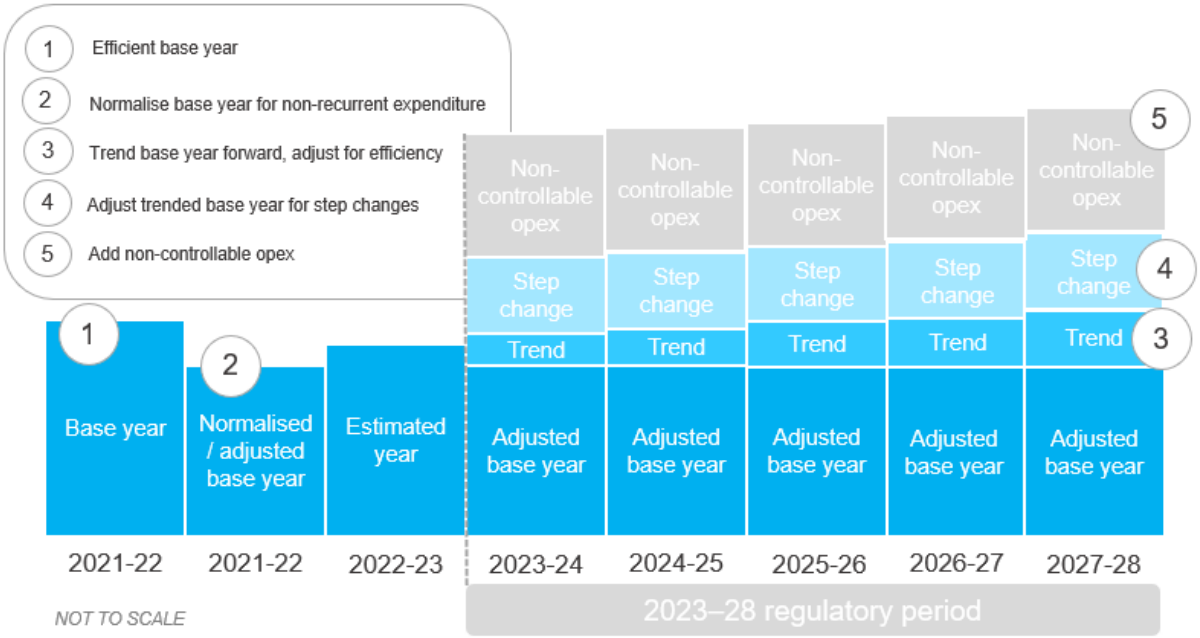
6.3.1 Forecasting methodology

The utilities sector has two main approaches for forecasting opex, including a zero-based approach or the top-down 'base-step-trend' methodology. The zero-based method involves a bottom-up build of operational costs. It assumes a nil budget as the starting point, adding projects or activities required that year in a bottom-up construction of the costs. The 'base-step-trend' methodology uses a comparable financial year and normalises or adjusts the base year to reflect efficient expenditure. A trend or 'rate of change' is applied to account for changes in real price growth, output growth and productivity growth over the forecast regulatory period. Step changes and non-controllable opex are added for efficient and prudent expenditure required over the regulatory period, which are not included in the base year or accounted for in the trend.

We used the 'base-step-trend' approach in forecasting opex for the 2023–28 regulatory period. An illustrative example of the 'base-step-trend' approach is shown in Figure 6-5.

[5] Independent Competition and Regulatory Commission Act 1997, Section 20(2).

Figure 6-5: Illustrative example of Icon Water opex forecasting methodology



6.3.2 Key inputs and assumptions

The key assumptions that we have used in our opex forecast are outlined in Table 6-4.

Table 6-4: Opex forecast 2023–28 key assumptions

Key assumptions	
Legislative and regulatory obligations	Our opex forecasts are based on our current and known future legislative and regulatory obligations and licence requirements.
Network reliability and service standards	Our opex forecast will maintain reliability and service standards but not improve service outcomes, as discussed in **Attachment 3: Service standards**. Our customers support this objective.
Cost allocation and capitalisation	Our opex forecasts reflect our cost allocation methodology.
Efficient opex base year	Opex incurred in our base year (2021–22) provides a reasonable basis for our opex forecasts and represents our requirements to provide regulated water and wastewater services in the future sustainably.
Opex trend	Given our operating environment, the opex forecasts account for real expected changes in input costs, output growth, and productivity.
Inflation	The opex forecast is escalated to reflect increases in inflation and is consistent with the Commission's preferred inflation forecasting approach.[6]

[6] Independent Competition and Regulatory Commission, Final report Review of Methodologies for the Weighted Average Cost of Capital, April 2021, p. 43.

Key assumptions	
Non-controllable opex	Non-controllable opex forecasts reflect forecasts of government charges and fees imposed on Icon Water.

6.4 Establishing an efficient base year

Baseline expenditure is the level of spending necessary to provide a defined level of service. Activities we undertake may vary from year to year, although this does not necessarily change our opex funding requirements over a regulatory period. For example, water sourcing and pumping costs may be higher in a dry year or lower in a wet year, which low-frequency maintenance activities may offset. These ebbs and flows are a normal part of operating a water utility, and we use strategic and business planning to prioritise activities to spend prudently and efficiently. Therefore, the base year should reflect typical baseline expenditure, including prudent costs expected to continue operating the business sustainably into the future.

The tools and approaches we have applied to consider establishing an efficient base year include:

- benchmarking against historical and peer expenditures
- government and regulator policies and requirements
- service levels, customer preferences and willingness to pay
- reviewing material opex expenditure items on a case-by-case basis.

6.4.1 Base year

Base year selection

We have reviewed our opex for the 2018–23 regulatory period to determine the base year. The level of opex in the base year reflects an efficient and prudent level of recurring controllable opex to deliver safe and reliable water and wastewater services sustainably. This includes continuing to meet our customers' expectations while maintaining service standards.

Icon Water has selected 2021–22 as the base year from which to trend the opex forecast because it:

- reflects a realistic representation of the efficient and recurring level of costs to sustainably provide safe and reliable regulated water and wastewater services within our operating environment over the 2023–28 regulatory period
- is the penultimate year of the 2018–23 regulatory period, which is well accepted regulatory practice and will be the most recent year of audited financial data when the Commission issues the 2023 Price Direction
- incorporates the efficiency gains that Icon Water has achieved to date as our opex for both water and wastewater services is not materially different from the regulatory allowance, which incorporated an efficiency goal of 1.75 per cent per year[7]
- is efficient as base year opex represents revealed actual costs under an incentive-based regulatory framework. Icon Water is incentivised to spend opex efficiently because it retains the benefits of any under or overspend until the end of the regulatory period (ie. the difference between the allowance and actual expenditure can be retained as profit or loss)[8]

[7] Icon Water, Attachment 7: Operating expenditure, June 2017, p. 22.

[8] Independent Competition and Regulatory Commission, *Water and Sewerage Services Price Regulation: Incentive Mechanisms*, August 2020, pp. 12-18.

- is not materially different from the Commission's allowance, which was considered prudent and efficient in the 2018 final report,[9] as shown in Table 6-5.

Table 6-5: Controllable opex regulatory allowance compared to actual/estimates 2018–23 ($millions, nominal)

	2018–19	2019–20	2020–21	2021–22 Base year	2022–23	Total
	Actual	*Actual*	*Actual*	*Estimate*	*Estimate*	
Water						
Allowance	$61.8	$62.6	$63.8	**$65.9**	$67.9	**$322.1**
Actual/estimated	$65.8	$67.6	$60.9	**$67.7**	$69.2	**$331.2**
Difference	$4.0	$5.0	-$3.0	**$1.8**	$1.3	**$9.1**
Wastewater						
Allowance	$73.5	$74.5	$75.9	**$78.3**	$80.6	**$382.9**
Actual/estimated	$72.8	$73.8	$71.2	**$78.1**	$79.8	**$375.8**
Difference	-$0.7	-$0.7	-$4.7	**-$0.2**	-$0.8	**-$7.1**
Water and wastewater						
Allowance	$135.3	$137.2	$139.7	**$144.2**	$148.5	**$704.9**
Actual/estimated	$138.6	$141.5	$132.0	**$145.8**	$149.0	**$707.0**
Difference	$3.3	$4.3	-$7.7	**$1.6**	$0.5	**$2.0**

Source: Icon Water
Note: Totals may not sum due to rounding.

Since actual opex is not yet available for the entire 2021–22 financial year and the Commission will assess the prudency and efficiency of the base year, it is important to understand how base year opex has been derived. The base year opex estimate is derived from an internal approved full year forecast which comprises actual expenditure to February 2022. Our response to the Commission's draft report will include an updated base year reflecting the full year actual results.

Base year normalisation

While the base year reflects typical and recurrent operating expenditure, Icon Water has normalised or adjusted 2021–22 opex to reflect a regulatory base year that accounts for:

- any non-recurrent costs that do not reflect typical expenditure

[9] Independent Competition and Regulatory Commission, *Final Report Regulated water and sewerage services prices 2018-23*, May 2018, p. 48.

- exclusion of expenditure associated with investments not related to the provision of regulated water and wastewater services.

The Commission defined non-recurrent costs as:[10]

> A non-recurrent cost is an unusual charge, expense, or loss that is unlikely to occur again in the normal course of a business.

Normalising the base year ensures the expenditure used for forecasting reflects efficient costs.

6.4.2 Opex comparison with other utilities

Icon Water has undertaken benchmarking analysis to confirm the efficiency of our historical opex. We have analysed data from the National Performance Report (NPR) to understand how our opex performance compares to other utilities using partial performance indicators (PPI), which measure the relationship between one input and one output. PPIs can support benchmarking techniques because they provide a general indication of the comparative performance of utilities delivering a specific output.[11]

Notably, many factors that influence the opex performance and individual performance indicators need to be interpreted in context.[12] For example, a utility may have higher operating costs but provide a more reliable service with fewer water outages. Other factors affect costs, for example:

- Weather conditions can affect the quality of water sources and supply, and thus decisions about the level of treatment required and water security over the long term.
- Water utilities have varying operating environments, often with substantial differences in network size, types of water resources, number and type of customers, regulatory obligations, government policy, treatment standards, water demand levels, and wastewater collection per customer. Other operating environment factors may include differing demand and density characteristics, impacting the cost of supply per customer, including differences between distribution and bulk water supply.

Figure 6-6 shows opex per customer, as reported by the Bureau of Meteorology (BOM) in the NPR data. It is a box and whisker plot of large and major Australian utilities and shows that Icon Water's opex per customer has converged with the median of large and major Australian water utilities over time.[13] In 2020–21 Icon Water's opex per customer for water services was $512. The sample median was $507, and the mean average was $558.

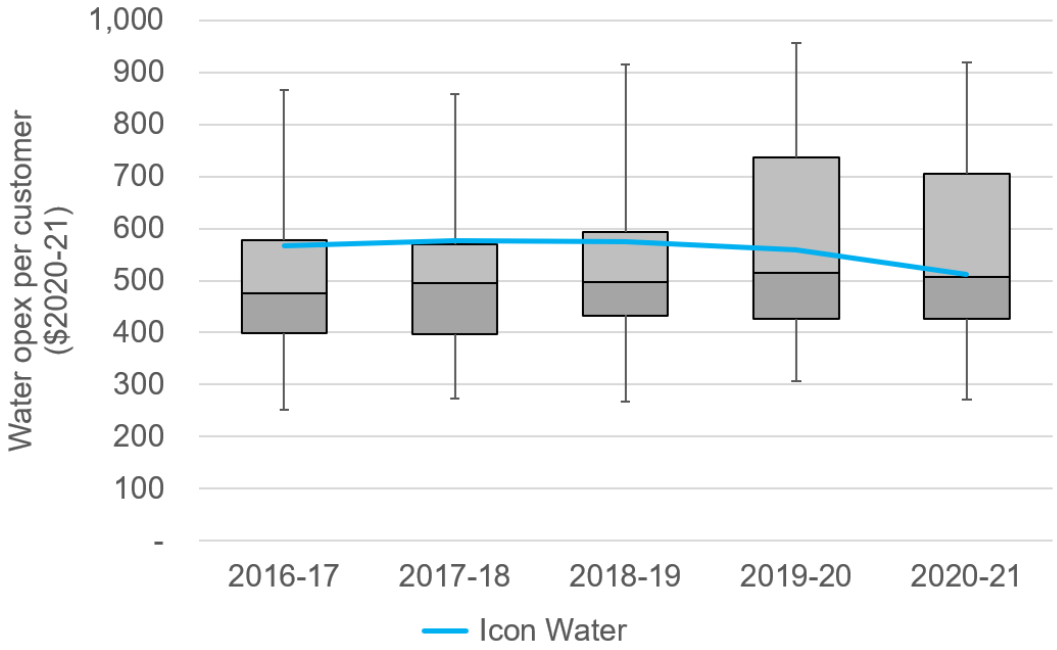
[10] Independent Competition and Regulatory Commission, *Water and Sewerage Services Price Regulation: Incentive Mechanisms*, August 2020, p. 12.

[11] The analysis in this report separates water and wastewater services. The Quantonomics report (Appendix 6.1) looks at PPIs for combined water and wastewater services.

[12] Bureau of Meteorology, *National performance report 2020–21: urban water utilities Part A*, 2022, p. 8.

[13] Large water utilities are defined as having over 50,000 customers, and major water utilities are defined as having over 100,000 customers.

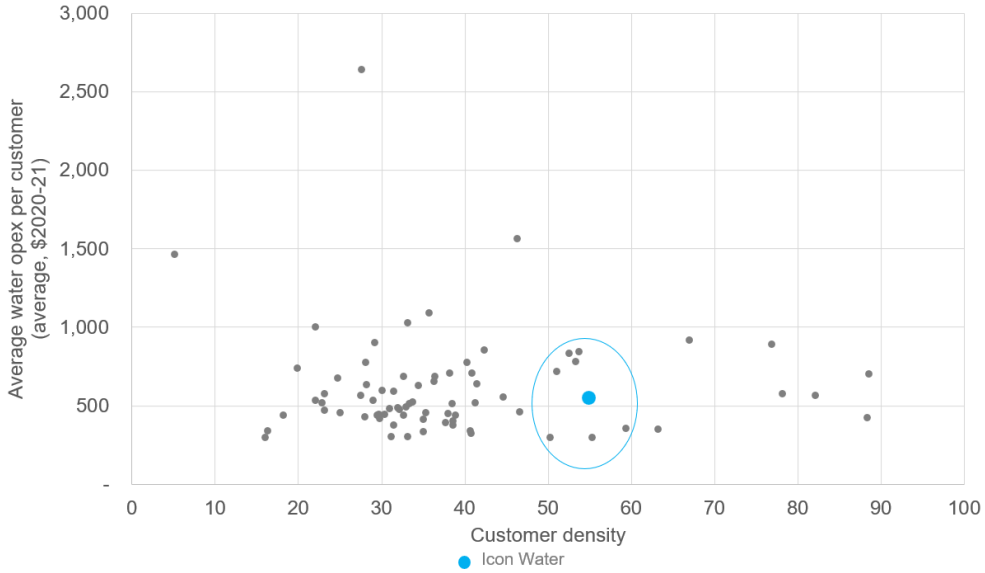
Figure 6-6: Australian utilities water operating expenditure per customer 2016–17 to 2020–21 ($2020–21)



Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

Figure 6-7 shows the average operating cost per customer plotted against customer density from 2018–19 to 2020–21.[14] The scatter of points shows no systematic relationship between customer density and opex per customer. Icon Water's average opex per customer is $548, close to the sample mean of $527 and below the average of $1,239 ($2020–21).

Figure 6-7: Average water opex per customer ($2020–21) over 2018–19 to 2020–21[15]



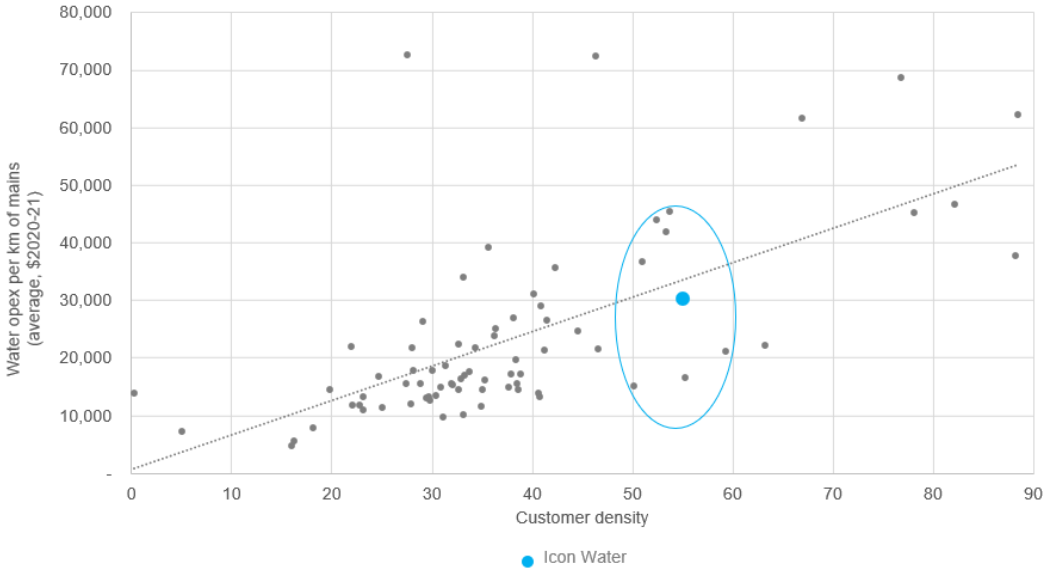
Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

[14] Customer density is measured as the number of customers per km of mains.

[15] Bulk water suppliers have been excluded from the sample. Conversion to real $2020–21 is based on four quarters to June of each financial year.

Figure 6-8 compares average water opex per kilometre (km) of mains against customer density, averaged over three years to 2020–21. Generally, opex per km tends to increase with customer density. Icon Water's average opex per km of mains is $30,125, which is below the average and median for utilities with a similar customer density.[16] Taking the eight utilities with similar customer density to Icon Water, the average water opex per km of mains is $31,403 and the median is $33,464 ($2020–21).

Figure 6-8: Water operating expenditure per km of mains ($2020–21) over 2018–19 to 2020–21



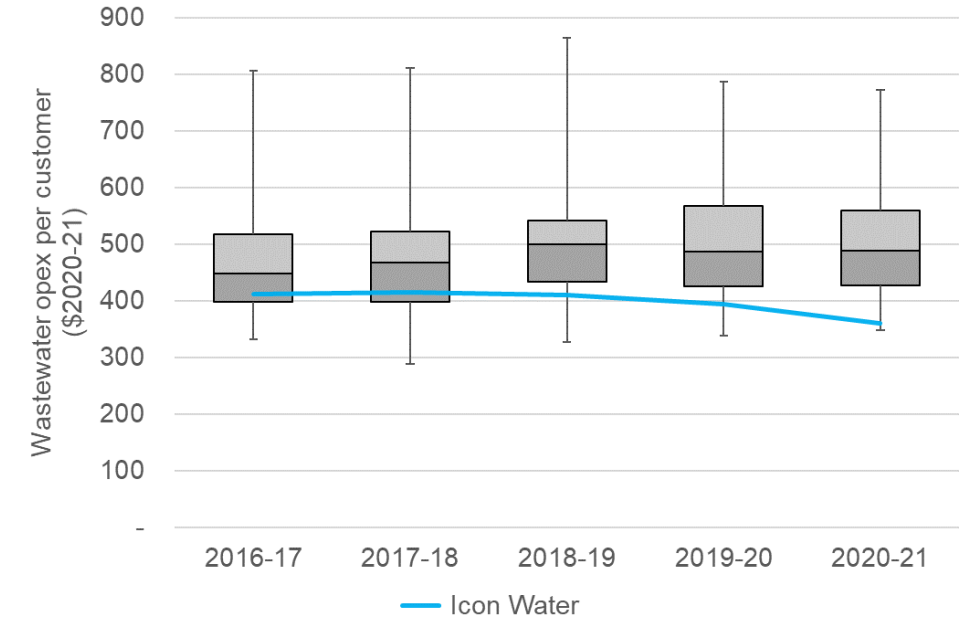
Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

Figure 6-9 shows wastewater opex per customer for major and large utilities over a five-year period to 2020–21. The box and whisker plot indicates that Icon Water has remained in the lower half or more recently, the lower quartile of wastewater opex per customer relative to large and major Australian wastewater utilities.[17] Icon Water's opex per customer has decreased in real terms since 2017–18 from $416 to $361 ($2020–21). In 2020–21 Icon Water's opex per customer for wastewater services was below the median of $373 and below the average of $394 ($2020–21).

[16] Utilities with a similar customer density is based on plus or minus 10 per cent of Icon Water's customer density.

[17] Large utilities are defined as having over 50,000 customers, and major utilities are defined as having over 100,000 customers.

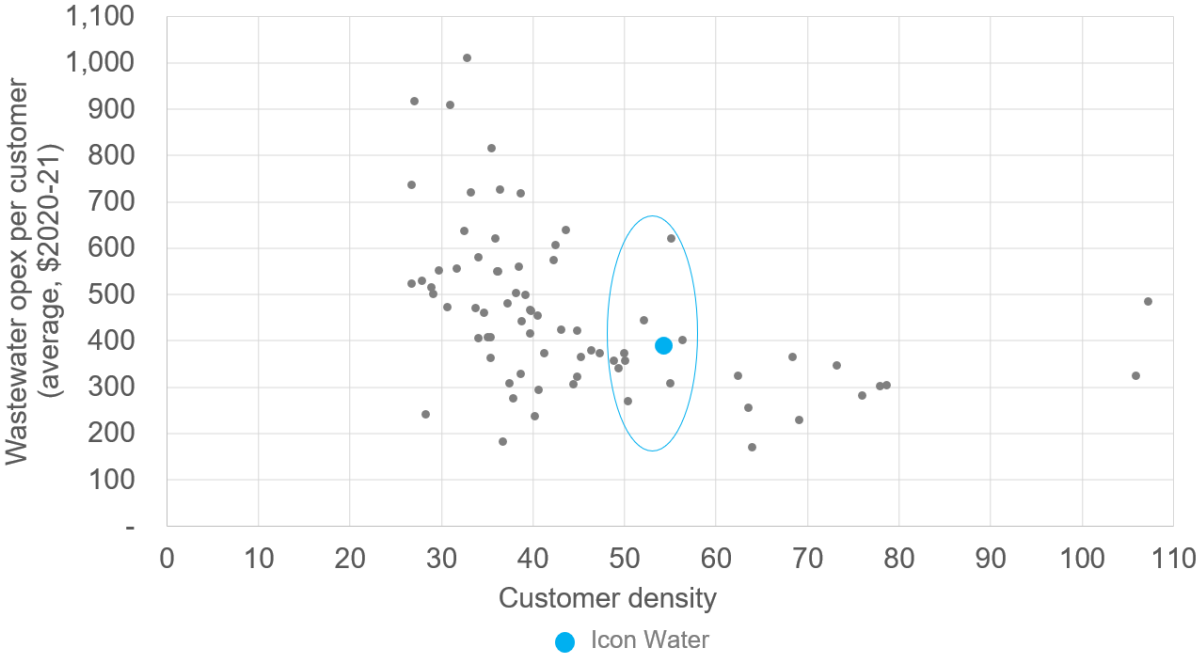
Figure 6-9: Box and whisker plot of large and major Australian utilities – wastewater operating expenditure per customer 2016–17 to 2020–21 ($2020–21)



Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

Figure 6-10 shows the average wastewater operating cost per customer plotted against customer density from 2018–19 to 2020–21. While there is a very low correlation between opex per customer and customer density, Icon Water's average wastewater opex per customer is $389, which is below the sample median of $421 and the average of $456 ($2020–21).

Figure 6-10: Average wastewater opex per customer 2018–19 to 2020–21 ($2020–21)

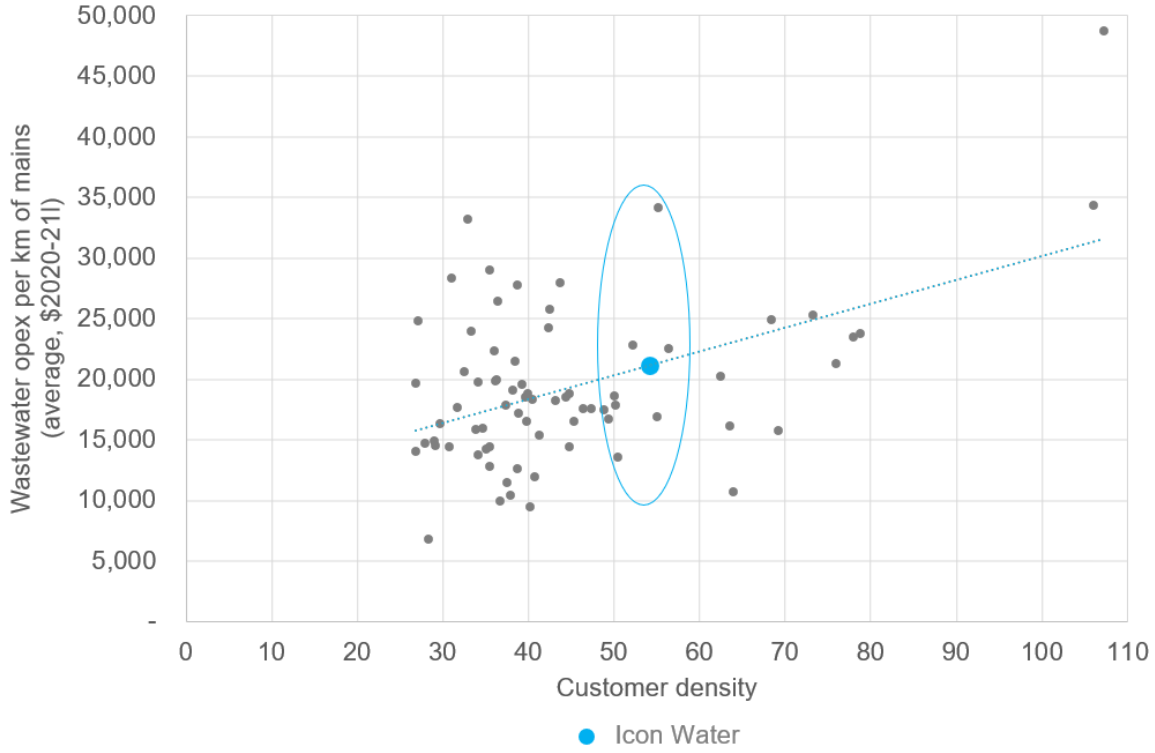


Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

While there is a weak correlation between wastewater opex per km of mains and customer density, Icon Water's opex per km of mains falls on the trend. Figure 6-11 shows the average wastewater opex per km of mains over period 2018–19 to 2020–21 relative to customer density. Icon Water's wastewater

opex per km of mains over the period is $21,062, similar to the median and mean of utilities in the sample, and with a similar customer density level.

Figure 6-11: Wastewater opex per km of mains 2018–19 to 2020–21 ($2020–21)



Source: Bureau of Meteorology, *Urban national performance report*, November 2021; Icon Water analysis.

Icon Water engaged Quantonomics to undertake a benchmarking study, using PPIs and Stochastic Frontier Analysis (SFA) to understand our costs relative to other Australian utilities. For PPIs, the analysis found that there is no historical systematic relationship between opex per customer and customer density. Quantonomics noted that Icon Water's average opex for water and wastewater services is similar to the average for the sample and opex per customer is near the average for utilities with a similar customer density. The report highlighted that water and wastewater opex per km of mains tends to increase with customer density. Icon Water's average opex per km of mains is similar to that of utilities with a similar customer density.[18]

Notably, all results should be interpreted with caution as there are some limitations of benchmarking related to data availability and quality:

- Benchmarking information may be incomplete or unavailable, including missing values, different operating environment aspects, government taxes and royalties, and water security. Moreover, there is limited information relating to capital inputs due to inconsistencies in approaches to asset valuation, asset age and depreciation profiles.
- Data definitions and accounting standards have changed over time.
- Not all utilities are comparable as they operate in different environments[19], with different climate conditions, water sourcing options[20], types of organisational integration, government policies,

[18] Quantonomics, Final report: Icon Water Expenditure Benchmarking, April 2022, pp. 25-26.

[19] Operating environment factors (OEFs) are variables which reflect exogenous differences between the operating contexts of different water and wastewater utilities, not all of which can be quantitatively measured.

[20] Examples include whether the utility is an inland or coastal utility; distance and method in which water is transported; whether it is sourced from a dam owned by the utility, desalination plant, or bulk water utility.

jurisdictional taxes and royalties, regulatory obligations (eg. economically regulated and price guided service providers, stand-alone service providers operating without formal economic regulation, government-based service providers, and bulk-water providers), customer base, asset profiles and maintenance standards. Different operating environments result in different customer demand and density characteristics which can have an important influence on cost of supply per customer or kilolitre delivered. This is important given water utilities have a high level of fixed costs. Different operating environments also impact the reliability of supply and drivers of the frequency and length of events or other service standards.

- Utilities may have different accounting methods and treatment of costs, capitalisation rates, and cost allocations to activities may differ between businesses, especially for those businesses horizontally or vertically integrated.
- There may be differences in the methods used for reporting asset values including accounting methods used for valuing assets.
- There may be differences in the level to which operating costs and capital expenditure are substituted.

The Quantonomics report outlines other data limitations in the analysis. Moreover, BOM is undertaking a review into data collated for the NPR, which is publicly available.[21] The Productivity Commission have also noted limitations on data quality.[22]

[21] Bureau of Meteorology, *National Performance Reporting Framework Indicator Review Draft findings and recommendations*, October 2021.

[22] Productivity Commission, *National Water Reform 2020*, May 2021.

6.5 Trending the base year

The trend or 'rate of change' is applied to base year opex for each year of the 2023–28 regulatory period to account for expected real increases in labour, electricity, chemicals, customer numbers, network growth (scale escalation) and expected changes in productivity. Icon Water has adopted an approach consistent with common regulatory practice. The trend has been calculated according to the following formula:

$$Rate\ of\ change = (1 + real\ price\ growth) \cdot (1 + output\ growth) \cdot (1 + productivity)$$

Table 6-6 sets out Icon Water's proposed rate of change. Each component is detailed in the following sections.

Table 6-6: Opex forecast trend (rate of change)

	2023–24	2024–25	2025–26	2026–27	2027–28
Real price growth	0.25%	0.47%	0.81%	0.42%	0.25%
Output growth	1.64%	1.68%	1.79%	1.82%	1.81%
Productivity growth	0.50%	0.50%	0.50%	0.50%	0.50%
Rate of change	1.39%	1.65%	2.10%	1.74%	1.55%
Trend (cumulative)	**1.39%**	**3.06%**	**5.23%**	**7.06%**	**8.72%**

Source: BIS Oxford Economics; Quantonomics; Icon Water analysis.

6.5.1 Real price growth

Base year opex reflects the current prices of cost inputs. The base-step-trend approach adjusts the base year opex to forecast real input cost changes. Real price growth accounts for the expected increases in labour rates, electricity prices and chemicals. We expect that these will increase at a rate different from the Consumer Price Index (CPI).

We engaged BIS Oxford Economics (BISOE) to forecast real cost escalators for the 2023–28 regulatory period.[23] BISOE built a robust forecast of expected cost escalators in the Electricity, Gas, Water and Waste Services (EGWWS) sector in Australia and the ACT based on macroeconomic and state-specific factors. The cost escalators and the applicable weights are presented in Table 6-7. Costs not included in the table are increased in line with forecast inflation.

[23] BIS Oxford Economics, *Input cost escalation forecasts to 2027–28*, March 2022.

Table 6-7: Real price growth cost escalators

	2023–24	2024–25	2025–26	2026–27	2027–28	*Weight*
Labour[24]	1.05%	1.25%	1.27%	0.64%	0.56%	40.0%
Chemicals	-3.96%	-0.22%	1.33%	1.78%	-0.64%	4.1%
Electricity	-0.09%	-0.41%	4.55%	1.67%	1.00%	5.5%

Source: BIS Oxford Economics; Icon Water.

We have applied an average historical input price weight of 40.0 per cent for labour prices, 4.1 per cent for chemicals and 5.5 per cent for electricity to combine these into the real price growth parameter. To derive real price growth, Icon Water has applied the cost escalators using input price weights based on the 2018–23 regulatory period average to smooth any lumpy opex predominantly due to changes in electricity costs as pumping water is largely dependent on the weather.[25]

BISOE estimates that the real increase in ACT labour costs is forecast to average 0.65 per cent per annum over the 2023–28 period. BISOE noted that the national and ACT utilities wages are forecast to increase by more than the national and state All Industries averages, because:

- the EGWWS sector is a capital-intensive industry whose employees have higher skill and productivity, and commensurately higher wage levels
- strong union presence in the utilities sector ensures outcomes for collective agreements and a higher proportion of employees on Enterprise Bargaining Agreements relative to the national average
- increases in individual agreements are expected to strengthen as labour markets tighten and labour productivity growth builds from 2022–23
- as utility investment levels are expected to increase, the demand for skilled labour will increase
- the national averages tend to be pulled down by lower wages and lower-skilled sectors such as retail, wholesale, accommodation, and hospitality.

Electricity cost escalators have also been used to forecast opex. BISOE predicts that electricity prices will increase by 1.3 per cent in real terms on average over the 2023–28 regulatory period. Electricity prices are influenced by government schemes and the announced closure of power stations.

BISOE forecasts chemical prices to change in line with historical volatility, with real prices decreasing by 0.3 per cent on average per annum over the 2023–28 regulatory period.[26] Chemical price changes are based on the producer price index for Basic Chemical Manufacturing and are driven by oil prices, exchange rates, quarrying costs and fuel prices.

Icon Water intends to update the escalators and weights to provide an updated forecast in the response to the Commission's draft report.

[24] The labour cost escalator includes the Superannuation Guarantee, which is detailed in Appendix 6.2.

[25] For example, if demand is high and dams are low, Icon Water pumps water from higher-cost alternatives. If the ACT experiences high rainfall, water demand decreases, and less pumping is required.

[26] BIS Oxford Economics, *Input cost escalation forecasts to 2027/*28, March 2022, p. 5.

6.5.2 Output growth

Output growth allows a commensurate increase in opex associated with increased customer numbers and volumes, reflecting an increase in the underlying infrastructure and activities, which cost more to operate and maintain. Output growth captures the relationship between scale, capex and opex to account for the growth and demand on our network. Operating and maintenance costs are partially driven by Icon Water's assumed changes in water and wastewater demand as the network expands to service a growing population in the ACT and facilitate greater network resilience. In the Commission's review of demand forecasting methods, it was noted that:[27]

> Demand forecasts help us to assess the prudency and efficiency of Icon Water's proposed expenditure during our price investigation. Icon Water's cost of providing the services is influenced by demand … Good demand forecasts can help us assess whether Icon Water's capital investment program and forecast operating costs are prudent and efficient. This helps us ensure that consumers pay for only those costs that are necessary to meet their demand for services. Good demand forecasts also help Icon Water plan its operations to meet demand.

Icon Water's efficient base year opex reflects our current output and demand, including customer numbers, water volumes and wastewater treatment. Output growth is the expected change in network output over the 2023–28 regulatory period.

We have applied the output change measures, and respective weightings based on econometric SFA.[28] The output growth measures and respective weights are outlined in Table 6-8.

Table 6-8: Output measures and weights

Output measure	Description	Weighting
Customer numbers	Customer numbers are based on the maximum forecast between water and wastewater customer numbers.	70.4%
Water volumes	The quantity of water is the total volume supplied to residential, commercial, municipal and industrial customers, plus the bulk water delivered to other water businesses or operational areas.	13.4%
Wastewater volumes	The quantity of wastewater treated is the total volumes collected of residential sewage, non-residential sewage, non-trade waste and trade waste.	16.3%

Source: Quantonomics, *Appendix 6.1 Icon Water benchmarking report*, April 2022, p. 34, 45, 49.

Table 6-9 shows the annual output growth factors for the 2023–28 regulatory period and the total output growth based on output measures.

[27] Independent Competition and Regulatory Commission, *Review of water and sewerage services demand forecasting methods*, December 2021, p. 10.

[28] Quantonomics, Appendix 6.1 Icon Water benchmarking report, April 2022, p. 34, 49.

Table 6-9: Forecast output growth 2023–28

	2023–24	2024–25	2025–26	2026–27	2027–28
Output growth	1.64%	1.68%	1.79%	1.82%	1.81%
Output growth (cumulative)	**1.64%**	**3.35%**	**5.20%**	**7.12%**	**9.05%**

Source: Icon Water; Quantonomics, *Appendix 6.1 Icon Water benchmarking report*, April 2022, p. 45.

6.5.3 Productivity growth

In economics, production is a process of transforming inputs into outputs, and productivity is the overall level of output produced per unit of input. Productivity measures how much output can be achieved with a given set of inputs. Utilities are productively efficient when producing goods and services at the least possible cost, given their operating environment and prevailing input prices.

Applying a positive productivity growth rate to our opex results in a lower forecast through additional efficiency savings, which are passed onto customers through lower water and wastewater prices. Icon Water has included an efficiency factor in the base-step-trend derivation for water and wastewater opex forecasts with consideration of econometric cost function modelling, efficiencies achieved in the 2018–23 regulatory period, recent regulatory decisions and declining long-term productivity trends in the utilities sector.

Econometric cost function modelling

Icon Water engaged Quantonomics to undertake econometric cost function modelling to understand our historical productivity and forecast expected efficiencies. Regarding the results from SFA, Quantonomics recommended a productivity growth factor between negative 0.2 and 0.7 per cent annually, without an adjustment to the base year:[29]

> Since the econometric variable cost function results, and the partial indicator analysis, suggest that Icon Water's opex efficiency is similar to the industry average for all states and territories, and given substantial data limitations, Quantonomics recommends that a base-year efficiency adjustment should not be applied. Instead, some allowance for 'catch-up' efficiency gains can be included within the Opex PFP annual adjustment factor. For Icon Water to reach the 67th percentile of opex cost efficiency over ten years would require an annual 'catch-up' productivity adjustment of 0.7 per cent. Combining this with a projected underlying industry productivity trend of 0.0 to –0.9 per cent per year yields an annual combined productivity adjustment of –0.2 to 0.7 per cent. We consider this to be a feasible and suitable range for an annual productivity adjustment.

Historical efficiency gains

Icon Water committed to achieving opex efficiency gains of 1.75 per cent annually or 10 per cent over the 2018–23 regulatory period.[30] As evident in Icon Water's opex performance over the 2018–23 period, we have achieved these efficiencies as our opex is not expected to be materially different from the regulatory allowance. This is despite absorbing additional costs for insurance premiums, which increased at a rate materially above inflation and the trend applied to the 2018–23 opex forecast.

[29] Quantonomics, Appendix 6.1 Icon Water benchmarking report, April 2022, pp. 50-51.

[30] Icon Water, Attachment 7: Operating expenditure, June 2017, p. 22; Icon Water, 2018–23 Water and Sewerage Price Proposal Overview, 2017, p. 25.

Productivity performance is evident in the NPR benchmarking analysis, where the PPIs (see section 6.4.2) show that Icon Water's three-year average opex to 2020–21 per customer is below the average and similar to the median for water services, and below the average and median for wastewater services. Moreover, opex per km of mains over three years to 2020–21 is similar to the average and median of utilities with a similar customer density.

Recent regulatory decisions

We have also had regard to recent regulatory decisions for water and wastewater businesses in applying a productivity growth rate to our opex forecast. Table 6-10 shows the regulatory decisions we have considered, and the productivity growth rates determined in those decisions. The productivity growth rates presented are annual but represent cumulative continuing efficiency factors.

Table 6-10: Regulatory precedent of productivity growth rates

Regulatory decision	Annual productivity growth rate
Australian Energy Regulatory – Recent regulatory determinations and access arrangements[31]	0.5% p.a.
Essential Services Commission of South Australia – South Australia Water Determination 2020 [32]	0.5% p.a.
Independent Pricing and Regulatory Tribunal – Sydney Water price determination 2020[33]; Hunter Water	0.8% p.a.
Office of the Tasmanian Economic Regulator – Taswater Draft Price Determination 2022[34]	1.5% p.a.
Queensland Competition Authority – Seqwater final decision[35]	No efficiency target applied

Long-term industry trends

Icon Water has considered long-term historical data where productivity has declined in recent decades. For example, the Australian Bureau of Statistics (ABS) reported that productivity decreased for the electricity, gas, water and waste services in 2020–21.[36] However, caution should be applied when considering the use of an aggregated market sector rather specific industry productivity growth (eg. the Productivity Commission has noted measurement issues with industry-wide productivity trends).

[31] Australian Energy Regulator, *Forecasting productivity growth for electricity distributors*, March 2019; Australian Energy Regulator, *Final Decision Jemena Distribution Determination 2021 to 2026 Attachment 6 Operating expenditure*, April 2021, p. 41.

[32] ESCSA, *SA Water Regulatory Determination 2020 Statement of Reasons*, June 2020, p. 196.

[33] IPART, *Review of prices for Sydney Water from 1 July 2020*, June 2020, p. 36.

[34] Office of the Tasmanian Economic Regulator, Investigation into Taswater's prices and services for the period 1 July 2022 to 30 June 2026, May, 2022, p. 41.

[35] Queensland Competition Authority, *Final report Seqwater bulk Water Price Review 2022–26*, March 2022, p. 30.

[36] Australian Bureau of Statistics, Estimates of Industry Multifactor Productivity, release date 13 December 2021.

Our productivity growth rate

Icon Water has relied on a combination of tools to propose a productivity growth rate, including econometric analysis, our expectations of sustainable and achievable efficiencies, recent regulatory decisions and historical market achievements. Despite negative productivity growth in the water and wastewater sector, Icon Water has included a positive productivity growth rate of 0.5 per cent annually to our opex forecast, representing our ambition to continue delivering efficient and prudent services at an affordable level for our customers. This results in opex savings of $12.1 million over the 2023–28 regulatory period, which will be passed onto our customers through lower prices.

A productivity growth rate of 0.5 per cent annually represents our expectations of achievable ongoing efficiency gains over the 2023–28 regulatory period. Initiatives that are expected to contribute to Icon Water's long-term efficiency gains include the Digital Strategy and strategic procurement activities, such as the rollout of the future sourcing strategy for corporate and customer services currently provided under the Corporate Services Agreement (CSA) and Customer Services and Community Support Agreement (CSCSA).

Icon Water considers it can achieve these efficiency gains even though the design and implementation costs of the sourcing strategy are significant and, under the regulatory framework, will not be recovered through customer prices. This is because the design and implementation costs are non-recurrent in nature and hence not captured under the base-step-trend methodology for determining the opex allowance. Similarly, the transition costs associated with the expiry of the CSA and CSCSA, expected to be incurred in 2023–24, will be borne by Icon Water and not included in customer prices (refer to **Attachment 1: Our role, operations and business context** for further information on the future sourcing strategy for these services).

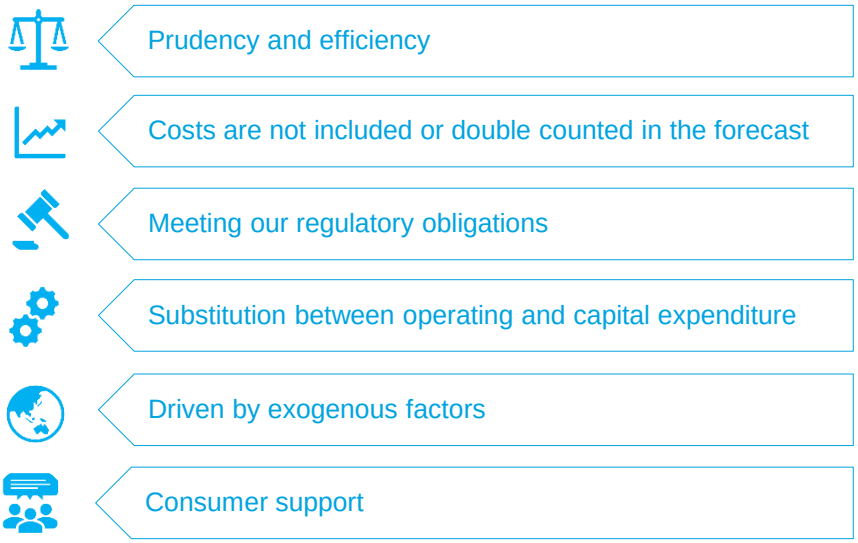
6.6 Step changes

Step changes are added or subtracted to account for costs not compensated for in the base year or the trend (rate of change), but that should be included to allow an efficient and prudent expenditure envelope. Icon Water has outlined the assessment criteria for assessing a step change for insurance premiums and maintaining the security of our critical infrastructure in the opex forecast for the 2023–28 regulatory period. Our proposed step changes are prudent, efficient, and do not double-count costs in the opex forecast.

6.6.1 Step change assessment

Icon Water has considered assessment criteria for including step changes in our proposed opex forecasts for the 2023–28 regulatory period. Our criteria for assessing whether to propose a step change are outlined in Figure 6-12 and detailed in this section.

Figure 6-12: Icon Water step change assessment criteria



Prudency and efficiency

We have considered whether the proposed step changes are prudent and efficient. The Commission defined prudency to reflect:[37]

> whether the project, program or activity would reasonably be expected of a utility operating in the circumstances that apply. Evidence considered for prudency would include substantiation of the benefits of and the need for the project, program or activity.

Icon Water has proposed step changes that a utility operating in a similar environment would reasonably be expected to incur. We have also ensured that the costs associated with the proposed step changes are efficient. The Commission defines efficient expenditure as: [38]

> whether the project, program or activity is delivered or proposed to be delivered with the best value for money. Evidence considered for efficiency would include exploration of alternative

[37] Independent Competition and Regulatory Commission, Final report Regulated water and sewerage services prices 2018–23, May 2018.

[38] Independent Competition and Regulatory Commission, Final report Regulated water and sewerage services prices 2018–23, May 2018.

> service delivery options, assessment of lowest cost over the life cycle, and the 'deliverability' of the proposed project, program or activity.

Icon Water considers that prudency and efficiency should be considered holistically and in the long-term interests of customers.

Costs are not double-counted in the forecast

Icon Water considers the opex forecast does not double count costs captured in the base year or the trend. A step change should not double count costs associated with an increase in the volume of water sold or wastewater treated, costs already captured in output growth or discretionary changes to inputs.

When opex is prudent and efficient, there is no capacity to absorb additional expenses required to meet additional regulatory obligations. In other words, if opex is considered prudent and efficient, a non-material adjustment may be required to ensure that opex continues to reflect prudent and efficient costs. Applying a materiality threshold on opex step changes creates a bias against efficient opex solutions that involve capex-opex substitutions, such as demand management to delay network augmentation. In the Australian Energy Regulator's final decision for United Energy's step change, it was noted that:[39]

> For clarity, when we consider materiality in the context of step change assessments, what we mean is whether the costs of the step change are double counted in other elements of the opex forecast.

While opex step changes should be substantiated with a significant uplift in expenditure based on the assessment criteria, ensuring costs are not double-counted needs to be a criterion to ensure customers pay the efficient amount necessary for safe and reliable water and wastewater services.

Regulatory obligation

An efficient opex allowance should capture prudent and efficient incremental costs necessary to fulfil new or changed statutory and regulatory obligations. A new or changed regulatory obligation impacts our costs of providing services and, when not captured in the base year or trend, should be included in the opex forecast as a step change.

Substitution from capex to opex, which is prudent and efficient

The trade-off between capex and opex should be considered an assessment criterion for step changes. Where avoided capex offsets the increase in opex in net present value terms, substitution is efficient. A step change that involves a substitution between capex and opex should be supported by appropriate analysis.

Driven by exogenous factors

Step changes could include costs driven by factors outside of Icon Water's control to recover efficient opex. Exogenous factors may include changes driven by external factors such as legislative change or a change in technical or accounting standards. A step change driven by an exogenous force may involve incurring costs in complex areas or markets, such as international insurance markets. An expert report may support a step change caused by an exogenous factor to reconcile options and include a market outlook of future conditions and costs.

[39] Australian Energy Regulator, Final decision United Energy Distribution Determination 2021 to 2026 Attachment 6 Operating expenditure, April 2021, p. 34.

Consumer support

Icon Water considers assessing step changes against customer preferences, including where there is strong customer support and the benefits to customers outweigh the costs. Additional expenditure may reasonably be required to achieve an outcome explicitly endorsed by customers or broadly accepted changes in community expectations – for example, specific reliability outcomes, service standards, or a commitment to greater environmental sustainability.

Proposed step changes for the 2023–28 regulatory period

We have proposed two step changes in our forecast. Insurance premiums are driven by exogenous factors outside of our control and changes to the Security of Critical Infrastructure (SOCI) legislation involves additional regulatory obligations that is not captured in the efficient base year or trend escalation.

In April 2021, the International Financial Reporting Interpretations Committee (IFRIC) published guidance which clarifies the accounting standards relating to Software as a Service (SaaS). A shift in third-party technology services to being expensed rather than captialised is outlined in **Attachment 5: Asset management governance**. Icon Water is currently undertaking analysis to explore the option of a step change relating to the trade-off of substituting expenditure from capital expenditure (capex) to opex for planned digital investments to ensure consistency with accounting standards and that our costs represent the most efficient option.

6.6.2 Insurance premiums

Insurance is a form of financial risk management used to hedge against the risk of a contingent or uncertain loss and is purchased to minimise loss due to low frequency, high impact events.

The global insurance markets in which Icon Water and other regulated utilities procure insurance have been characterised by market exits, reductions in offered capacity, the hardening of criteria for deploying insurance capacity and significant insurance premium increases because of increasing natural catastrophe events associated with climate change, the COVID-19 pandemic, litigation and cyber extortion. This has resulted in higher premium rises than expected during normal market conditions and present material cost increases for utilities outside their control.

Icon Water has investigated expected insurance premiums over the 2023–28 regulatory period and has sought advice from our insurance broker.[40] Insurance premiums are expected to increase substantially over the regulatory period. Based on the analysis, Icon Water has considered a range of approaches and suggests that a step change is the most efficient approach to increasing operating expenditure.[41] The increase in opex accounts for the level of insurance premiums included in the base year and the rate of change, with additional costs outlined in Table 6-11.

[40] Marsh, Appendix 6.4 Icon Water Premium Projections and Insurance Market Update, April 2022.

[41] Icon Water, Appendix 6.3 Insurance premium step change, June 2022.

Table 6-11: Insurance premium step change (millions, $2022–23)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Water	$0.57	$0.77	$0.95	$1.08	$1.17	**$4.55**
Wastewater	$0.66	$0.89	$1.10	$1.25	$1.35	**$5.25**
Total	**$1.23**	**$1.66**	**$2.06**	**$2.33**	**$2.52**	**$9.80**

Source: Marsh; Icon Water analysis.
Note: Totals may not sum due to rounding.

While there is uncertainty in forecasting insurance premiums and the risk associated with an under/over recovery of costs, insurance premiums have been included as a step change because it is consistent with incentive-based regulation, where utilities are best incentivised to achieve efficient cost outcomes by including costs in the total opex forecast. Details of our proposed insurance premium step change are included in Appendix 6.3.

6.6.3 Security of Critical Infrastructure

Different threats, including natural hazards and human-induced threats (such as malicious cyber-attacks, disgruntled employees, criminals or malevolent state-based actors), can significantly disrupt our ability to safely and reliably service water and wastewater customers, including those with nationally significant functions. The Department of Home Affairs noted that the interconnected nature of critical infrastructure means that the compromise of essential functions can have cascading consequences:[42]

> The Australian Government and industry report a worsening critical infrastructure threat environment, exacerbated by malicious cyber activity by state and criminal actors. Australia is not immune and cannot be complacent, as the threat of a significant cyber-attack (or attacks) is possible and growing ever more likely.

Water and wastewater services are part of Australia's national critical infrastructure and are subject to new and changing obligations under the *Security of Critical Infrastructure (SOCI) Act 2018* (Cth) and *Security Legislation Amendment (Critical Infrastructure Protection) Act 2022* (Cth). An overview of regulatory obligations is outlined in Box 6-2.

[42] Department of Home Affairs, Department of Home Affairs submission into the Review of the Security Legislation Amendment (Critical Infrastructure Protection) Bill 2022, February 2022, p. 2.

Box 6-2: Security of critical infrastructure background information

Security of Critical Infrastructure (SOCI) [43]

The *Security Legislation Amendment (Critical Infrastructure Protection) Act 2022* (SLACIP Act) was passed April 2022 to amend the *Security of Critical Infrastructure Act 2018* (the SOCI Act) and builds on the existing framework to uplift the security and resilience of Australia's critical infrastructure.

The purpose of the reforms is to strengthen the existing framework for managing risks to defined critical infrastructure, including by:

- introducing a requirement for owners and operators of critical infrastructure assets to establish, maintain, and comply with a *risk management program* to manage the material risk of a hazard occurring, which could impact the availability, integrity, reliability or confidentiality of the critical infrastructure asset
- requiring entities to provide asset information and notification of certain events, including material changes in shareholding and notification and reporting of cyber security incidents within mandatory timeframes
- establishing a mechanism for the declaration of *Systems of National Significance (SoNs)* –the assets most interconnected, interdependent, and essential to Australia's social or economic stability, defence or national security – which are subject to *Enhanced Cyber Security Obligations*.

Risk management program

The risk management program requires responsible entities of critical infrastructure assets to establish, maintain, and comply with a risk management program. Entities must take a holistic and proactive approach in identifying and mitigating hazards that pose material risks to the availability, integrity, reliability or confidentiality of the asset:

- entities must identify (and as far as is reasonably practicable, prevent), and mitigate 'material risks' that could have a 'relevant impact' on the asset
- a material risk refers to those risks and hazards that, if realised, may affect the availability, integrity, reliability and confidentiality of critical infrastructure assets.

Entities are required to regularly review the risk management program and ensure the program is up to date. Icon Water will also be required to provide an annual report to the Commonwealth Government, approved by its board, council or other governing body, regarding the risk management program.

Systems of National Significance (SoNs)

SoNS are critical infrastructure assets that are crucial to the nation due to the cascading consequences of disruption to other critical infrastructure assets and sectors if they are unavailable. Only a small subset of critical infrastructure assets will be SoNS. The Federal Minister may only declare a critical infrastructure asset a SoNS if satisfied that the asset is of national significance.

Enhanced Cyber Security Obligations[44]

Enhanced Cyber Security Obligations will only apply to SoNS. Under the Enhanced Cyber Security Obligations, the Secretary of Home Affairs may require the responsible entity for a system of national significance to undertake one or more prescribed cyber security activities:

- develop cyber security incident response plans to prepare for a cyber incident
- undertake cyber security exercises to build cyber preparedness
- undertake vulnerability assessments to identify vulnerabilities for remediation
- provide system information to build Australia's situational awareness.

The Enhanced Cyber Security Obligations will support the sharing of near-real time threat information to provide industry with a more mature understanding of emerging cyber security threats, and the capability to reduce the risks of a significant cyber attack against Australia's most critical assets.

Cyber threats to the utilities industry and the monetisation of private information by cybercriminals are increasing. The SLACIP Act 2022 requires a significant increase in external reporting to the Australian Cyber Security Centre (ACSC) and Department of Home Affairs should an incident occur. To ensure Icon Water can continue to protect the personal data and information of customers and staff, processes and resilience of the supply chain, and resilience of supply against the increasing threats related to critical infrastructure, further investment is needed in corresponding controls.

The *SLACIP Act 2022* imposes positive security obligations (PSOs), embedding risk management and reporting into business-as-usual activities. With the amendments to the SOCI Act, there is a need to modernise and uplift our cyber security framework, process, policies and controls to ensure compliance with the new legislative requirements and to continue protecting our systems and the information of our customers by robustly managing and mitigating our cyber security vulnerabilities.

The Department of Home Affairs found that the average one-off cost per water utility for changes to SOCI legislation was expected to be $14.3 million, with ongoing costs of $6.0 million per year.[45]

To be compliant with our regulatory obligations and to protect the resilience and reliability of water and wastewater services, we have proposed to include a prudent step change in the opex forecast for the 2023–28 regulatory period. The details of our step change and compliance obligations are included in Appendix 6.5.[46]

Our preliminary estimated efficient step change to comply with additional SOCI regulatory obligations for minimum cyber security standards is $3.55 million over the regulatory period, as shown in Table 6-12. The step change for the critical infrastructure risk management program of enhanced cyber security obligations is not included in the step change. Our proposed SOCI step change does not double count costs as expected expenditure is not included in the base year or the trend. As the SOCI legislation only came into effect in April 2022, Icon Water is still developing costings for cyber security, personnel vetting, supply chain, and physical security to ensure regulatory compliance. We expect to include an updated step change in our response to the Commission's draft report.

Table 6-12: Security of critical infrastructure (SOCI) step change (millions, $2022–23)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Water	$0.36	$0.32	$0.32	$0.32	$0.32	**$1.65**
Wastewater	$0.42	$0.37	$0.37	$0.37	$0.37	**$1.90**
Total	**$0.78**	**$0.69**	**$0.69**	**$0.69**	**$0.69**	**$3.55**

Source: Icon Water
Note: Totals may not sum due to rounding.

[43] Department of Home Affairs, *Factsheet: Security Legislation Amendment (Critical Infrastructure Protection Act) 2022*, 2022.

[44] Department of Home Affairs, *Factsheet: The Enhanced Cyber Security Obligations Framework*, 2022.

[45] Australian Government Department of Home Affairs, *Department of Home Affairs submission into the Review of the Security Legislation Amendment (Critical Infrastructure Protection) Bill 2022*, February 2022, p. 9.

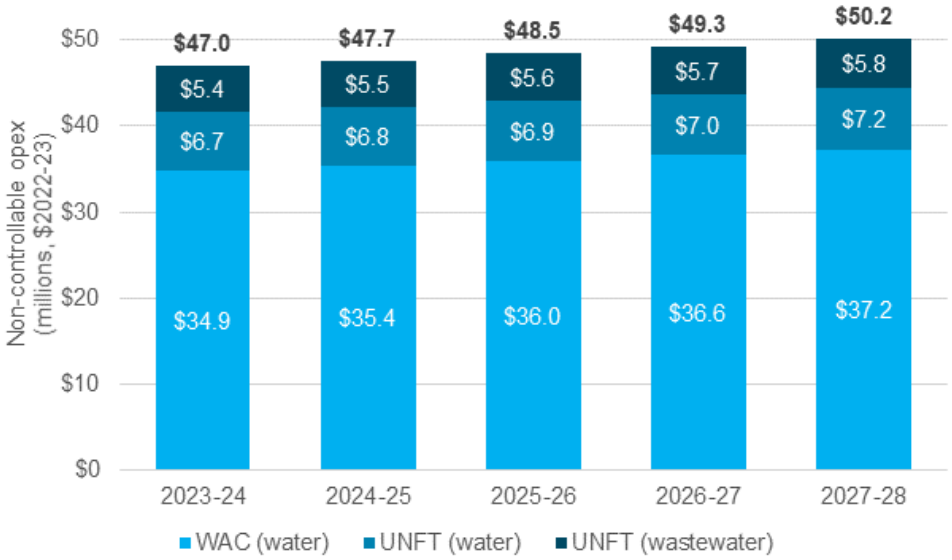
[46] Icon Water, Appendix 6.5 Critical infrastructure opportunity brief, June 2022.

6.7 Non-controllable opex

Non-controllable opex is added to the forecast. It includes costs levied on Icon Water by the ACT Government. This expenditure consists of the WAC and UNFT. Non-controllable opex is forecasted using a zero-based method, which assumes a nil budget as the starting point and is a bottom-up construction of costs.

Non-controllable opex is subject to a true-up mechanism through the annual price resets (detailed in **Attachment 4: Regulatory controls**). If costs are over (or under) estimated, any difference will be included in the annual price adjustment. The forecast of non-controllable opex for the 2023–28 regulatory period is expected to increase in real terms, as shown in Figure 6-13.

Figure 6-13: Non-controllable opex (millions, $2022–23)



Forecast non-controllable opex is derived from a bottom-up forecast of costs based on historical trends, input data estimates, and available information such as ACT Government budget statements. Estimates for the WAC and UNFT are detailed in the following sections.

6.7.1 Water Abstraction Charge (WAC)

The WAC was implemented in 1999 under the *Water Resources Act 1998* (ACT), to conserve water and provide a return on Territory-owned assets.[47] The charge is designed to send a price signal to consumers for the costs incurred by the ACT Government in maintaining water catchments, the environmental costs associated with the consumption of water and the scarcity value of water. Icon Water pays the WAC to the ACT Government.

The WAC is calculated as the product of dam abstractions (included in the demand forecasts in **Attachment 9: Demand**) and the unit WAC price as determined by the ACT Government in the *Water Resources (Fees) Determination*. The ACT Government currently indexes the WAC price by three per cent annually as per its decision in the 2016–17 budget. Icon Water has indexed the WAC price by three per cent annually over the 2023–28 regulatory period to derive our forecast. Icon Water's forecast of WAC liabilities is shown in Table 6-13Table 6-13:.

[47] ACT Government Chief Minister Treasury and Economic Development, *Non-potable water review*, December 2021, p. 13.

Table 6-13: Forecast Water Abstraction Charge (WAC) 2023–28 (nominal)

		2023–24	2024–25	2025–26	2026–27	2027–28
Dam abstractions (ML)	(A)	51,938	52,418	53,138	53,902	54,632
WAC ($/kL)	(B)	$0.69	$0.71	$0.73	$0.75	$0.78
WAC ($, millions)	(C)=(A)*(B)	**$35.8**	**$37.3**	**$38.9**	**$40.6**	**$42.4**

Source: Icon Water.
Note: Totals may not sum due to rounding.

6.7.2 Utilities Network Facilities Tax

The UNFT is payable by the owners of any network facility on land in the ACT. Utility networks include networks for transmitting and distributing electricity, gas, wastewater, water and telecommunications. Icon Water pays the UNFT to the ACT Government.

The UNFT is calculated as the product of the UNFT rate (in $/km) and the length (in km) of the water and wastewater networks. The UNFT rate is determined each year by the ACT Government through the *Taxation Administration (Amounts Payable–Utilities (Network Facilities Tax)) Determination*, a notifiable instrument under the *Taxation Administration Act 1999* (ACT). The ACT Government currently applies annual indexation to the UNFT rate using the Wage Price Index (WPI) for the preceding December quarter. Icon Water has forecasted the UNFT rate for 2023–28 by indexing the rate by three per cent annually. This estimate is based on estimates of wage price growth from the Reserve Bank of Australia.[48]

Icon Water has forecasted the network length by applying average historical growth rates of 1.36 per cent for the water network and 1.40 per cent for the wastewater network. Forecasts for the 2023–28 regulatory period are included in Table 6-14.

[48] Reserve Bank of Australia, *Statement of Monetary Policy*, February 2022.

Table 6-14: Forecast Utilities Network Facilities Tax 2022–28 (millions, $nominal)

		2023–24	2024–25	2025–26	2026–27	2027–28
Water						
Mains length (km)	(A)	4,894	4,960	5,028	5,096	5,165
UNFT ($/km)	(B)	1,402	1,444	1,487	1,532	1,578
UNFT ($, millions)	(C)=(A)*(B)	6.86	7.16	7.48	7.81	8.15
Wastewater						
Mains length (km)	(A)	3,946	4,001	4,057	4,113	4,171
UNFT ($/km)	(B)	1,402	1,444	1,487	1,532	1,578
UNFT ($, millions)	(C)=(A)*(B)	5.53	5.78	6.03	6.30	6.58
Water and Wastewater						
UNFT ($, millions)		**$12.4**	**$12.9**	**$13.5**	**$14.1**	**$14.7**

Source: Icon Water
Note: Totals may not sum due to rounding.

6.8 Our opex forecast

Table 6-15 shows our opex forecast, which is a summation of the components of the base-step-trend method.

Table 6-15: Components of forecast opex 2023–28 (millions, 2022–23)

	2023–24	2024–25	2025–26	2026–27	2027–28	Total
Water						
Adjusted base	$69.7	$69.7	$69.7	$69.7	$69.7	**$348.7**
Price growth	$0.2	$0.5	$1.1	$1.4	$1.6	**$4.7**
Output growth	$1.1	$2.4	$3.7	$5.1	$6.5	**$18.7**
Productivity growth	-$0.4	-$0.7	-$1.1	-$1.5	-$1.9	**-$5.6**
Step changes	$0.9	$1.1	$1.3	$1.4	$1.5	**$6.2**
Non-controllable opex	$41.6	$42.2	$42.9	$43.7	$44.5	**$214.8**
Total opex	**$113.3**	**$115.2**	**$117.6**	**$119.8**	**$121.8**	**$587.5**
Wastewater						
Adjusted base	$80.4	$80.4	$80.4	$80.4	$80.4	**$402.1**
Price growth	$0.2	$0.6	$1.2	$1.6	$1.8	**$5.4**
Output growth	$1.3	$2.7	$4.2	$5.8	$7.4	**$21.6**
Productivity growth	-$0.4	-$0.8	-$1.3	-$1.7	-$2.2	**-$6.5**
Step changes	$1.1	$1.3	$1.5	$1.6	$1.7	**$7.1**
Non-controllable opex	$5.4	$5.5	$5.6	$5.7	$5.8	**$27.9**
Total opex	**$88.0**	**$89.6**	**$91.7**	**$93.4**	**$94.9**	**$457.6**
Total water and wastewater opex	**$201.3**	**$204.8**	**$209.2**	**$213.1**	**$216.7**	**$1,045.1**

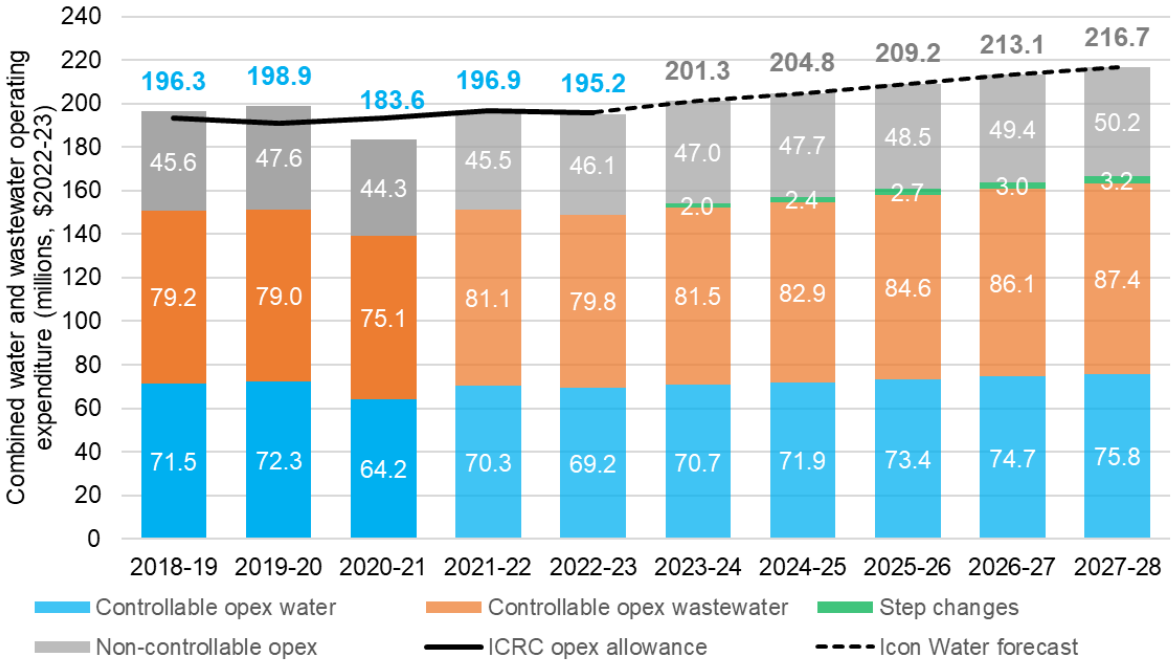
Source: Icon Water
Note: Totals may not sum due to rounding.

The opex forecast for water and wastewater services over the 2023–28 regulatory period, derived using the base-step-trend approach, totals $1,045.6 million ($2022–23), as shown in Figure 6-14.[49] The opex forecast is 7.8 per cent higher than the 2018–23 period allowance of $970.4m ($2022–23)[50] and 7.7 per cent higher than the 2018–23 regulatory period estimated actual opex of $970.9m ($2022–23).

Our opex forecast is efficient, capturing expected increases in population growth, water demand, projected volumes of wastewater treatment, insurance premiums driven by factors outside of our control, costs associated with additional regulatory requirements, and efficiency gains over the 2023-28 regulatory period.

Over the 2023–28 regulatory period, we plan to continue delivering water and wastewater services at the standards that our customers expect. Operationally, this includes continuing to develop strategic actions for our drought response action plan, accommodate changes in our workforce, gain efficiencies through our Digital investment strategy, and continue to engage with our customers.

Figure 6-14: Water and wastewater operating expenditure 2018–23: actuals, estimates, and forecast



[49] The indicative opex forecast is $1,132.1 million in nominal dollars, which accounts for forecast inflation placeholder of 2.62 per cent.

[50] The total opex allowance for 2018–23 was $925.1 million in nominal dollars (Independent Competition and Regulatory Commission, *Final report Regulated water and sewerage services prices 2018–23*, May 2018, p. 55).

Appendices: Supporting documents

Reference number	Appendix title	Author
6.1	Icon water expenditure benchmarking	Quantonomics
6.2	Cost escalation report	BIS Oxford Economics
6.3	Insurance premium step change (Commercial in confidence)	Icon Water
6.4	Insurance premium (Commercial in confidence)	Marsh
6.5	Critical infrastructure opportunity brief (Commercial in confidence)	Icon Water
6.6	Opex model (Commercial in confidence)	Icon Water

Abbreviations and acronyms

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ACSC	Australian Cyber Security Centre
BISOE	BIS Oxford Economics
BOM	Bureau of Meteorology
Capex	Capital expenditure
Commission	Independent Competition and Regulatory Commission
CPI	Consumer Price Index
CSA	Corporate Services Agreement
CSCSA	Customer Services and Community Support Agreement
EGWWS	Electricity, Gas, Water and Waste Services
IFRIC	International Financial Reporting Interpretations Committee
IPART	Independent Pricing Regulatory Tribunal
km	Kilometre
NPR	National Performance Report
OEF	Operating environment factor
Opex	Operating expenditure
PPI	Partial performance indicator
PSOs	Positive security obligations
SaaS	Software as a Service
SFA	Stochastic Frontier Analysis
SLACIP Act	*Security Legislation Amendment (Critical Infrastructure) Act 2022*
SOCI	Security of Critical Infrastructure
SOCI Act	*Security of Critical Infrastructure Act 2018*
SoNs	Systems of National Significance
UMCN	Upper Murrumbidgee Catchment Network
UNFT	Utilities Network Facilities Tax
WAC	Water Abstraction Charge

WPI	Wage Price Index