



# **Keeping Sydney liveable, productive and thriving for a sustainable future**

Price proposal 2020–24

1 July 2019

Sydney  
**WATER**

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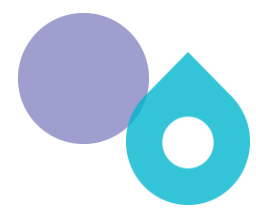


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# Executive summary

Sydney Water is in the process of a transformation that will turn us into a customer-centric utility that is well-positioned to deliver high quality service to our customers in the largest city in Australia. We are proud of our heritage. We are on a journey to become a lean corporatised provider of essential services to five million customers, providing value for money for customers and a financial return for government.

We plan to keep Sydney liveable, productive and thriving, protecting our environment, investing to make our network more resilient to climate change, and playing our part in developing an integrated approach to infrastructure.

Since our last IPART determination only three years ago, the city's growth has accelerated while an extended period of high temperatures, combined with low rainfall, has left our infrastructure in need of significant renewal and extension. To be better-placed to meet these challenges, we have continued to transform our organisation. We have successfully replaced our 30-year-old customer billing platform and we are implementing a new capital procurement model, based on better aligning the incentives of our external delivery partners with our own incentives to efficiently deliver the services our customers want.

In this price proposal we set out our plans to:

- invest efficiently in infrastructure, including investment to support government plans for a water sensitive Sydney through greater recycling of water and integrated water design
- ensure our assets are safe and well-maintained and our environment is protected
- adapt our services to better meet customer needs, while keeping our prices affordable.

To provide these services from 2020–24, we need to invest 42% more on capital expenditure (including investment in information technology) than we forecast to spend over 2016–20 and 68% more than IPART granted to us in 2016.<sup>1</sup>

We also need to spend 2.1% more on core operating costs than we expect to have spent over 2016–20 and 5.9% more than our IPART allowance set in 2016.<sup>2</sup> Our proposed total operating expenditure (including uncontrollable costs) for 2020–24 of \$5.4 billion (\$2019–20<sup>3</sup>). This is 2.4% lower than forecast expenditure over the current 2016–20 period. This reflects a saving in bulk water purchase costs and an assumption of no Sydney Desalination Plant (SDP) running costs in the next period.

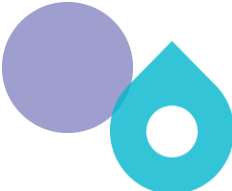

This increase in expenditure is what we require to make sure we keep pace with what our customers and stakeholders expect. The Environment Protection Authority has indicated, for instance, that as population grows in the Hawkesbury Nepean catchment, our wastewater

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<sup>1</sup> We propose a capital expenditure allowance of \$4.5 billion for 2020–24, compared to forecast expenditure of \$3.2 billion for 2016–20 and IPART's allowance for the 2016–20 period of \$2.7 billion.

<sup>2</sup> We propose to spend \$3.911 billion on core operating expenditure over 2020–24, 2.1% more than current period core operating expenditure of \$3.8 billion and 5.9% more than the IPART allowance for the 2016–20 period of \$3.690 billion. If we spend a further \$78 million approved for drought in 2019–20, our 2016–20 core operating expenditure will be about the same as our 2020–24 forecast. This is our expenditure forecast for average weather conditions, we may spend more if weather is adverse or in extended drought.

<sup>3</sup> All dollars following are quoted in \$2019–20 unless noted.



treatment plants need to comply with new lower nutrient load caps from June 2024. We need to invest now to ensure these plants can operate to higher environmental standards at the same time as serving more customers in the catchment in future. In the meantime, some of our existing customer service and environmental standards have come under pressure as changing weather conditions have negatively impacted our performance. We have responded by significantly increasing our frontline network maintenance workforce. By 2019–20, we will have increased the workforce by 30% since 2017.<sup>4</sup> We propose to further increase this workforce in the next four years to make sure we stay on track and restore higher levels of performance.

We are working with government to help deliver the vision of three cities.<sup>5</sup> Growth in Western Sydney provides an opportunity to do water differently. We are about to embark on a decade of greenfield investment to expand our water and wastewater networks and our treatment plant capacity. With rapid growth and development continuing further away from wastewater ocean outfalls and encroaching on inland waterways, water recycling can become an increasingly economic solution to wastewater treatment and disposal.

In South Creek we need to invest in a new wastewater treatment plant by 2024 to meet new customer demand. Traditionally we would build primary and secondary treatment capacity and transfer the wastewater to the east to be released at our deep ocean outfalls. Instead, by providing a means of local disposal of wastewater, recycled water can defer or avoid the costs of upgrading existing pipelines and investing in additional wastewater storage facilities, to protect the city from wet weather overflows. This benefit, together with the additional benefit of providing a local water supply independent of rainfall, can help to make recycled water competitive compared to traditional approaches. This independent local supply can be used for irrigation, environmental flows to waterways or recycling for non-drinking purposes.

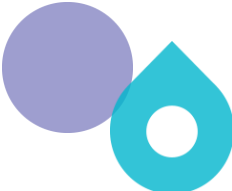

We know we must deliver these outcomes for our customers while keeping our bills affordable. Our commitment to be an efficient service provider is helping us to deliver on this requirement. Financial market conditions and a larger customer base are also helping us to avoid price increases. Our expenditure plans have been subject to rigorous budgeting challenge. We have tested for both prudence (can the expenditure be deferred without undue risk to performance or service) and efficiency (for instance innovative solutions, providing the highest customer value or lowest cost).

On infrastructure capital expenditure, we have removed over 20% of the cost from the initial program estimates, reflecting scope, efficiency and program savings we back ourselves to deliver, while ensuring we do not compromise on the critical growth and renewal imperatives that drive these programs. On operating expenditure, we are committed to deliver further productivity improvements through programs to reduce corporate costs and improve the performance of our water and wastewater production business. These programs have delivered \$47 million in savings in this period and we are targeting a further \$83 million over 2020–24. This is equivalent to an annual efficiency improvement of 0.5% a year over the next period.

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<sup>4</sup> We are increasing the full-time employees in our network maintenance workforce, from 249 in 2016–17 to 328 in 2019–20.

<sup>5</sup> Greater Sydney Commission 2018, *Greater Sydney Region Plan – A Metropolis of Three Cities*, Greater Sydney Commission, Sydney.



We will drive further efficiency and better customer outcomes through our reforms to our capital procurement model, which is currently in transition, and our new finance and procurement systems, which will transform our ability to apply data systematically in our decision-making.

Against this backdrop, we propose that prices for water and wastewater services for 2020–24 will be reduced in real terms compared to the 2016–20 prices determined by IPART. Putting aside the impact of Sydney Desalination Plant (SDP), a typical household consuming 220 kL of water a year, will receive in real terms, an annual bill reduction of 4%<sup>6</sup> (reducing from \$45 from \$1,172 to \$1,127) in 2020–21, with prices remaining flat in real terms after that.

This reduction is on top of the 8% (around \$100) reduction determined by IPART in 2016.

However, SDP is now operating, and we must recover its operating costs (as separately determined by IPART) from our customers via their Sydney Water bills. On 1 July 2019, customers will commence paying SDP's operating costs. In 2019–20 a typical household's annual bill will increase by about \$35 in real terms. SDP's operating costs will change from about \$35 to about \$40 in real terms, for each year of full operation for 2020–21 and beyond.

Consequently, if SDP:

- continues to operate for the whole of 2020–21, a typical household's annual bill will reduce by about \$40<sup>7</sup> in real terms in 2020–21.
- turns off before 30 June 2020, customers will stop paying SDP's operating costs, meaning a typical household's annual bill will decrease by about \$80<sup>8</sup> in real terms.

If further drought costs prove essential, we will make these investments. Funding for these additional costs, whether it be capital investment to improve network resilience or operational expenditure to manage water restrictions and implement water conservation, is not included in our proposal. Our operating expenditure is set for average weather. However, we do expect to spend more than our allowance at times of low rainfall and above average temperatures.

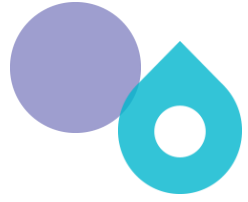

While uncertainty exists, it is in customer interests to set prices for the full four years, giving customers clarity on future prices and giving us a stable financial platform to 2024.

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<sup>6</sup> Subject to confirmation by WaterNSW, our bulk water provider, of the costs they propose to recover over the same period in their IPART proposal.

<sup>7</sup> If SDP continues to operate in 2020-21, our proposal to reduce bills in 2020–21 by \$45 in real terms will be partially offset by a small increase in SDP's operating costs between 2019–20 and 2020–21 (\$40 in 2020-21 instead of \$35 in 2019-20). In this scenario, a typical household's annual bill will be reduced by about \$40.

<sup>8</sup> If SDP turns off before 2020-21, customers will no longer pay SDP operational costs in 2020-21. In this scenario, a typical household will benefit from both, our proposal to reduce bills in 2020–21 by \$45 in real terms, and by not having to pay SDP operating costs, (\$35 in 2019-20). In this scenario a typical household's annual bill will be reduced by about \$80.



We are committed to:

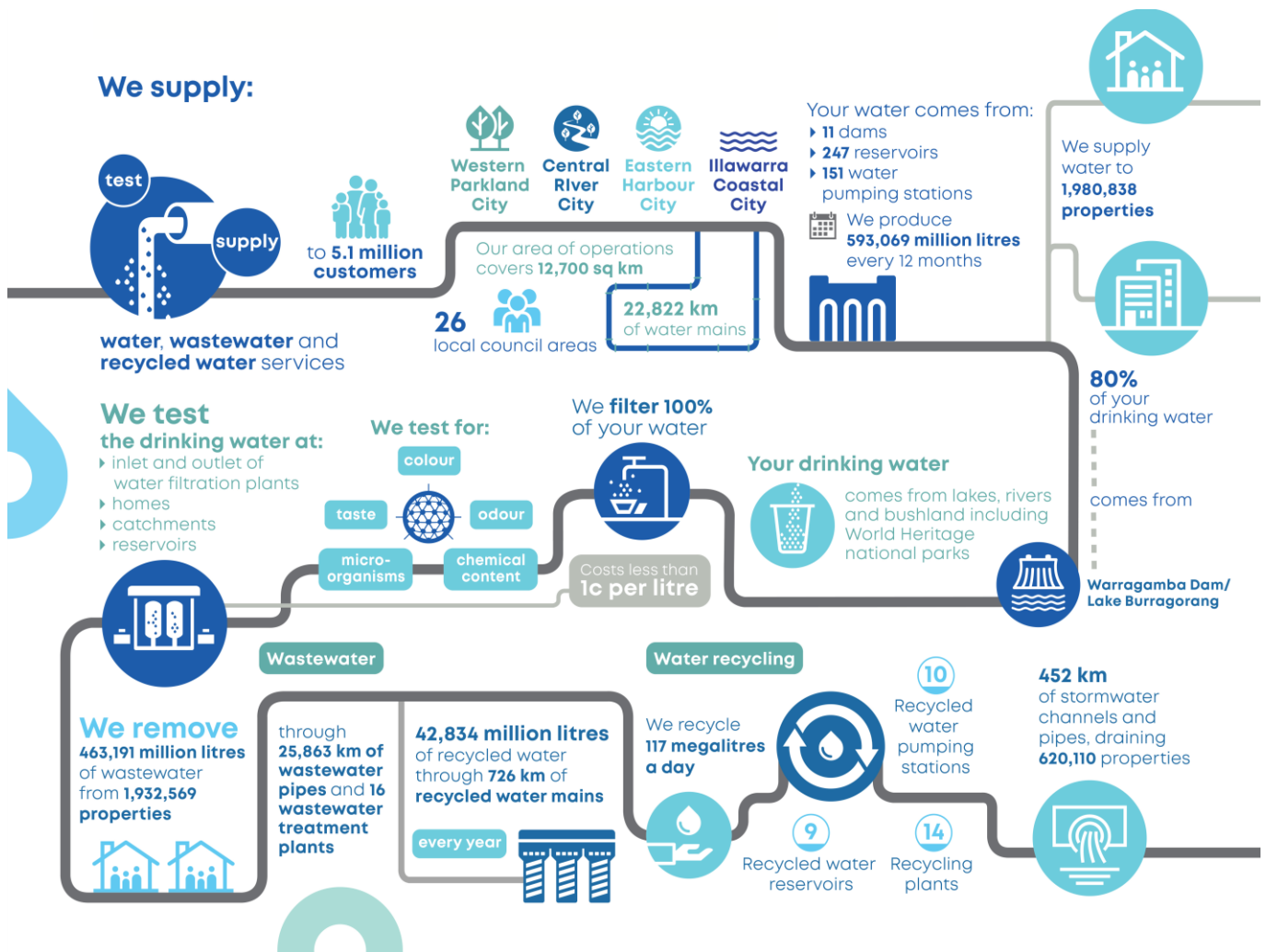
- maintaining and renewing water, wastewater, recycled water and stormwater assets to protect public health and the environment
- helping our customers save water, and pricing water to encourage its efficient use, particularly if the drought lasts longer than expected
- investing to meet the needs of population growth, hotter climate and digital connectivity
- working with government to deliver the three cities vision
- unlocking the benefits of an integrated approach to water catchment and city planning
- planning for a resilient water sensitive future for Greater Sydney.

We want our customers and stakeholders to have their say on this proposal – go to [sydneywater.com.au](https://sydneywater.com.au) or [ipart.nsw.gov.au](https://ipart.nsw.gov.au) for further information.

# Who we are

Sydney Water is Australia's largest water utility, supplying water, wastewater, recycled water and some stormwater services to 5.1 million people in Sydney, the Illawarra and the Blue Mountains. Every day we proudly protect the health of our community by providing safe and high-quality drinking water, removing wastewater and preserving our rivers and beaches.

We do not own or operate raw water infrastructure. Instead we buy 'bulk' water for our customers from WaterNSW, who manages the dams and catchments, and when required from SDP. About 80% of our water supply comes from Lake Burrigorang, behind Warragamba Dam, or directly from the Hawkesbury Nepean River.







For over **130 years** we have helped shape this great city, and we will continue to provide valuable input into **planning and growing the city** - to make for a better tomorrow



## Our services

### Water

Our drinking water is among the best in the world. Our water network delivers about 590 billion litres a year to customers through 22,822 kilometres of water mains, 247 service reservoirs and 151 water pumping stations. About 1.6 billion litres of water is supplied to almost 2 million homes and businesses every day.

All drinking water, including water from the desalination plant (when in operation), is treated to meet the *Australian Drinking Water Guidelines*. Sydney Water and WaterNSW work together to manage Sydney's water supply from the catchments.

### Wastewater

We operate 24 separate wastewater systems with 16 wastewater treatment plants, with 25,863 kilometres of mains and 686 wastewater pumping stations. We collect around 463 billion litres of wastewater a year.

### Recycled water

There are 570 kilometres of recycled water mains in our area of operations. We recycle about 43 billion litres of wastewater a year for home use, irrigation, agriculture and industry. About 115,000 people are supplied with recycled water services.

### Stormwater

Although most stormwater systems are the responsibility of local councils, we have 452 kilometres of stormwater channels, serving about 570,000 properties.

## Our role and responsibilities

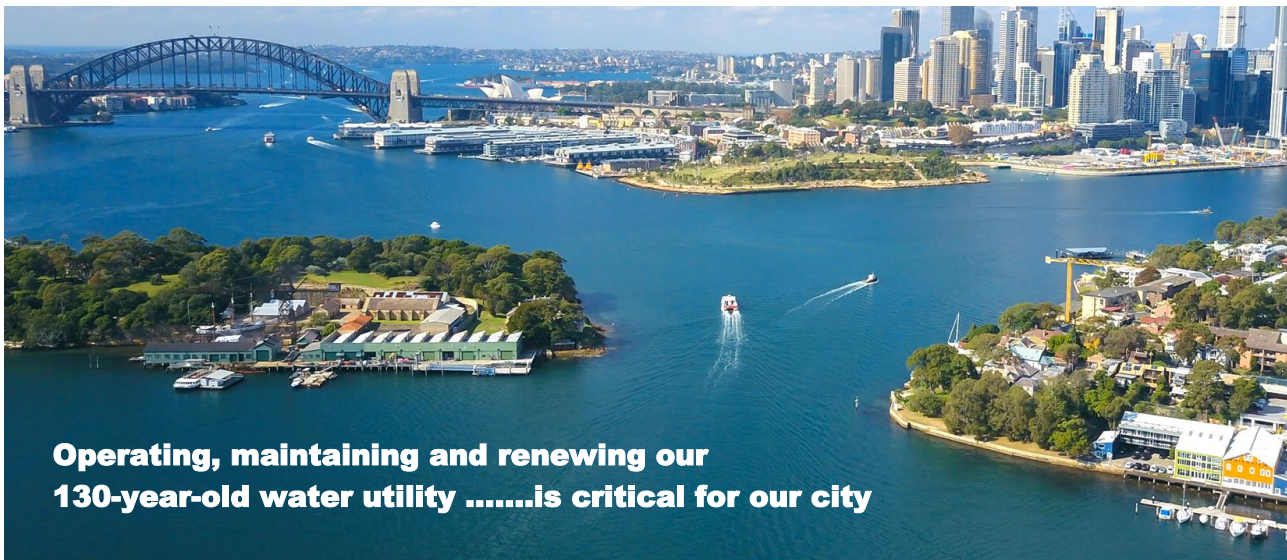
Sydney Water is a statutory corporation, wholly owned by the New South Wales Government. Under the *Sydney Water Act 1994*, we have three equal, principal objectives:

- to be a successful business and, to this end,
  - to operate at least as efficiently as any comparable businesses
  - to maximise the net worth of the State's investment in the corporation
  - to exhibit a sense of social responsibility by having regard to the interests of the community in which we operate
- to protect public health by supplying safe drinking water
- to protect the environment by conducting our operations in compliance with the principles of ecologically sustainable development.

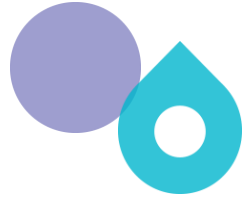

We have various regulators including:

- IPART, which regulates and sets prices and oversees our Operating Licence
- NSW Health, which regulates drinking water quality
- the Environment Protection Authority (EPA), which regulates our environmental performance, including wastewater treatment plant discharges.

Our Statement of Corporate Intent is an annual agreement with the NSW Government and our shareholding Ministers. It is a five-year corporate plan and budget. The Statement of Corporate Intent sets customer service, environmental, public health, commercial and employee performance objectives and targets. We have two shareholding Ministers and a Portfolio Minister.



The *Water Industry Competition Act 2006* (WIC Act) was established to encourage competition in the water sector and facilitate water recycling. We have obligations arising from the WIC Act, particularly in relation to third party access, and requirements for codes of conduct where other utilities interconnect with our assets. Our Operating Licence 2019–23 will also include new requirements to provide service information to market participants to help the private sector contribute to market development.



Infrastructure NSW released its State Infrastructure Strategy 2018–38 in 2018. Together with the NSW Government’s Future Transport Strategy 2056, the Greater Sydney Region Plan<sup>9</sup> and the Regional Development Framework<sup>10</sup>, it consolidates infrastructure investment and land-use planning for Sydney. It contains several recommendations that shape our infrastructure planning, including requirements to:

- develop a 20-year Strategic Capital Plan for Sydney’s water and wastewater systems
- work with Infrastructure NSW on the completion of the South Creek Corridor strategic business case
- develop options for the augmentation of Sydney’s water supply.

This aligns with our obligations under the NSW Government’s new Greater Sydney Urban Water Framework. In 2018 our Minister asked us to develop (with WaterNSW) a long-term capital and operational plan consistent with NSW policy objectives (the Metropolitan Water Plan 2017, the Greater Sydney Region Plan, the State Infrastructure Strategy 2018–38 and the outcomes of the South Creek Sector Review), and a long-term drought response plan. These requirements will be reflected in our 2019–23 Operating Licence.

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<sup>9</sup> Greater Sydney Commission 2018, *Greater Sydney Region Plan – A Metropolis of Three Cities*, Sydney

<sup>10</sup> Department of Industry 2017, *Making it Happen in the Regions: Regional Development Framework*, NSW Government, NSW

# Our customer-informed plan

This price proposal is more informed by our customers than ever before. Through our 2018 Customer Engagement Program we had more than 10,000 customer interactions. We used a range of methods to engage with customers, including deliberative forums, discussion groups, interviews and online surveys. We engaged with residential customers, businesses, government, community groups, customers with different cultural backgrounds, and customers in hardship. This helped identify our customers' priorities, their preferences on water and wastewater pricing structures and a range of customer service issues, and their willingness to pay for incremental investments.

Our focus on delivering high-quality drinking water, reliable water and wastewater services, while keeping prices fair and affordable, is exactly what our customers told us they value.

Our customers have six priorities that we will deliver on in this proposal:

## Meeting the needs of our customers



Quality drinking water



Fair and affordable prices



Reliable services



Water security



Environmental protection



Responsive customer services

Harnessing the insight of our customers is critical to striking the right balance between service and cost, and for ensuring that our investment choices reflect customer valuations.

Outcomes from our customer engagement program were a key input to decisions on regulated service standards, pricing structures, and discretionary projects and programs included in this price proposal. Our regulated performance standards for service interruptions have been informed by the customer views outlined in our submissions as part of the recent Operating Licence review. Overall, minimum levels of service remain largely the same as in our current licence.

In this proposal, our proposed pricing structures for water and wastewater prices align with the options most strongly preferred by our customers, that is:

- a water usage price at the higher end of the range of long-run marginal costs

- a fixed residential wastewater charge that is the same across houses and apartments.

Our proposed changes to non-residential wastewater usage charges were also supported by business customers, after it was explained that this would lead to a cost reduction for most customers. There is a strong preference for water usage prices that give customers more control over their bills and reward efficiency.

We are also proposing to deliver several projects and programs that were supported by customers in our engagement program including:

- investing to end the daily release of untreated wastewater from cliff-face outfalls (through our proposed project at Vaucluse Diamond Bay)
- our Waterway Health Improvement Program, which will deliver improved waterway health through stormwater management activities
- reducing rainwater entering our wastewater system and causing overflows by working on private plumbing ('source control'), where this is a cost-effective solution
- reducing repeat water pressure failures in chronic problem areas, which has been adopted by IPART as a new Operating Licence requirement.



Based on customer views on costs and customer benefits of digital meters, we have deferred a decision on a broad roll-out of digital meters. We will continue to investigate digital metering opportunities and technologies, including their potential for reducing network costs. We are planning a digital metering trial of 8,500 properties, which will help inform future decisions.

In general, the feedback from our customers is well aligned with our key themes in this proposal to:

- ensure our assets are safe and well-maintained so our water supplies are secure, and our health and environment are protected
- deliver timely, efficient investment so our infrastructure meets the demands of growth
- act on the customer insight we have gained and keep our prices affordable.

# Our proposal for 2020–24

## Bills and pricing

For 2020–24 we propose funding of \$10.7 billion, a 2.4% increase in real terms compared to the current price period from 2016–20. This follows an extensive budget review process as we seek to run as efficient a business as we can, while meeting our obligations as Greater Sydney’s water and wastewater services provider in a fast-growing city, at risk of extended drought.

Our revenue will be recovered through prices paid by customers for water, wastewater, stormwater, trade waste and other services. All but 3% of our revenue will continue to come from charges for water and wastewater services.

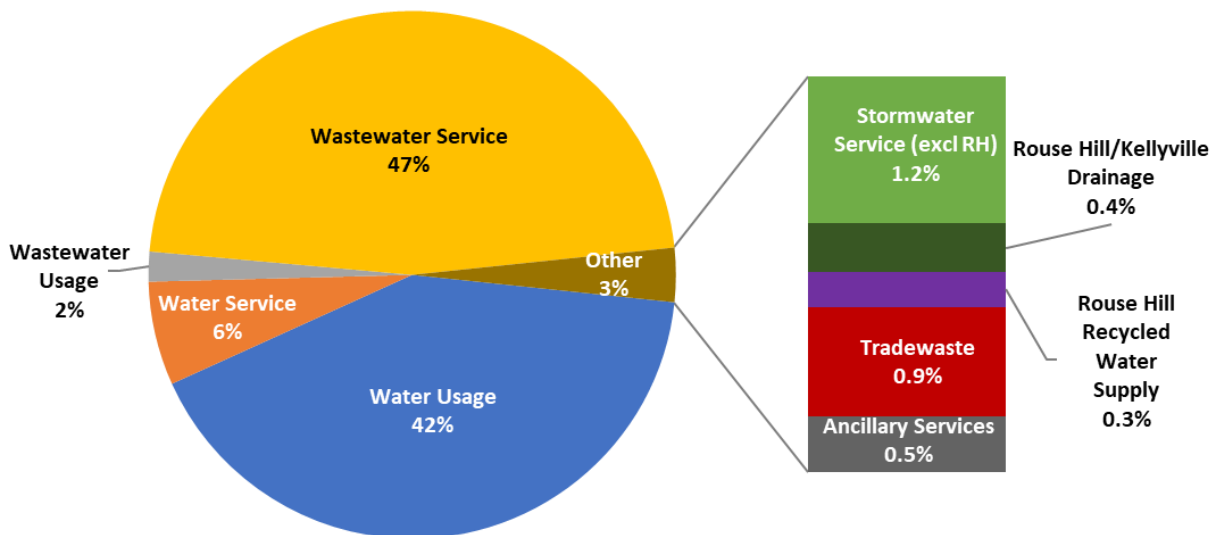


Figure 1 Revenue composition of regulated services

Our proposed prices are informed by:

- our customers’ preferences
- our forecast efficient costs and revenues over the 2020–24 price period
- the estimated cost of supplying services sustainably over the long term.

We set out below how our proposed prices compare with prices in 2019–20. In making this comparison, we note the only costs related to drought that our customers will pay before July 2020 in addition to our approved 2016–20 prices are for the operation of SDP and Shoalhaven transfers. This adds around \$40 to the typical residential household bill for 2019–20, based on arrangements determined by IPART.

If dam levels rise, SDP may cease to operate after reaching its minimum operation period of 14 months. This minimum operation period will expire on 27 March 2020. Noting these caveats, the prices we propose are:

- a bill reduction for typical residential customers of water and wastewater services of 4% from July 2020, with bills remaining unchanged in real terms through to 2024. This is on top of an 8% reduction (around \$100), that was determined by IPART in 2016

- for non-residential customers, the size of the bill reduction will vary, with customers with higher consumption generally saving more than customers who use less
- stormwater prices in declared stormwater catchments, will increase by 8%.

Excluding SDP operational costs, a typical residential household (consuming 220 kL of water a year) will see its annual bill for water and wastewater fall by \$45 in real terms. Similarly, typical apartments (consuming 160 kL a year) will see a \$45 reduction in real terms. Beyond 2020–21 residential bills will remain constant until 2023–24. We are not proposing any major changes to residential water or wastewater price structures.

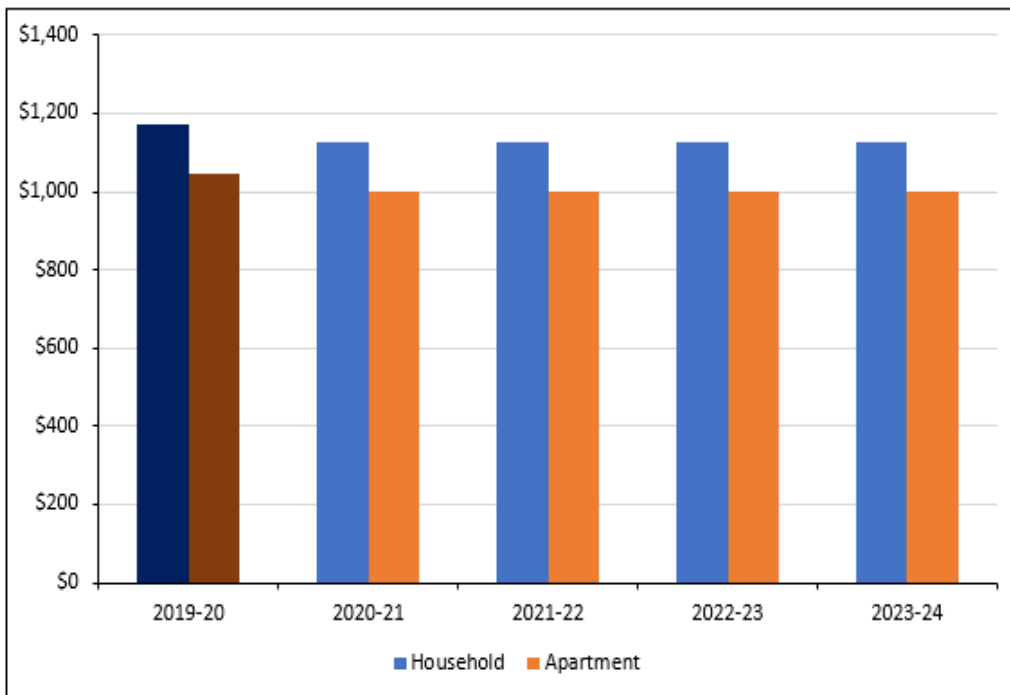


Figure 2 Real water and wastewater bills for households (220 kL/year) & apartments (160 kL/year)

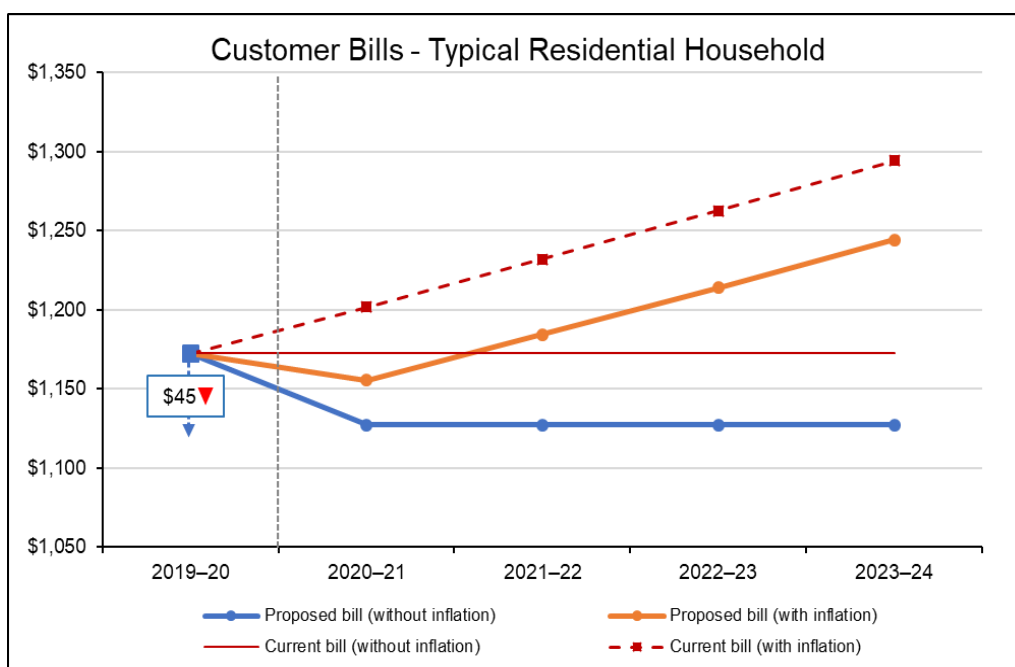


Figure 3 Water and wastewater bill for typical residential household (220 kL/year)

If SDP is still operating in July 2020, customers will still benefit from a bill saving in 2020–21 after inflation. If SDP is turned off, the reduction will be greater. The exact bill reduction depends on SDP’s operation over 2019–20.

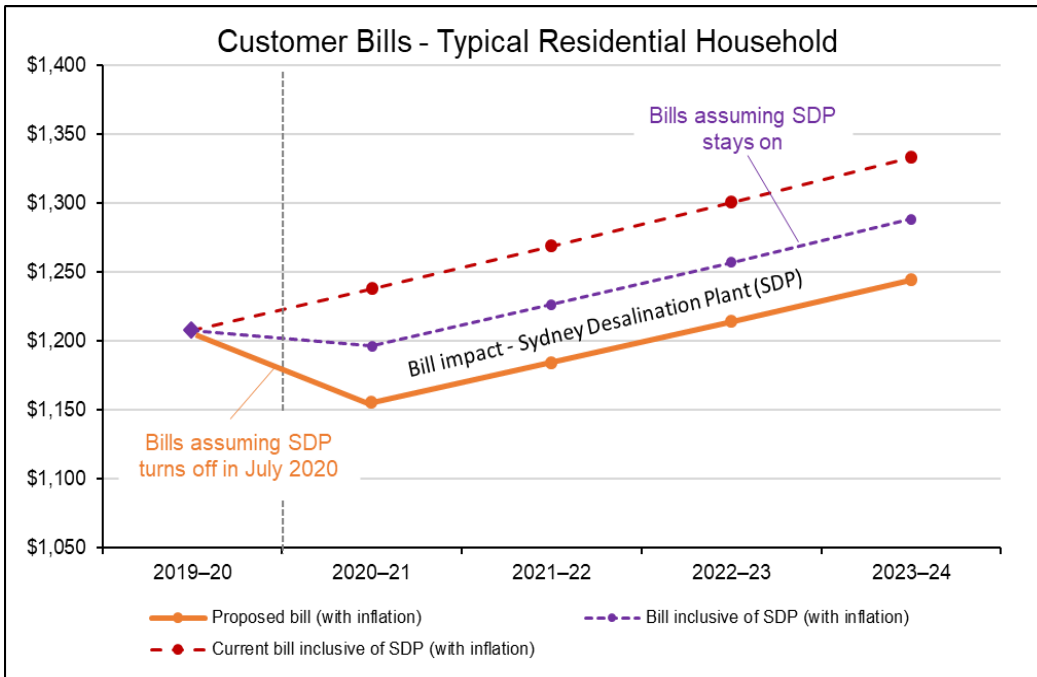


Figure 4 Water and wastewater bill for typical residential household (220 kL/year) with SDP<sup>11</sup> costs

Larger household users using 350 kL per year will face a slightly smaller decrease of 3.1% in their water and wastewater bills. The difference arises because we propose that the water usage charge remains constant at the current level, while the water service charge decreases in line with the fall in our unit costs. Therefore, customers that have relatively high water consumption benefit slightly less from the price reduction.

Table 1 Real residential water and wastewater bills depending on consumption (\$2019–20)

	2019–20	2020–21	2021–22	2022–23	2023–24
<b>Water and wastewater</b>					
160 kL/year (typical apartment)	1,045	999	999	999	999
Annual change		-4.3%	0.0%	0.0%	0.0%
200 kL/year	1,130	1,085	1,085	1,085	1,085
Annual change		-4.0%	0.0%	0.0%	0.0%
220 kL/year (typical house)	1,173	1,127	1,127	1,127	1,127
Annual change		-3.9%	0.0%	0.0%	0.0%
350 kL/year	1,449	1,404	1,404	1,404	1,404
Annual change		-3.1%	0.0%	0.0%	0.0%

<sup>11</sup> Bill impact includes SDP and Shoalhaven transfer costs.



## Revenues and costs

For 2016–20 we are forecasting to recover \$10.8 billion in regulated income. This is 4.1% (\$429 million) above the revenue level projected by IPART in 2016.

Table 2 Regulated target revenue for 2016–20

Regulated income	2016-17 Actuals	2017-18 Actuals	2018-19 Forecast	2019-20 Forecast	Total
IPART allowance	2,552	2,582	2,612	2,644	10,391
Actual / forecast	2,623	2,738	2,661	2,798	10,820
Variance	71	156	49	153	429
Variance %	3%	6%	2%	6%	4%

This is mainly due to:

- mostly above average temperatures and some prolonged dry weather periods, resulting in customers using more water
- an increasing number of connections due to higher property growth.

Higher property growth is prompted by government housing acceleration programs and infrastructure funds, precinct acceleration, city centre and urban reactivation programs, and new policies increasing the number of affordable rental housing.

To account for uncertainty around our water sales forecasts and encourage accurate demand forecasting, IPART introduced a mechanism that may adjust our revenue requirement for the next period if the difference between actual and determined water sales exceeds a band of  $\pm 5\%$  around the forecast. As water sales are above forecast to date over 2016–20, it is possible that the mechanism will be triggered.

Our forecast capital expenditure of \$4.5 billion over 2020–24 will grow our regulated asset base from \$19.2 billion in 2019–20 to \$22.2 billion by 2023–24, an increase of \$3 billion (15.7%).

Despite the increased investment and operating costs needed to cater for actual and forecast growth, we propose a total revenue requirement of \$10.7 billion over 2020–24, only marginally higher (\$249 million) than the level set in the 2016 Determination. This relatively small increase is made possible by our lower cost of funding and the efficiency gains we have secured.

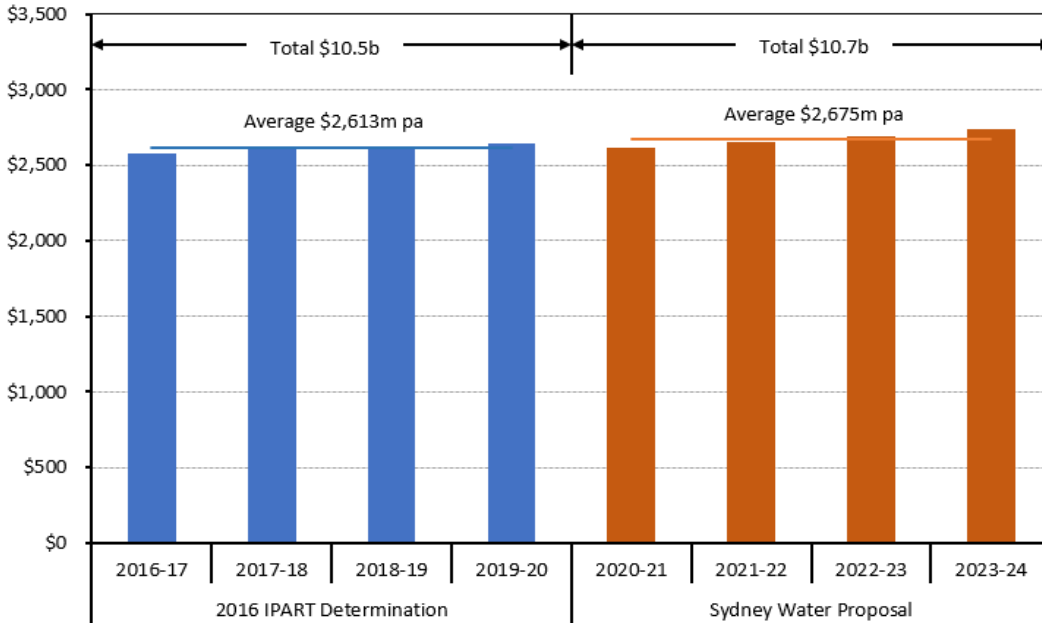


Figure 5 Target revenue 2016–24

Our proposal is based on a real post-tax cost of capital of 4.1%, significantly lower than the 4.9% set by IPART for our 2016 Determination. This is mainly due to downward movements in interest rates. As financing costs represent about 30% of our total costs, this helps us to hold down costs in 2020–24.

This, together with the growth in our customer base, lower bulk water costs and the efficiency gains we have secured since 2016, helps to offset the cost pressures we are facing including the need to increase capital expenditure to meet new growth and to renew our assets, while meeting our legislative requirements and service performance expectations.

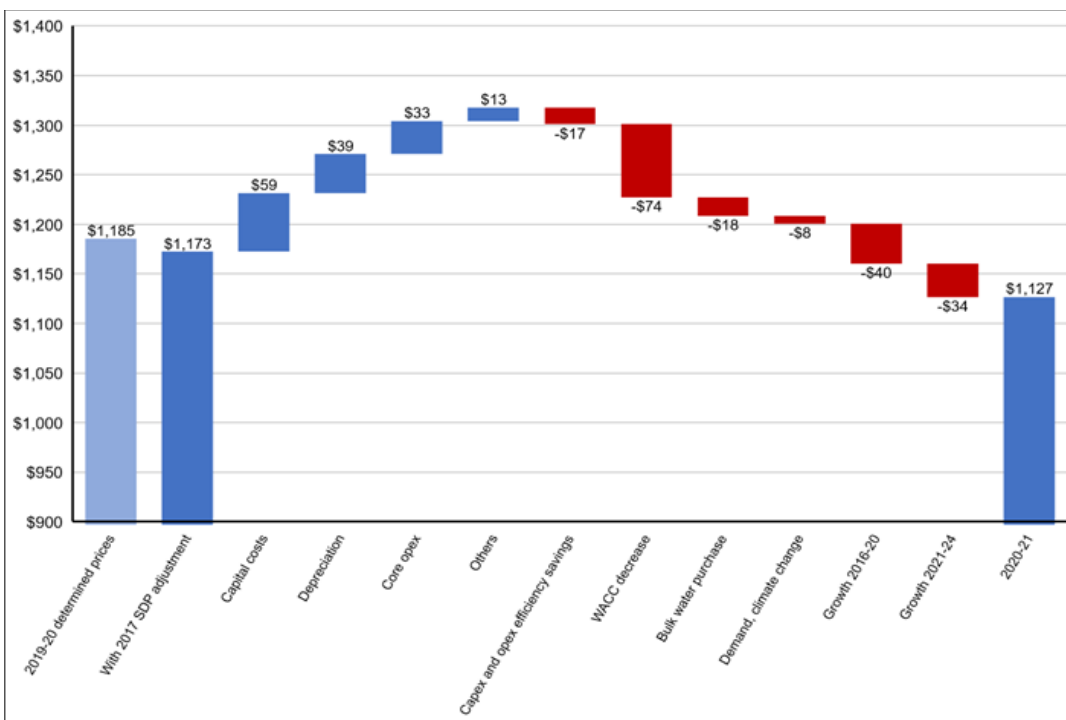


Figure 6 Explanation of change in typical household bill between 2019–20 and 2020–21



## Pricing the cost of growth

To date, 2016–20 has seen an unprecedented peak in growth, and hence in our customer base and the number of dwellings that we serve – well above what we had forecast. We now expect to provide water supply to about 4% more residential dwellings (about 1,927,000 in total) by 2020, compared to the forecast in IPART’s 2016 Determination (1,861,000).

New dwellings growth has increased almost year-on-year since 2010, increasing from 12,000 new connections delivered in 2009–10 to an all-time high above 42,000 in 2017–18. By 2020, we expect to have delivered 56% (about 60,000) more new water connections than our 2015 forecast (of about 90,000) for the whole of the 2016–20 period.

While new connections contribute to more demand for our services, and therefore more revenue, in the short term it means significantly more expenditure to supply new customers. Our proposed prices assume our customer base will increase by around 35,000 new properties a year. This is high by historic standards but lower than the number of new connections we installed in 2017 and 2018.

However, as the level of growth to 2024 is highly uncertain, we adjusted our initial capital expenditure forecast down by 20%. This reduced forecast reflects lower growth than the 35,000 new dwellings a year assumed in the original capital expenditure forecast. If higher growth does materialise, we will build to meet demand and seek to recover costs at the next price review. We will bear the financing cost for this investment in the interim. The benefit of this arrangement is that customers do not pay for the additional potential expenditure in this cycle and we bear the risk of growth exceeding our risk-adjusted forecast.

## Pricing the cost of regulatory change

We have priced our proposal based on meeting the obligations that we expect to be in place during 2020–24. Most of our obligations are set out in our Operating Licence, our Environment Protection Licences (EPLs) and in the *Australian Drinking Water Guidelines*. While changes to regulation can occur at any time, we have only priced in regulatory change that is almost certain. Several of our environmental regulatory frameworks are currently being reviewed by the EPA, which will result in a change to the limits and conditions in our EPLs.

From June 2024 onwards, the EPA will introduce much tighter load limits for nutrients discharged to the Hawkesbury Nepean River system from licensed wastewater treatment plants. Some wastewater projects in the Hawkesbury Nepean catchment have factored in this change in regulatory settings by adopting more advanced nutrient removal processes. A nutrient offset protocol is also being established by the EPA, and our price proposal includes funds to deliver a series of pilot nutrient offset projects to test the viability of this approach.

The EPA is proposing to tighten concentration limits for most pollutants across all our wastewater EPLs, based on our historic performance. This regulatory change is unlikely to impact the ongoing compliance for most pollutants. We are doing research to inform the setting of limits that can be scientifically substantiated based on environmental protection concerns.

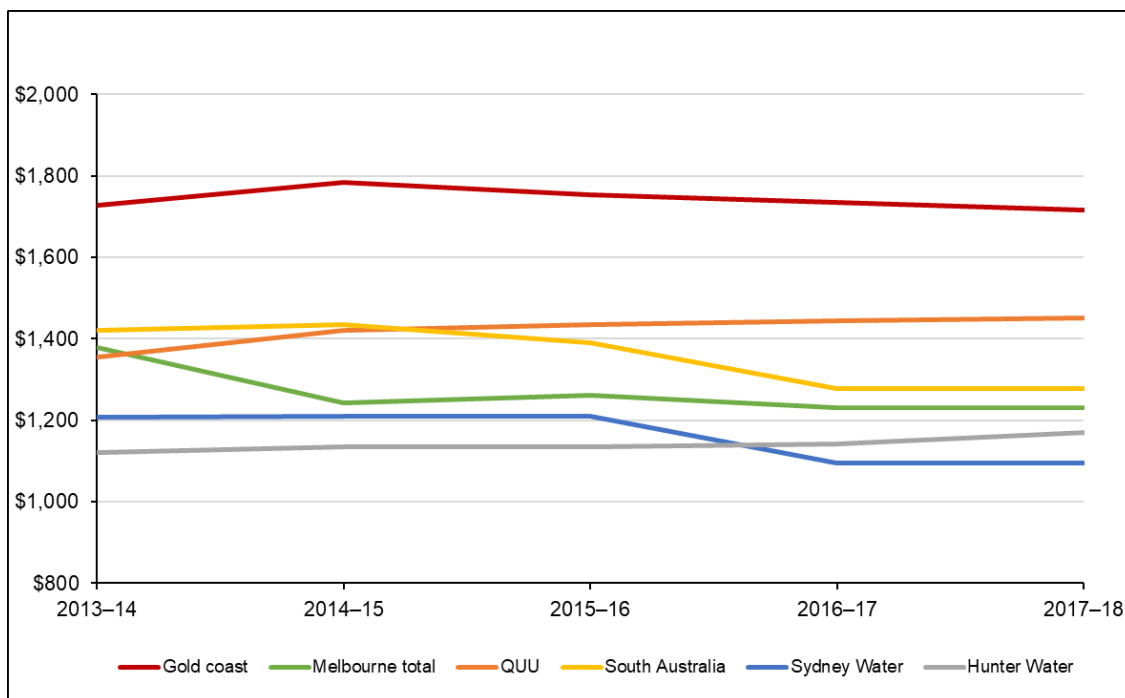
The EPA is finalising the wet weather overflow abatement regulatory framework which we must adopt. Pending agreement on this framework, we seek \$172 million, which we believe is a reasonable budget to deliver cost effective abatement. Much of this work seeks to reduce

stormwater entering our wastewater system, which will deliver benefits throughout our wastewater network, beyond simply a reduction in wet weather overflows. Should the EPA adopt a stricter approach, we may need to invest more.

## Affordability

Our increased expenditure forecasts highlight the challenges of keeping bills affordable for our customers, in the face of the need to invest in extending and renewing our networks. Much of the growth that needs to be financed is expected in areas which are relatively more expensive to service due to their location and the distance from existing infrastructure. We recognise that if the cost of capital increases, our customers are likely to face significant price increases in the future.

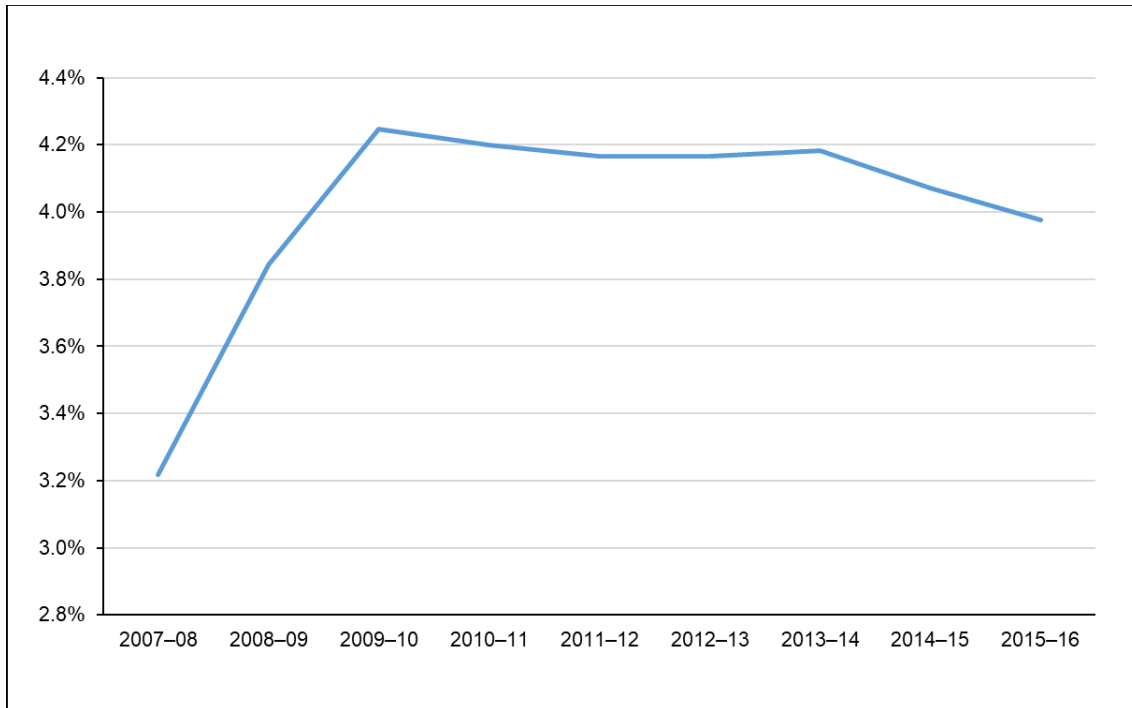
Our residential bills based on consumption of 200 kL a year continue to be amongst the lowest in the country. Based on this comparison, our residential bill was the lowest in this sample of Australian utilities in 2017–18.



Source: National Performance Report 2017–18, Sydney Water

Figure 7 Comparison of annual bills at 200 kL consumption

Our relatively low bill helps keep our services affordable. Our analysis shows our annual bill is around 4% of a low-income household's disposable income.<sup>12</sup>



Source: ABS data

Figure 8 Annual bill as % of low-income household disposable income (source: ABS data)

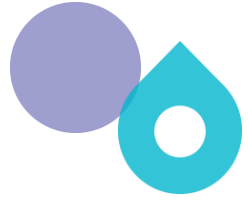

To ensure our customers experience a service that is affordable and as supportive as possible, we offer a range of support services through our Customer Care team, including financial support schemes funded by the NSW Government. These include:

- the Payment Assistance Scheme, a \$1 million scheme supporting customers in acute financial hardship
- pensioner concessions, through a scheme that provided rebates to pensioners to the value of \$125 million in 2017–18, supporting 224,000 pensioners
- emergency plumbing repairs through PlumbAssist, a Sydney Water program that will in future be funded by government
- support with payment plans, including offering a range of payment methods and financial counselling, where individuals require support with budgeting.

However, we are not complacent and recognise that affordability could become a bigger issue for us in future. We need to consider how best to fund the expansion in our infrastructure. We are likely to spend at least \$18 billion to service growth between now and 2044. This could make it difficult to keep bills affordable for our customers in the medium term, particularly if the cost of capital increases from its current historically low levels. We appreciate customers face cost of living pressures with all their utility bills.

Our substantial long-term funding requirements must be met either by charging customers, or through other sources. The cost of infrastructure in any one area is spread across all customers.

<sup>12</sup> More recent ABS data than 2015-16 is not available at present



Our postage stamp prices do not vary by location, even though the cost of providing water and wastewater services varies significantly between different locations.

Currently, the cost of water infrastructure is recovered exclusively from customers over the life of the assets. There has been no contribution from developers for our water, wastewater and stormwater capital investment since a change of government policy in 2008. Developer charges are a matter for government policy and our plan assumes the existing policy remains in place.

An alternative approach would be to recover some or all of the costs of infrastructure from the beneficiaries of that infrastructure via developer charges. This is the approach across all major utilities across Australia except for Sydney Water and Hunter Water where they are set to zero and all costs of growth are paid for in bills to our customers.<sup>13</sup>

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<sup>13</sup> Excludes recycled water.



# Our performance and service delivery for 2016–20

We have commitments to provide a high standard of service to our customers, and to protect the environment and public health. These requirements are set out in our Operating Licence and in our EPLs. Through our customer engagement, we have started to gauge how far the standards we set capture service features that customers care about, and to what extent the standards should be set to reflect the levels for which customers are willing to pay.

It is a good time to take this approach as the pressures of growth and drought, as well as the age and condition of our assets, are starting to make some of our standards more difficult to consistently maintain. We may need to increase resources in some areas, and spend less in others, and we need to understand the trade-offs that may exist. We need to make sure the standards that are set reflect what our customers most value. We continue to find ways to innovate and deliver the same or better service at lower cost;<sup>14</sup> but high population growth, increased housing density and low rainfall can make a given standard more challenging to meet over time. For a minority of our standards, we are finding increased challenges in maintaining the service we provide for customers, particularly in management and clean-up of wastewater overflows in bushland. In consultation with the EPA, we are taking decisive action to address these issues.

## Providing essential customer services

Customer satisfaction remains high. A successful innovation from which our customers now benefit is our new Customer Hub. This has been recognised with a Global Water Award for Smart Water Project of the Year. The Customer Hub enables us to be proactive in the way we communicate with customers, and to be predictive in the way we manage our networks. By providing frontline customer-facing staff with the right information, in the right form, and at the right time, we can make better decisions and enhance customer outcomes.

Since the start of our Customer Hub, customer experience has shifted from a Customer Advocacy Score of 21 to 48 (on the Net Promoter Score scale). Customers experiencing a service fault or interruption now have more communication channels available to them to report issues, and we are now more proactive in reducing the number of customers affected by serious interruptions. In its first 12 months in the western operational area, over 100,000 customers had water interruptions avoided or mitigated and over 50,000 customers were informed of water interruptions in advance.

## Protecting our environment

Better data now gives us more insight into the impact of dry weather and weather patterns on our network. Dry weather and high evaporation from 2017 to 2019 has created a soil moisture level that is lower than 95% of readings since 1988.

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<sup>14</sup> For instance, when we are fixing leaks and breaks on water mains we now install mains wizards, which reduce the number of customers whose service is interrupted while we make the repair.

This correlates strongly to increased water network leaks and breaks, and to sewer chokes leading to wastewater overflows (shown in the chart below). The roots of stressed trees enter cracks in wastewater pipes and create blockages. Water pipes are dislodged and are more vulnerable to breaks as the soil shifts around them.

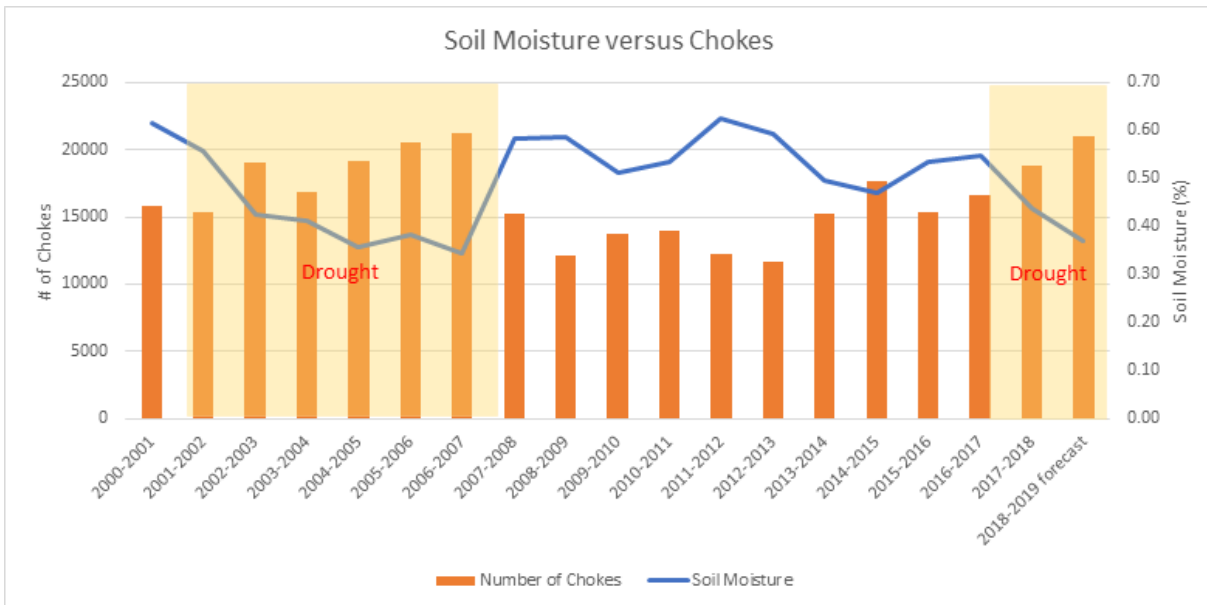


Figure 9 Historical soil moisture and sewer chokes

This has contributed to our projection of 21,000 sewer chokes in 2018–19, an 80% increase compared to six years ago; and a deterioration in our environmental performance, with increasing investigations by the EPA into breaches of our EPLs.

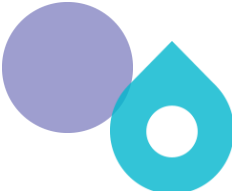

We identified the scale of the problem in 2018. We put in place remedial maintenance, funded both through our drought-related expenditure and through a new environmental performance program of \$18 million. This was the start of implementing a new asset strategy for reticulation sewers, based on preventative maintenance rather than the previous ‘plan to repair’ strategy.

The new strategy will be implemented in three phases. The first is a program to inspect and remove tree roots from access chambers and the sewer mains that connect to them. This will provide a good indication of the severity of tree root intrusion across our network. A second program of CCTV inspections and root cutting will be delivered in the highest priority wastewater catchments. This will provide immediate benefits by reducing the risk of dry weather overflows and will identify any remediation work required to ensure network performance is maintained in accordance with our asset management strategy.

We are planning to increase funding for remediation work identified in the inspection programs. Due to accelerated tree root intrusion over recent years, it is likely to take several years to return asset condition and performance to a more sustainable position.

The cost of restoring our wastewater networks to full health reflects our reassessment of long-term maintenance requirements. The drought showed that in our attempts to optimise our operating costs, efficiency reductions may have fallen too heavily on maintenance activities. Our improved understanding of weather and soil moisture impact has demonstrated to us that we need to invest at a higher level to have higher confidence of our performance being robust in a wide range of weather conditions.





Declines in performance have diverted more maintenance activity from planned maintenance to reactive maintenance to manage increased leaks and wastewater overflows. While our increase in total maintenance expenditure will address this, the spend increase has slightly lagged the performance deterioration. In the interim, this created a knock-on squeeze in planned maintenance. We operate a shared maintenance pool of labour that services both water and wastewater assets, both of which tend to require more resources in drier weather.

We have increased our expenditure on maintenance, expanding the number of crews and the frontline maintenance staff we have by 30% since 2017, so that there is now a bigger Sydney Water footprint on the ground every day attending to service issues.<sup>15</sup> This larger labour force is critical in helping to address a backlog of watermain leaks and breaks, as well as managing wastewater overflow incidents.

However, as the dominant buyer of these maintenance services in Sydney, it is not possible to double or treble our maintenance resources overnight. It takes time to hire and train new crews and this creates longer lead times than we would like in being able to move to a sustained level of higher maintenance capability.

To ensure we learn the lessons of this experience, we are undertaking an independent review with the oversight of the EPA. We will then have a short time to prepare an improvement plan to address the findings. Identified actions will be added to our EPLs. We expect the review to be concluded and the recommendations adopted by the end of 2019.

## Helping customers to conserve water

We contribute to ensuring a secure and affordable water supply for our customers through our commitment to help customers conserve water. We are determined to improve water efficiency through better management of demand, to minimise leakage and seek to replace drinking water with recycled water for non-drinking use, where efficient.

We are classified by the World Bank as a leading utility in infrastructure leakage management.<sup>16</sup> Since our last IPART price review in 2016, IPART agreed to our proposal to adopt an economic level of water conservation method to provide a clear basis for water conservation activity. We have since produced annual Water Conservation Reports setting out the savings we are making.

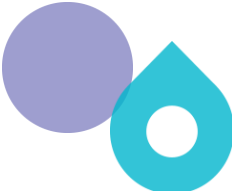

While we delivered on all the projects identified in our Water Conservation Reports for 2016–17 and 2017–18, actual new water savings delivered in 2017–18 were lower than forecast. This was primarily from a rise in leakage due to the prolonged period of hotter and drier weather. These dry conditions have led to increased leaks and breaks, triggered by a higher backlog of repair jobs and an increase in the time leaks are running before repair. Our increased networks resource in the field is helping to address this challenge. We are also making an additional investment in our Active Leak Detection Program, which we estimate to be saving two billion litres per year.

Water efficiency programs delivered during 2016–20 have been largely self-funded. With a stronger focus on water conservation to be reflected in our new Operating Licence, we want to use

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<sup>15</sup> We have increased our networks field resources from 249 full time employees to 328 in 2019.

<sup>16</sup> The Infrastructure Leakage Index (ILI) is a standard introduced by the World Bank which includes bands from A (reflecting best practice) to D. Our ILI of 1.63 is in Band A and compares well against other developed countries. By world standards, Sydney Water rates in the top 10% of water utilities for minimising leaks.



this pricing review as an opportunity to establish a new baseline program, including funding for ongoing research and development and pilot projects. This will position us to identify a broader range of new water efficiency initiatives that are economically efficient at varying dam levels and to be ready to ramp up water efficiency initiatives when it is economic to do so.

## Investing for growth and renewal

The 2016–20 period has been characterised by unprecedented growth. Since the second year, 2017, our capital investment program has ramped up sharply. By June 2020, we expect to have invested \$3.2 billion, which is 18% more than the allowance set by IPART for the period.<sup>17</sup>

The biggest contribution to this has been higher growth expenditure. Around one third of capital expenditure in the period will be to service growth. This is \$323 million (44%) more than the growth allowance. In our 2015 price proposal, we deliberately submitted a conservative forecast for growth capital expenditure which was much lower in the final two years of the period. This reflected the expectation that high growth was likely in the first two years, but that it was far less clear it would continue. While we are required to offer services in our area of operations when these are reasonably requested, we are conscious that the bill impact of growth uncertainty should be managed. We accepted the risk of covering the financing costs if the less certain developments did occur and needed to be serviced. This has meant customer bills over 2016–20 were lower than they would have been if we had included a fuller capital investment forecast.

As it turns out, we expect to service at least 60,000 more new dwellings than forecast. This growth investment has been challenging to manage with new growth patterns in transport corridors affecting our services and a tight infrastructure development market in Sydney constraining our ability to buy services as cost effectively as we would like.

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<sup>17</sup> We forecast to have spent \$3,194 million over this period compared to our IPART allowance of \$2,695 million.

Figure 10 illustrates that:

- the actual number of new dwellings has been much higher than forecast
- the capital forecast we submitted in 2015 was lower towards the end of the period
- actual growth expenditure has increased towards the end of the period.

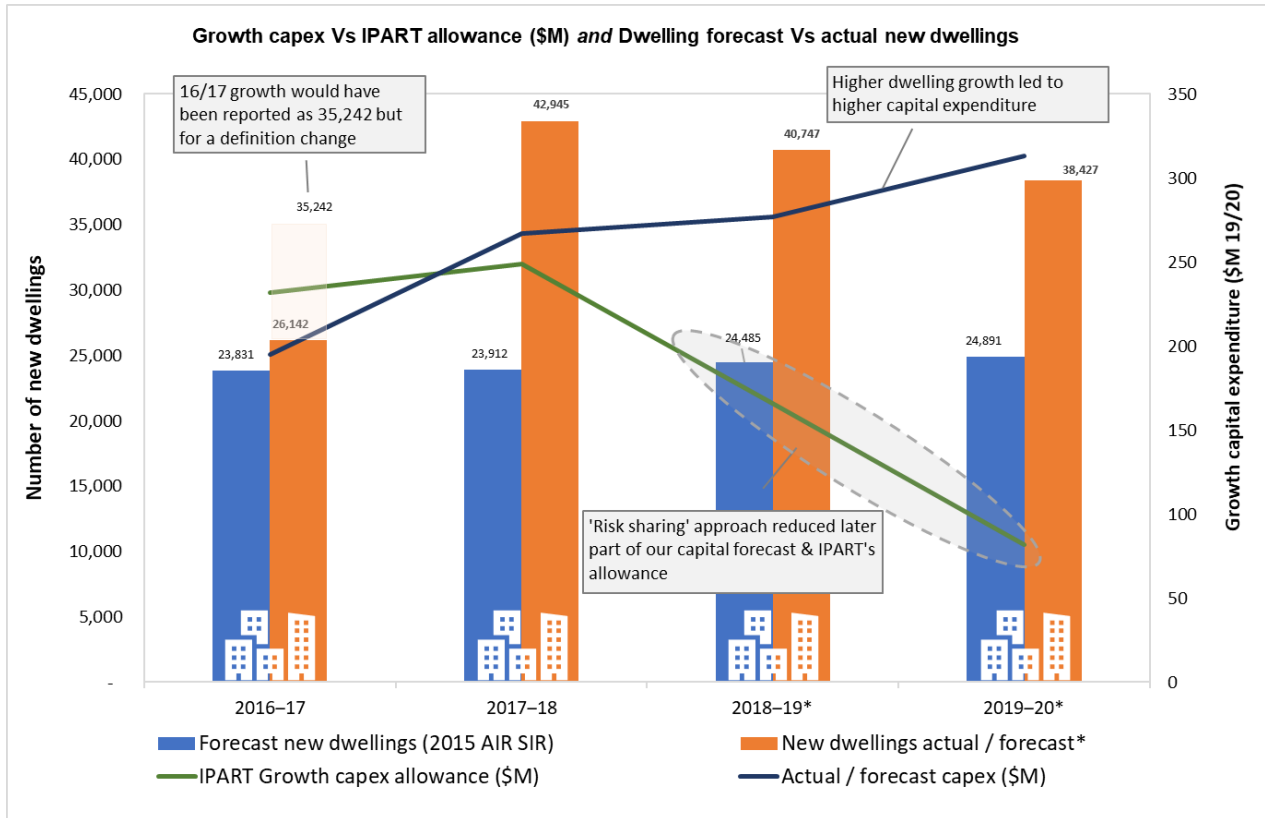


Figure 10 Growth and new dwellings

In renewals related to wastewater, expenditure is forecast to be \$109 million (13%) above our allowance of \$817 million. This increased focus on wastewater as an asset class carrying relatively high risk was balanced by savings elsewhere, largely through deferring lower priority renewals. A comprehensive review of asset condition and failure consequence identified some higher priority environmental, performance and safety risks. For example, work on 'de-watering' assets was brought forward to avoid process failures and provide for more efficient solid waste disposal. For wastewater pumping stations, higher expenditure has been due to more stringent electrical and flood management requirements being identified once planning progressed. This reprioritisation has been executed so that infrastructure renewals are largely in line with the original allowance.

In this period, we have also made progress on vital renewal work on critical sewers. The Northern Suburbs Ocean Outfall Sewer (NSOOS) runs for 28 km across Sydney at a depth of up 90 metres. It serves 1.3 million people and runs at 60% of capacity even in dry weather (where 70% effectively means 'full' with remaining space required for wet weather flows).

Difficult inspection work followed a program of work which created the conditions for safe access. This established that concrete linings are corroded to the point where structural repairs are required. However, it was also found that siltation levels were so high that the renewal work could not begin until the silt was removed.

Due to the access constraints and high flows, bespoke equipment and work methods have been developed to allow safe and effective inspection, de-silting and renewal work to begin.

The work has taken longer than initially planned but the experience gained set us up well for ongoing work on the NSOOS and on Sydney's other major sewers.

Specially designed de-silting pontoon



## Investing in technology and service

We have continued to see a shift in a range of information technology fundamentals that affect our options and decisions. These include cloud-based IT services, software as a service (SaaS), data security concerns, Internet of Things (IoT) and changing customer expectations. We have adapted our investment plans to take best advantage of these trends. We have delivered significant transformation through the deployment of Customer Experience Platform (CxP, formerly known as T2020), a new customer billing platform replacing our 30-year-old custom built mainframe system – as well as developing a cost effective and internationally recognised Customer Hub application. These achievements are fundamental to our future digital strategy and put us on the path towards being a digital utility.

Capital expenditure on information technology in 2016–20 will be \$411 million, 27% above the 2016 allowance of \$324 million. The difference is largely made up of overspend on the CxP billing system and data centre costs, which included IT security upgrades to counter rapidly increasing worldwide cyber security risks. These increases have been partially offset by underspends in some areas. The successful deployment of CxP was prioritised as a business-critical function as the old mainframe-based system posed an increasing risk to our business operations and our revenue streams.

We identified that delivering the originally planned Enterprise Resource Planning platform, known as our Business Experience Platform (BxP), would pose significant project delivery risks for CxP. We decided to pause BxP in late 2017 and prioritise the successful deployment of CxP. With CxP now live in June 2019 we will refocus on delivering BxP. The delay in implementing BxP means that there will not be a direct benefit in associated operating cost savings until its completion in 2021.

We have seen a significant increase in cyber security concerns around critical infrastructure. This has been experienced across all utilities and is a feature of the 2017 Finkel Review of the energy sector and recent decisions around investment in the 5G networks globally. In response to this we made several large and unplanned investments to address IT security. They involve investments in cyber security and an investment into transitioning from our own Tier 1 data centres to the NSW Government Tier 4 data centre (GovDC).



## Responding to service demands

Our proposed operating expenditure for 2020–24 comprises around 65% of total expenditure and just over 50% of allowed revenue. Core operating expenditure (excluding bulk water purchases) covers approximately 70% of this total. About 50% of core operating expenditure is market-tested and not controllable in the short term. These market-tested costs include contractors, materials, BOO filtration, property and electricity.

We budget for average weather conditions. This means that in the unusual weather conditions we have had since 2016 (prolonged periods of low rainfall and high temperatures) we expect to spend more than our allowance for those years. However, we do not budget for costs directly connected to water restrictions.

Earlier in the decade, we found significant scope for cost reductions. In the 2012–16 period, we were able to realise significant cost efficiencies, with core regulated operating expenditure nearly \$273 million below the determined allowance. Of the savings realised, just over a third were due to savings in electricity costs driven by more favourable electricity prices and better management of electricity contracts. This contributed to the price reduction we were able to make in 2016.

Over 2016–20, operating expenditure has increased due to a combination of costs over which we have limited or no control. Much of this has been driven by the prolonged low rainfall and higher than anticipated growth, with a range of new business-as-usual costs appearing towards the end of the period.

We will overspend our total operating allowance of \$5.3 billion by \$254 million<sup>18</sup> or 4.8%, due to a \$114 million increase in bulk water costs (largely due to starting up Sydney Desalination Plant) and \$140 million increase in core operating expenditure. These increases include costs to manage water efficiency and support maintenance activities in 2018–19 (\$46 million), higher electricity prices (\$46 million), increased digital requirements, including those related to cyber security (\$30 million) and the need to address declining environmental performance outcomes (\$28 million).

This extra cost may increase to \$332 million, or 6.2% of the 2016–20 operating allowance, if additional approved funds (outside the formal annual budget) of \$78 million are spent to help manage the onset of drought in 2019–20. This spending relates to detecting leaks, water conservation advertising, managing water restrictions, water efficiency programs, and water use intelligence and analytics. Customers will not bear these costs, as our current prices reflect the operating allowance we were granted in 2016, with no provision for additional remuneration, even if new uncontrollable costs arise in the period.

These cost increases come against a backdrop of a continued drive for efficiency in our water and wastewater treatment functions as well as in corporate costs, where we have delivered efficiency gains of \$47 million over the period. In water and wastewater treatment, the Production Improvement Program has been implemented to transform and restructure our production business. Through organising functions around product streams, changes to make our workforce more flexible, and measures to reduce labour and service contractor costs, we are targeting savings of \$32 million through to 2020.

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<sup>18</sup> Our IPART operating allowance for 2016–20 is \$5.289 million and we expect to spend \$5.545 million, a 4.8% overspend.

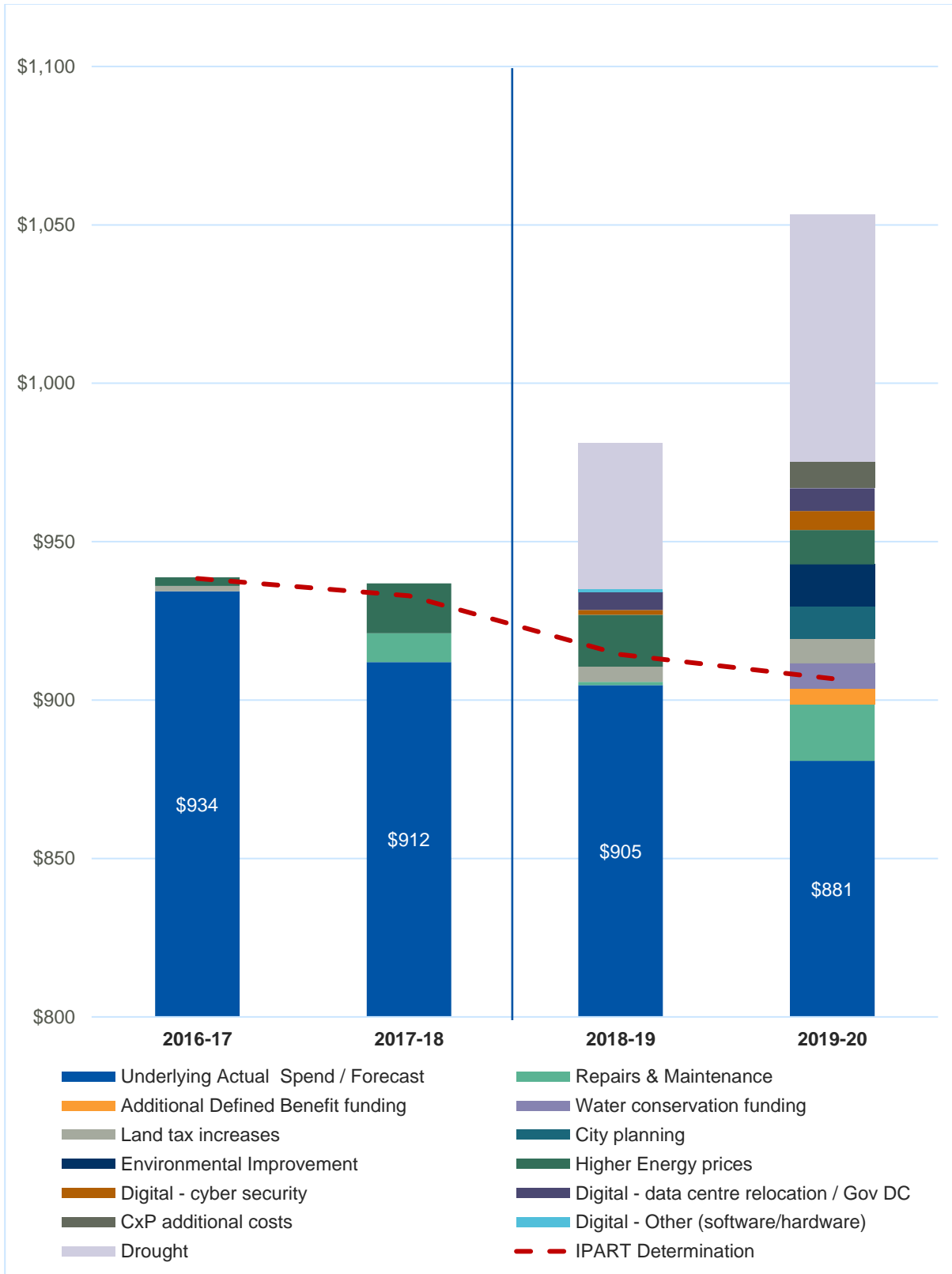


Figure 11 Core operating expenditure 2016–20



# Our performance commitments for 2020–24

By 2056 Sydney is expected to be home to more than 8 million people, spread across a metropolis of ‘three cities’ in line with the government’s vision. To meet the needs of this increased population, we will need to invest in new infrastructure, renew and maintain our existing assets and increase recycling. Inherent in this challenge of serving a larger city is that we need to build new networks and treatment plants, particularly in Western Sydney, to serve greenfield areas currently not served by Sydney Water.

In developing an efficient capital forecast for 2020–24 we have taken account of this growth and its inland location, and the challenges it raises for supplying water and treating wastewater in line with environmental standards. Our analysis indicates that integrated water solutions are likely to be at least as cost effective as traditional water solutions for these areas. Such integrated water solutions also bring additional opportunities, such as for cooling and irrigation. These are likely to be especially important for the Western Parkland City, which has the highest summer temperatures, lowest rainfall and minimal tree canopy but is expected to be home to half the population growth through to 2056.

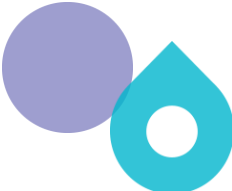

The investment we plan to make over 2020–24 does not commit us to a particular servicing approach and keeps our options open for greater use of recycling in the years ahead. Investment decisions we make later in the 2020s will be decisive, but the period to 2020 starts us on the journey of doing water differently.

Equally, our information technology infrastructure requires a further phase of significant investment to position us as a modern utility able to capture and manage data to support delivery of outcomes and efficient use of our assets.

Delivering this transformation requires us to increase our scale and delivery capability and we are adapting our operating model to meet this challenge. We need to be ready to take on a wider role in integrated planning of infrastructure in the city, so that we excel at both design and planning, partnering with government, councils and developers as required, as well as our core role of working with external partners to deliver services on the ground to both new and existing customers. Meeting these challenges requires increases in operating and capital expenditure, although the rapidly growing size of our customer base will help to keep costs affordable. We face some incremental recurring increases in our operating costs due to changes in our Operating Licence, extra tax and pension costs, and additional costs for planning integrated infrastructure. Despite these pressures, core operating cost per property served will continue to decline.

## Investing in new and existing infrastructure assets

A significant increase in capital expenditure is required so that we can provide services to a projected 144,000 new properties by 2024, and to manage the risk of deteriorating performance from our asset portfolio.



Existing assets have served us well, but they are reaching capacity and it is no longer possible to fully service new customers by building connecting networks and by making use of spare capacity at existing treatment plants. Significant new infrastructure is required to service greenfield locations, typically at five to six times the cost per property of infill developments. We are likely to require almost a decade of above average levels of investment to establish this infrastructure.

Growth investment will focus on the North West and South West Growth Areas as well as around the Western Sydney Airport Growth Area where there is no network and current wastewater services are via septic tanks. The airport and nearby commercial and residential developments are eventually expected to add around 80,000 jobs and 11,000 homes. We need to acquire land for a treatment plant at South Creek, build a small interim treatment plant by 2023 and commission a scalable permanent one by 2026 at the latest.

Our program also includes significant expenditure to renew existing assets. Forecast renewal expenditure of \$2.5 billion for 2020–24 is 38% higher than we expect to spend over 2016–20. Wastewater renewals represent 60% of the total and drive much of the increase between periods.

Our increase in renewal expenditure is driven by evidence of deteriorating asset performance, and increased failures, underpinned by improved risk analysis. We now have a more sophisticated understanding of the consequences of asset failure. Consequences of failure include remediation costs, public health impacts, environmental harm and service outages. Our risk analysis means that most renewal programs are prioritised through a combination of assessing the criticality of assets in their locations, and their condition. We now understand that there are more high-risk assets than was previously thought.

Poorer performance across a range of indicators has supported the risk analysis. Overall environmental performance has decreased, including:

- declining performance in terms of the number of systems complying with their limits for dry weather overflows to waterways (EPL condition L7.4)<sup>19</sup>
- the number of reportable environmental incidents<sup>20</sup> has increased more than four-fold since 2015–16 to an expected 870 incidents in 2018–19.

The major focus for renewals will be on wastewater assets. We propose to spend \$1.5 billion to renew or remediate end-of-life or high-risk wastewater assets. The higher level of expenditure also allows for more frequent condition assessments of high-risk assets.

Examples of the major renewal programs driven by this process and prioritised based on recent performance are shown in the table:

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<sup>19</sup> Over the three years of this period to date, there were 8 occasions when systems did not comply – an average of 2.67 non-compliant wastewater catchment systems per year. In the two years prior (2014–15 and 2015–16) there were only 2 non-compliances (on average 1 per year).

<sup>20</sup> A small percentage of overflows should be reported to the EPA as notifiable incidents, if they meet criteria including: wastewater reaching a waterway; impact on waters posing a potential public health risk; monitoring indicates a high level of faecal contamination; an overflow requiring significant clean up (more than one day); or dry weather overflows from any sewage pumping station.



Table 3 Examples of key asset renewal programs

Program details and scope	Why this work is essential
<p><b>Critical sewers (\$572 million)</b></p> <p>Continued de-silting and rehabilitation of Sydney’s 3 major sewers which serve 3.4 million people<sup>21</sup></p> <p>Condition assessment and renewals of a large cohort of sewers now essential due to recent increased overflows</p>	<p>Major sewer failure risks are:</p> <ul style="list-style-type: none"> <li>• high repair costs</li> <li>• extensive environmental damage and public health risks from large overflows</li> </ul>
<p><b>Wastewater treatment plant renewals (\$305 million)</b></p> <p>Replacement and reliability improvements of treatment plant inlet works and de-watering plant</p> <p>Renewal of civil infrastructure and electrical infrastructure to improve worker safety</p>	<p>Inlet works impact plant operations if they are not well maintained. Renewals must address:</p> <ul style="list-style-type: none"> <li>• performance risks (risk of plant damage and bypasses)</li> <li>• inefficient inlet works cause shorter asset life and higher operating cost (screen cleaning, energy costs)</li> </ul>
<p><b>Wastewater pumping stations (\$106 million)</b></p> <p>Major site-wide renewals, like-for-like replacements of obsolete equipment and planned overhauls</p> <p>Reliability projects to prevent dry weather overflows and improve resilience to extreme storm events</p>	<p>15% of assets require action to address:</p> <ul style="list-style-type: none"> <li>• risk of environmental damage</li> <li>• risks to public health from overflows</li> </ul>

While there are programs of work identified based on known risks with the current information, there are numerous governance gates where further investment analysis tests the component project investments before expenditure occurs. This is how we ensure that the various risks are managed appropriately at the lowest lifecycle cost.

As well as growth and renewals other important investments include:

- reducing wet weather overflows to the environment, which will be based upon a new standard we expect the EPA to set
- reducing repeat wet weather surcharges into homes – which we do not want any residential customer to experience.

To deliver this investment in growing and renewing our infrastructure, as well as the enabling technology we require to serve our customers, we propose to spend \$4.5 billion in capital for 2020–24. This is composed of:

- \$4.1 billion of capital infrastructure investment on our water, wastewater and stormwater assets, to meet growth and maintain our existing networks
- \$0.4 billion on corporate capital expenditure, the majority of which is to continue to modernise our information technology infrastructure. This will improve our customer service

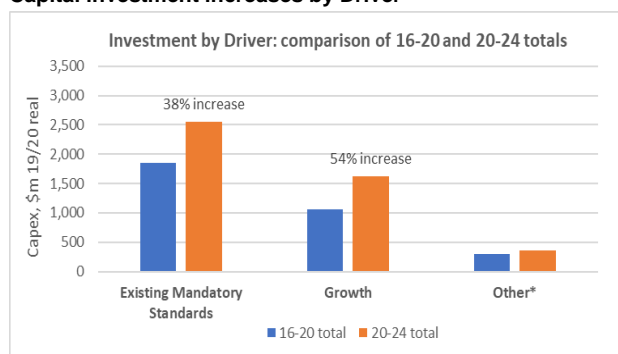
<sup>21</sup> Northern Suburbs Ocean Outfall Sewer, South Western Suburbs Ocean Outfall Sewer and Bondi Ocean Outfall Sewer

and continue progress towards becoming a digitally connected utility, making better use of data to optimise our decision-making.

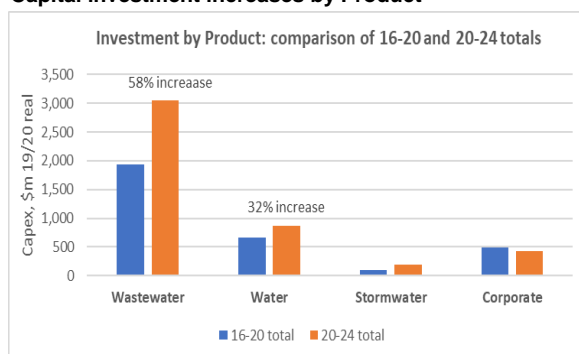
## Innovating in planning and delivery of capital investment

For our infrastructure investment program, excluding information technology, we propose \$4.1 billion for 2020–24. This represents a 46% increase on our current period infrastructure investment and a 78% increase on the infrastructure capital allowance we were granted in 2016.<sup>22</sup> This increase is driven by both provision of new assets to service growth (\$1.6 billion, 36% of our proposed program) and renewal of existing assets (\$2.6 billion, or 56% of the total program).

**Capital investment increases by Driver**



**Capital investment increases by Product**



\* 'Other' drivers are Discretionary Standards, Government Programs, Business Efficiency & New Mandatory Stds.

**Figure 12 Capital investment increase by driver and product**

In developing the forecast, we challenged ourselves to deliver for less than our original budgets. Our review process led us to factor in a range of efficiency reductions:

- program-specific efficiency savings, such as including benefits of using new technology
- identifying how to meet multiple needs with lower cost integrated planning solutions
- efficiency challenges where program forecasts were reduced, assuming a combination of improvements in unit costs, scope optimisations and improved delivery can reduce costs
- low growth forecasts factored in to ensure customers are not funding upfront investments which may be deferred if growth slows down.

The result was the application of efficiency adjustments to many (but not all) programs, resulting in a reduction of over \$620 million based on our initial five-year plan. On average, this reflects a reduction of around 17%. As in the current period, we have also assumed some risk in our growth expenditure forecast by excluding some less certain investments which we will need to finance if they are required. This resulted in a reduction to the growth expenditure forecast of over \$700 million.

To enable us to operate at scale and deliver consistently in the medium term, we are implementing over 2019–20 a new procurement strategy and delivery model, called Partnering for Success (P4S). This will replace our current approach which uses many contractors on a large number of

<sup>22</sup> Our proposed \$4.1 billion infrastructure program is 46% greater than our 2016–20 infrastructure investment of \$2.8 billion and 78% greater than our IPART infrastructure allowance of \$2.3 billion.

discrete projects, requiring hundreds of contracts across thousands of suppliers. This was manageable with a smaller program. However, it is not efficient to scale up this model.

Table 4 Application of efficiency reductions to the infrastructure forecast

Step	Details	Infrastructure forecast
Consolidated bottom up forecasts	5-year infrastructure forecast including integrated planning benefits and other efficiencies added together	\$6.1 billion
Efficiency challenge	<p><u>Renewals</u>: savings of \$620 million were applied. Some priority programs (e.g. critical sewers) were excluded from the savings</p> <p><u>Growth</u>: the forecast was reduced by \$700 million to discount investments which are less certain to be required in 2020–25.</p> <p>Other adjustments: reductions of around \$150 million</p>	\$4.6 billion
Final review steps	Additional projects worth \$300 million excluded after final review. Plan is then reprofiled and converted to a 4-year plan	\$3.9 billion <sup>23</sup>

Partnering for Success will simplify our supply chain, delivering significant benefits to us, our customers and our partners through increased efficiency, cost savings, continuity of work, resource availability and partner capability.

We are in the process of selecting three Regional Delivery Consortia (RDC), one in each of our three regions, to deliver design, construction, maintenance (excluding existing insourced civil maintenance) and facilities management. This approach will help us better operate as one team with our partners. It will better align the incentives of our partners with our incentives to deliver the best outcomes for customers while delivering value for money. It will incentivise our delivery partners to find the most optimal mix of capital and operating expenditure solutions as they will be rewarded based on performance. In this way, we are setting up commercial structures that better incentivise us to outperform and share the financial benefits of outperformance in the future between customers, external partners and ourselves.

We estimate that this transformation can deliver efficiency benefits of 5 to 10% for capital expenditure in the medium term, as well as wider strategic benefits. We operate in a highly competitive and overstretched market for infrastructure development in New South Wales. The state government is overseeing an unprecedented level of investment in infrastructure (\$87 billion over the next four years). In this context we need the benefits of security and long-term relationships with our partners to align their incentives with ours. By partnering with three RDCs for a 10-year period, we have a strong mutual interest in investing together to build capability, knowledge and skills to deliver the best long-term outcomes.

<sup>23</sup> \$3.9 billion is for four years excluding HSS M&C and unregulated capital expenditure. This is consistent with \$4.1 billion referred to on page 29 which covers water, wastewater and stormwater infrastructure. The \$4.1 billion includes HSS, water meters and finance lease costs.



## Investing to become a digitally connected utility

For information technology, we propose capital expenditure of \$375 million. This is a 16% increase on the allowance in the 2016–20 period and a 9% decrease on expected expenditure for the same period. The major remaining components of BxP (the new finance and procurement systems) will recommence in mid-2019 with completion aimed for mid-2021. This means that the operating expenditure benefits originally envisaged from implementing BxP have not yet been achieved. We will continue to enhance our cybersecurity by transitioning to GovDC – we have allocated \$104 million for a range of projects related to this. In the longer term we want to be positioned as a digital utility. Moving towards this requires many relatively small projects, when compared to the refresh of our historical core systems.

## Managing our future operating costs

Many key drivers of higher expenditure in 2016–20, especially those in 2019–20, are expected to endure in the next period. We are therefore proposing a transitional re-baselining of our operating costs. We propose in the 2020–24 period total operating expenditure of \$5.4 billion, an increase of 2% compared to our IPART 2016–20 allowance of \$5.3 billion.

However, as we are already paying some of these new costs, and because we have faced additional drought costs in 2018–20, this proposal represents a decrease of 2.4% compared to expenditure over 2016–20.<sup>24</sup> If the additional approved drought costs of \$78 million for 2019–20 are spent, our 2020–24 proposal will in fact represent a decrease of 4% on actual 2016–20 expenditure. If drought continues however, customers will also face the running costs of SDP depending on how long it is in operation in 2020–24. Other potential drought-related costs we may face are excluded and we are taking the risk on bearing those costs, should they prove necessary.

Out of the total of \$5.4 billion, core operating expenditure represents \$3.9 billion, an increase of 2.1% compared to 2016–20. If we spend the additional \$78 million we have provisioned for drought in 2019–20, core operating expenditure will be broadly equivalent across the two periods.

We did not budget for some of the new costs in our last price proposal, even though we are paying for them now, as they reflect new requirements placed in our Operating Licence in the last two licence reviews (for water conservation and cyber security). These reviews have placed new, unfunded obligations upon us. As such, this new baseline mostly reflects new costs over which we have limited discretion and which we are already paying.

Costs related to the adverse weather conditions and the onset of drought may or may not continue after 2020. If conditions remain dry and hot on average we expect to spend more than our allowance, as we have done in this period. However, we do not budget for the direct impact of water restrictions on our costs or revenues.

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<sup>24</sup> We proposed an operating expenditure allowance of \$5.414 billion, which is a 2.4% decrease on our forecast expenditure in this period of \$5.545 billion

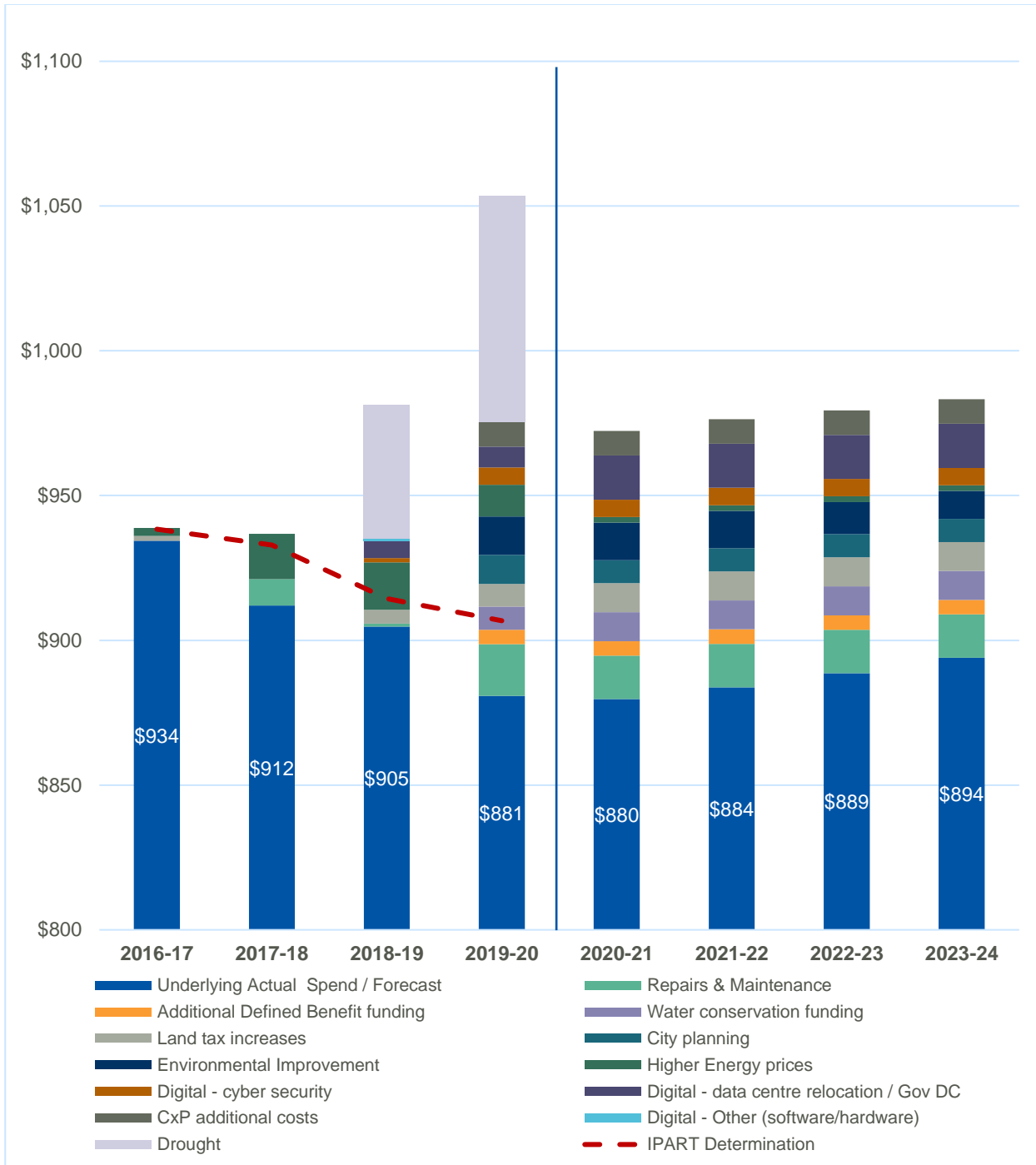


Figure 13 Core operating expenditure 2020–24

This re-based core operating expenditure level will allow us to:

- put in place a level of maintenance sufficient to sustain our asset strategy for reticulation sewers and to comply with our Environment Protection Licences (EPLs) (\$15 million a year)
- fund new operating licence obligations for water conservation (\$10 million a year) and to set up and maintain a management system for cyber security (\$7 million a year)
- work with government on planning to facilitate growth in Western Sydney (\$8 million a year)
- fund the relocation of our data centre and ongoing costs connected to our new billing platform, improving security and providing critical system support (\$15 million a year)

- fund increased pension costs (\$5 million a year), increased land tax (\$3 million a year) and energy costs (\$2 million a year).

We have continued to drive efficiency and are expecting to realise savings of \$83 million over 2020–24, based on the following programs:

- Production Improvement program (\$49 million)
- Multi-function business centre (\$11 million)
- Supply chain improvement (\$14 million)
- Network reorganisation (\$5 million)
- Civil operating model (\$4 million).

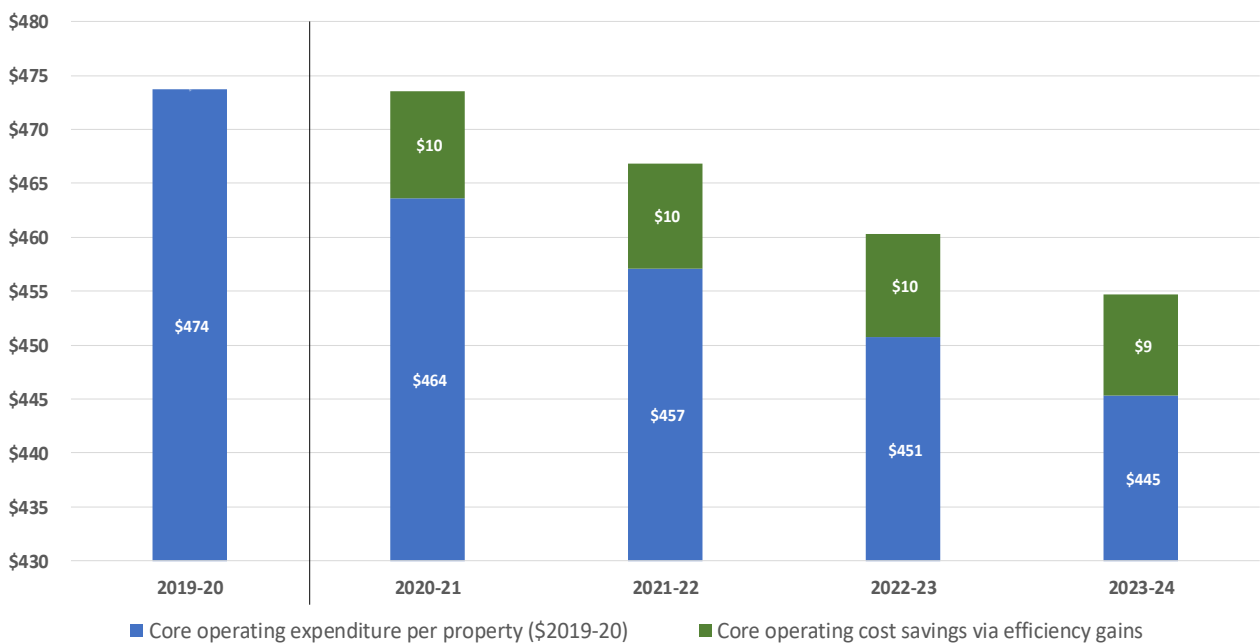


Figure 14 Core operating costs per property 2019–24

Together, these efficiencies will drive a productivity improvement of 0.5% a year over the period. This enables us to hold back operating expenditure increases to 0.7% per year. This is a challenging baseline to meet in light of the uncertainty about the costs of growth. Most of the new extra cost represents higher fixed costs regardless of volume. However, population growth has been 1.7% a year over this period, a high rate by historic standards. If this continues, it is likely to drive upwards pressure on costs. Initial estimates of costs driven by growth suggest growth has increased operating costs by about 0.4% a year over 2016–20. We are no longer able to entirely absorb the costs of growth.

Our actual expenditure requirements may well turn out to be higher, not including additional costs that may arise due to drought. We cannot be sure, for instance, of the level of expenditure required to return our wastewater network to a higher performance level. However, we will prioritise and challenge our expenditure plans over the period, to ensure we uncover potential savings and make the most cost-effective use of our customers' money.

While our total expenditure is increasing, based on our proposal our operating cost per property served will continue its downward trend, achieving almost 20 years of steady reduction. Our increasing customer base and larger scale helps deliver this improvement, but it is supplemented by the \$83 million of efficiency savings which we forecast to deliver over 2020–24. This trend and the impact of efficiency savings can be seen in Figure 14.



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**\$10.7 billion revenue**

needed to run our business and deliver our essential services.

**\$4.5 billion**

**capital expenditure** to grow and renew our infrastructure

**\$5.4 billion**

**operating expenditure** to maintain the services our customers value.



# Our financial position

## Financial performance and financeability

To be able to serve our customers and meet community needs, we need to be financially viable. This means that we must be able to efficiently deliver services and maintain the new and existing infrastructure of our core business and be able to pay interest costs on the money we borrow.

Our financial position over the current 2016–20 price period has remained strong, largely due to the operating and capital expenditure efficiencies we have achieved, higher revenue from higher than expected water demand, and low interest rates.

Our capital structure has moved from about 33% debt in 2007 to about 58% debt in 2019. This change in gearing is consistent with the objectives of NSW Treasury's capital structure policy for Government Business that came into effect from 1 July 2017. The implementation of this policy and the consequent increase in our gearing, resulted in our credit rating being downgraded in December 2018 from Baa1 to Baa2 – the target rating under the capital structure policy. Our previous relatively low gearing structure meant that we were able to absorb borrowing for projects not directly part of our core business, such as funding the desalination plant. Our headroom for more debt for such projects, without paying down old debt or growing our revenue base via connections, may be more limited in the future.

An indicator of our ability to make interest payments from our regulatory cashflows is our credit rating. Our current credit rating is Baa2 and is expected to remain, absent any large shocks to our business. IPART uses a benchmark debt structure to inform setting our targeted cashflow allowance for the next determination, which also matches our target credit rating.

There is always variance in our actual cashflows due mainly to water sales being higher or lower than forecast. Our financial performance relative to allowed cashflows will vary as a result of any inefficiencies or changes in interest rates. In the 2016 Determination, our financial performance and cashflows were strong relative to our interest expense (debt level) due to efficiencies we found and hotter than expected weather increasing water sales. This helped maintain our credit rating.

We have also assessed our finances against IPART's financeability tests. This indicated minor breaches of one of the three ratios due to the re-gearing initiatives referred to above. We consider that these minor breaches against IPART's test are acceptable as we are forecast to retain our Moody's Baa2 rating. We also note IPART's guidance that a business does not need to meet the target for every ratio in each year of the regulatory period.

There are some risks to our financial position. The main short-term risks include increased expenditure and lower water sales, both due to drought. The mid-term and long-term term risks include a possible increase of interest rates, a decision for a lower weighted average cost of capital than 4.1% and an increase in capital expenditure required to service population growth while meeting increasingly stringent environmental and water quality requirements. We will monitor and manage these risks.





# Weighted average cost of capital

The weighted average cost of capital (WACC) is the minimum financial return an investor requires from an investment given its non-diversifiable risk. The WACC should be set to ensure that an efficient business can generate enough return to service its ongoing debt requirements and provide returns for shareholders.

Our 2020–24 proposal applies a real post tax WACC of 4.1% as determined by IPART in their February 2019 WACC update. This is 80 basis points lower than the WACC set in our 2016–20 price period. Our lower proposed WACC reduces a typical bill by about \$70 each year, compared to 2016–20.

We expect the WACC to continue to decline as we approach the start of our July 2020 price period, as market driven parameters of the WACC continue to reduce. Estimating the WACC is not an exact science and IPART should always reserve some discretion to ensure that the firms they regulate remain financeable in all market conditions. While IPART's WACC method is a sensible starting point, IPART should apply judgment to ensure that the WACC model used in the 2020 Determination produces a return that reflects the expected returns of a benchmark water utility over the price path. IPART should ensure that the WACC selected meets at least the minimum level to pass the IPART financeability test, regardless of whether IPART's uncertainty index is breached.

The equity beta is a crucial input to how our WACC is set. IPART recognises the importance of this parameter and is currently reviewing its process to estimate the equity beta from market data, and intends to apply its findings, along with other evidence, as an input into the WACC it determines for our 2020-24 prices.

We support IPART's review as we expect it to improve the predictability and transparency of IPART's method. We will provide our detailed position on equity beta in IPART's separate beta review. In summary, our view is that the evidence supports an equity beta of 0.7.

# Modernising regulation

We propose a four-year price period for 2020–24. As a matter of principle, we think there is merit in a longer price period and it was our intention to seek five years in this proposal. However, as our expenditure plan confirms, we are undergoing change in the scale and breadth of our operations. We may also face further challenges from drought. We concluded therefore that a four-year plan remains a better platform to secure the certainty we need at this time.

The possibility of extended drought led us to consider ways in which we might use the regulatory framework to ensure our revenues align with our costs when faced by uncontrollable events, such as the government’s introduction of water restrictions. IPART’s framework has some flexibility to manage changes in costs within a price path contingent on new information and indeed there is already such an arrangement in place for SDP. As in the current period, our customer prices vary depending on whether SDP is in operation or not. In principle this approach could be extended to cover other third party costs or additional Sydney Water costs that arise within period contingent on defined trigger events. In our proposal however we have decided to bear the risk of additional drought costs that may arise, including any costs connected to water restrictions.

We support maintaining the reforms introduced by IPART in 2016 in the 2020 Determination, including unregulated price agreements and the operating expenditure efficiency carryover mechanism. While we are not seeking any carryover claims in this price proposal, this mechanism strengthens our financial incentives to consistently seek efficiencies and reduce costs.

We have taken our customer engagement to a new level. We expect to go further in future reviews and see significant scope to innovate in how we engage our customers and use their insight to help determine the outcomes we deliver. This is a key part of our transition to an outcomes-based framework as we become a more customer-centric business. IPART’s approach focuses largely on assessing expenditure against delivery of outputs and standards, with less emphasis on the determination of outcomes that are valued and prioritised by customers. An outcomes-based framework shifts the objective to ensuring the prices deliver the outcomes customers value. We recognise we are well-placed to propose these innovations and develop them with IPART. The graphic below illustrates the key stages in the development of a customer-led proposal under an outcomes-based approach.

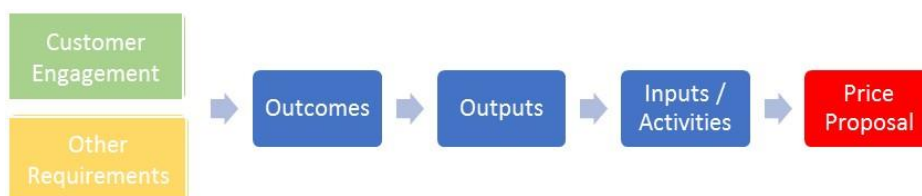


Figure 15 Stages of an outcomes-based framework

An outcomes-based approach would not necessarily mean a material shift in the way IPART assesses our price proposal. IPART may still need to assess the efficiency of our proposed expenditures. However, the focus would shift to whether planned outputs are likely to deliver customers’ desired outcomes.



# How to read this proposal

We have prepared this proposal in accordance with IPART's November 2018 guidelines for water agency pricing submissions and a Submission Information Package provided to us by IPART in December 2018.

## Proposal structure

This overview document summarises our proposal and allows the reader to become familiar with our positions. Our proposal responds to the specific information requested by IPART and is supported by 15 attachments that provide more detail on specific topics.

For attachments that discuss performance, cost drivers, and/or expenditure, we present details of annual actual outcomes for 2016–18 and forecast outcomes for the period 2018–24. We use forecast information for 2018–19 because final data for the full year was not available at the time of drafting. Final outcomes for 2018–19 will be provided to IPART later in 2019. IPART will take this information into account as part of their review.

## Attachments

**Attachment 1: Our role and function** describes the role and function of Sydney Water in providing services to over five million people and 1.8 million homes and businesses. We outline our regulatory framework.

**Attachment 2: Service levels and performance** provides details of our performance in delivering services. For each of our regulatory obligations, we set out actual performance for 2016–18, and forecast performance from 2018–24.

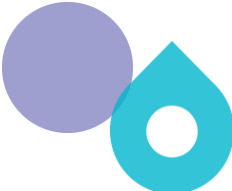

**Attachment 3: Customer engagement** describes how we have listened to our customers and adapted our plans to align with what they want and are willing to pay for. This includes possible changes to the level and structure of prices, options to change regulated performance standards in the Operating Licence, and specific programs to improve environmental and waterway health outcomes.

**Attachment 4: Proposed prices** provides details of our proposed prices for water, wastewater and stormwater services from 1 July 2020 to 30 June 2024.

**Attachment 5: Affordability and bill impact** examines how our proposed prices would affect different types of customers. This includes an analysis of a typical bill, for both residential and selected types of business customers. We also compare our proposed bills with other utilities.

**Attachment 6: Weighted Average Cost of Capital (WACC)** sets out the WACC that has been used to generate our proposed prices, based on applying IPART's agreed method.

**Attachment 7: Regulatory Framework** turns to issues that relate to how IPART makes pricing decisions. This includes the use of incentive mechanisms that allow a commercial outcome while also ensuring our customers receive value for money over time.



**Attachment 8: Water demand and customer numbers** describes our approach to estimating water demand, which is a key driver of both costs and revenue. We describe our methodology, which is based on forecasts of population growth and econometric techniques.

**Attachment 9: Capital expenditure** provides information on actual capital expenditure from 2016–18, and details of our forecast capital expenditure for 2018–24. We analyse the reasons for variances between planned and actual expenditure.

**Attachment 10: Operating expenditure** provides information on actual operating expenditure from 2016–18, and details of our forecast operating expenditure for 2018–24. We analyse the reasons for variances between planned and actual expenditure.

**Attachment 11: Proposed revenue requirement** brings together our forecasts for water demand, proposed capital and operating expenditure, and the application of the WACC, to estimate how much revenue must be recovered from customers.

**Attachment 12: Financial position** examines how this price proposal would affect our financial position, one of the indicators that IPART is required to assess in deciding our prices.

**Attachment 13: Confidential**

**Attachment 14: Recycled water** discusses our existing water recycling projects. Reflecting IPART's pricing framework, most water recycling schemes do not affect our overall price proposal, as most costs are ring fenced from regulated products and services and are recovered from scheme customers. However, some costs of projects that were delivered under a government direction are recovered from general water prices.

**Attachment 15: Asset management governance** outlines how we plan, design, build, operate and maintain our assets to deliver service outcomes.

## Reader notes

- The terms '2016 Determination' and 'current determination' are used to refer to IPART's determination of prices for the period 1 July 2016 to 30 June 2020.
- The term '2020 Determination' is used to refer to IPART's upcoming determination of prices for the period 1 July 2020 to 30 June 2024 (assuming IPART accepts our proposal for a four-year determination).
- Our price proposal presents dollar amounts in either 'nominal' (with inflation) or 'real' terms (without inflation), depending on the context. Nominal dollars show the amount you would pay in the year the money is (or was) spent. Real dollars are the result of a calculation that converts nominal amounts into dollars of a common year, using either past or future rates of inflation. Real dollars allow for a better comparison between amounts spent in different years, because the effect of inflation has been removed.
- Unless noted otherwise, dollars are shown as at 30 June 2020 (that is, dollars of the 2019–20 financial year).
- In general, nominal dollars are used for an annual time series of values from the current determination period (eg, operating costs) and to show projected customer bills in the upcoming determination period. This is in line with IPART's Submission Information Package.

- If a table shows aggregated data from several years, the figures are presented in real dollars (that is, \$2019–20).
- To convert nominal dollars of the past into real dollars of 2019-20, we apply the values specified by IPART in their Submission Information Package and reproduced below:

To convert:	Use:	Value
\$2014-15 to \$2015-16	June-to-June change in All Groups CPI Australia	1.0%
\$2015-16 to \$2016-17		1.9%
\$2016-17 to \$2017-18		2.1%
\$2017-18 to \$2018-19	Bloomberg mean consensus inflation forecast	2.2%
\$2018-19 to \$2019-20	Mid-point of Reserve Bank of Australia inflation target	2.5%

- To estimate nominal dollars in a future year (that is, any year after 2019–20), we have assumed an inflation rate of 2.5%, which is the mid-point of the Reserve Bank of Australia’s target band for general price inflation.
- Some totals in tables may not add precisely due to rounding.

