

PRICE SUBMISSION 2020-23



WESTERN
WATER



Traditional Owner acknowledgement

Western Water proudly acknowledges Aboriginal people as Australia's first peoples and the local Traditional Owners as the original custodians of the land and water on which we rely. We pay our deepest respects to their Elders, past, present and emerging.

We acknowledge the continued cultural, social and spiritual connections that Aboriginal people have with the lands and waters, and recognise and value that the Traditional Owner groups have cared for and protected them for thousands of generations.

In the spirit of reconciliation, we remain committed to working in partnership with local Traditional Owners to ensure their ongoing contribution to the future of the water management landscape while maintaining their cultural and spiritual connections.

Cover art (and illustrations)

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Everything We are is Water

Everything Living Relies on It

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Executive Summary

Introduction

In developing this three-year price submission for the 2020-23 regulatory period, Western Water has considered a number of unique factors alongside our key aims of affordable prices, efficient and high-quality services and protecting environmental values.

We must also plan for the financial sustainability of the organisation over both the medium and long term. The current operating context is challenging, with our region experiencing unprecedented growth and interest rates at historic lows.

Fulfilling commitments given as part of the 2018 water price decision process, we have developed a new tariff structure in collaboration with our customers.

The revised tariff structure embeds the Water Efficiency Rebate into the tariffs in a way that smooths out the change over time to limit bill shock and encourage water conservation.

Taken together, these factors – high growth, low interest rates and the revised tariff structure – will all impact in different ways on our average water bills. Ultimately most customers will experience a modest price increase before inflation is applied.

This executive summary provides more information about the various elements of our pricing, tariff and service proposals.

Underpinned by broad, robust and deep consultation with our customers and stakeholders, the proposals enable us to deliver on our vision of *Strong Communities, Growing Together*.

We are committed to supporting a thriving region and to managing risks to regional expansion, economic growth and liveability.

This proposal keeps prices affordable for our customers and further orientates our tariff structure towards water conservation. It also enables us to better manage the continued urban expansion within our region and position the organisation on a firm long-term financial footing through continued innovation and transformation of our business.

Regulatory period

Consistent with Western Water's request for a shorter 2018 price determination period of two years, this price submission proposes a three-year regulatory period to run from 1 July 2020 to 30 June 2023 in line with the guidance given by the Essential Services Commission (ESC).

This regulatory period will enable us to match our planning and operations with the current challenges and risks we face in close collaboration with our customers. The outcomes of this ongoing work will inform our next proposal to come into effect in 2023.

Community consultation

During the preparation of this proposal we consulted extensively with our customers and stakeholders, using various methodologies to gain feedback and insights.

Our engagement processes included online surveys, deliberative forums, a citizen's jury about changes to the tariff structure, information sessions and taking advice from our Community Engagement Reference Group and a wide range of community organisations.

We are confident that the voice of our community has strongly informed the proposals presented in this submission.

Customer Outcomes

Based on customer consultation, Western Water proposes to retain the following customer outcomes accepted in our 2018 Price Submission:

- Outcome 1: Fair and affordable charges
- Outcome 2: Reliable, safe services
- Outcome 3: Innovative approaches to addressing customer needs
- Outcome 4: Care of the environment
- Outcome 5: Sustainable contribution to the community and regional liveability

Price path

The proposal seeks to recover an additional 1% real increase in revenue each year over the price submission period to enable Western Water's financial capability to serve the community and deliver our long-term objectives.

For our typical residential customer, this equates to an annual residential bill increase of around \$10 each year, in addition to the adjustment for inflation.

Price reduction as a result of low interest rates

Offsetting this increase for the first year, the majority of customers will benefit from Western Water passing through forecast savings from low interest rates. Subject to ESC acceptance of our approach to return these savings, the proposed typical residential customer bill will remain at \$1,019 before applying the CPI escalation for the year commencing 1 July 2020. The \$1,019 includes the 1% price path increase already mentioned.

Based on what we anticipate will be a relatively low interest rate outlook for the outward years, we expect to be able to pass through further savings in the second and third years of the pricing period. These savings will be applied to reduce the fixed service charges component of customer bills.

Tariff restructure

As a result of consultation, we are rebalancing our residential customer tariffs to reduce the fixed charges portion of owner occupier bills.

The resulting increase in the variable portion of the bill will give customers more control over the size of their bills through changing water usage behaviour.

This will be achieved by permanently applying the \$103.25 rebate owner occupier customers currently receive as a reduction to the fixed service charges.

Residential landlords and vacant landowners will see a more gradual reduction in their fixed charges over a seven-transition year period commencing 1 July 2021. To avoid bill shock, the unwinding of the \$103.25 rebate will be transitioned over a seven-year period commencing 1 July 2021 for residential tenants (who will no longer receive the rebate as

they do not pay fixed charges). Western Water will finance the transitioned rebate outside the price submission revenue requirement.

The unwinding of the rebate for residential tenants from 2021 allows time for Western Water to support them to adjust to the phase out of the rebate and manage their water usage costs through water conservation measures. Western Water's support programs will be enhanced to assist tenants with this adjustment.

To further incentivise water saving, in line with community direction, we are retaining the three-tier water usage tariff structure and increasing the third-tier water charge by 1.95% real each year over the period.

New customer contributions

Greenfield urban development in our region requires significant infrastructure investment ahead of new customers connecting to and receiving our services. Efficiency in the timing of such investments reduces the costs for each new connection.

Enhancing our collaboration and sharing information and plans with land developers has been a key component in informing our proposals for charges for new urban land developments. This is enabling our continued transition toward more cost reflective charges for greenfield land development over the period to 2028. Greenfield charges are proposed to increase by 5% real each year for the three years of this proposal period.

A review of land development charges for new connections in already established areas has informed our proposal that the current real charge for infill connections to remain in place over the three-year regulatory period.

Efficiency

Western Water is committing to two percent (real) productivity efficiency compared with base year (2018/19) costs. The major ongoing programs designed to achieve this are in the areas of strategic procurement, optimised asset management, digitisation and beneficial use of our resources, in particular recycled water.

Guidance requirements

The ESC's guidance for Western Water's 2020 Price Determination outlines the minimum information requirements for a 'Standard' rated corporation under the PREMO incentive mechanism. Western Water is not required to rate itself under the PREMO framework, however we must be satisfied that our process and submission has met the requirements of the ESC's guidance.

Western Water is satisfied that we have substantially met the material requirements of the ESC's guidance (refer to Appendix 1 for our assessment) and have therefore set the return on equity in this proposal at 4.5 per cent. This reflects the rate of return provided for a 'Standard' PREMO rating as provided in the ESC's guidance.

While we have met the material requirements of the ESC's guidance, our proposal does deviate in that an alternate, more current, 2019/20 cost of debt estimate has been used to establish the return on debt.

We are also proposing a refinement to the cost of debt adjustment that provides Western Water with

the ability to profile the cost of debt adjustments within the price determination period.

This refinement enables Western Water to maintain no change to the average residential bill in 2020/21 and provides for smoother price outcomes in the following two years.

These variations to the guidance support our customer feedback and apply the pricing principles outlined in Clause 11 of the Water Industry Regulatory Order 2014.

PREMO rating

While the guidance does not require Western Water to assess its PREMO rating, we have completed an assessment of our proposal against the PREMO framework and we are satisfied that we can demonstrate a 'Standard' PREMO rating. Table 1 provides a summary of our assessment, with further detail provided in Appendix 2.

Throughout this submission Western Water refers to the 2020 Price Submission as PS20 and the 2018 and 2023 Price Submissions as PS18 and PS23 respectively.

Table 1: PS20 PREMO Assessment Summary

Aspect	Result	Comments
Risk	2.5	One new GSL in response to customer feedback
		Key assumptions reflect recent trends combined with market-based information to increase forecasting accuracy over the submission period
		Risk-based prioritisation of investment expenditure and P50 cost estimates
		Risk framework aligned with ISO 31000
		Price proposal balances Western Water's financial sustainability and customer price stability over the continued period of high regional growth
Engagement	3.7	A comprehensive approach to ensuring customer-led decision-making in PS20 across the IAP2 spectrum of public participation, based on best practice community engagement, with input from more than 4,000 customers and hundreds of stakeholders and community organisations Consultation featured deliberative processes including a citizen's jury and deliberative panels to inform critical planning around pricing and our tariff structure
Management	2.5	Ongoing commitment to operating expenditure productivity efficiency
		Risk-based prioritisation of the capital expenditure program
		Management and Board ownership of the proposal
		Consistency in key drivers underpinning all aspects of the submission
		Western Water has demonstrated a commitment to achieving strong performance targets as set in PS18
Outcomes	2.6	Customer feedback has driven development of outcomes Business output and measures are aligned with customer outcomes Outcomes from PS18 have been reaffirmed by 80% of survey participants

1. Board Attestation

PS20 has been developed with input from our Board, senior management, subject matter experts (both internal and external), our customer reference group, stakeholders and our broader customer base through an extensive engagement program.

Western Water's Board has provided their endorsement of key assumptions throughout the submission preparation process.

The extensive process and level of engagement gives us confidence this price submission provides value for money to customers, while delivering key outcomes and maintaining our relatively high service levels.

The Board's attestation to the quality and accuracy of information included in the price submission follows, including that the guidance has been complied with in all material aspects.

As at 15 November 2019, the directors of Western Water having made such reasonable inquiries of management as we considered necessary (or having satisfied ourselves that we have no query), attest that, to the best of our knowledge, for the purpose of proposing prices for the Essential Services Commission's 2020 Water Price Review.

- *Information and documentation provided in the price submission and relied upon to support Western Water's Price Submission is reasonably based, complete and accurate in all material respects.*
- *Financial and demand forecasts are the corporation's best estimates and supporting information is available to justify the assumptions and methodologies used; and*
- *The Price Submission satisfies the requirements of Western Water's Water Price Review Guidance paper issued by the Essential Services Commission in all material respects – noting our proposed variations to the return on debt and profiling of cost of debt annual adjustment that directors consider apply the pricing principles outlined in Clause 11 of the Water Industry Regulatory Order 2014.*

To provide the Board with assurance that the template reflects the financials presented within this price submission document, the template has been independently reviewed by Marsden Jacob Consulting with their report addressed to the Board.

2. Managing Risk

Western Water adopts an enterprise approach to risk management that is aligned with ISO 31000 and the Victorian Government Risk Management Framework. Effective risk management is embedded in our decision making and planning processes and assists with achievement of our compliance obligations and strategic goals.

By utilising our risk management framework, significant risks have been identified and assessed, including an assessment of the nature and scale of the risk and its probability of occurrence. Key risk management actions have been identified along with an appropriate allocation of the risk.

Key considerations in assessing risk mitigation actions and the allocation of risk within Western Water's proposal include:

- consideration of the party that is best placed to manage the risk exposure
- the cost and benefit arising from the risk mitigation action – the efficiency
- delivery of our customer outcomes – including sustainable and affordable prices
- compliance with regulatory, statutory and legal obligations including those under the Letter of Expectations issued to our Board by the Victorian Minister for Water, and
- ensuring the financial viability of Western Water.

An overview of the significant risks identified and assessed is summarised below. Detailed risk assessments are available to the ESC.

Table 2.1: Connections and Demand Forecasting Risk

Impact	<ul style="list-style-type: none"> • Western Water may over or under recover revenue against an efficient cost for its services • A revenue under-recovery may impact Western Water's ability deliver against this proposal
Risk Mitigation Activities	<ul style="list-style-type: none"> • Enhanced engagement with regional land developers enabling increased accuracy of short-term property connections forecasting • Longer term forecasts aligned with VIF 2016 and verified against VIF 2019 • Ongoing developments in network intelligence and modelling capabilities
Risk Allocation	<ul style="list-style-type: none"> • Continuation of a price cap form of price control over the regulatory period allocates the risk to Western Water during the three years

Table 2.2: Service Delivery Risk

Impact	<ul style="list-style-type: none"> • Service disruptions may have significant impacts for the community and customers including the potential to adversely impact the wellbeing of vulnerable customers • Ineffective planning may negatively impact the liveability and economic prosperity of our region
Risk Mitigation Activities	<ul style="list-style-type: none"> • Delivery of our optimised asset management program • Ongoing investment in asset maintenance and renewals • Ongoing improvements to physical and cyber security risk management – particularly the protection of our critical SCADA systems • Adherence with our Water Security Policy and delivery of annual water operating plan • Progression of the Central Region Sustainable Water Strategy
Risk Allocation	<ul style="list-style-type: none"> • Capital works expenditure budgeted at P50 (most likely) estimates • Costs associated with service delivery failures is borne by Western Water • Western Water is proposing a new Guaranteed Service Level (GSL) where a customer will not experience greater than 5 water interruptions in a year • Urban land developers bear risk in relation to the timing of our delivery of greenfield capital infrastructure

2. Managing Risk cont.

Table 2.3: Employee and Public Safety Risk

Impact	<ul style="list-style-type: none"> Failure to protect, or provide safe services to, our employees, contractors, customers and the public may negatively impact their quality of life or, in a worst-case scenario, result in loss of life
Risk Mitigation Activities	<ul style="list-style-type: none"> Western Water's pricing proposal includes expenditure associated with delivering security risk management projects, the implementation of occupational, health, safety and wellness programs, delivery of the optimised asset management project, as well as additional auditing programs in high risk operations
Risk Allocation	<ul style="list-style-type: none"> Our proposal is based on Western Water accepting risks associated with a failure to protect employees, contractors, customers and the public

Table 2.4: Environmental Risk

Impact	<ul style="list-style-type: none"> Ineffective environmental management may impact public health or result in temporary or permanent harm to the environment
Risk Mitigation Activities	<ul style="list-style-type: none"> Master planning for our works and systems is inclusive of environmental impacts management and integrated water management Western Water's pricing proposal includes expenditure associated with increased system monitoring real-time and predictive intelligence Implementation of an updated compliance monitoring and reporting system
Risk Allocation	<ul style="list-style-type: none"> Our proposal is based on Western Water accepting risks associated with a failure to protect the environment from harm resulting from our activities and operations

Table 2.5: Financial Risk

Impact	<ul style="list-style-type: none"> Ineffective management of Western Water's financial position may result in a requirement for contributions from the State as shareholder, reductions in expenditure programs and/or potential customer price increases in future pricing periods
Risk Mitigation Activities	<ul style="list-style-type: none"> Assumptions underpinning this proposal have been built up through detailed work programs and management is attesting to their reasonableness Stress testing of Western Water's financial profile has been undertaken The three-year regulatory term limits the period for an over or under recovery of revenue for both Western Water and customers – this is important as the risk of inaccurate forecasting in the proposal is relatively high, notwithstanding potential volatility in the rate of growth and water consumption
Risk Allocation	<ul style="list-style-type: none"> The proposed pass-through to customers of the impact of changes in certain uncontrollable costs allocates this risk to customers Risk associated with the forecast revenue requirement and expenditure, other than for pass-through items, has been allocated to Western Water

The key areas where there is a step-up in activity and costs relating to risk mitigation activity over this pricing period include:

- optimised asset management
- environmental compliance
- integrated water systems planning, and
- data and network intelligence – monitoring and predictive capabilities.

3. Engagement

Engagement Highlights

- Four key community engagement topics were identified for PS20
- Customer reach of up to 80,000 about our engagement activities
- High quality engagement activities aligned with the IAP2 spectrum for public participation and contemporary best practice
- Input received from more than 4,000 customers

3.1 Community engagement

In the development of PS18, Western Water undertook extensive engagement with customers and stakeholders with close to 6,000 contributing their input. This provided significant direction for business planning.

With the current submission being developed just two years later, Western Water considered it was not necessary to go to the same lengths for engagement overall. Instead, we focused on addressing critical topics and gaps identified in our engagement program from PS18. Four core areas for engagement with customers were determined for PS20. They are described in Table 3.

More than 4,000 customers and hundreds of community and stakeholder organisations contributed to our decision making. Details about the various engagement processes and the numbers of customers reached for each topic in the development of PS20 are captured in Appendix 3.

Table 3: PS20 Engagement Topics

Topic	Engagement Purpose	IAP2 Spectrum Engagement Level
Tariff Structure Review	<ul style="list-style-type: none">• To respond to customer feedback and fulfil the commitment made in PS18	Collaborate
Future Pricing	<ul style="list-style-type: none">• To test customer response to a real price increase• To receive suggestions on how an increase should be applied over the pricing period and against which component charges of the tariff structure to best address customer needs	Collaborate
Service Standards and Guaranteed Service Levels	<ul style="list-style-type: none">• To check that the services standards and GSLs in PS18 continue to meet customer expectations• To gauge support for a new GSL on the maximum number of water supply interruptions experienced per year	Involve
Customer Outcomes	<ul style="list-style-type: none">• To test the customer outcomes proposed in PS18 and update for PS20 if/where required	Consult/Involve

How engagement shaped PS20

The quality and strength of the engagement approach for PS20 resulted in customers and stakeholders providing significant input and direction for business planning including shaping the decisions presented in Table 4.

Table 4: How Western Water's Engagement Shaped PS20

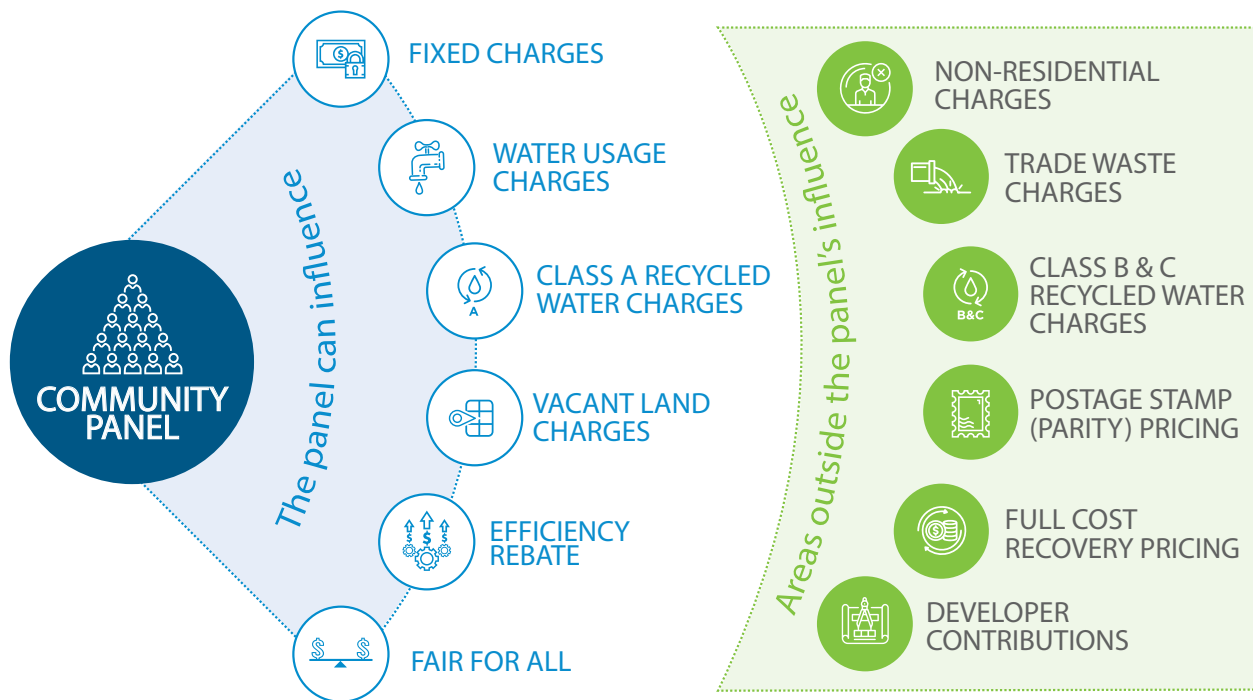
Topic	Engagement Purpose
Tariff Structure Review	<ul style="list-style-type: none"> Embedding the Efficiency Rebate on fixed charges (increasing the proportion of the customer bill that is variable and can be impacted by customers) Protecting residential tenants from the impacts of removing the Efficiency Rebate from their bills by introducing a progressively reducing interim rebate for tenants over the seven years commencing 1 July 2021, that is to be funded external to the revenue requirement Retaining the current tariff arrangements for vacant land and Class A recycled water customers Retaining the three-tier water usage charge to incentivise water conservation Committing to explore opportunities for more potable water substitution through the use of recycled water Maintaining our focus on identifying opportunities to incentivise water conservation and on-time bill payment Committing to explore opportunities to mature our customer web portal to provide better access to usage and billing information
Future Pricing	<ul style="list-style-type: none"> Proposing a 1% (real) per annum price increase (on the typical customer bill) Applying the price increase in a smoothed approach over the three years of the submission Maintaining financial, education and plumbing support programs for vulnerable customers
Service Standards and Guaranteed Service Levels	<ul style="list-style-type: none"> Introducing a new GSL for the number of water supply interruptions a customer experiences each year Retaining existing services standards and GSLs
Customer Outcomes	<ul style="list-style-type: none"> Retaining Customer Outcomes and updating measures for the new pricing period, based on customer support Using an efficient and lean investment approach to the greatest extent possible to keep bills affordable
Stakeholder Engagement	<ul style="list-style-type: none"> Committing to delivering the 15 actions outlined in our Reconciliation Action Plan Proposing a 5% (real) per annum increase to New Customer Contributions (greenfield sites only)



Tariff Structure Review engagement

Western Water convened a community panel (short-form citizen's jury) over June and July 2019 to undertake a review of five elements of our tariff structure. The following diagram describes the panel's role and the scope of the conversation.

Diagram 1: Tariff Structure Review Panel Scope



The panel provided Western Water with a report of eight recommendations, supported by a super-majority of at least 80% of panel members, that addressed the remit and their agreed understanding of what “fair” means. The panel recommendations are listed below.

Tariff Structure Review Panel Recommendations

1. Reducing the fixed proportion of the bill to 70%
2. Offering incentives for saving water (water usage charges)
3. Retaining the existing Class A recycled water charges
4. Extending the benefits of using Class A recycled water (education/in new developments)
5. No change to vacant land charges
6. Allocating the Efficiency Rebate against fixed costs with a proportion retained to offset any impact on tenants
7. Introducing customer incentives for paying bills on time and water efficiency
8. Developing technology solutions (app/web portal) for better access to usage and billing information

Western Water's promise to the panel was that we would use these recommendations to the greatest extent possible in the development of this price submission. This promise is consistent with the Collaborate level of engagement on the IAP2 Spectrum of Public Participation.

Future Pricing engagement

For PS20, in response to increasing costs of operation, we engaged with the community about the possibility of a modest real price rise. Given the importance of the topic, we chose to engage with customers at the Collaborate level on the IAP2 spectrum by recruiting a representative group of more than 50 customers to attend Water Pricing Forums in early October 2019.

The forums considered whether customers could manage an annual price increase of 1% (on top of an assumed 2% increase for inflation). They also considered how that increase might be applied (i.e. smooth, stepping up or up-front) and which component of tariffs it might be applied to (all, fixed or variable components). Across the forums we also maintained a focus on supporting those customers affected by increases including vulnerable customers.

Water Pricing Forum Findings

Majority support to increase prices by up to 1% per annum in real terms

1. Majority (87%) support to increase prices by up to 1% per annum in real terms
2. Apply the price increase on the variable charge components of the tariff (with 61% unable to live with the increase being applied to fixed charges)
3. Apply the increase smoothly over the three-year regulatory period (preferred by 62%), and
4. Promote more customer information about saving water and hardship program to assist customers in controlling their bills

Customer Outcomes engagement

The key recommendations from engagement on Western Water's customer outcomes were to retain the existing customer outcomes for PS20, retaining strong focus on fair and affordable charges and quality services.

Some measures for the outcomes required review for PS20 and reflect the following customer priorities and feedback:

- ensure good communication when services are interrupted
- set a higher target for value for money measure
- increase the target for the number of customers on e-billing for the next three years, and
- replace those measures that are no longer relevant for PS20.

As a result, the new customer outcome measures have been established for PS20 and can be found in Section 4 of this submission.

Service Standards and Guaranteed Service Levels engagement

Western Water is proposing to retain the service standards and GSLs developed for PS18 which were based upon extensive engagement with close to 2,800 customers and community members.

We undertook engagement for PS20 with a further 2,030 customers to check that this was the right direction for the three-year regulatory period. The following table provides an overview of this engagement and the key findings.

Based on internal review of performance to date and community findings from both PS18 and PS20 engagement, Western Water proposes no changes to services standards and GSLs for PS20 except for the introduction of a new GSL about water supply interruptions. Full details of all service standards and GSLs can be found later in this submission.



Table 5: PS20 Service Standards and GSLs engagement

Topic	Engagement Method	Timing	No. customers	Findings
Customer Satisfaction Survey	Online survey	May 2019	1,895	Satisfaction levels with all key service area indicators remained in line with prior year results and did not indicate any need to change standards (after allowing for a step change in survey results due to the change from phone to online method)
Service Standards & GSLs poll	Water Matters webpage poll	Sept 2019	19	The majority of respondents (95%) agreed that Western Water should introduce a GSL linked to the number of water supply interruptions a customer experiences each year
Service Standards & GSLs consultation page	Water Matters webpage visits and discussion	Sept 2019	116	While more than 100 customers visited the webpage for Service Standards and GSLs, there were no participants in the online discussion about whether they should be changed for PS20. Western Water has accepted this as an indication of acceptance of existing service levels

3.2 Stakeholder engagement

Western Water has embedded stakeholder engagement as a core function of all its operations and therefore it is viewed as business as usual to provide ongoing opportunities for feedback and consultation with stakeholders.

Building on our previous initiatives, the stakeholder engagement program aligned closely with Western Water’s extensive customer engagement program to deliver the Customer Outcomes identified as part of PS18. We recognise our stakeholder groups have

differing levels of knowledge and interest in our business and services, and so we tailored our PS20 engagement and employed a variety of initiatives, depending on the topic, including one-on-one meetings, workshops, round tables, stakeholder panels, online engagement and formal submissions.

The following diagram illustrates the range of topics Western Water has covered in its stakeholder engagement activities during the price submission development period.

Diagram 2:
Stakeholder
Engagement
Topics





Stakeholder engagement program

Business customers

Business customers account for 5% of Western Water's customer base. However, their combined drinking water usage is close to 15% of total consumption. They are an important part of our business; our focus is on delivering a reliable and quality service to enable them to flourish.

In response to feedback received during PS18, Western Water established the Commercial and Stakeholders Services Supply Team (the Team) to address and deliver service enhancements.

The four-person team was launched in May 2019 and immediately commenced an intensive engagement program, including one-on-one meetings with key accounts and an online survey for broader business and trade waste customers to explore how we can better meet their service needs.

Consistent with the customer-focused approach this submission for the Tariff Structure Review, the Team is investigating undertaking a similar initiative for business and trade waste customers as part of PS23 engagement.

In addition, the Team is investing in building a customer database to enable improved tailoring of customer information. Business customers will also benefit from the introduction of the online customer portal.

Stakeholders that represent our community and customer's interests

These stakeholders include hardship and social welfare advocacy groups, migrant representative groups, disability support groups and elderly representative groups.

Western Water has undertaken extensive engagement to better understand and deliver enhanced services for our customers, particularly customers experiencing hardship and hard to reach customers.

In April 2019, Western Water engaged an independent researcher to interview those stakeholders who represent and advocate on behalf of our vulnerable and hard to reach customers. This involved 15 interviews with local government, financial counsellors and welfare advocates to better understand the values and needs of our new and hard to reach customers. The outcomes from this research will help shape our already comprehensive and robust Customer Support Program and customer communications, with a focus on:

- increasing communications with new customers linked to their values and needs
- extending engagement with hard to reach customers via community organisations, local councils and other support services
- highlighting ways to keep bills down, manage bills better and customer support programs, and
- encouraging payment plans with increased frequency to make paying bills more manageable.

Our existing approach to supporting customers has been informed through close working relationships with local community health centres, chairing the Melton New and Emerging Community Network and investing in family violence awareness training for our customer support team.

Traditional Owners

There are four Registered Aboriginal Parties in Western Water's service region:

- Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation
- Wathaurung Aboriginal Corporation trading as Wadawurrung
- Dja Dja Wurrung Clans Aboriginal Corporation, and
- Taungurung Land and Waters Council Aboriginal Council.

Our relationship with the Traditional Owner groups has been strengthened throughout 2018 and 2019 through the development of Western Water's Reconciliation Action Plan 2019-2021, which was launched in late October 2019.

The Action Plan outlines how Western Water will incorporate Aboriginal values in our planning (particularly through our Integrated Water Management initiatives), promote reconciliation through our sphere of influence, and enhance employment opportunities for Aboriginal and Torres Strait peoples.

The Plan features 15 actions that are considered in the context of this price submission.

Stakeholders we collaborate with to meet our customer needs and regulatory obligations

These stakeholders include State Government, Local Government, regulators and the water industry.

Engagement with these stakeholders is founded on the ethos of Western Water being timely, transparent and effective in order to gain insight and advice on key elements of PS20. The engagement forums and touch points between these stakeholders and Western Water has been multi-faceted and across our business units.

During 2019 Western Water engaged 29 stakeholders representing state and local government, elected representatives, regulators, water corporations and major customers via one-on-one interviews by an independent researcher. The focus of the stakeholder review was to explore their views on our performance, challenges and most

notably for PS20, their views on Western Water's customer consultation program.

This research resulted in 11 recommendations focused on encouraging Western Water to maintain face-to-face engagement with local government (and elected representatives), reconnect with business customers, and engage with urban land developers. This initiative forms part of Western Water's ongoing commitment to engage with key stakeholders with similar reviews conducted in 2013 and 2016.

A number of major projects, which will proceed in this pricing period, have involved significant stakeholder engagement throughout 2018 and 2019 (refer Diagram 2). These highlight Western Water's commitment to engage stakeholders to help inform decision-making. More details of stakeholder engagement for these projects can be found in Appendix 3.

Urban land development industry

With the unprecedented levels of growth in our region, the development industry is recognised as a critical stakeholder for Western Water. Enhancing our collaboration and sharing of information and plans has been a key component in informing PS20.

The most notable initiatives have been the consultation program supporting the Development Servicing Plans (DSP) and Integrated Water Management Guide, and greater discussion regarding increasing New Customer Contributions (NCC) by 5% per annum in real terms for PS20.

Our focus moving forward is to engage on:

- reviewing our DSP consultation process
- Western Water's capital approvals process
- approach to determining logically sequential expansion of water and sewer networks
- data gathering processes (collaborate with local councils) and opportunities for expanding intelligent networks, and
- integrated water management.

4. Outcomes for Customers

Customer Outcomes Highlights

- Current PS18 five customer outcomes to be retained
- Customers seeking affordable prices now and into the future
- Innovative approaches expected to address customer needs
- Western Water plays a role in regional sustainability and liveability

4.1 Customer Outcomes proposals

In developing this submission, Western Water engaged with customers to ensure that the five customer outcomes proposed for PS18 remained relevant. The engagement process, detailed in Section 3, demonstrates our engagement with the community to reflect on the PS18 outcomes and seek feedback on the approach moving forward. The response from at least 80% of the customers who engaged in feedback was to keep the current outcomes and the majority of measures developed in PS18.

As a result, Western Water proposes to retain its existing outcomes with refreshed activities and targets as detailed below for each outcome.

Outcome 1: Fair and affordable charges

Customers have made it clear that they are concerned about the affordability of water services, now and in the future, for all members of the community. Western Water has completed its tariff structure review for residential charges and will be focusing on implementing the key recommendations from this review.

The activities to support Western Water in keeping our charges fair and affordable are outlined in Table 6.

Table 6: Customer Outcome - Fair and Affordable Charges

Key projects	Activities and processes	Measures and targets	Target
Implementing recommendations from Tariff Structure Review	Increasing variable portion of the customer bill by embedding the Efficiency Rebate on fixed charges	Customer satisfaction that the price of water services represents value for money (average survey score out of 10)	≥ 6.5 out of 10 on annual survey
Customer support program	Maintaining commitment to existing program and increasing promotion of support opportunities with financial counsellors	Customer hardship program participants who have cleared outstanding debt	≥20%

4. Outcomes for Customers cont.

Outcome 2: Reliable, safe services

The safety and reliability of our services is integral to Western Water putting customers at the centre of what we do. Safety and reliability are not only requirements from the Department of Health and Human Services, they are an integral part of our business planning.

We pride ourselves on providing a reliable and quality product to our customers. The projects, activities and measures detailed below in Table 7 demonstrate our commitment to achieving this outcome.

Table 7: Customer Outcome - Reliable, Safe Services

Key projects	Activities and processes	Measures and targets	Target
Delivering quality maintenance and field services	Ongoing use of Waternamics data to predict service issues	Average response time to Priority 1 water incidents (minutes)	≤ 30
	Extend CCTV in sewer inspections	Average response time to sewer spills (minutes)	≤ 30
	Trial leak detection and sewer integrity technology for future uptake	Customers experiencing more than 5 water supply interruptions	0
	Continue Sewer Spill Prevention Strategy	Customers experiencing more than 3 sewer service interruptions	0
Providing safe, quality drinking water	Continue network flushing program	Water quality complaints (per 1000 customers)	≤ 4
	Better use of water quality data through SCADA and Waternamics	Number of <i>Safe Drinking Water Act</i> non-compliances (water sampling and audit)	0

Outcome 3: Innovative approaches to addressing customer needs

Customers have communicated that they expect innovative approaches to addressing customer needs. The benefits of delivering innovative solutions will help Western Water be more responsive to customer needs while delivering efficiencies in the business.

Table 8 below outlines how we are meeting our customer expectations on delivering innovative approaches to customer needs.

Table 8: Customer Outcome - Innovative Approaches to Addressing Customer Needs

Key projects	Activities and processes	Measures and targets	Target
Increased use of technology solutions for customer service	Online customer portal	Customer portal usage (% unique customers)	≥ 10%
	E-billing promotion	Customers on e-billing	≥ 20%
	Supply outages communications program	Customers mobile numbers registered for SMS communications	≥ 75%
	Online communications and engagement	Customers email accounts registered for communications and engagement	≥ 50%

Outcome 4: Care of the environment

Customers care for the environment and expect us to engage in projects and efficiencies that have limited impact or reduced impact on the environment. The activities listed have been developed with commitments made to the Environment Protection Agency and Department of Environment, Land, Water and Planning.

Table 9 below outlines the key projects and activities we are engaging in to deliver on this outcome.

Table 9: Customer Outcome - Care of the Environment

Key projects	Activities and processes	Measures and targets	Target
Reduced impact on environment <ul style="list-style-type: none"> Melton RWP solar array project Melton Waste to Energy trial Large Scale Renewable Energy project (Vic water industry) 	Solar array project at Melton RWP commenced Trial of waste to energy treatment at Melton RWP to increase biogas production Investment in large scale renewable energy project with Vic water industry	Reduction in greenhouse gas emissions (tonnes CO ₂ e)	≤ 35,638
	Continue Sewer Spill Prevention Strategy including CCTV review of the sewer network	Number of sewer spills	0
Positioning Western Water as a leader in environmental care	Promotion of environmental values to customers via grants, sponsorships, media, education program, support of environmental groups, uptake of recycled water, and greenhouse gas reduction projects	Customer satisfaction with the way Western Water cares for the environment (average survey score out of 10)	≥ 7.8

Outcome 5: Sustainable contribution to the community and regional liveability

Customers see Western Water as having a major influence on the sustainability and liveability of our region.

Table 10 below outlines the key projects and activities we are engaging in to deliver on this outcome.

Table 10: Customer Outcome - Sustainable Contribution to the Community and Regional Liveability

Key projects	Activities and processes	Measures and targets	Target
Water conservation program	Promotional and incentive program to reduce usage per person	Litres per person per day	≤ 185
Integrated water management solutions <ul style="list-style-type: none"> Sunbury IWM IWM Forums 	Development of Sunbury IWM Plan with Melbourne Water and DELWP Participation in IWM Forums Development of other IWM plans with other Councils (e.g. Macedon Ranges, Melton)	Development of Sunbury IWM Plan	On track
Western Irrigation Network	Minister approval of Business Case Commencement of infrastructure works	Reuse of recycled water produced	≥ 75%
Education Program	Maintain existing program with stronger focus on community education opportunities	Per cent of preschools and primary schools receiving free WW education presentation	≥ 90%
Position WW as a valuable member of the community	Attendance at community events Grants and sponsorships Media presence	Customers agree that WW is a valuable member of the community (per cent of survey respondents selecting 4 or 5 out of 5)	≥ 70%
Western Water's Reconciliation Action Plan	Deliver actions set out in Reconciliation Action Plan	Actions delivered on time as per plan	Delivered

4.2 Service Standards proposals

Western Water proposes to retain the service standards accepted for PS18 as detailed below. For the service standards, customer refers to a service connection.

Table 11: Service Standards Proposed for PS20

Service Standard	Standard
Unplanned water supply interruptions	
Water supply interruptions per 100km of water mains	12.00
Customer minutes off water supply (average)	14.10
Water supply interruptions restored within 5 hours	98.3%
Frequency of water supply interruptions (average)	0.11
Duration of water supply interruptions (average)	2 hours 6 mins
Time taken to attend to bursts and leaks – Priority 1 (average)	30 minutes
Time taken to attend to bursts and leaks – Priority 2 (average)	60 minutes
Time taken to attend to bursts and leaks – Priority 3 (average)	24 hours
Customer experiencing more than five interruptions in a year	0.00
Planned water supply interruptions	
Water supply interruptions restored within 5 hours	99%
Customer minutes off water supply (average)	45 minutes
Frequency of water supply interruptions (average)	0.10
Duration of planned water supply interruptions (average)	4 hours
Sewerage service	
Sewerage blockages per 100km of main	14.00
Response time for sewer spills (average)	30 minutes
Response time for sewer blockages (average)	60 minutes
Time to rectify a sewer blockage (average)	47.2 minutes
Spills contained within 5 hours	100%
Customers receiving > 3 sewer blockages in the year	0.00
Customer service	
Complaints to the Energy Water Ombudsman Victoria (per 1000 customers)	0.70
Telephone calls answered within 2 minutes	75%

4.3 Guaranteed Service Levels proposals

Western Water proposes to retain the five GSLs accepted in PS18 with the addition of a new GSL addressing the maximum number of water supply interruptions. The introduction of the new GSL is based on customer feedback received during our PS18 engagement and confirmed during PS20 engagement.

The payment to customers affected by GSLs ranges from \$100 to \$500 in line with feedback received in 2017. This will be payable when the missed service level is caused by the business or failure of the business system(s). The payment for the new GSL is \$100, in line with GSLs of a similar nature.



Table 12: Guaranteed Service Levels Proposed for PS20

Guaranteed Service Level	Payment
Planned water supply interruption during peak hours (i.e. 5am-9am; 5pm-11pm)	\$100
Planned water supply interruption longer than notification given	\$100
More than three sewer interruptions in 12 months	\$100
[NEW] More than five water supply interruptions in 12 months	\$100
Sewerage spill inside the house, not stopped within one hour of notification	\$500
Restricting or commencing legal action prior to taking reasonable endeavours (as defined by the Essential Services Commission) to contact the customer about help available if they are experiencing difficulties paying	\$300

5. Performance

Western Water’s performance against PS18 is influenced by key performance drivers that vary from the assumptions that underpinned PS18. The difference between PS18 estimates and actual is shown in Charts 1 to 3.

In particular, since delivering PS18, our region has experienced a higher rate of growth than expected and the climate has been drier and warmer than anticipated increasing customer water demand while reducing available local sources of water.

While variation in these key drivers is resulting in higher than submitted prescribed tariff revenue, it is also increasing operating and capital expenditure within the PS18 two-year period.

Prescribed tariff revenue

In 2018/19, total prescribed revenue was higher than forecast in PS18. This result was due to higher than forecast water usage as demonstrated in Chart 2.

Table 13: Prescribed Revenue 2018/19 \$M (real)

	2018/19 PS18	2018/19 Actual	2018/19 Variance
Total Prescribed Revenue	81.67	86.70	5.02

Chart 1: Residential Connections PS18 vs Actual

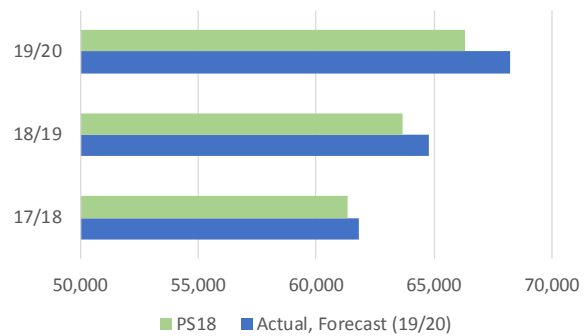


Chart 2: Residential Consumption PS18 vs Actual

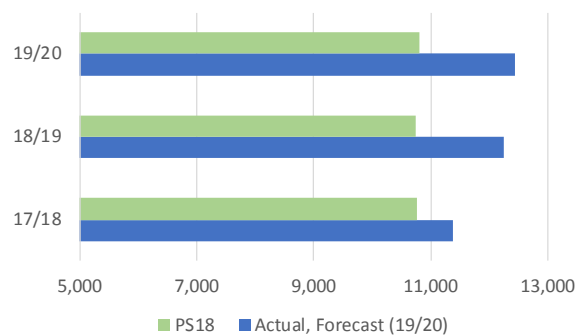
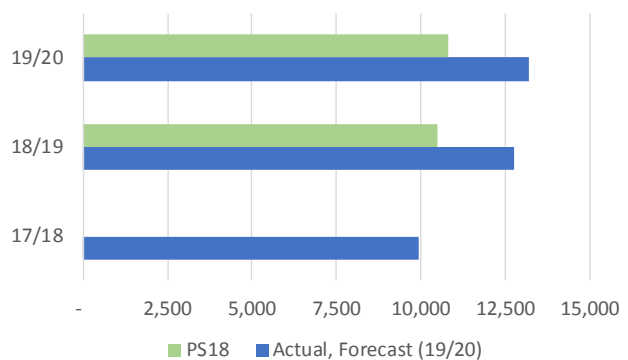


Chart 3: Melbourne Water Transfers PS18 vs Actual



Operating expenditure

Operating costs in 2018/19 were influenced by higher than forecast water consumption with the average consumption at 195 litres per person per day compared to our PS18 assumption of 188 litres per person per day.

While the business has increased expenditure on bulk water purchases, electricity, fuel, water sampling and analysis, and chemical costs associated with delivering this higher than estimated water demand, these additional costs have been more than offset by increased water usage revenue during 2018/19.

The 2018/19 controllable costs included a Western Water contribution to industry integrated water management (IWM) activities. However this expense was offset by grant revenue received during the year.

Environmental compliance expenditure increased during 2018/19 with increased activity required relating to groundwater compliance and management of biosolids. Western Water is working closely with the Environment Protection Authority on management of these environmental impacts.

Table 14 details Western Water's performance against our PS18 controllable operating expenditure proposal.

Table 14: 2018/19 Controllable Operating Expenditure Performance \$M (2018/19\$)

	2018/19 PS18	2018/19 Actual	2018/19 Variance
Controllable operating expenditure	41.76	44.20	-2.43
Direct Expenses			
Contractors & Consultants	9.09	8.98	0.11
Electricity	3.92	4.91	-0.99
Other direct expenses	4.23	6.64	-2.41
Administration Expenses			
Employee Expenses	17.12	16.55	0.57
Printing, Postage & Phone	0.81	0.90	-0.09
Other administration expenses	6.59	6.22	0.37
Total Controllable Expenses	41.76	44.20	-2.43
Controllable operating expenditure additional to baseline & forecast variations			
Electricity & generator fuel (demand related)			-1.07
Integrated Water Management			-0.47
Asset Repair due to third parties			-0.19
Environmental Compliance			-0.21
Other Variances (asset decommissioning, recruitment costs, incidents)			-0.49
			-2.43

Adjusting for higher than assumed PS18 growth in connections, the demand-driven electricity and fuel variance, the revenue funded IWM expense, and the repairs required due to third party impacts, Western Water achieved an efficiency factor of 3.2% as compared to its target of 4%.

Capital expenditure

Western Water invested \$70.03 million in capital expenditure projects in 2018/19 as compared to its PS18 planned investment of \$61.3 million.

The additional expenditure was assessed as efficient after consideration of options available to respond to developers' acceleration in the timing of property sales. In partnership with regional developers, Western Water assessed options for staging of investment or temporary solutions to reduce the impact on our investment program while ensuring customer connections were not delayed.

The result of the collaborative approach was an increase in our growth driven investment from \$42.1 million to an actual expenditure of \$50.2 million.

The increased investment was brought forward from later years largely to meet the needs of growth in the Mount Atkinson area, where the brought forward investment of \$7.1 million was required to provide a new water main to service the area.

An assessment of our performance on the PS18 top five projects is provided in Appendix 4.

Business outcomes

Overall Western Water has delivered against its PS18 customer outcome measures in the 2018/19 year, with the overall performance rating presented in Table 15.

Greenhouse gas emissions are slightly above the interim target, which has led to a slight underperformance in customer outcome 4. Care for the environment. The above target greenhouse gas emissions are driven by increased operations to meet higher consumer water demand.

Details of performance against each of the measures has been communicated with our customers and published on our website via the following link: <https://www.westernwater.com.au/About/Service-levels-and-customer-outcomes/Customer-outcomes>

Table 15: Customer Outcomes Performance 2018/19

Customer outcome	Performance
Fair and affordable charges for all customers	Green
Reliable, safe services to existing and new customers	Green
Innovative approaches to addressing customer needs	Green
Care of the environment*	Orange
Sustainable contribution to the community and regional liveability	Green
Overall	Green

* Greenhouse gas emissions higher than forecast (refer content above table)

6. Revenue Requirement

Western Water’s PS20 proposal results in a revenue requirement of \$302.33 million, or net present value (NPV) revenue requirement of \$286.59 million – noting that Western Water’s commitment for a gradual unwind of the \$103.25 efficiency rebate to tenants over the period to 2027/28 will be funded external to this \$302.33 million revenue requirement.

The revenue requirement for the PS20 period is made up of the key elements as detailed in Table 16. Further discussion of each key element is presented in the following sections.

Table 16: Revenue Requirement (\$M)

	2020/21	2021/22	2022/23	Total
Operating Expenditure	62.01	64.30	65.74	192.05
Return on Assets	20.23	22.50	25.03	67.76
Regulatory Depreciation of Assets	7.35	8.98	11.25	27.58
Tax Allowances	7.71	4.91	2.50	15.12
Offset of Non-prescribed revenue	-0.06	-0.06	-0.06	-0.18
Total Revenue Requirement	97.24	100.63	104.46	302.33

Operating expenditure

Western Water’s operating expenditure forecast has been developed with consideration of the requirement to service its growing region while meeting our customer outcome for affordable and fair pricing.

Western Water’s drive to improve its business and deliver efficiencies in controllable costs has supported the continued delivery of the Efficiency Rebate to residential customers that in 2019/20 is \$103.25 per annum (Water Efficiency Rebate previously known as the Government Water Rebate).

Western Water’s proposal commits to a continued focus on effective and efficient operations with a two per cent efficiency factor applied to controllable costs each year of the PS20 submission period.

6.1 Baseline controllable operating expenditure

Western Water’s baseline controllable operating expenditure references Western Water’s 2018/19 controllable expenditure excluding identified non-recurring items of expenditure incurred in the year. Table 17 provides the adjusted baseline controllable operating expenditure for 2018/19 that forms the base for PS20 controllable expenditure.

The table also presents expenditure items identified that reflect required adjustments to the 2018/19 baseline controllable expenditure. These adjustments reflect expenditure items that are:

- increased/new compliance obligations
- stepped up operating expenditure items that are not growth related, and
- expenditure items that will be offset by grant revenue or contributions.

The electricity expenditure adjustment is required as our forecast electricity load and cents per kWh do not increase at the rate of growth each year. As discussed further in this section, while the load is impacted by connections growth, larger influencing factors are water demand assumptions and the source of the water supply.

6. Revenue Requirement cont.

Table 17: Baseline Controllable Operating Expenditure (\$M)

	2018/19	2020/21	2021/22	2022/23
Base year – total controllable operating expenditure in 2018/19:	44.19			
Adjustments for non-recurring expenditure items incurred in 2018/19:				
Integrated Water Management Planning	0.47			
Assets decommissioning & Bridge Repair	0.13			
Price Submission	0.21			
Desludging	0.17			
Adjusted baseline controllable operating expenditure (2018/19)	0.98			
Adjusted baseline controllable operating expenditure (Forecast)	43.21	45.21	46.46	47.48
Forecast variations to baseline operating expenditure:				
IT Software cost increases		0.60	0.71	0.72
Corporate – General (Directors' fees)		0.06	0.08	0.08
Price Submission		0.02	0.30	0.22
Integrated Water Management Planning		0.10	0.10	0.10
Waterborne gypsum trial		0.10	-	-
Central Region South Sustainable Water Strategy		-	0.15	-
GHG Emissions Reduction Pledge		0.12	0.16	0.13
Desludging program		0.20	0.22	0.08
Electricity Expenditure		(0.44)	0.12	0.32
Total changes required to baseline operating expenditure:		0.76	1.84	1.65
Total Controllable Operating Expenditure		45.97	48.30	49.13

6.2 Operating expenditure efficiency improvement

Western Water is committed to minimising price increases to customers and providing fair and affordable charges. We have delivered efficiencies to absorb additional costs arising from servicing the growing region, addressing the impacts on services from climate change and supporting liveability in our communities. This is reflected in our typical residential customer bills remaining around \$1,000 per year since 2013/14.

Given our ongoing focus on delivering affordable prices, in this pricing proposal Western Water is committed to delivering two percent (real) productivity efficiency to its base year (2018/19) costs. With an average growth rate of 4.8% assumed over the three year regulatory period and the two percent efficiency factor, we are forecasting

controllable costs to increase by 2.8% on average.

Our proposed productivity efficiency is supported by investments and process change currently underway, along with new initiatives that will be actioned over the PS20 period. Key programs that will enable achievement of this productivity efficiency include our:

- strategic procurement and sourcing program – assisted through collaboration with industry participants
- optimised asset management project
- beneficial use of our resources – such as our waste to energy trial
- progressive digitisation and review of processes using a lean approach, and
- investment in data and predictive analysis.

Table 18: Controllable Operating Costs

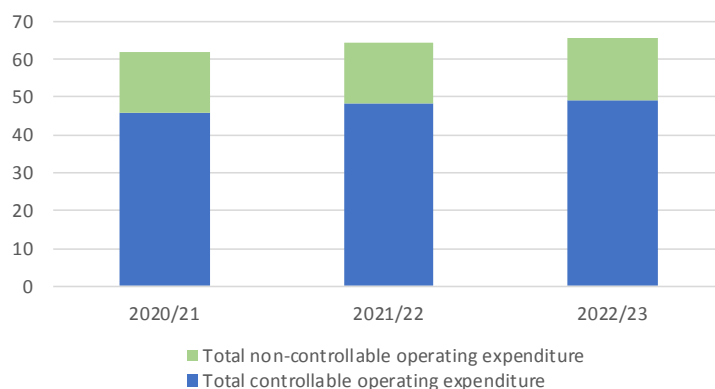
	2020/21	2021/22	2022/23
Total Controllable Operating Costs (2020 \$M)	45.98	48.30	49.13
Water Customers (Number)	75,426	79,013	82,337
Customer Growth	5.5%	4.8%	4.2%
Controllable cost per customers (\$per customer)	610	611	597

Table 19: Total Prescribed Operating Expenditure (\$M*)

	2020/21	2021/22	2022/23
Operating & maintenance	6.88	7.16	7.37
Treatment	14.93	15.95	16.41
Customer Service & Billing	5.41	5.52	5.63
GSL Payments	0	0	0
Corporate	18.64	19.51	19.59
Other operating Expenditure	0.13	0.16	0.13
Total controllable operating expenditure	45.99	48.30	49.13
External bulk charges (excl temporary purchases)	12.89	12.93	13.56
External temporary water purchases	0	0	0
Licence Fees	0.13	0.13	0.17
Environmental contribution	3.01	2.95	2.88
Total non-controllable operating expenditure	16.03	16.01	16.61
Total prescribed operating expenditure	62.01	64.31	65.73

*\$ as at 1 January 2020

Chart 4: Total Prescribed Operating Expenditure (\$M)



6. Revenue Requirement cont.

Table 20: Total Controllable Operating Expenditure by Segment (\$M*)

	2020/21	2021/22	2022/23
Water	21.10	22.13	22.65
Sewer	21.14	22.22	22.42
Recycled Water	3.74	3.95	4.05
Total prescribed operating expenditure excluding Environmental Contribution	45.98	48.30	49.13

*\$ as at 1 January 2020

6.3 Controllable expenditure

Employee Related (FTE calculation)

Employee expenses reflect our Enterprise Agreement and assume continuation of a 3% rate of escalation into future agreement periods.

The expenditure profile incorporates forecast performance and end of band payment arrangements, as well as a forecast movement of employees between bands. These expenses assume no change to current arrangements.

The assumed level of Full Time Equivalent (FTE) employees has been developed from a bottom-up build of existing roles, including vacancies, and extrapolated for future FTE requirements to service our growing region – net of efficiency derived from the ongoing digitisation projects and lean review of our processes.

Such projects include, but are not limited to, the development of our digital online systems for developers and customers, enhancement of our GIS and asset information data and systems, customer communication via 'push' and interactive approaches and in the field data capture via mobile technology.

Chemicals

Current chemical industry procurement contracts expire in 2020. Western Water in conjunction with other industry participants is jointly re-tendering the chemicals procurement, and in this proposal we have assumed replacement contracts will result in pricing at current levels.

The operational need for chemicals is subject to variation based on the source and quality of the water, the volume of water treated and the ultimate destination of the water. The quality of water from our local reservoirs varies significantly more than water purchased from the Melbourne system.

The chemicals expenditure forecast is based on forecast water and sewage system flows.

Electricity

Electricity is one of Western Water’s largest operational costs. For the majority of our sites, we currently procure under the Department of Treasury and Finance (DTF) contract for electricity supply that is provided by RED Energy.

Our DTF contract for electricity supply excludes the electricity requirement for the Melton Recycled Water Plant, being the only site at present where we purchase electricity from the national electricity pool.

Also, at that site we generate electricity by operating a biogas cogeneration plant. Plant operations are operated to limit power usage at peak and high market price periods and to enable exporting to the grid when opportune.

Many of Western Water’s key sites have secondary power generation facilities such as diesel generators. This secondary generation provides security during power outages and the ability to feed power back into the grid or operate off the grid when opportune.

Western Water’s energy requirement has increased as a result of servicing a higher number of connections, as well as an increase in water consumption per connection.

In addition, climate impacts have reduced water flows into local reservoirs resulting in increased electricity required to treat and manage water quality, and a higher reliance on water transferred (pumped up) from the Melbourne system.

Western Water’s gross electricity consumption estimate is provided in Table 21. The estimate reflects electricity consumed for pumping and transfers of water based on our source modelling and a growth factor applied to 2018/19 consumption for other metered sites.

Within this pricing period a small portion of the forecast gross electricity consumption is assumed to be offset by Western Water planned projects that produce electricity behind the meter or reduce operational electricity demand. These projects include:

- Melton Recycled Water Plant solar array with generation commencing in 2019/20
- Gisborne Recycled Water Plant solar panels with generation commencing in 2022/23, and
- implementation of an energy monitoring system and server room air conditioner upgrade at Sunbury head office reducing demand from 2022/23.

The electricity consumption net of these planned projects is provided in Table 21.

Western Water will continue to implement other electricity generation and demand reduction projects that provide a net economic benefit.

The electricity charge per kWh for the PS20 period assumes the mid-point predictions detailed in the VicWater July 2018 Supply Chain Excellence Program (SCEP) 5-Year Electricity Price Forecast.

For reference, Western Water has assessed no material variance in the SCEP mid-point predictions used in PS18 against the average rate paid under our DTF sourced electricity contract for the 2018/19 year. The 21.23 c/kWh rate detailed in Table 21 for 2019/20 reflects our current DTF average contract rate.

Table 21: Electricity Assumptions

	2019/20	2020/21	2021/22	2022/23
Gross Electricity Consumption (kWh) (millions)	23.74	25.74	27.32	29.68
Net Electricity Generation from Projects (kWh) (millions)	0.27	0.55	0.55	0.89
Net Electricity Use (kWh) (millions)	23.47	25.19	26.77	28.79
Rate (c/kWh)	21.23	20.10	22.32	22.73
Net Electricity Cost (\$M)	5.00	5.06	5.98	6.54

6. Revenue Requirement cont.

Greenhouse gas emissions reduction

The Department of Environment, Land, Water and Planning (DELWP) accepted Western Water's greenhouse gas (GHG) emissions reduction pledge of 10% below baseline emissions (an average of 2012-2016 emissions) by 2025. At that time, this equated to a 46% reduction on forecast business as usual emissions.

Western Water will achieve the pledge via behind the meter renewable energy and electricity demand management projects and has assumed the remaining pledge requirement will be met through the purchase of emissions offsets via large-scale certificates (LGCs).

The assumption to use LGCs as a reference for meeting the emissions pledge is due to their

availability in large volume and a requirement for future investments by Western Water to demonstrate an economic benefit against the LGC price.

Table 22 provides detail of Western Water's forecast net GHG emissions and the required purchase of LGCs to meet the pledge target. The assumed LGC forward prices reference the base price of analysis completed by VicWater/ Integrated Water Network for the Large-Scale Renewable industry project.

The analysis completed by Marsden Jacob Consulting considered forward market rates and forecast supply of renewable energy based on anticipated market investment in renewable projects. The downward trend in LGC prices reflects significant investment in renewable projects coming online.

Table 22: Greenhouse Gas Emissions Reduction Assumptions

	2019/20	2020/21	2021/22	2022/23
Total Gross Greenhouse Gas Emissions (tonnes)	38,117	40,564	42,857	45,767
Total GHG Reduction from Capital Projects (tonnes)	284	575	1,311	1,858
Total Net Greenhouse Gas Emissions (tonnes)	37,833	39,989	41,547	43,909
Greenhouse Pledge Target (tonnes)	36,223	33,146	30,754	29,480
LGCs required to meet pledge (tonnes)	1,533	6,580	10,377	14,009
LGCs market price	\$34.00	\$19.00	\$15.05	\$9.22
Value of LGCs required to meet pledge	\$52,122	\$125,020	\$156,173	\$129,163

6.4 Non-controllable expenditure

Bulk water

Western Water has two wholesale suppliers of water - Southern Rural Water and Melbourne Water - and manages a number of small local water storages itself.

Melbourne Water charges include a largely fixed fee based on bulk entitlements, with a variable fee dependent on volumes drawn and reflective of transfer costs. The Southern Rural Water charge is a fixed annual fee regardless of volume of water drawn.

Our pricing proposal assumes continuation of the larger towns of Melton and Sunbury water being sourced solely from the Melbourne system providing customers with consistency of supply and reduced water quality issues, as well as enabling smaller towns to draw from their local supply.

To meet customer peak summer demands Melbourne Water is being pumped to and stored in Rosslynne Reservoir during off-peak periods to increase security of supply to the Macedon region during times of low rainfall.

In line with industry bulk entitlements for the Melbourne water system, Western Water continues to remain outside the desalination pool.

Bulk sewage charges

Western Water and City West Water share a district boundary for their respective service areas within which they provide bulk sewage transfer services to their respective customers. Western Water and City West Water have collaborated to provide a least cost option for servicing customers in the boundary area.

The agreement enables Western Water to transfer bulk sewage to the Western Treatment Plant via City West Water's pipes and pumping assets. It provides for the reimbursement of agreed costs associated with construction of infrastructure via a return on assets and regulatory depreciation and relevant recovery of operational expenditure associated with the maintenance of infrastructure and flows of the bulk sewage.

The ultimate treatment and disposal of the bulk sewage is to be done by Melbourne Water. The Melbourne Water fee is to be recovered by City West Water as a direct pass through based on flows. The proposed costs associated with this agreement are reflected in Table 23.

Table 23: Bulk water volumes (ML) & costs (\$M)*

	2020/21		2021/22		2022/23	
	ML	\$M	ML	\$M	ML	\$M
Melbourne Water	13,739	9.99	13,985	10.04	16,455	10.66
Southern Rural Water	1,965	2.23	2,570	2.19	896	2.17
Total bulk water volumes & cost	15,704	12.22	16,555	12.23	17,351	12.83

*\$ as at 1 January 2020

Table 24: Proposed costs (\$M*) associated with City West Water bulk sewage agreement – 2020/21 to 2022/23

	2020/21	2021/22	2022/23
CWW Fixed Sewer Service Charge	0.62	0.62	0.62
CWW Variable Sewer Charge	0.03	0.05	0.06
Melbourne Water – treatment, transfer charge – pass through	0.01	0.03	0.04
Total	0.66	0.70	0.72

*\$ as at 1 January 2020

Licence fees

Western Water pays licence fees to the Environment Protection Agency (EPA) for licences to manage the seven recycled water plants and the ESC for pricing regulation. In addition, a *Safe Drinking Water Act* Administration Levy is imposed by Department of Health and Human Service (DHHS).

The ESC licence fee is allocated based on cost distribution from the ESC. As Western Water is presenting only a three-year submission, it is expected the proportion allocated will be higher during the 2022/23 financial year applicable to our next scheduled review.

There are no known increases proposed on the DHHS levy.

Environmental Contribution

Western Water has assumed the 2019/20 Environment Contribution levy continues over the three-year regulatory period based on discussions with the Department of Environment, Land, Water and Planning.

Allocation of shared costs

Western Water's approach is to directly attribute costs to a service classification, prescribed segment or activity category wherever appropriate.

The chart of accounts and cost centre breakdown enables many costs to be directly attributed without need for allocation. Where allocation of shared costs is required, appropriate allocations have been utilised.



7. Capital Expenditure

7.1 Capital expenditure forecast

Western Water’s capital program has been developed based on connection forecasts that are underpinned by the Victoria in the Future 2016 (VIF16) estimates and on reductions in customer water consumption to achieve 155 litres per person per day (Target 155) by 2035.

The program has been developed to meet the outcomes, including performance criteria, outlined in this submission. This includes achieving optimal balances between capital investments, ongoing operational expenditure and maintaining the operational reliability of assets, in consultation with our customers.

The program is underpinned by the Urban Water Strategy. This has provided optimisation of the water balance to safeguard the resilience of the system to efficiently supply drinking water, collect and treat sewage flows, and reuse treated effluent as recycled water, with resilience to climate variability and growth/demand uncertainties.

The detail of the program has been prepared using a combination of strategies and master plans developed to apply the outcomes of the Urban Water Strategy to ensure the efficiency of the individual elements of the highly interdependent system.

The master plans and strategies have identified risks and developed appropriate mitigation measures to respond to the uncertainties.

Project cost estimates have been developed at the P50 (most likely) level, utilising Monte Carlo and deterministic methods based on concept and preliminary design investigations for major projects, and a combination of historic data and third-party master plan estimates at the planning level.

Major projects

The top ten projects are listed in Table 25 with a brief description of the project. Refer to Appendix 4 for more detail on these projects.

The list below represents the largest projects by expenditure and includes projects incorporating interdependent elements as well as specific programs of activity.

Each project is supported by a business case providing the basis for inclusion with consideration to its stage of development and reflecting the most likely approach where outcomes must be delivered within the PS20 period.

Table 25: Top Ten Projects

Investment	2020/21- 2022/23 Allocation \$M (2020\$)
Parwan-Balliang Irrigation District Network (Western Irrigation Network Stage 1)	17.73
Melton Recycled Water Plant - Additional on-site recycled water storage - Stage 1	15.14
Melton Recycled Water Plant and Bacchus Marsh Recycled Water Plant Interconnection	14.43
Derrimut Diversion Sewer Pump Station/Rising Main	10.88
Gisborne Recycled Water Plant - Stage 1 Bioreactor	10.51
Sewer Spill Prevention Strategy - Sewer Relining Program	8.11
Grant Street Sewer Pump Station Upgrade	7.30
Beattys Road East Trunk Water Main	6.16
Sunbury Outfall Sewer Duplication	5.72
Melton Recycled Water Plant - Convert Aeration tank 5 & 6 to IFAS	5.58

7. Capital Expenditure cont.

Table 26: PS20 Capital Program – Breakdown by Major Service Category (Real 2020\$) \$M

Service Category	2020/21	2021/22	2022/23	3-Year Total	2023/24	2024/25	2025/26	2026/27	2027/28	8-Year Total
Total	90.84	94.19	98.76	283.79	92.07	90.42	92.76	89.76	91.52	740.31
Water	36.17	29.14	32.82	98.13	40.64	44.42	39.86	51.00	50.98	325.02
Sewer	44.06	52.97	55.32	152.34	39.89	41.63	44.36	35.13	36.46	349.81
Recycled Water	10.61	12.08	10.62	33.31	11.54	4.37	8.54	3.63	4.08	65.46

Chart 5: Capital Program - Breakdown by Major Service Category (Real)

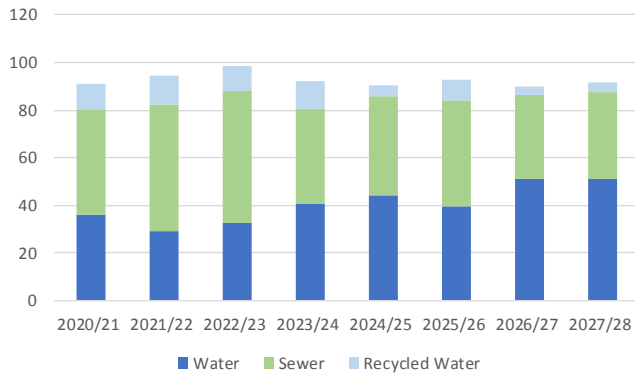
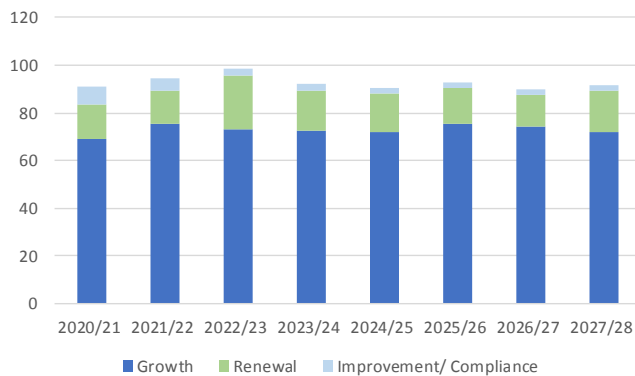


Table 27: PS20 Capital Program – Breakdown by ESC Driver (Real 2020\$) \$M

Driver	2020/21	2021/22	2022/23	3-Year Total	2023/24	2024/25	2025/26	2026/27	2027/28	8-Year Total
Total	90.84	94.19	98.75	283.78	92.07	90.41	92.75	89.77	91.51	740.29
Growth	69.1	75.11	73.24	217.45	72.69	72.1	75.23	74.34	71.94	583.75
Renewal	14.59	14.41	22.09	51.09	16.31	16.08	15.13	13.41	17.4	129.42
Improvement/ Compliance	7.15	4.67	3.42	15.24	3.07	2.23	2.39	2.02	2.17	27.12

Chart 6: Capital Expenditure by ESC Driver



8. Return on RAB

8.1 Rolled forward regulatory asset base

The rolled forward regulatory asset base is outlined in the tables below. Please note that 2018/19 numbers have been adjusted to reflect 2018/19 actuals (as per guidance).

Table 28: Regulatory asset base 2018/19 to 2022/23 (\$M)*

Service Category	PS18		PS20		
	2018/19	2019/20	2020/21	2021/22	2022/23
Opening asset base	458.39	501.68	532.01	591.70	658.37
plus capex	70.96	74.70	90.84	94.19	98.75
less government contributions					
less customer contributions	20.39	35.27	22.96	17.71	12.65
less disposals	0.54	0.83	0.83	0.83	0.83
less regulatory depreciation	6.74	8.26	7.35	8.98	11.25
Closing asset base	501.68	532.02	591.71	658.37	732.39

*\$ as at 1 January 2020

Table 29: Regulatory asset base 22023/24 to 2027/28 (\$M)*

Service Category	PS23				
	2023/24	2024/25	2025/26	2026/27	2027/28
Opening asset base	732.38	801.47	863.79	925.57	981.93
plus capex	92.07	90.41	92.75	89.76	91.52
less government contributions					
less customer contributions	14.61	17.83	18.93	19.73	21.07
less disposals	0.83	0.83	0.83	0.83	0.83
less regulatory depreciation	7.53	9.44	11.21	12.85	14.37
Closing asset base	801.48	863.79	925.57	981.93	1,037.17

*\$ as at 1 January 2020

8.2 Regulatory depreciation

Western Water has used a straight-line depreciation profile for all new assets applied once the asset enters service. The regulatory depreciation also reflects the mix of long and shorter life assets that are added as the asset enters service.

Western Water's optimised asset management program of activity has incorporated a validation of assets in the field and reconciliation to the asset register.

Work is progressing on splitting assets into subcomponents with an objective of the asset register reflecting the lowest maintainable asset.

Work is also progressing to validate the condition of all assets and their components.

Early outcomes of the work are indicating that the useful lives of the assets will lengthen on average resulting in a lower rate of depreciation in addition to a reduced renewal expenditure program.

PS20 has factored in an estimate of the lower renewal requirement and has factored in a slight decline in average depreciation from PS23. The asset management program of activity will be completed and PS23 will be updated to reflect its outcomes.

Table 30: PS20 Regulatory Depreciation (Real 2020\$)

Driver	2020/21	2021/22	2022/23	3-Year Total	2023/24	2024/25	2025/26	2026/27	2027/28	8-Year Total
Depreciation \$	7.35	8.98	11.25	27.58	7.53	9.44	11.21	12.85	14.37	82.98
Average Depreciation rate %	1.3%	1.4%	1.6%	1.4%	1.0%	1.1%	1.2%	1.3%	1.4%	1.3%

8.3 Return on equity

Western Water's proposal reflects the return on equity of 4.5% per annum (real, after tax) as set out in the ESC guidance.

8.4 Return on debt

Western Water supported the ESC's use of a ten-year trailing average cost of debt in PS18 to determine the Return on Debt over the regulatory period. We continue to support the approach in PS20. However, we are proposing minor refinements to its application post learnings gained through implementing PS18 price adjustments and through our PS20 customer engagement.

The proposed refinements we believe enhance the trailing average cost of debt approach in terms of its alignment to the WIRO clause 11 pricing principles. They also reflect customers' feedback for transparent, easy to understand pricing arrangements, along with certainty in the price path and a preference for smoothed changes to pricing.

Western Water's proposal aims to reduce the size of the cost of debt adjustments outside of the approved price path through the use of a revised estimate, from that applied in the ESC regulatory template, of the total cost of debt for 2019/20.

The proposal also provides for smoothing the impact of the adjustments within the price determination period through allowing Western Water to profile the timing of cost of debt adjustments within the price period while ensuring customers remain economically neutral.

Western Water proposes that any bring forward or deferral of a cost of debt adjustment be restricted to +/- 2 years and that the ESC be provided with our cost of debt proposal for approval in conjunction with the annual prescribed tariff approval process.

Revised 2019/20 total cost of debt

Our proposal uses a rate of 3.32% as the estimate for the 2019/20 cost of debt as compared to the regulatory template rate of 4.61%.

The rate of 3.32% is based on 6 months (April 2019 through to September 2019) of actual RBA 10-year BBB benchmark data and use of an estimate of a 3% rate for the remaining six months of the 2019/20 cost of debt year to 31 March 2020.

Table 31 provides detail of the template outcomes with the 4.61% ESC estimate cost of debt estimate compared to the proposed 3.32% rate.

As the 3.32% proposed rate is more reflective of the market forecast 2019/20 total cost of debt there is expected to be only a minor adjustment, if any, applied to the 2020/21 tariffs. The following two years of adjustments will be lower than if the ESC's template rate of 4.61% is used.

We believe that further refinements may include the use of forward interest rate estimates in setting the cost of debt estimate which will deliver against the WIRO pricing principles. Such refinements will be further considered for PS23 post-stakeholder engagement.

Table 31: Ten Year 2019/20 Cost of Debt Estimate

	ESC Template	Western Water Proposal
10 Year Cost of Debt Estimate for 12 months to 31 March 2020	4.61%	3.32%
Trailing average RRR* – Nominal Cost of Debt	5.50%	5.37%
Forecast Inflation	2.30%	2.30%
Trailing average RRR* – Real Cost of Debt	3.13%	3.00%
Estimated 3-year real total Cost of Debt adjustments**	-\$5.498	-\$4.162

** RRR – Regulatory Rate of Return*

*** Current market based 10-year forward rates have been used to estimate the cost of debt adjustments over the price submission period*

8. Return on RAB cont.

Revised adjustment profile

Western Water's proposal also provides for profiling of the impact of the adjustments within the price determination period. The profile is based on a relatively certain cost of debt estimate applied in 2020/21 and market referenced estimated cost of debt adjustments for years 2 and 3 of the price submission period, provides for a bring forward of a portion of the forecast years two and three over recovery to year one.

The outcome is no change to the average customer real bill of \$1,019 in 2020/21 as the bring forward of the adjustment largely offsets the removal of the prior year cost of debt adjustment of \$10 and the proposed 1% price increase of \$10.

The average bill profile is forecast at \$1,019, \$1,033 and \$1,045 for years one to three respectively. Refer to Table 32 for a comparison of the estimated cost of debt adjustments and the average bill outcomes under the ESC guidance approach and Western Water's proposed approach.

Our proposal sets the real average bill at \$1,019 for 2020/21 – reflecting the proposed 1% price path and a bring forward cost of debt adjustment of \$20. The real average bill of \$1,019 reflects no change in the average bill from 2019/20.

Western Water commits that in the event the future interest rate adjustments are less than the brought forward \$20, Western Water will not recover any of the committed 2020/21 \$20 (i.e. Western Water will accept the risk on the committed adjustment

amount of \$20 irrespective of year two and year three adjustments).

Our proposal of locking in the 2020/21 average bill at \$1,019 inclusive of the committed \$20 return of future cost of debt savings, is based on ESC acceptance of the revised adjustment profile. The proposed approach of setting the 2020/21 real average bill enables Western Water to communicate a certain PS20 first year bill outcome to our customers that includes the proposed 1% price path and a bring forward future years cost of debt adjustments of \$20.

The proposed average real bill profile over the three years smooths the price path increases (noting that they have a cumulative effect over the period) as preferred by customers. Also, with no real change in the 2020/21 average real bill, it provides an opportunity for Western Water to support its customers to reduce or substitute drinking water consumption to offset future year bill increases.

While adjustments for external or technical factors, such as the cost of debt adjustment, outside of the approved price path are not easy for customers to understand, minimising and smoothing bill adjustments as proposed in Western Water's refinements to the return on debt support the WIRO pricing principles.

Specifically, Western Water believe its varied return of debt proposal reduces the size of annual variations in the fixed service charges and provides for more manageable price movements in customer bills.

Table 32: Cost of Debt Adjustments – Profiled

Regulatory Year	ESC Template			Western Water Proposal		
	2020/21	2021/22	2022/23	2020/21	2021/22	2022/23
Average bill inclusive of 1% price increase (Real) (Pre-Cost of Debt Adjustment)	\$1,039	\$1,049	\$1,059	\$1,039	\$1,049	\$1,059
Trailing average RRR – Real Cost of Debt set in determination	3.13%	3.13%	3.13%	3.0%	3.0%	3.0%
Market forward curve 10-year Cost of Debt Estimate	3.32%	3.28%	3.44%	3.32%	3.28%	3.44%
Cost of Debt Adjustment - \$M (Real)	-\$0.45	-\$1.9	-\$3.3	\$0	-\$1.4	-\$2.8
Cost of Debt Adjustment – per average bill	-\$6	-\$23	-\$39	\$0	-\$17	-\$32
Total average bill (Real)	\$1,033	\$1,026	\$1,021	\$1,039	\$1,033	\$1,028
Proposed cost of debt adjustment profile (Real)				-\$20	-\$16	-\$15
Proposed average bill (Real)				\$1,019*	\$1,033**	\$1,045**

* The proposed average bill of \$1,019 (real) in 2020/21 represents no change from the 2019/20 average bill

** The proposed average bills for 2021/22 and 2022/23 are estimated on the current 10-year cost of debt forward curve and may vary from these estimates

9. Tax Allowance

Also, as the proposed approach reduces the size of cost of debt adjustment in the last year of the PS20 period, we expect less bill shock for customers at the commencement of PS23 when the return on debt is refreshed for the new pricing period.

These outcomes assist customers with their financial planning as well as assisting Western Water in working with customers to set monthly payment plans (or personal expense budgets) that do not result in significant over or under payment in a year or requiring regular review and adjustment – this is particularly valuable to low income and vulnerable customers.

Western Water is a tax paying entity under the National Tax Equivalent Regime. A significant contributor to Western Water's tax expense is New Customer Contributions (NCC) revenue arising from both land developer cash charges and gifted assets, with the revenue immediately assessable and payable.

As our NCC charge incorporates recovery of the NCC gifted assets cost of tax, Western Water has elected to continue to exclude this tax expense from its tax allowance building block (introduced effective from 1 July 2018). The tax allowance presented in Table 33 incorporates this exclusion. Economically Western Water recovers the cost of the tax however there is a timing difference in making the cash tax payment and receipt of the cash in the future from new customer tariff revenues.

Western Water has elected to fund the cash timing difference by increasing its level of debt and thereby avoiding the need to seek the funding from all customers through higher tariffs (via inclusion of the tax cost in the tax allowance). This outcome ensures no intergenerational shifts in pricing and provides a fair outcome for both new and existing customers.

Table 33: Tax Allowance for PS 20 (\$M)*

	2018/19	2019/20	2020/21	2021/22	2022/23
Tax allowance	0	0	7.71	4.91	2.50

**\$ as at 1 January 2020*

10. Growth Forecasts

Western Water bases growth forecasts on official Victorian Government information, being the Victoria in the Future (VIF) data. Our current forecasts are based on VIF16 and verified against VIF19, the most current published dataset.

Other key input information includes:

- Id Placemaker – third party information provider
- Aquarate Data – Western Water billing information
- Precinct Structure Plan land release information
- Western Water Land Development data, and
- market information.

Market information is more accurate and granular than VIF in the short-term and is used to inform forecasting for the upcoming 18-24 months. Western Water obtains market information from a range of sources, such as developers, research companies, and local knowledge, and uses it in combination with Western Water land development data, such as Requests for Conditions and Statements of Compliance.

Western Water also considers the macro-economic environment, such as house prices, net migration, government policy and sentiment.

Growth in Western Water’s region is currently very strong, and the indicators are that we will see this flow into strong growth in residential connections over the next few years.

Requests for Conditions peaked at 8,573 in 2017/18 after the gazettal of several Precinct Structure Plans, while the number returned to 6,061 in 2018/19. We are seeing many of these Requests for Conditions flow through to Statements of Compliance.

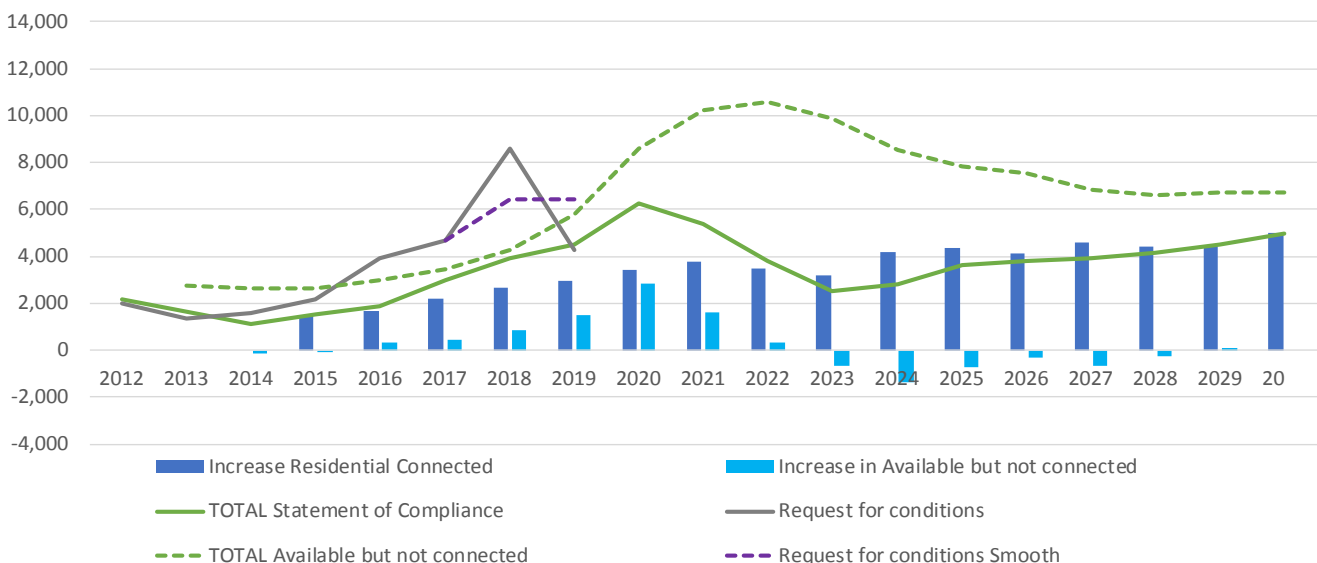
Also, developer pre-sales have been very strong, with some 8,500 properties pre-sold in Western Water’s region as of March 2019. However, the number of pre-sold properties has reduced to approximately 6,000 properties as of September 2019, resulting from a slowdown in pre-sales in late 2018 and 2019, and continued growth in lots flowing through to Statements of Compliance.

On the back of this data and allied with activity on the ground, we are predicting increasing numbers of Statements of Compliance over the next year, peaking in 2020. It is expected that the 6,000 pre-sold lots will flow through to Statement of Compliance in the next 18 months or so.

With the increased number of Statements of Compliance, there is a noticeable increase in the available land, implying that there is a lengthening lag in Statements of Compliance flowing through to connections. Available land has increased to 8.2% of connected properties, well above its historical average of 5%. Available land is forecast to increase to 14% in 2021.

Chart 7 illustrates the forecast movements in the key indicators as discussed above.

Chart 7: Growth Forecasts by Key Indicators



Developers are advising of significant slow-downs in their rate of sales. Market research supports this sentiment, with data indicating that pre-sales in Q1 and Q2 2019 fell by 70% compared to the same two quarters in 2018.

The decline in sales rates that developers are experiencing is consistent with the macro-economic environment and market sentiment. Victoria's residential development market has experienced a downturn driven by a number of factors including access to finance, weak wage growth and reduced buyer confidence in the market. Overall, total building approvals for dwellings in Victoria declined by 21% in 2018/19 from 2017/18.

While Melbourne's growth areas experienced a more moderated decline in 2018/19 building approvals for dwellings (a fall of 11.9% from 2017/18), dwelling supply generally lags residential lot sales by up to two years in growth corridors. The current reduction in pre-sales is expected to impact on building approval and completion data in 2019/20 and beyond.

The negative sentiment in the macro-economic environment, we believe, will lead to a significant slowdown in the rate of Statements of Compliance after the demand of the current pre-sales is met in about 18 months' time.

We forecast developers will largely rely on their inventory of stock, as evidenced by the substantial increase in available land, to meet demand, rather than commit investment to release new land. Available land, we predict, will trend downwards over several years to get back to close to its historical average, as developers continue to run down their stock.

The number of residential connections is currently above that predicted in VIF16 and we predict this gap to widen over the next couple of years, with a peak in 2021, one year after the peak in Statements of Compliance. Consistent with the slowdown in Statements of Compliance, we forecast a similar slowdown in connected properties.

By 2023, the number of connected properties is predicted to be in line with the VIF16 forecast and from then on Western Water's forecast is consistent with VIF16.



11. Demand

Western Water’s water demand forecast forms an integral part of business planning – financial and infrastructure.

Western Water forecasts demand through end use modelling and climate correcting via a mass balance model. The current (PS18) demand forecast assumes a decline in usage per capita across the service region driven primarily by a changing customer base and customer water efficiency. This current demand forecast starts at 200 litres per person per day (l/p/d) in 2016 declining to 155 l/p/d (Target 155) by 2035 region wide.

The 2018/19 demand forecast was for 188 l/p/d while the actual recorded was 195 l/p/d – this is 4% higher than forecast. A large component of this difference can be attributed to the actual climate experienced. The remainder of the difference is likely due to a misalignment with end use assumptions and customer behaviour - noting the model outputs are driving a reduced demand forecast due to the assumptions being used.

The 2019/20 demand forecast assumed a decline on the 2018/19 188 l/p/d by approximately 1.3%.

As noted by the ESC in Western Water’s 2018 Price Determination, our desire to achieve T155 across the region resulted in optimistic demand forecasts and they suggested the demand forecasts in PS20 reflect the best available estimates, are reasonable and well explained.

Following the easing of water restrictions to permanent water saving rules in 2012, Western Water customer usage has averaged 192 litres/person/day (l/p/d). This is above the Melbourne average of 161 l/p/d over the same period.

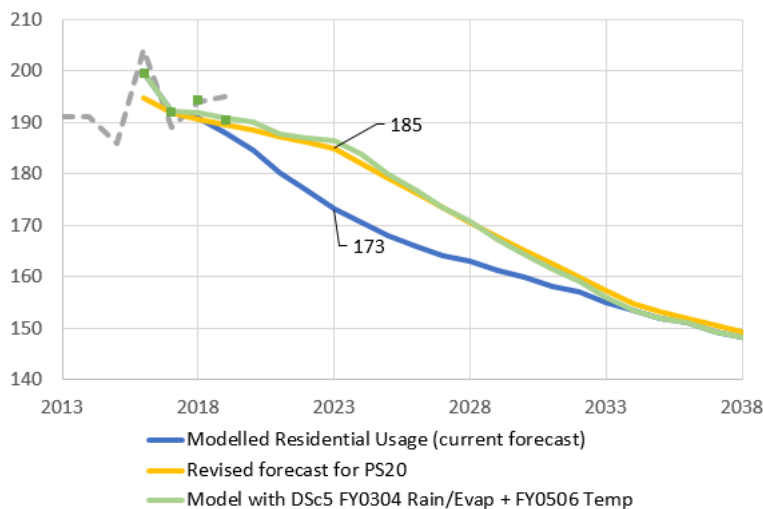
A review of Western Water’s customers comparing water usage per lot size with neighbouring water authorities was completed in 2019. This concluded that customer water usage habit is consistent with customers residing on similar size lots.

Our main difference to Melbourne’s water usage is the customer profile – a higher proportion of smaller block sizes, dual occupancy and high-rise apartments exist over greater Melbourne than Western Water’s service region.

A review of customer water usage over the 2018/19 year, with usage broken into billing cycles, has also been completed. This concluded that very high users tend to consume consistently at a high rate over each billing cycle (full year), whereas the majority of customers increase their discretionary use in the warmer months.

The outcome of these two reviews will be used to target water demand reduction strategies. However, given the size of the gap between the forecast and actual in 2018/19, along with the results of the analysis completed, we have shifted the demand profile of how we achieve T155 region wide by 2035.

Chart 8: Per capita usage (l/p/d) Actual vs Forecast



12. Form of Price Control



This alternative profile is provided in Chart 8, where a flatter profile that reflects current usage is maintained, allowing time for the benefit of demand reduction strategies to drive average consumption down – noting that the demand forecast continues to decline to 155 l/p/d by 2035 region wide.

As illustrated in Chart 8, our revised forecast assumes demand at 185 l/p/d at 2023 compared to our current assumption applied in PS18 of 173 l/p/d.

Western Water proposes retaining the existing price cap means of price control. This approach:

- supports customer preference for price certainty and smoothed pricing
- ensures a clear relationship with the cost of service
- provides a better alignment of services with price to incentivise efficient water use by customers, and
- provides for simpler messaging to customers.

13. Prices and Tariff Structure

Prices and Tariff Structure Highlights

- Customer feedback from our Tariff Structure Review engagement is incorporated with fixed charges making up a lower portion of the total bill
- The Efficiency Rebate is applied to tenants only and transitions out by the end of the PS23 regulatory period
- Continuation of our tiered approach to water usage charges reflects customer sentiment to encourage water conservation
- The majority of customers' bills benefit from a net reduction to water and sewer service charges in 2020/21 with modest increases in 2021/22 and 2022/23
- A review of non-residential customer tariffs will be completed prior to PS23

13.1 Tariff and tariff structure

Current tariff structure

The application of current tariffs across our customer types is presented in Table 34. Western Water applies an Efficiency Rebate of \$103.25 in the current regulatory period to residential customers that receive a water volumetric charge – that is residential owner occupiers and tenants.

Table 34 highlights the uniformity in Western Water's current tariffs for equivalent services.

Table 34: Current Tariff Structure

	Water – Fixed Service Charge*	Sewer – Fixed Service Charge	Tier Water Volumetric Charges	Receives Efficiency Rebate
Owner Occupier - Residential Water & Sewer	100% of charge	100% of charge	Three tier pricing	Yes
Tenant - Residential Water & Sewer			Three tier pricing	Yes
Landlord - Residential Water & Sewer	100% of charge	100% of charge		No
Vacant Landowner	100% of charge	100% of charge		No
Class A – Residential & Non-Residential	50% of charge		Fixed at tier one pricing	No
Non-Residential Water & Sewer	100% of charge	100% of charge	Fixed at tier two pricing	No
Tenant - Non-Residential Water & Sewer			Fixed at tier two pricing	No
Landlord - Non-Residential Water & Sewer	100% of charge	100% of charge		No

* Fixed water service charge is based on meter size, with a multiplier being applied to the standard 20mm charge as the base. Residential customers typically use the standard 20mm connection.

Tariff structure review – embedding the Rebate into tariffs

As proposed in PS18, Western Water has undertaken customer engagement to seek feedback on the fairness of our tariff structure. Detail of this engagement is presented in Section 3.1 of this document.

As the Efficiency Rebate is not a component of Western Water's approved tariffs, a key objective in the tariff structure review was proposing a fair and simple way of embedding the Efficiency Rebate into our prescribed residential tariffs.

In assessing alternative tariff structures, it was concluded that no single option would result in all customer segments remaining neutral or benefiting from an unwinding of the Efficiency Rebate. Also, it was acknowledged that some customer segments currently receive greater value than others from the existing Rebate application.

In developing our proposal to embed the Efficiency Rebate into tariffs, we have been guided by the customer Tariff Structure Review Panel (the Panel) recommendations, our Customer Outcome to deliver fair and affordable charges and the pricing principles outlined in sub-clause 11 (d) of the Water Industry Regulatory Order 2014.

The following details our tariff restructure proposal per key customer segment.

Residential owner occupiers

Consistent with the Panel's recommendation we are proposing that effective 1 July 2020 residential fixed charges for owner occupiers be reduced by \$103.25 and that the rebate is no longer provided to these customers.

Residential owner occupiers' total bills will not change overall as a result of implementing the change. It is proposed the reduction be applied in the proportion of 30% to the fixed water charge and 70% to the fixed sewer charge.

Residential tenants

Removal of the Rebate from residential tenants from 1 July 2020 would result in an immediate increase in their bill of \$103.25. To address this substantial impact, we propose a gradual reduction in the Rebate for residential tenants with no change proposed in year 1 (2020/21) and an equal rate of reduction applied over years 2021/22 to 2027/28

inclusive. At the end of the transition period, tenant bills will be higher by \$103.25.

The transitioned approach to removal of the Rebate avoids bill shock for residential tenants. Also, deferring the implementation of the transition for the first year provides residential tenants with an opportunity to implement water usage conservation measures to offset the bill increases in the later years, and provides an opportunity for Western Water to enhance its support to assist these customers as needed.

Consistent with the ESC guidance that states that the Commission will not include a provision for rebates in the financial model and the Commission will only approve maximum prices, Western Water's proposal excludes the proposed tenant rebate from the ESC approved revenue requirement. Western Water is committing to the transitioned approach to the Rebate unwind for tenants and will finance the expense from its operating cash flows.

Residential landlords & vacant landowners

While landlords and vacant land holders currently to not receive the Efficiency Rebate, our proposal includes a reduction to the fixed service charges for residential landlords and vacant landowners effective from 2021/22 in an amount equal to the transitioned removal of the rebate applied to tenants bills.

It is proposed the annual reductions be applied in the proportion of 30% to fixed water charges and 70% to fixed sewer charges. By 2027/28, the residential landlord and vacant landowner bills will receive the full reduction of \$103.25 against their fixed service charges.

While this transitioned approach means uniform fixed service tariffs across all residential customers is not achieved until 2027/28, Western Water believes this is a fair approach when considering all customer segments.

Tier three water usage charge

Western Water's proposal includes a real price increase of 1.95% per annum in the tier three water charges over the period of 2020/21 to 2027/28. The additional revenue received from the increased tier three water charges is expected to offset the reduction in vacant landowner fixed charges revenues.

13. Prices and Tariff Structure cont.

However, we note increased revenue arising from the increase in the tier three charge is at risk if customers reduce their water consumption.

This proposal aligns with customer feedback and our ongoing water conservation objective of reducing drinking water demand. Western Water will work closely with large water consumers to assist with programs that support drinking water conservation and therefore reduce the impact of the third-tier price increase.

Class A recycled water customers: In considering Western Water's tariff structure the Panel recommended retaining the existing Class A recycled water charges. As a result, Western Water's proposal retains the current charges.

Through the price submission period, Western Water will work with stakeholders to assess opportunities to extend the use of Class A recycled water where beneficial. We will also continue to promote and educate the benefits of Class A use as a substitute for potable water.

Non-residential customers

The Panel was scoped to consider residential customer bills and therefore recommendations specific to non-residential customers were not presented.

As non-residential customers currently do not receive the Rebate, their tariffs are not impacted under this proposal to embed the Rebate into tariffs. They are not impacted through the increase in tier three water charges as their water usage charge is set to align with residential tier two rate.

However, we do move away from our preferred approach of uniform tariffs for service charges for residential and non-residential customers with a similar sized service connection. Western Water is planning to review its non-residential tariffs as we develop PS23.

Price change to customer bills

In developing PS20 Western Water has planned for the sustainability of the business over the medium and longer term. To achieve this, our current pricing proposal has been developed to strengthen our financial capacity now in order to address the challenges and support delivery of our objectives over the longer term. The proposal provides increased revenue through a 1% (real) increase in the

average residential customer bill each year over the price submission period. This equates to an annual residential bill increase of around \$10 each year, in addition to the adjustment for inflation, for our typical residential customer.

This modest increase in conjunction with our proposed increase in developer contributions, supports Western Water's financial capability now and into the future as we invest heavily in connecting new customers, continue to deliver our service level promises and community valued programs and adapt our business to the impacts of climate change.

Customer feedback provided a clear preference for Western Water to apply any increase in prices to the water usage component of the bill (being the component of the bill that customers can influence) and to send a strong water conservation message. While we support increased usage prices, post assessing the price change in combination with impacts to customer groups arising from the Tariff Structure Review and the pass through of the benefit of lower interest rates, we believe a fairer approach is to apply the increase to the fixed service charges.

Western Water acknowledges that, overall, residential tenants would be the most adversely impacted group if the price increase was applied to water usage charges combined with bill increases as a result of the transitioned removal of the Rebate.

We believe a fairer approach therefore is to apply the price increase to residential and non-residential customer fixed water and sewer charges, as these residential customers retain the full \$103.25 rebate and both residential and non-residential fixed charges will receive adjustments to pass on the benefit of lower interest rates against their fixed charges.

Price reduction as a result of low interest rates

As discussed in the Return on Debt Section 8.4, our proposal to offset the 1% (real) price increase, for at least the first year, the majority of customers will benefit from Western Water passing through savings achieved from low interest rates. We estimate our typical residential customer bill will remain at \$1,019 before applying the CPI escalation for the year commencing 1 July 2020. The \$1,019 includes the 1% price path increase already discussed.

Based on the current relatively low interest rate outlook for the outward years, we expect to be able to pass through further savings in the second and third years of the pricing period. These savings will be applied to reduce the fixed service charges component of customer bills consistent with the PS18 determination.

13.2 Residential tariffs

As discussed above, we are planning changes to our existing residential tariff structures. The changes are reflected in the tariffs detailed below.

The water and Class A recycled water volume charges are applied to the metered volume of water and Class A recycled water used by the customer.

Table 35: Proposed Residential Tariffs*

		Current	PS20		
	Units	2019/20	2020/21	2021/22	2022/23
Residential water tariff					
Fixed water service charge (20mm meter) – Owner Occupier	\$/year	234.34	209.53	212.69	215.90
Fixed water service charge (20mm meter) – Landlord & Vacant Land	\$/year	234.34	240.98	240.12	239.25
Water usage charge – block 1 (0-440 litres/day)	\$/kl	1.8580	1.8580	1.8580	1.8580
Water usage charge – block 2(441-880 litres/day)	\$/kl	2.4652	2.4652	2.4652	2.4652
Water usage charge – block 3 (881+ litres/day)	\$/kl	3.7786	3.8522	3.9274	4.0039
Residential sewer tariff					
Fixed sewerage service charge – Owner Occupier	\$/year	540.88	482.92	490.30	497.79
Fixed sewerage service charge – Landlord & Vacant Land	\$/year	540.88	556.30	554.32	552.31
Residential Class A recycled water tariff					
Fixed Class A recycled water service charge	\$/year	113.16	113.16	113.16	113.16
Class A recycled water usage charge	\$/kl	1.8580	1.8580	1.8580	1.8580

* \$ as at 1 January 2020

Table 36: Proposed Non-Residential Tariffs*

		Current	PS20		
	Units	2019/20	2020/21	2021/22	2022/23
Non-Residential water tariff					
Fixed water service charge (20mm meter)	\$/year	234.34	240.97	244.61	248.30
Water usage charge	\$/kl	2.4652	2.4652	2.4652	2.4652
Non-Residential sewer tariff					
Fixed sewerage service charge	\$/year	540.88	556.30	564.80	573.44
Non-Residential Class A recycled water tariff					
Fixed Class A recycled water service charge	\$/year	113.16	113.16	113.16	113.16
Class A recycled water usage charge	\$/kl	1.8580	1.8580	1.8580	1.8580

* \$ as at 1 January 2020

Meter reads occur every four months.

13.3 Non-residential tariffs

The non-residential tariff includes:

- fixed charge for the water service
- fixed charge for the sewerage service
- fixed charge for the Class A service (where applicable), and
- single-step volume charge for water and Class A (where applicable).

Like residential tariffs, the water charges are applied to the metered volume of water used by the customer.

13. Prices and Tariff Structure cont.

13.4 Trade waste tariffs

Western Water introduced a risk-based categorising and quality and quantity charging approach to trade waste in the 2008. We propose to continue with fees based on risk category and quality and quantity charging for large discharge customers. Minor trade waste customers will continue to be charged the annual service charge. Western Water propose inflation-only increases to the price of trade waste services for the period of this price submission.

*Table 37: Proposed Trade Waste Tariffs**

	Units	2020/21	2021/22	2022/23
Trade Waste Charges				
Application fee – Risk Rank 1 (per application)	\$ ea	140.26	140.26	140.26
Application fee – Risk Rank 2 (per application)	\$ ea	220.48	220.48	220.48
Application fee – Risk Rank 3 (per application)	\$ ea	409.32	409.32	409.32
Application fee – Risk Rank 4 (per application)	\$ ea	970.72	970.72	970.72
Management fee – Risk Rank 1 (per annum)	\$/year	272.55	272.55	272.55
Management fee – Risk Rank 2 (per annum)	\$/year	571.74	571.74	571.74
Management fee – Risk Rank 3 (per annum)	\$/year	1278.25	1278.25	1278.25
Management fee – Risk Rank 4 (per annum)	\$/year	2600.58	2600.58	2600.58
Volumetric charge – Category B (per kl)	\$/kl	1.7011	1.7011	1.7011
Volumetric charge – Category C (per kl)	\$/kl	1.1909	1.1909	1.1909
Trade Waste Charges - Risk Ranks 2, 3 & 4				
BOD >400mg/L	\$/kg	0.3439	0.3439	0.3439
Suspended Solids >400mg/L	\$/kg	0.2191	0.2191	0.2191
Total Phosphorus >30mg/L	\$/kg	0.5120	0.5120	0.5120
Total Combined Nitrogen >60mg/L	\$/kg	0.6586	0.6586	0.6586
Total Oxidisable Sulphur >100mg/L	\$/kg	0.9515	0.9515	0.9515
Sodium >250mg/L	\$/kg	0.1457	0.1457	0.1457
Arsenic >0.2g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Cadmium >0.4g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Chromium (III & VI) >100g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Copper >100g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Lead >100g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Mercury >0.2 g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Nickel >10g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Selenium >10g/day	\$/kg	0.2191	0.2191	0.2191
Heavy Metals — Zinc >100g/day	\$/kg	0.2191	0.2191	0.2191
Trade Waste Penalty Units				
1st major breach	\$ ea	180	180	180
2nd major breach	\$ ea	380	380	380
3rd major breach	\$ ea	850	850	850
4th major breach	\$ ea	1,730	1,730	\$1,730

* \$ as at 1 January 2020

13.5 Miscellaneous tariffs

Miscellaneous charges are a fee for service established by Western Water’s Administration By-Law 97/2. They are designed to recover from the service recipient the cost of providing that particular service.

Not all customers will require the use of these services on a general basis, it may only be on sale of property that the needs are incurred. Therefore, it is not appropriate to spread the cost across all customers on an ongoing basis.

They are generally applied based on actual/full cost recovery methodology. These costs may include direct contractor/third party invoice costs, internal marginal cost and recovery of overheads.

13.6 Prescribed sewer contract revenue

Western Water has entered an agreement with City West Water that requires Western Water to receive and transfer bulk sewerage through the pipes, assets and catchment area of Western Water, for City West Water’s respective customers.

This agreement provides for the reimbursement of agreed costs associated with construction of infrastructure via a return on assets and regulatory depreciation and relevant recovery of operational expenditure associated with the maintenance of infrastructure and flows of the bulk sewage.

The proposed revenue from this agreement is reflected in Table 38.

Table 38: Proposed Revenue from City West Water Sewer Contract (\$M)

		2020/21	2021/22	2022/23	Total
CWW Fixed Sewer Service Charge	Real 2020\$	0.128	0.128	0.128	0.384

14. Adjusting Prices

While there are several factors that create uncertainty for Western Water in the foreseeable future, we value customer feedback on the need for price certainty.

This risk is minimised for customers during this submission period given the substantial allocation of risk to Western Water and as we are proposing minimal mechanisms that lead to a price adjustment(s) in the period (noting that in agreement with the ESC, adjustments may be profiled within the period to achieve the WIRO pricing principles).

The price adjustment mechanisms Western Water proposes are:

- continuation of annual adjustment of prices for charges approved by the ESC and CPI
- annual trailing average cost of debt adjustments – a template detailing the adjustments to be separately provided to the ESC
- pass through of Melbourne Water bulk water charges (including price and changes in cost of debt) - these may result in increases to cost or savings
- pass through of desalination charges in the event they applied to Western Water, and
- adjustment for regulatory, legislation or ministerial directive changes.

Western Water would also rely on the ability to adjust tariffs in instances where exposure to natural disaster or extreme weather events result in a material impact to the business.



15. New Customer Contributions

The proposed greenfield New Customer Contribution (NCC) charge reflects the principles set out in the ESC guidance. High growth in greenfield areas that requires significant infrastructure investment upfront with new customers connecting over time, results in a relatively high NCC charge.

Consistent with PS18, we propose the charge continue to be transitioned over the period to 2028 to a level more aligned with a full cost recovery charge. This approach supports developers to better manage their risk associated with the increase to the charge.

The proposed infill NCC charge also reflects the principles set out in the ESC guidance. Based on a review of the incremental costs and revenues associated with connecting customers in existing serviced areas, the proposal provides for 2018/19 prices to continue over the three-year regulatory period.

In the following tables, NCC revenue is based on the proposed NCC charges and NCC lot forecasts are based on detailed analysis of development growth and timing.

Table 39: Proposed NCC Charge per Lot (2020\$)

	2020/21	2021/22	2022/23
Infill	2,696	2,696	2,696
Greenfield	5,662	5,945	6,243

Table 40: Proposed NCC Lots (#)

	2020/21	2021/22	2022/23
Infill	489	346	228
Greenfield	4,894	3,455	2,280
Total	5,383	3,801	2,508

Table 41: Proposed NCC Revenue (\$M) (2020\$)

	2020/21	2021/22	2022/23
Infill	1.32	0.93	0.61
Greenfield	27.71	20.54	14.23
Total	29.03	21.47	14.84

16. Financial Position

Western Water has assessed the financial impact of the proposals within this price submission. Also, financial stress-testing scenarios are available for review by the ESC through the determination process.

Table 42 provides detail of the ESC’s key financial viability metrics relating to Western Water’s PS20 proposal. As presented in the table, our financial metrics for the PS20 three-year period are robust, however, they present a weakening trend over the eight years driven by Western Water’s significant investment in growth related infrastructure.

As the infrastructure investments are required ahead of customer connections, and full utilisation of the assets, Western Water has assumed an increase in debt levels to fund the required investment. This increased debt is able to be serviced over time

through new customer revenues, however in the interim our financial risk increases as demonstrated in the metrics presented in Table 42.

Western Water is pursuing opportunities to reduce its reliance on debt funding through the delivery of efficiency outcomes, optimising the timing and delivery of the infrastructure investment program and working with developers to influence development timing and cost reductions.

In addition, the proposed fixed service charges and developer contribution increases as discussed earlier in the submission, provide phased in financial support to ensure our future customer charges remain affordable and predictable.

*Table 42: Financial Indicators**

	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Primary Indicator								
FFO Interest Cover (times)	3.05	2.97	2.77	2.58	2.40	2.34	2.29	2.26
Secondary Indicators								
Net Debt / RAV (Gearing) (%)	43.3	48.0	51.3	54.2	56.1	57.6	59.1	60.0
FFO / Net Debt (%)	11.0	9.4	8.2	7.1	6.3	6.0	5.8	5.6
Internal Financing Ratio (%)	39.3	36.9	33.8	37.9	40.6	42.0	46.3	48.3

** The financial key indicators are extracted from the ESC regulatory template and therefore may vary from those modelled using Western Water’s financial model. This is due to the application of standardised assumptions applied in the regulatory template to items such as interest and tax payments.*

17. Other

Non-prescribed revenue

Western Water currently has limited non-prescribed revenue opportunities. It currently earns a very limited revenue stream from rental of houses situated on treatment plant sites and interest received on monies invested.

Additional products and services

We have reviewed all products and services for which we currently levy a charge, to ensure we continue to recover the costs associated with providing services. If the cost of providing individual products and services to customers can be recovered through these charges, this helps reduce the price for the wider customer base.

Further details on prices for miscellaneous products and charges are contained in Appendix 5. These charges are in real dollars as at 1 January 2020 and will be increased by CPI each year.



Appendix 1: ESC Guidance Requirements

Overall

The price submission has been prepared with the ESC as its target audience. Western Water has prepared response documents for specific engagement groups and prepared a simple communication of the key points of the submission for sharing with all customers.

3.1 Risk

Refer to Section 2, page 7 of the submission for identification, management and allocation of risk

Scenario analysis for risks will be made available to the ESC on request

3.2 Regulatory Period

Western Water's price submission is for the period of 1 July 2020 to 30 June 2023 as set out in the ESC Guidance

3.3 Customer Engagement

Customer and stakeholder engagement activities are presented in Section 3 of the submission, with further detail provided in Appendix 3

Specifically, a summary of how engagement feedback has been taken into account by Western Water in reaching its proposals is provided on page 65

Resources and materials provided to customers during our engagement, along with customer feedback about the engagement program is available on request by the ESC

3.3.3 Service Standards

Refer to Table 11 (page 20) for a list of service standards relating to reliability and attending faults that align with provisions in the ESC's urban water customer service code 31

Refer to page 64 for our engagement activities in relation to service standards

Changes to Western Water's service levels and targets are detailed in Section 4 and detail of how they were informed by customer preferences is provided in Section 3

3.4 Outcomes

Refer to Section 4.2 for alignment of service standards with urban water customer service code. See page 20

Refer to Section 4 our defined and measurable customer outcomes. See page 17

Section 3 on community engagement demonstrates how engaging with our customers led to the development of the outcomes.

3.5 Guaranteed Service Levels

Refer to Section 4.3 of the submission for our defined and measurable guaranteed service levels

One new GSL is introduced in PS20 resulting from customer feedback. Detail in Table 5 (page 13) in the Customer Engagement section presents how customers influenced the introduction of this GSL. Section 4.3 describes the new GSL and incentive payment

3.6 Revenue Requirement

Refer to Section 6, page 25 for detail on Western Water's revenue requirement

A summary of Western Water's revenue requirement out to 2027/2028 is provided in the Rev&RAV_FO tab of the financial template

3.7 Forecast Operating Expenditure

Detail of the baseline controllable operating expenditure is presented in Section 6.1

Controllable and non-controllable operating expenditure annual forecasts are outlined in Section 6, from page 25. Also, non-controllable operating expenditure forecasts are detailed in the Opex_FO tab of the financial template

Opex_FO tab of the financial template also provides detailed operating expenditure splits

3.7 Forecast Capital Expenditure

Western Water's approach to capital expenditure is outlined in Section 7, page 33
Capex_FO input in the finance model provides capital expenditure forecasts to 2027/2028
Top 10 projects are listed on page 33
Overall capital expenditure by service category is listed in Table 26, page 34
Capital expenditure has been prioritised and modelled at P50 cost estimates
Capex_FO Breakdown in the financial template provides ongoing project costs

3.10 Forecast Regulatory Asset Base

Refer to Section 8, page 28 for detail on the rolled forward and forecast regulatory asset base
New Customer Contributions volumes are directly related to our forecast growth assumptions with detail provided on the issuance of statements of compliance provided in Section 10. Gifted asset values reflect historical values per lot against the forecast statements of compliance forecast

3.10.3 Regulatory Depreciation

Refer to Section 8.2 page 36 for detail on the approach to regulatory depreciation

3.10.4 Cost of Debt

Refer to Section 8.4 page 36 for detail on our cost of debt proposal

3.10.5 Cost of Equity

With reference to the ESC's guidance, Western Water has applied a real cost of equity of 4.5%

3.11 Tax Allowance

Refer to page 39 for a discussion on the tax allowance
The Rev&RAV_FO Tab in the financial template provides the tax allowance forecast to 2027/28

3.12 Demand

Key demand, including litres per person per day assumptions can be found in Section 11, see page 42

3.13 Form of Price Control

Western Water is proposing no change from its current price cap form of price control

3.14 Prices and Tariff Structure

Detail on customer on customer engagement with regards to price proposals can be found on page 63
Refer Section 13, page 34 and Appendix 5 for detail of the proposed pricing and tariff and miscellaneous charges structures

3.15 Adjusting Prices

Detail on proposed price adjustments are detailed on Section 14, page 50

3.16 New Customer Contributions

The new customer contribution pricing proposals are based on the ESC NCC pricing principles
Refer to Section 15, page 51 for detail of the proposal

3.17 Financial Position

Refer to Section 16, page 52 for detail of the financial position
Financial scenarios are available on request

Additional Information

An executive summary including an overview of the PS20 proposals is provided on page 3
Western Water's board attestation is detailed on page 6

Appendix 2: PREMO Self-Assessment

PREMO is an incentive mechanism that links the return on equity to a water corporation's level of ambition in delivering value to its customers.

At Western Water we are committed to delivering exceptional value to our current and future customers. Our challenge is delivering the value our customers see in our services while expanding our network to deal with significant future growth.

We have used the PREMO assessment tool to rate our price submission process and components. Ratings are out of a maximum score of 4.

Our performance, on average, across the four categories is rated as mid to high level standard. Engagement has an advanced rating.

Our engagement model has delivered a continuous feedback loop with our customers, allowing us to review and readjust PS20 to reflect customer feedback.

PS20 PREMO Self-Assessment

	Basic (1-1.99)	Standard (2-2.99)	Advanced (3-3.99)	Leading (4)
Risk		2.5		
Engagement			3.7	
Management		2.5		
Outcomes		2.6		

Risk

Western Water has applied its enterprise approach to risk management that is aligned with ISO 31000 and the Victorian Government Risk Management Framework to identify and assess risks associated with delivery of PS20.

Key risk management actions have also been identified along with an appropriate allocation of the risk.

The significant risks identified and assessed are identified as:

- forecasting of connection growth and consumption demands
- delivery of reliable services
- safety of employees and the public
- environmental impacts arising from our operations, and
- financial viability of Western Water.

PS20 PREMO Self-Assessment: Average Risk Rating Score 2.5

Aspect	Result	Comment
<p>Has the business demonstrated a robust process for identifying risk, and how has it decided who should bear the risks?</p>	<p>2.5</p>	<p>Western Water takes a detailed and researched forecasting approach in managing risk.</p> <p>Growth: We have used the latest VIF 2016 information aligned to VIF 2019 to model the forecast growth of customers in our service region. Further work was done to update the latest forecast based on local information gathered from developer forecasts and compliance approvals.</p> <p>Demand: We employ end use modelling to forecast customer demand. This process considers end user water use, appliance stock and behavioural changes. It also incorporates changes based on water restrictions and water savings rules. The forecasting has been modeled using weather and climate change forecasts, PSP release information and residential end use modeling. (referenced in Section 10: Growth Forecasts)</p> <p>Supply: Water supply requirements have been modeled with consideration to forecast climate change by BoM and CSIRO, and long-term growth and demand requirements. We have a diversified portfolio of supply options to service customer demand. This includes utilising Western Water surface water, recycled water and additional water allocations purchased through the Melbourne grid.</p> <p>The accurate forecasting noted above incorporates best practice methodology consistent with the Victorian Water Sector.</p> <p>Expenditure: We employed a risk-based approach to expenditure forecasting.</p> <p>We applied a two-stage approach to optimise the investment decisions for capital expenditure and capture the associated impact on operational expenditure.</p> <p>The first stage involved developing an initial estimate to confirm that the required levels of service and customer outcomes can be met based on investing in a requirement driven environment.</p> <p>The second stage optimised the investment based on various criteria, including balancing available resources, consideration of who should bear the risk where there is uncertainty of the forecast and considering the possibility of staging the investment to more accurately reflect the likely expenditure.</p> <p>Large project costs were estimated using Monte Carlo analysis and all other projects have been costed using the deterministic method to develop P50 estimates. This efficient modeling methods allow Western Water to forecast project costs more accurately. (More information can be found in Appendix 4: Capital Expenditure).</p> <p>In conjunction with managing risk through accurate forecasting, Western Water also has an overarching corporate risk management framework in line with ISO 31000 standards.</p> <p>Through scenario testing, risk has been allocated to the party most equipped to deal with the risk. The ideal allocation of risk has allowed Western Water to keep prices stable throughout the price submission. (More information can be found in the risk allocation section of the document).</p>
<p>To what extent does the proposed GSL scheme provide incentives for the business to be accountable for the quality of services delivered, and provide incentives to deliver valued services efficiently?</p>	<p>2.5</p>	<p>The GSL scheme for PS18 was developed with extensive consultation and involvement from the community through online surveys, focus groups and community engagement reference groups. Revisiting these GSLs with customers showed that the addition of GSL regarding service interruptions should be introduced. We have taken this into account and added a new GSL for this price submission. (More information can be found in the engagement section of the document).</p> <p>Each GSL has been carefully reviewed and targets have been set in accordance with providing customers with a reliable and safe service. The GSLs represent the level of service required to deliver on the customer outcomes within this price submission.</p>

Engagement

Western Water has completed extensive customer, community and stakeholder engagement activities in preparing PS20 that built on the strong engagement undertaken for PS18 and our business as usual engagement programs. Our broad engagement activities have provided for customers to be involved at varying levels and on a variety of issues.

Our engagement with customers for PS18 led to the development of our customer outcomes and measurable outputs. Continual engagement throughout the year has allowed us to test the outcomes and measures with our customers and provide a platform for feedback. We have listened to this feedback and incorporated customer suggestions, such as reducing fixed tariffs, into this pricing proposal.

We have rated ourselves as “Advanced” for engagement.

PS20 PREMO Self-Assessment: Average Engagement Rating Score 3.7

Aspect	Result	Comment
Has the business detailed and justified alignment of its customer engagement process with IAP2 public participation spectrum?	4.0	Western Water follows best practice as identified in the IAP2's Public Participation Spectrum. Levels of engagement were selected based on our goals, time frames, resources and levels of concern in the decision to be made, and the corresponding promise was made to the public for that participation level. Detail of the engagement levels and topics can be found in Section 3: Engagement.
Has the business demonstrated that it has engaged with a broad range of customers in developing its submission (form)?	3.5	Western Water used its online panel platform to promote its engagement for PS20, inviting members to view content and participate in surveys, polls and deliberative processes. This panel consists of more than 40,000 customers – more than 50% of our customer base. Opportunities were also promoted via our customer newsletter. Independent recruitment organisation Deliberately Engaging was contracted to ensure representative participation in our deliberative processes. Invitations to participate were mailed to 12,000 randomly selected customers (around one in six) and another 9,500 invitations were issued by email. All towns and customer types contributed to our decision making. Through community and stakeholder engagement, we endeavoured to capture the needs of hard to reach and vulnerable customers.
Has the business demonstrated that it has engaged with its customers about a range of issues relating to its submission (Content)?	3.5	Building on the learnings from the high level of detailed engagement conducted for PS18, Western Water identified four major topics of investigation for PS20. These were based on customer feedback and business needs and included a tariff structure review, pricing discussions, service standards and GSLs and customer outcomes. Broader customer input was received through community and stakeholder engagement as well as our annual customer satisfaction survey, completed by close to 1900 customers, which considers all aspects of our service delivery.
Has the business explained how it decided when to engage with its customers (Timing)?	3.5	The four topics for PS20 engagement were determined at the beginning of the planning process and agreed by the Board and Executive Team. The major engagement activity for PS20 was the Tariff Structure Review which required detailed planning and background information for panelists. Engagement on service standards, GSLs and customer outcomes were left to the latter part of the planning period so that FY19 performance and financial data would be available to help with meaningful engagement. Similarly, while pricing engagement planning occurred early in the submission process, actual consultation was not undertaken until we had a clear picture of what pricing considerations we needed to investigate for PS20. This was, however, informed by stakeholder engagement undertaken earlier in the year.

PS20 PREMO Self-Assessment: Average Engagement Rating Score 2.5 cont.

Aspect	Result	Comment
<p>Has the business explained how its engagement with customers has influenced submission?</p>	<p>4.0</p>	<p>Customer input has shaped the following decisions within PS20:</p> <ul style="list-style-type: none"> • efficient expenditure to keep bills affordable for all customers • embedding the Efficiency Rebate on fixed charges (increasing the proportion of the customer bill that is variable and can be impacted by customers) • protecting tenants from the impacts of removing the Efficiency Rebate from their bills by introducing an interim rebate for tenants over the next 8 years • proposing a 1% per annum price increase (on the typical customer bill) • committing to review non-residential tariffs for the next price submission • introducing a new GSL for the number of water supply interruptions a customer experiences each year • retaining the current tariff approaches for vacant land and Class A recycled water customers • retaining the three-tier water usage charge • committing to explore greater opportunities to incentivise water conservation and on-time bill payment • retaining Customer Outcomes and updating measures for the new pricing period, based on customer support • retaining existing services standards and GSLs for the new pricing period, and • maintaining financial, education and plumbing support programs for vulnerable customers.

Management

Western Water has implemented a price path that delivers significant value to current and future customers. We are keeping costs to a minimum through creating efficiencies in business operations and innovative projects that deliver cost savings. The proposed pricing structure has been chosen to minimise bill fluctuations to ensure that our services are manageable for all customers. This delivery has been endorsed by senior executives and the Board.

PS20 PREMO Self-Assessment: Average Management Rating Score 2.5

Aspect	Result	Comment
Has the business provided evidence that there is senior level, including Board level, ownership and commitment to its submission and outcomes?	2.5	Throughout the submission process senior management and board members have been consulted at key points. This includes: <ul style="list-style-type: none"> • review of documentation and modelling • standing agenda updates of tariff modelling at executive meetings. • senior executive review of key documents through the process. General Managers have made an attestation in support of this submission. The board has made an attestation in support of this submission (refer Section 1)
Has the business demonstrated how its proposed prices reflect only prudent and efficient expenditure?	2.5	Western Water has committed to a 2% (real) productivity efficiency for this price submission. Projects have been reviewed by the Board and key projects have been prioritised. Major projects driving efficiencies include programs of work to deliver efficient work processes, cost savings and generation of renewable electricity. These projects have been prioritised and costed using a risk management approach in conjunction with a Monte Carlo simulation (more information can be found in Appendix 4: Capital Expenditure) Sound methodologies based on industry best practices have been used to calculate key forecast elements including: <ul style="list-style-type: none"> • demand • growth, and • water supply.
Has the business provided sufficient justification of the quality of the submission, including the quality of supporting information on forecast costs?	2.5	We have committed to delivering an extensive operational efficiency program annually (on average) on controllable costs. Our internal business reviews provide a platform for discussion and qualification of forecast costs Prudent forecasting of demand and growth as per the growth model assumptions in Section 10 Growth Forecasts demonstrates our thorough investigation into modeling our future requirements Western Water has sought independent advice on the new tariff schedule and proposed price submission

Outcomes

The outcomes, as defined by our customer engagement groups in PS18 and reaffirmed by engagement groups for PS20, were a driving force in the development of this price submission. Ensuring that we deliver the desired outcomes has required Western Water to think innovatively to gain maximum efficiencies within this price submission. We have demonstrated this throughout the price submission through prioritisation of capital projects, operational efficiencies and measurable outputs.

PS20 PREMO Self-Assessment: Average Outcomes Rating Score 2.6

Aspect	Result	Comment
Has the business provided evidence that the outcomes proposed have taken into account the views, concerns and priorities of customers?	3.0	Western Water has devised its outcomes based on extensive engagement with customers. The engagement has been an ongoing process between price submissions to ensure the outcomes are still relevant and priority to our customers. The engagement process has been detailed in Appendix 3 with a full report available on request The outcomes derived for PS18 were readdressed with customers for PS20 and it was re-affirmed these met customer requirements
Has the business provided sufficient explanation of how the outcomes it has proposed align to the forecast expenditure requested?	2.5	The business has provided a lean expenditure forecast that demonstrates the businesses commitment to delivering the customer outcomes Customers' outcomes such as safe and reliable drinking water require additional capital expenditure due to the growth in Western Water's service area but through operational efficiencies we have minimised the impact on customers to deliver these outcomes Capital portfolios have been developed to better align forecast expenditure with customer needs. (More information can be found in Appendix 4: Capital Expenditure). The portfolios allow Western Water to optimise expenditure for customer needs
Has the business proposed output to support each of its outcomes, which are measurable, robust and deliverable?	2.5	Western Water has carefully reviewed business activities that can deliver our customer outcomes. All outcomes have a numerical or definitive outcome of achievement. Further information in Section 4
Has the business justified that the outputs it has proposed align with the outcomes?	2.5	Western Water's outcomes were devised with our customers. This alignment has meant that the customer outcomes reflect the outputs we are prioritising as a business
Has the business demonstrated a reporting and stewardship process to measure performance against each outcome and to inform customers?	2.5	Western Water has communicated its performance against the measures listed against each customer outcome in an annual scorecard We also created a website which provides customers with access to our current performance measures and our performance against these measures

Appendix 3: Engaging with Customer and Stakeholders

In the development of PS18, Western Water undertook extensive engagement with customers and stakeholders with close to 6,000 contributing their input. This provided significant direction for business planning.

With the current submission being developed just two years later, it was not necessary to go to the same lengths for engagement overall. Instead, we focused on addressing critical topics and gaps identified in our engagement program from PS18. Four core areas for engagement with customers were determined for PS20. They are described below along with the level of engagement undertaken.

Details about the numbers of customers reached for each topic in the development of PS20 are

tabled below. The following table describes the engagement methods undertaken for each topic, as well as the number of customers engaged.

In addition, stakeholder engagement requirements included keeping Government, local councils, key statutory bodies, and the urban land development industry and community groups advised of our challenges and planning.

Further, significant engagement activity has occurred with central agencies and metropolitan water corporations on Western Water's strategic future, which has run parallel to – and informed – the development of this Price Submission.

PS20 Engagement - Customer Reach

Topic	Communications Method	No. customers
Tariff Structure Review	Panel invitation – mail	12,000
	Panel invitation – email	9,476
	Water Matters email with link to survey and webpage	36,604
	Advertising in local papers	n/a
	Article in Western Water customer newsletter	85,369
Customer Outcomes	Water Matters email with link to survey and webpage	953
Service Standards & GSLs	Water Matters email with link to webpage and discussion	135
Future Pricing	Forum invitation – email	6,101
	Water Matters email with link to survey and webpage	39,000

PS20 Engagement - Customer Participation

Topic	Engagement Method	No. customers
Tariff Structure Review	Online survey	828
	Community panel	30
	Stakeholder updates	272
Customer Outcomes	Community Engagement Reference Group one-on-one interviews	6
	Online survey	660
	Water Matters site visits, poll and feedback	287
Service Standards & GSLs	Customer satisfaction survey	1,895
	Water Matters site visits, poll and discussion	135
Future Pricing	Deliberative forums x 2	53
Total customer input		4,166



Engagement on Tariff Structure Review

A community panel (short-form citizen's jury) reviewed five elements of our tariff structure over June and July 2019.

We selected this detailed, deliberative process because it works on the premise that members of the community can deliver smart, long-term decisions which earn public trust if they are given enough information and time to weigh up the pros and cons and consider the trade-offs associated with an issue.

The engagement activity was conducted by expert facilitators, Mosaic Lab, with support from independent recruitment firm, Deliberately Engaging. To ensure a randomly selected, representative jury (community panel), close to 20,000 customers received either a written or an email invitation to join the panel. Panel members had access to extensive background materials and were able to talk with experts from within and outside the business. They also reviewed results from the wider engagement on the topic including findings from 828 customers who completed the TSR online survey, and stakeholder feedback.

The topics for review reflected feedback from customers on tariff areas which they considered unfair. These included the fixed to variable split of the customer bill components, the rising block tariff for water usage charges, and how we charge for Class A recycled water and vacant land. Western Water also used the opportunity to discuss what customers felt would be the best way to incorporate the current Efficiency Rebate in the tariff structure.

Engagement on Future Pricing

During the development of PS18, Western Water tested possible real price increases with customers of around 2% each year. The topic was discussed at our eight community information sessions (with 130 customers) in mid-2017 and then at two deliberative forums (with a representative group of 51 customers).

Customers were made aware of the challenges Western Water is facing in terms of meeting demand for services from population growth as well as climate change impacts on services. With this

understanding, there was general support for small price increases. Forum participants were mindful of vulnerable people in the community who have limited finances and so they preferred a smoothed process for introducing the price increase.

However, at the same time, we were hearing significant concerns from customers about affordability of water services. As a result, Western Water elected to have zero real price increases for the two years for PS18 period.

Engagement on Customer Outcomes

Five customer outcomes were developed for PS18 based on our understanding of customer needs and values from the detailed engagement program undertaken at the time. Against each outcome, we identified relevant measures to enable us to track our performance.

For PS20, we provided a reader-friendly book to explain how the five PS18 customer outcomes were developed and to provide background information on the outcomes and their measures. This book was used as the foundation of our engagement with customers about the outcomes and measures, which began with one-on-one interviews with six members of Western Water's Community Engagement Reference Group (CEREG).

Key findings revealed the need to better explain the measures, with improved wording in some cases. CERG members suggested several additional benchmarks including a 100% secure water supply, compliance with EPA standards, and increased use of recycled water.

This feedback helped shape the engagement we undertook with the broader customer base through online tools including an email to 38,000 members of our online panel, a dedicated topic page on our Water Matters website and an online survey about the outcomes and their measures.

A total of 485 customers completed the survey.

The customer outcomes book is being updated to reflect the revised outcomes and measures for PS20 and this will be made available on Western Water's website (and the project page on the Water Matters site) along with annual updates on our performance against the outcomes.

Engagement on Service Standards & GSLs (PS18)

PS18 Engagement - Service Standards & GSLs

Topic	Engagement method	Timing	No. customers	Findings
Services spending priorities	Online survey	Dec 2016	933	<p>Keep spending around the same for most of the service areas addressed by our service standards:</p> <ul style="list-style-type: none"> • being quick and easy to deal with • quickly fixing supply interruptions and sewer blockages • avoiding supply leaks, interruptions and sewer blockages
Customer Satisfaction	Phone survey	May 2016 May 2017	800 800	<p>Mainly high satisfaction levels (weighted average score of 8 or more out of 10) with key areas addressed by standards including:</p> <ul style="list-style-type: none"> • Overall customer satisfaction (8.1) • Water pressure (8.2) • Water supply is not interrupted (8.9) • Overall water supply (8.8) • Water supply works (7.9) • Overall customer service (8.1) • Sewerage system (9.0) • Sewerage service works (7.3)
Service Standards & GSLs	Focus groups (2)	July 2017	20	<p>Key findings included support to:</p> <ul style="list-style-type: none"> • increase time to respond to P1, P2 & P3 unplanned interruptions as well as sewerage spills and blockages • increase duration of planned disruptions to reduce frequency of interruptions • shift in proportion of calls answered within 2 minutes if all emergency calls answered within 30 seconds • increase notification time for planned interruptions and SMS services for outages • accept remaining services standards as are as well as the five GSLs but increase compensation payment amount to \$100 minimum • consider introducing a GSL for PS20 around number of planned & unplanned water interruptions • publishing standards, service levels and annual performance on WW website.
Service Standards & GSLs	Online survey	August 2017	235	<p>Online respondents agreed with the direction suggested by the focus groups for majority of indicators but were happy to extend P3 response time to 24 hours.</p>
Service Standards & GSLs	Western Water's Community Engagement Reference Group	August 2017	8	<p>Final consideration of findings with established community representative committee to test and agree to final proposed standards & service levels as well as approach to those proposed for PS20.</p>

How the community's engagement findings were used for this submission

Given the extensive engagement undertaken for PS18, Western Water did not extensively re-engage on service standards and GSLs for PS20. Instead, we checked-in with customers about what was accepted previously.

To support this decision, an internal working group considered our performance on the service standards and GSLs for the 12 months to 30 June 2019. While there have been some areas of exception, we consider it necessary to have a longer period of time to test these standards and put in place those initiatives to enable the level of service we aim to achieve. This internal group reaffirmed introducing the new GSL flagged in earlier engagement.

In addition, the 2019 customer satisfaction survey (conducted online) attracted input from close to 1,900 customers who indicated continued moderate to high levels of satisfaction with services covered by the standards and GSLs.

To check in with customers about our proposed direction for PS20, we sent an email invite to 39,000 customers in early September 2019 with links to a web page with our current standards and GSLs as well as the performance results for 2018/19. The message directed customers to the Water Matters webpage on the topic which included a short poll about the new GSL along with the opportunity to provide feedback on retaining the current standards and service levels for PS20.

Stakeholder engagement

Engagement approach

Western Water has embedded stakeholder engagement as a core function of all its operations and therefore it is viewed as business as usual to provide ongoing opportunities for feedback and consultation with stakeholders.

Building on our previous initiatives, the stakeholder engagement program aligns closely with Western Water's extensive customer engagement program to deliver the Customer Outcomes identified as part of PS18.

We recognise our stakeholder groups have differing levels of knowledge and interest in our business and services, therefore we tailored our PS20 engagement and employed a variety of initiatives, depending on the topic; including one-on-one meetings; workshops, round tables, stakeholder panels, online engagement and formal submissions.

Our stakeholders

Within the different stakeholder groups, engagement has been multi-level and covering all aspects of Western Water's pursuit of delivering on its five Customer Outcomes.

Western Water's Stakeholders

Customers	Key accounts Business customers Trade waste customers
Stakeholders that represent our community and customer's interests	Western Water Community Engagement Reference Group Hardship & social welfare advocacy groups Migrant representative groups Disability support groups Environmental groups Traditional owners Elderly representative groups
Stakeholders we collaborate with to meet our customer needs and regulatory obligations	State government Local government Regulators (EPA, ESC) Water industry (MW, CWW)
Stakeholders we engage with to deliver our services	Development industry Suppliers

Business customers

As part of PS18 engagement business customers provided the following feedback relating to service enhancements:

- Direct access to a business customer manager
- A better deal and fairer prices
- Faster response times when service interrupted
- Electronic bills and increased bill frequency
- Online information (especially billing)
- Preference for email correspondence

Development Industry

Throughout 2018 and 2019, Western Water's interaction and engagement with the urban development industry has included:

- hosting Developer Forums (June 2018, June 2019 and October 2019)
- delivering a Developer Survey (June 2018, October 2019)
- providing Developer Updates via email on key industry initiatives and seeking feedback on key topics (April and July 2018; and April and June 2019; October 2019)
- facilitating the Development Servicing Plans (and corresponding engagement from April – September 2019)
- meeting one-on-one with urban land developers who submitted a DSP to discuss the outcomes
- participating and presenting at land development industry forums and workshops.

To support developers in better understanding our approach to NCCs for PS20 we prepared fact sheets and addressed NCCs at each of the Developer Forums. This engagement has focused on providing information about the challenges we face in our region, how we calculate our NCCs, the impetus to move toward more cost-reflective charges and the price submission process.

Major engagement projects

Sunbury's Water Future

Western Water worked closely with Melbourne Water, Hume City Council, development sector and the community to identify water cycle management solutions that will be best for the Sunbury community and environment. This project resulted in 12 recommendations to help inform our planning.

Tariff Review Structure

Western Water engaged a range of stakeholder groups as part the Tariff Structure Review; this resulted in formal submissions from the Victorian Tenant's Association and the Urban Development Institute of Australia and a financial counselor from the Sunbury Community Health presenting at the Community Panel. These contributions enriched the process and reflected views more broadly beyond the panel membership.

Western Irrigation Network (WIN) Project

Western Water is working closely with the Victorian Government, Moorabool Shire and Melton City Councils, other stakeholders and local farmers to develop a new irrigation district in the Parwan-Balliang region which would be supplied with the recycled water volumes being generated by the significant population growth in the west of our service area. Pending commitment from farmers, the WIN project is expected to be operational in 2021-22.

Appendix 4: Capital Expenditure Program

As discussed in Section 5, Western Water invested \$70.03 million in capital expenditure projects in 2018/19 as compared to its PS18 planned investment of \$61.3 million. The expenditure in excess of the PS18 forecast has been invested in brought forward growth projects.

A summary of the status of the PS18 top five projects is as follows:

PS18 Top Five Projects

Project	PS18 Allocation	Comment
Melton RWP - Additional onsite storage	\$12.6m	Discoveries of significant quantities of cultural heritage artefacts on the proposed site of the winter storage have delayed the project, resulting in a re-design to avoid the very sensitive areas and further fieldwork and analysis. The construction contract is expected to be tendered and awarded in FY2019/20.
Grant Street SPS Upgrade	\$5.9m	The design and approvals for this project progressed in FY2018/19. The construction contracts are expected to be tendered and awarded in 2019/20. The expenditure for the period is on track to meet the PS18 allocation.
Bacchus Marsh RWP - Melton RWP Interconnector	\$6.0m	Substantial approvals are required on this project, particularly at the Werribee River Crossing. The extent and complexity of the approvals has delayed the project. The construction contract is expected to be tendered in FY2019/20, with award early in FY2020/21.
Melton South Exford Rd SPS/RM/Sewer	\$4.2m	Land development activity in the Melton South area has been slower than forecast, so this project has been deferred to accommodate land development-driven projects in areas that are developing at a faster rate than expected.
Sunbury RWP Upgrade	\$3.4m	The Sunbury RWP Upgrade was completed in FY2018/19 as programmed.

Major projects

The top ten projects are listed in Table 24 of the submission with a brief description of the project. Further information, as well as details on other significant projects, is provided below.

The table shows the largest projects by expenditure and includes projects incorporating interdependent elements as well as specific programs of activity.

Each project is supported by a business case providing the basis for inclusion with consideration to its stage of development and reflecting the most likely approach where outcomes must be delivered within the PS20 period.

Parwan-Balliang Irrigation District network (WIN stage 1)

Western Water's preferred strategic response to the increase in volumes at Melton, Bacchus Marsh and Sunbury recycled water plants is the Western Irrigation Network (WIN) project which involves developing a new irrigation district in the Parwan/

Balliang area, supplied with recycled water from the three treatment plants.

A storage basin is planned in the Parwan area, with a pump station. A header tank will also be constructed to maintain pressure in the delivery pipe and the delivery pipeline is required from the Parwan area to the eight proposed customers in the recycled water district.

The pipeline will be 600mm diameter and will extend primarily through private land owned by the customers. Sections will also run through road reserves. Construction of the infrastructure is required by June 2022, so that the irrigation scheme is operational in time to maintain EPA compliance, particularly at Melton RWP.

The Board approved the business case for WIN, including its staging, in June 2019, with Stage 1 of the project proceeding to the development phase in readiness for procurement.

Melton RWP – Additional on-site recycled water storage stage 1

The Melton Recycled Water Plant (RWP) sewerage catchment is experiencing rapid growth. The current irrigation and storage system is at capacity so it must be increased to maintain compliance.

Failure to contain the 90th percentile recycled water volume will result in Western Water breaching the *Environment Protection Act* beyond 2022. Construction of a winter storage was identified as the best option to achieve compliance when the current EPA licence expires.

The Board approved the business case in December 2017. Detailed design has now commenced with construction expected to commence later in FY2019/20.

Melton RWP and Bacchus Marsh RWP Interconnection

With the projected growth in Western Water's southern region, in the catchments of both Melton and Bacchus RWPs, Western Water has been investigating options for reuse of the additional volumes of recycled water that are becoming available.

Given their proximity to each other and the locations of potential recycled water customers, both plants and their reuse schemes have been considered as a single system.

All strategic options that were under consideration relied on an interconnecting pipeline between Bacchus Marsh and Melton RWPs. Under the preferred adaptive pathway – the WIN project – the pipeline will be two-way, with normal operation to deliver water from Melton RWP in a westerly direction towards Parwan/Balliang.

The Board approved the business case in February 2018. Detailed design and approvals have progressed during FY2018/19 and construction is expected to commence later in FY2019/20.

Derrimut Diversion Sewer Pump Station/Rising Main

The Plumpton and Kororoit Precinct Structure Plans, west of Caroline Springs, were gazetted in 2018. The majority of the area is serviced by Western Water, with City West Water servicing a small area

in the north-east. Development activity has already commenced.

The topography falls to the east, away from Western Water's sewerage infrastructure in the Rockbank area. Western Water and City West Water have developed a staged sewer-servicing strategy for the area.

The initial connections will be into existing City West Water sewers in Caroline Springs. It is projected that the spare capacity in these sewers will be exhausted by 2023, when the permanent solution will be required.

The permanent solution involves the Clarke Road Pump station and rising main, which will transfer the sewage flows from the area to City West Water's Derrimut Interceptor Sewer, which eventually connects into Melbourne Water's sewer network.

Western Water will construct and operate the Clarke Road pump station and rising main. In addition to Western Water flows, it will also transfer sewage flows from City West Water.

The preferred location of the pump station has been identified and Western Water has been in discussions for some time with numerous stakeholders to acquire the site for the pump station.

It is expected that the site of the pump station will be agreed in the coming months, which will allow the concept design of the pump station and rising main to be developed.

Gisborne RWP Stage 1 Bioreactor

Growth in Gisborne is increasing sewage loads on the existing recycled water plant. Interim works on the existing bioreactor and better flow balancing into the treatment plant have created extra capacity from the existing assets.

However, given the ongoing growth in Gisborne, the treatment plant requires a substantial upgrade. The master plan, completed in 2015, recommended a new bioreactor, along with some other new process units.

To support the business case, a concept design for the upgrade is currently underway. The bioreactor will be one component of the upgrade included in the business case.



Sewer Spill Prevention Strategy - Sewer Relining Program

As sewers age they become increasingly susceptible to blockages from tree roots, cracks, infiltration and general debris. Rehabilitation of the sewer extends the life of the asset and increases its capacity.

Western Water developed a program in 2010 called the Sewer Spill Prevention Strategy (SSPS). This program targets actions to prevent sewage spills to minimise their unacceptable effects to the environment.

Without this program, the capacity and condition of Western Water's sewers would gradually reduce; the likelihood of spills to the environment would increase; and, the need for expensive repairs and replacements would rise. An effective sewer management plan optimises investment by reducing the need for complete rehabilitations, instead targeting the areas most in need of repair.

This program is annual and ongoing - it is constantly reviewed and optimised to enable significant sewer rehabilitation within budget limits.

Grant Street Sewer Pump Station Upgrade

Moorabool Shire is the second fastest-growing regional municipality in Victoria and, under current growth projections; Bacchus Marsh's population is expected to increase from about 20,000 to close to 40,000 over the next 25 years.

Currently, all sewage flows to the Avenue of Honour Sewage Pump Station (SPS) and is pumped to the Bacchus Marsh Recycled Water Plant in Parwan. The Avenue of Honour SPS is nearing capacity.

The proposal is to increase the capacity of Grant Street SPS and, significantly, divert sewage from the Avenue of Honour SPS to the upgraded Grant Street SPS. This reduces the load on the Avenue of Honour SPS by about one-third and, over the current 50-year planning horizon, avoids the need to upgrade the capacity of the pump station, the upstream sewers and the rising main.

Construction of the pump station will be staged, to avoid over-investment and operational issues in the early years. Stage 1 will more than double the existing capacity.

Detailed design of the pump station is complete, and approvals are in place. The Board approved

proceeding to the develop phase at its April meeting. Contract award and commencement of construction are scheduled for the end of 2019.

Beattys Road East Trunk Water Main

The Beattys Road East Trunk Water Main will be the second augmentation of the water supply into the Rockbank area, following the commissioning of the Leakes Road water main in early 2018. The second augmentation is required when the number of lots in the Rockbank area reaches 6,000, which is projected around 2023/24.

Running through the Plumpton and Kororoit area, the water main will also open up supply into this newly-gazetted area.

The Leakes Road water main is supplied from Hillside pump station, while the Beattys Road water main will be fed from Melbourne Water infrastructure upstream of the Hillside pump station. As well as reinforcing the network, this will provide a more secure supply into the area and reduce the amount of pumping required.

The water main will connect existing infrastructure on the Melton Highway to infrastructure currently under construction through the Woodlea estate. Initial sections of the water main will have a diameter of 900mm, with the later sections decreasing to 450mm. Construction may be in a staged approach, possibly aligning with the construction of a major upgrade of Beattys Road.

Sunbury Outfall Sewer Duplication

The population of Sunbury is expected to more than treble in the next 45 years.

The existing Sunbury outfall sewer, which was built at the same time as the Sunbury Recycled Water Plant, transfers about 90% of Sunbury's flows to the treatment plant. The sewer is in three sections – a 750mm diameter southern section, a much-larger ovoid section in a deep tunnel in the middle and a 750mm diameter northern section.

The existing outfall sewer is currently approaching its capacity. The majority of the growth in Sunbury will be in the catchment of the outfall sewer and ultimately it is planned to continue to transfer about 80% of Sunbury's flows through an augmented outfall sewer.

The 2009 Sunbury Sewerage Master Plan highlighted the impending hydraulic restriction in the existing sewer (in the 750mm diameter sections) and the proposal is to duplicate the 750mm diameter sections for a length of about 1.3km. The ovoid section, which would be extremely difficult and expensive to duplicate, was built with sufficient capacity for ultimate projected flows. The proposed alignment is alongside the existing sewer, within road reserves, Crown Land, existing easements through two private properties and land owned by Western Water at the Sunbury RWP.

In May 2019, the Board approved the pipe size and the project proceeding to the Develop phase.

Melton RWP - Secondary Treatment Upgrade

The Melton RWP will service the vast majority of the Melton growth corridor, from west of the proposed outer metropolitan ring road. Growth in its catchment is exceptionally fast.

The master plan for the treatment plant, completed in 2017, identified an upcoming capacity constraint in the existing secondary treatment process.

Options to increase the secondary treatment capacity are currently being explored. The previous master plan, completed in 2007, recommended constructing additional secondary tanks. The 2017 master plan recommends using innovative technology to increase the performance of the existing tanks, without the need to construct new tanks. The options to increase the secondary treatment capacity are currently being explored.

Significant projects

Western Water has no identified significant projects over the PS20 three-year period in addition to the major projects discussed above.

Capital program development methodology

We followed a rigorous, business-wide process to develop the capital program to deliver agreed levels of service and outcomes for the pricing period.

The capital program considered the need for investment over a 20-year period and takes into account the key drivers for investment beyond this pricing period. Prudent and efficient investments are

identified for the three-year pricing period with the longer-term view in mind.

The development of the investment for each portfolio aligns with the Western Water capital delivery process for delivering new assets and maintaining and renewing the existing asset base.

Development of capital portfolios

A key aspect of our capital optimisation process is the development of capital expenditure portfolios. To enable us to better understand and optimise the required capital investment, we segmented our total capital investment into 33 portfolios.

This approach was taken to allow the key drivers, delivery of customer outcomes and risks to be identified and optimised in a detailed manner.

Each portfolio was managed by a relevant senior manager who managed the development of the capital investment requirement with their team. The portfolio manager consulted with internal and external stakeholders to inform and incorporate key dependencies and impacts of decisions made within the portfolio.

The portfolios were also reviewed and critiqued by the relevant General Manager and revised in collaboration with the portfolio managers and team members prior to submission to the executive team for review and sign off.

Information relevant to each portfolio was captured in a standardised portfolio justification document. The document was developed to address the criteria as set out in the Essential Services Commission Guidance and to demonstrate the prudence and efficiency of the proposed investment.

Each justification document contained the necessary information to demonstrate and justify the investment for the purpose of setting prices according to the ESC Guidelines.

The portfolio justification documents also contain a review and sign off sheet to demonstrate that each of the relevant managers and executive team members have reviewed and endorsed the decisions made within the portfolio. The portfolios are listed in the following table.

Capital Portfolios

No.	ID	Portfolio Name
1	FCM	Facility Management
2	ITNS	IT System Infrastructure
3	PVM	Plant and Vehicle Management
4	INNV	Innovation
5	ITAM	IT Asset Management
6	ITBS	IT Business Management
7	ITSC	IT SCADA
8	POWM	Power Management Improvements
9	GIFT	Gifted Assets
10	LDG	Land Development Growth
11	LDOS	Land Development Out of Sequence
12	PLAN	Infrastructure Planning
13	RIRA	Recycled Water Land Irrigation Augmentation
14	RNAA	Recycled Class A Augmentation
15	RNCA	Recycled Class B/C Expansion
16	RIRR	Recycled Water Land Irrigation Renewals
17	RNAR	Recycled Class A Renewals
18	RNCR	Recycled Class B/C Renewals
19	BIOS	Biosolids
20	SNA	Sewer Network/Transfer Augmentation
21	SQI	Sewer Environmental Improvements
22	SRA	Sewer Treatment Augmentation
23	SNR	Sewer Network Renewals
24	SRR	Sewer Treatment Renewals
25	UNCL	Unclassified
26	WFA	Water Treatment Augmentation
27	WNA	Water Network Augmentation
28	WQI	Water Quality Improvements
29	WTA	Water Transfer Augmentation
30	WFR	Water Treatment Renewals
31	WNR	Water Networks Renewals
32	WTR	Water Transfer Renewals
33	WRES	Water Resource

Portfolio optimisation process

We applied a two-stage approach to optimise the investment decisions within each portfolio. The first stage involved developing an initial estimate for the portfolios to ensure that the required levels of service and customer outcomes could be met based on investing in a requirement driven environment and adhering to the relevant engineering standards.

The second stage optimised the investment based on various criteria to balance the available resources to ensure that the forecast investment was efficient while still meeting the customer outcomes and adhering to the relevant standards.

Each stage is described below in detail.

Portfolio Optimisation Stage 1 – Requirements Driven Estimate

The initial estimate developed a capital expenditure estimate that delivered the following:

- meets and maintains the agreed levels of service to be delivered by the portfolio
- delivers the agreed customer outcomes relevant to the portfolio
- takes into consideration the key drivers and input assumptions that govern the portfolio
- identifies the required capital investments and defines the optimal time to ensure that no additional risk is borne by Western Water in delivering the levels of service and customer outcomes
- assumes that capital investments can be delivered based on the requirements as set out by the engineering analysis to meet the required timing for delivery, and
- includes cost estimates based on the best available information including P50 estimates

Portfolio Optimisation Stage 2 – Resource Balanced Estimate

The second stage optimised the estimate developed in stage 1 by considering the following additional elements:

- Capacity to deliver investment within the time required: The engineering analysis may suggest that a certain asset needs to be delivered within a given timeframe. This analysis considers whether the planning, design and tender process can be completed within the required timeframe for the asset to be built as required.
- Consideration of internal and external dependencies that impact the delivery of the assets: This element considers the sequencing of assets and tests whether there are dependencies that impact the delivery of the asset.
- Confidence of cost estimates: This step considers whether there is equal confidence in the accuracy of the engineering estimates. For example, there may be high certainty about a project that is to occur in the first year and less certainty about estimates for projects in subsequent years.
- Risk Assessment: This is the crucial step in the second stage of the portfolio optimisation process. The risk assessment outlines the risk to the delivery of the agreed levels of service and customer outcomes given the factors discussed above. Due to these factors and uncertainty, it may not be possible to deliver the assets in the ideal timeframe. This in turn presents a risk to delivery of service levels and customer outcomes. The risk assessment considers the likelihood and consequence of each risk and whether there are existing controls in place to mitigate the risk. Controls may include current operational interventions or other interim methods to deliver the customer outcomes if the required capital expenditure cannot be delivered in the ideal timeframe.

The final recommended investment for each portfolio is developed based on risk adjusted optimisation conducted in stage 2.

The optimisation process ensures that the proposed expenditure forecast is efficient in delivering the levels of service and customer outcomes.

Appendix 5: Tariff Schedule

Variable water, sewerage, trade waste charges and disposal of septic waste are rounded down to 4 decimal places. All other charges are rounded down to 2 decimal places.

Efficiency bill reduction appears as a reduction on residential water usage customer bills and is not reflected in tariffs.

PS20 Schedule of Prices

Tariff and Price Component	Price (1 Jul 19)	2019 Price pre COD adj	Adj'tment for Rebate	Price after adj	% Price increase	2020/21 COD adj b/fwd	Real 2020\$		
							Price (1 Jul 20)	Price (1 Jul 21)	Price (1 Jul 22)
1.1 Residential water tariff									
Service charge (per annum)									
20 mm	234.34	237.39	-30.98	206.42	1.51%	-6.17	203.35	212.69	215.90
25 mm	366.16	370.93	-30.98	339.95	1.51%	-10.16	334.92	350.29	355.57
32 mm	599.93	607.74	-30.98	576.76	1.51%	-17.24	568.23	594.31	603.28
40 mm	937.41	949.60	-30.98	918.63	1.51%	-27.46	905.03	946.58	960.87
50 mm	1464.73	1483.78	-30.98	1452.80	1.51%	-43.43	1431.30	1497.00	1519.60
80 mm	3798.52	3798.53	-30.98	3767.55	1.51%	0.00	3824.44	3882.19	3940.81
100 mm	5859.04	5935.23	-30.98	5904.25	1.51%	-176.51	5816.89	6083.90	6175.76
150 mm	13182.90	13354.32	-30.98	13323.35	1.51%	-398.31	13126.22	13728.74	13936.04
20 mm Service charge (per annum) - Landlord & Vacant Land	234.34	237.39	-4.43	232.97	1.51%	-7.10	233.87	240.12	239.25
Usage charge block 1 (0-440 litres/day) (per kL)	1.8580	1.8580	0.00	1.8580	0.00%	0.00	1.8580	1.8580	1.8580
Usage charge block 2 (441-880 litres/day) (per kL)	2.4652	2.4652	0.00	2.4652	0.00%	0.00	2.4652	2.4652	2.4652
Usage charge block 3 (881+ litres/day) (per kL)	3.7786	3.7786	0.00	3.7786	1.95%	0.00	3.8522	3.9274	4.0039
1.2 Non-residential water tariff									
Service charge – commercial / free access / benevolent (per annum)									
20 mm	234.34	237.39	0.00	237.39	1.51%	-7.10	233.87	244.61	248.30
25 mm	366.16	370.93	0.00	370.93	1.51%	-11.09	365.43	382.21	387.98
32 mm	599.93	607.74	0.00	607.74	1.51%	-18.17	598.74	626.23	635.68
40 mm	937.41	949.60	0.00	949.60	1.51%	-28.39	935.55	978.49	993.26
50 mm	1464.73	1483.78	0.00	1483.78	1.51%	-44.36	1461.82	1528.92	1552.00
80 mm	3749.77	3798.53	0.00	3798.53	1.51%	-113.56	3742.32	3914.10	3973.20
100 mm	5859.04	5935.23	0.00	5935.23	1.51%	-177.44	5847.41	6115.82	6208.16
150 mm	13182.90	13354.32	0.00	13354.32	1.51%	-399.23	13156.73	13760.66	13968.44
Usage charge (per kL)	2.4652	2.4652	0.00	2.4652	0.00%	0.00	2.4652	2.4652	2.4652
1.3 Residential sewerage tariff									
Sewer service charge (per annum) - Owner Occupier	540.88	547.91	-72.28	475.64	1.51%	-14.22	468.59	490.11	497.51
Sewer service charge (per annum) - Landlord & Vacant Land	540.88	547.91	-10.33	537.59	1.51%	-16.38	539.80	554.10	551.98
1.4 Non-residential sewerage tariff									
Service charge – commercial / free access / benevolent (per annum)	540.88	547.91	0.00	547.91	1.51%	-16.38	539.80	564.58	573.10

PS20 Schedule of Prices cont.

Tariff and Price Component	Real 2020\$								
	Price (1 Jul 19)	2019 Price pre COD adj	Adj'ment for Rebate	Price after adj	% Price increase	2020/21 COD adj b/fwd	Price (1 Jul 20)	Price (1 Jul 21)	Price (1 Jul 22)
1.5 Residential and non-residential recycled water tariff – class A									
Service charge (per annum)									
20 mm	113.16	113.16	0.00	113.16	0.00%	0.00	113.16	113.16	113.16
25 mm	176.85	176.85	0.00	176.85	0.00%	0.00	176.85	176.85	176.85
32 mm	289.74	289.74	0.00	289.74	0.00%	0.00	289.74	289.74	289.74
40 mm	452.74	452.74	0.00	452.74	0.00%	0.00	452.74	452.74	452.74
50 mm	707.42	707.42	0.00	707.42	0.00%	0.00	707.42	707.42	707.42
80 mm	1811.03	1811.03	0.00	1811.03	0.00%	0.00	1811.03	1811.03	1811.03
100 mm	2829.77	2829.77	0.00	2829.77	0.00%	0.00	2829.77	2829.77	2829.77
150mm	6367.00	6367.00	0.00	6367.00	0.00%	0.00	6367.00	6367.00	6367.00
Usage charge class A recycled water – residential (per kL)	1.8580	1.8580	0.00	1.8580	0.00%	0.00	1.8580	1.8580	1.8580
1.6 Trade waste charges									
Application fee – risk rank 1 (per application)	140.26	140.26	0.00	140.26	0.00%	0.00	140.26	140.26	140.26
Application fee – risk rank 2 (per application)	220.48	220.48	0.00	220.48	0.00%	0.00	220.48	220.48	220.48
Application fee – risk rank 3 (per application)	409.32	409.32	0.00	409.32	0.00%	0.00	409.32	409.32	409.32
Application fee – risk rank 4 (per application)	970.72	970.72	0.00	970.72	0.00%	0.00	970.72	970.72	970.72
Management fee – risk rank 1 (per annum)	272.55	272.55	0.00	272.55	0.00%	0.00	272.55	272.55	272.55
Management fee – risk rank 2 (per annum)	571.74	571.74	0.00	571.74	0.00%	0.00	571.74	571.74	571.74
Management fee – risk rank 3 (per annum)	1278.25	1278.25	0.00	1278.25	0.00%	0.00	1278.25	1278.25	1278.25
Management fee – risk rank 4 (per annum)	2600.58	2600.58	0.00	2600.58	0.00%	0.00	2600.58	2600.58	2600.58
Volumetric charge – category B (per kL)	1.7011	1.7011	0.00	1.7011	0.00%	0.00	1.7011	1.7011	1.7011
Volumetric charge – category C (per kL)	1.1909	1.1909	0.00	1.1909	0.00%	0.00	1.1909	1.1909	1.1909
1.7 Trade waste quality charges — risk ranks 2, 3 and 4 (per kg)									
BOD >400mg/L	0.3439	0.3439	0.00	0.3439	0.00%	0.00	0.3439	0.3439	0.3439
Suspended solids >400mg/L	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Total phosphorus >30mg/L	0.5120	0.5120	0.00	0.5120	0.00%	0.00	0.5120	0.5120	0.5120
Total combined nitrogen >60mg/L	0.6586	0.6586	0.00	0.6586	0.00%	0.00	0.6586	0.6586	0.6586
Total oxidisable sulphur >100mg/L	0.9515	0.9515	0.00	0.9515	0.00%	0.00	0.9515	0.9515	0.9515
Sodium >250mg/L	0.1457	0.1457	0.00	0.1457	0.00%	0.00	0.1457	0.1457	0.1457
Arsenic >0.2g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Cadmium >0.4g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Chromium (III & VI) >100g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Copper >100g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Lead >100g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Mercury >0.2 g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191

PS20 Schedule of Prices cont.

Tariff and Price Component	Real 2020\$								
	Price (1 Jul 19)	2019 Price pre COD adj	Adj'ment for Rebate	Price after adj	% Price increase	2020/21 COD adj b/fwd	Price (1 Jul 20)	Price (1 Jul 21)	Price (1 Jul 22)
1.7 Trade waste quality charges — risk ranks 2, 3 and 4 (per kg) cont.									
Heavy metals — Nickel >10g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Selenium >10g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
Heavy metals — Zinc >100g/day	0.2191	0.2191	0.00	0.2191	0.00%	0.00	0.2191	0.2191	0.2191
1.8 Trade waste penalty units									
1st major breach	185.86	185.86	0.00	185.86	0.00%	0.00	180.00	180.00	180.00
2nd major breach	392.37	392.37	0.00	392.37	0.00%	0.00	380.00	380.00	380.00
3rd major breach	877.68	877.68	0.00	877.68	0.00%	0.00	850.00	850.00	850.00
4th major breach	1786.35	1786.35	0.00	1786.35	0.00%	0.00	1730.00	1730.00	1730.00
1.9 Customer contribution (per lot)									
Customer contribution — Infill	2696.34	2696.34	0.00	2696.34	0.00%	0.00	2696.34	2696.34	2696.34
Customer contribution — Greenfield	5392.69	5392.69	0.00	5392.69	5.00%	0.00	5662.32	5945.43	6242.70
2.0 Miscellaneous fees and charges									
Water tapping fees – drinking and recycled water									
20 mm installation	435.31	435.31	0.00	435.31	0.00%	0.00	435.31	435.31	435.31
25 mm installation	803.63	803.63	0.00	803.63	0.00%	0.00	803.63	803.63	803.63
32 mm installation	1691.04	1691.04	0.00	1691.04	0.00%	0.00	1691.04	1691.04	1691.04
40 mm installation	2193.22	2193.22	0.00	2193.22	0.00%	0.00	2193.22	2193.22	2193.22
50 mm installation	3365.19	3365.19	0.00	3365.19	0.00%	0.00	3365.19	3365.19	3365.19
Water meter test – 20mm to 32mm (per test)	117.24	117.24	0.00	117.24	0.00%	0.00	117.24	117.24	117.24
Conditions of connection – sewer									
Residential standard (per application)	217.54	217.54	0.00	217.54	0.00%	0.00	217.54	217.54	217.54
Commercial standard (per application)	301.32	301.32	0.00	301.32	0.00%	0.00	301.32	301.32	301.32
Information statements – standard	66.86	66.86	0.00	66.86	0.00%	0.00	66.86	66.86	66.86
Plugging fees – drinking and recycled water	159.46	159.46	0.00	159.46	0.00%	0.00	159.46	159.46	159.46
Pressure and flow information	313.13	313.13	0.00	313.13	0.00%	0.00	313.13	313.13	313.13
Disposal of septic waste to treatment plants									
per load	440.93	440.93	0.00	440.93	0.00%	0.00	440.93	440.93	440.93
per kL	57.1277	57.1277	0.00	57.1277	0.00%	0.00	57.1277	57.1277	57.1277
Non-core miscellaneous services	Actual cost	Actual cost		Actual cost	0.00%		Actual cost	Actual cost	Actual cost

Appendix 6: Governance

Western Water's price submission process commenced on the back of PS18. A number of key issues were highlighted in preparation of PS18 that confirmed the need of Western Water to lodge a two-year submission and follow it up with PS20.

Submitting pricing proposals for a shorter two-year regulatory period in PS18 has enabled Western Water to reassess its position on future growth from a pricing and service performance perspective (see ESC guidance on what Western Water's challenges were).

The preparation process for this submission commenced with a detailed summary of all the key price submission activities being developed and tasked generally to a Senior Manager or senior staff members to develop, review and/or update relevant strategies and documentation. The progress on these activities was tracked and reported, with the relevant General Manager ultimately responsible for their delivery.

The Price Submission Steering Committee, established for PS18, continued to ensure the process had good governance and oversight by Western Water's Executive Management Team.

The Steering Committee was comprised of key members of the Executive, being Managing Director, General Manager Business Services, General Manager Customer, Community & Operations and General Manager Planning & Capital Delivery, supported by the Manager Regulation & Governance, the senior communications and engagement advisor seconded to work full time on

the submission and an external contractor engaged to support the process. The Committee met initially on a monthly basis which then moved to weekly and extended to the whole of the Executive team for the final six months prior to submission date.

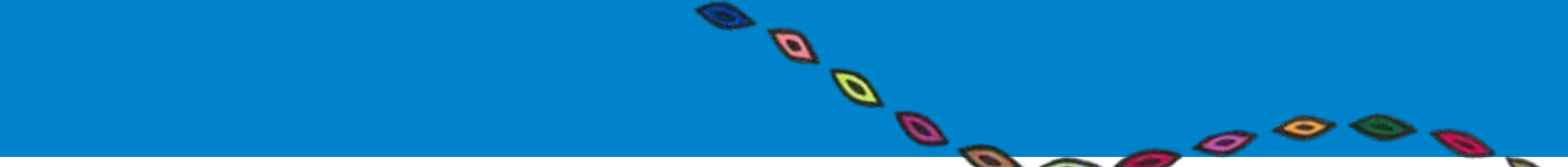
To assist with transparency and consistency all assumptions have been documented, updated and reviewed. These assumptions represent the key inputs into the submission with the owner of each of the assumptions required to confirm the documented assumption.

Throughout the planning and development of the submission, the Board of Western Water has been provided with contextual papers to enable them to understand the background of the key areas addressed. In addition, several key decisions were endorsed by the Board for input to the various customer and stakeholder engagement processes.

Third party assistance

Western Water received assistance from a number of third party organisations to assist with preparation of background work to inform this submission:

- Marsden Jacob Consulting
- MosaicLab Consulting
- Red Strategic Communications
- Bartley Consulting
- Marchmont Hill, and
- Deliberately Engaging.





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