

28 September 2017

Dr Ron Ben-David
Chairperson
Essential Services Commission
Level 37, 2 Lonsdale Street
MELBOURNE VIC 3000

Dear Ron

Yarra Valley Water's 2018-23 Price Submission

On behalf of the Board of Yarra Valley Water, I am pleased to submit our 2018-23 price submission. We believe that through our deep customer engagement and research over the past two years, we have found the "sweet spot" between price and service that delivers the greatest value to our customers.

Customer insights are the foundation of our submission. The insights started with understanding our customers lives in a broader sense (beyond water), and concluded with the Citizen's Jury deliberating on the challenge:

"We need to find a balance between price and service which is fair for everyone. How should we do this?"

Our engagement has been designed to understand:

- the diversity of our customers, their unique values and perspectives
- customer's service experiences and expectations across our diverse customer base, using both quantitative and qualitative research techniques
- the relative value of individual aspects of our service and its relationship to price through conjoint choice modelling
- what is fair for everyone and of greatest value through an independent and citizen led deliberative process.

Along the way, we also sought the input of our Community Advisory Group on all facets of our submission.

Resulting from this engagement the following major insights were revealed:

- the overarching preference is for 'no bill increase', however customers favour increased service levels over a bill decrease
- small, frequent changes are preferred over one-off larger bill changes

- customers are satisfied with existing core infrastructure service levels and are not 'willing to pay' to improve them, contrasting with previous price reviews - while they also do not favour reductions in service levels for lower bills
- water quality is the most important aspect of our service and should not be compromised.

These insights led to the development of seven outcomes, distinguished between what is important and what is of value to customers. Listed in order of customer preference they are:

"as a customer, I expect...

- water that is safe to drink (safe drinking water),
- water and sewerage services I can rely on (reliable water and sewerage services)
- fast response and effective restoration of my service when it is interrupted (timely response and restoration)

"as a customer, I value...

- support for customers having difficulty paying their bill (fair access and assistance for all)
- modern, flexible service and advice that suits my needs (modern flexible service)
- saving water now so it's available in the future (water availability and conservation)
- looking after the environment (care for and protect the environment)

Within customers overarching sentiment of 'no bill increases' we have sought to optimise customer value through:

- initiatives where our customers have identified additional value:
 - improving awareness and access to services and programs for customers who experience difficulty paying their bills
 - a more flexible and tailored service through creating incentives for customers to move to e-billing with direct debit, and progressing digital metering trials consistent with their strong support for digital metering
 - a proactive approach to saving water through investing to reduce network water loss, increasing education, awareness and other measures to encourage water efficiency, and greater use of recycled water and stormwater.
- designing a price path that delivers small bill changes in preference to large infrequent changes, while minimising the impacts of removing the \$100 government water rebate on those customers most affected
- challenging ourselves to ensure our customers do not bear undue risk, particularly in terms of price, resulting in:
 - proposing significant efficiencies through compounding productivity improvements of 2.5% per year while absorbing an estimated \$14.5 million of costs between 2018-19 and 2022-23 associated with electricity and above inflation wages growth
 - a prudent and efficient investment plan amounting to \$1.1 billion over five years which is the minimum amount required to maintain customer service levels, provide for customer growth and meet environmental obligations. We propose 14% unit rate efficiencies associated with ongoing programs and have not charged customers for \$117 million of capital projects where there is project uncertainty (timing, cost, scope and benefit)
- holding ourselves accountable for achieving our seven outcomes and publicly reporting our results – and where we fail to deliver the outcomes, we commit to lowering prices in the following year by \$1.5 million for each of the seven outcome targets we do not achieve (a total of \$52.5 million over the period is at stake).

Overall, we are proposing a declining real price path for all customers over the five-year regulatory period. We have minimised the impact of removal of the \$100 government rebate in 2018-19 and retained the strong water conservation incentive associated with our inclining three step water usage tariffs through a real weighted price reduction of 10.2% over the pricing period. Taking into account reductions already passed on to customers due to our Revenue Cap over the current price period, this equates to a 12.7% price reduction from the last determination.

In annual terms, consistent with customers preference for not having a bill increase and also not valuing a decrease, we have held bills flat in 2018-19 for the typical residential customer and non residential customers, with annual prices changes 0.7% less than inflation for the following four years. The overall effect of our proposal is a real decrease in the average bill every year over the period.

Throughout the process we have sought to optimise value for customers.

Using the Commission's guidance we assessed our proposal to determine the level of ambition that would be appropriate. Our view is that our engagement, management and risk elements are consistent with a 'leading' submission with outcomes meeting the criteria for 'advanced'. In summary, the basis for this assessment is:

- our engagement and research programs are at the outer edge of the Commission engagement model in terms of content, form and timing – culminating with the Citizens' Jury that independently and without bias made recommendations to balance price and service that they considered fair for everyone
- significant efficiency and productivity improvements proposed for both operating and capital expenditure together with substantial Board and management involvement in the submission over the last two years
- a robust risk framework consistent with international ISO standards and accepting significantly more risk on behalf of customers through proposed efficiency savings and excluding uncertain projects. In addition, a commitment to price reductions if outcome targets are not achieved and realignment of rebates consistent with customer's priorities and preferences
- co-creation with our customers of seven outcomes distinguishing between what they expect and what generates additional value. Consistent with customer's priorities and preferences – our targets focus on maintaining core service levels and increasing emphasis and activities in areas of value.

While we believe our submission is 'leading' overall - we are proposing an 'advanced' self rating as this optimises value for customers in terms of 'what they get' and 'what they pay'. A 'leading' submission over an 'advanced' submission would increase the typical household bill by about \$29 in real terms over the next regulatory period. This raised the question of whether additional value could be generated to match this increase. Our conjoint choice modelling identifies changes in the relative value score for difference price and service offerings. The results show:

- an 'advanced' submission significantly increases the value score from the current service and price offering of 47.3 to 70.1
- a 'leading' submission would only generate a small increase in value compared to the current service and price offering, increasing the value score from 47.3 to 50.4, and this is substantially below the 'advanced' submission value score of 70.1.

Our extensive customer engagement program did not reveal any other areas of substantial customer benefit that would offset the impact of higher bills. Given our starting point of relative high operational

efficiency, the additional productivity to reduce price and improve the value score for a leading submission would need to be in the order of 4% p.a. In our view, committing to such a target would be an unacceptable risk to take and it would not be in the best interests of our customers nor the sustainability of the organisation. We are confident that an 'advanced' submission creates our 'best offer' for customers through balancing outcomes, risk and price.

The Board has been actively engaged in the development, review and approval of the price submission over the past two years. Through the Board and its Sub-Committees, we have considered 43 price submission related papers as well as attending Citizens' Jury sessions. We are confident in providing the appropriate attestation.

In summary, our submission:

- reflects what our customers expect and value that came through our deep and comprehensive engagement with our community
- identifies the "sweet-spot" between price and service delivery that provides the greatest value for our customers
- commits us to delivering outcomes that match customer expectations and values, with price reductions if these are not delivered
- ensures that customers are not paying for conservatism in investment plans
- continues to position Yarra Valley Water at the leading edge of efficiency
- delivers real bill reductions year on year.

In closing, we would like to express to the Commission our view that the introduction of the PREMO model has been a challenging and very positive development in economic regulation. It is Yarra Valley Water's intention to fully embed the key tenets of the model into the planning and delivery of our services on an ongoing basis.

If you require further details on these matters, please contact our Managing Director, Pat McCafferty

Yours sincerely



Sue O'Connor

Chair

YARRA VALLEY PRICE SUBMISSION WATER

2017



ABORIGINAL ACKNOWLEDGEMENT

Yarra Valley 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 and operate. We pay our deepest respects to their Elders past, present and future.

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.

BOARD ATTESTATION

As at 27 September 2017, the directors of Yarra Valley Water Corporation, 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 2018 Water Price Review:

- information and documentation provided in the Price Submission and relied upon to support Yarra Valley Water's Price Submission is reasonably based, complete and accurate in all material respects;
- financial and demand forecasts are Yarra Valley Water's best estimates, and supporting information is available to justify the assumptions and methodologies used; and
- the Price Submission satisfies the requirements of the 2018 Water Price Review Guidance paper issued by the Essential Services Commission in all material respects.



Sue O'Connor

Chair

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FINDING THE BALANCE BETWEEN PRICE AND SERVICE THAT IS FAIR FOR EVERYONE

This document presents Yarra Valley Water's Price Submission for the five-year regulatory period commencing 1 July 2018. The Price Submission meets the Commission's requirements in its 2018 Water Price Review Guidance Paper.

- Customer insights are the foundation of our submission. We have found that while customers do not want water bills to increase, they value increased service levels over a bill decrease. Our insights started with understanding our customers' lives in a broader sense (beyond water), through to conjoint choice modelling and a citizens' jury to understand what customers expect and value.
- The citizens' jury's goal was to provide recommendations on the balance between price and service which is fair for everyone. The jury established the criteria for 'fair for all', and made 10 recommendations which we have accepted.
- Through targeted price reductions in 2018-19, we have offset the impact of removing the \$100 government rebate on the average bill and retained the strong water conservation incentive associated with our inclining three step water usage tariffs.
- We propose to deliver bill reductions year on year. Water bills of our typical household (using 150 kilolitres of water per year) and business customers will not increase in 2018-19 (in nominal terms). From 2019-20 to 2022-23, the annual price change will be 0.7% less than inflation, resulting in real decreases for the period.
- Within customers' overarching sentiment of 'no bill increases' we have sought to optimise customer value. We have included substantial efficiencies in our operating and capital investment costs for the 2018-23 period through:
 - compounding 2.5% annual efficiency in our base controllable operating costs
 - \$1,186 million capital investment program to maintain existing service levels. This proposed level of expenditure is similar to the 2013-2018 regulatory period, including 14% cost rate efficiencies for ongoing programs and a 21% reduction in growth related capital expenditure forecasts that reflect a more conservative rate of development
 - not charging customers for \$117 million possible capital works due to significant project uncertainty (cost, scope, timing or benefits).
- Distinguishing between what customers have told us they expect and what would drive increased value, our seven outcomes have been defined to reflect the customer experience. The outcomes are supported by a 'Golden Thread' that includes primary measures, other measures we will manage and monitor, activities, actions, programs and costs.
- Our customers say that water quality is the most important service we provide and should not be compromised. They are satisfied with core infrastructure related service levels so we are proposing no change to current service levels.

- We have focused on areas where our customers have identified additional value. These are:
 - improving awareness and access to services and programs for disadvantaged customer segments who experience barriers to our services
 - creating incentives for customers to move to e-billing with direct debit and pursuing pilot projects to support the introduction of digital meters
 - investing to reduce network water loss, increasing education, awareness and other measures to encourage water efficiency and greater use of recycled water and stormwater.
- We will hold ourselves accountable for achieving the outcomes. If we fail, we commit to lowering prices in the following year by \$1.5 million, for each of the seven outcome targets we do not achieve. That's a total of \$52.5 million at stake – and we will publicly report these results to our customers.
- We are proposing an 'advanced' self rating of our submission which optimises value for customers in terms of 'what they get' and 'what they pay'. Whilst we believe our submission could be rated as 'leading', this would increase prices to customers without a corresponding increase in customer value. We are confident that an 'advanced' submission creates our 'best offer' through balancing outcomes, risk and price.

THE JURY ESTABLISHED A CRITERIA AND GUIDING PRINCIPLES FOR ASSESSING 'FAIR FOR EVERYONE' WHICH THEY USED TO GUIDE THEIR FINAL RECOMMENDATIONS:

- **Equitable** (in terms of price impact and service access)
- **Representative** (consideration given to all groups)
- **Transparent and visible** (in relation to information and pricing)
- **Affordable** (affordable service and support for those who need help)
- **Flexible and responsive** (provides choice and meets differing needs)
- **Consistent service standards** (for customers within the same service area)
- **Sustainable over the long-term** (reinvestment)

OVERVIEW - THE STORY OF OUR SUBMISSION

A CONVERSATION WITH OUR CUSTOMERS

To truly put our customers at the centre of our submission we embarked on an ambitious program of research and engagement. Delivered in four phases, the program builds on insights from each previous phase, and has an overall focus on creating customer value. The phases were:

- **The Story – understanding and empathy** (March to August 2016). We wanted to better understand our customers, their lives and what was of most importance to them. We sought to identify personas to allow us to connect to our customers as real people with differing values, taking us well beyond simple demographics. Eight personas were identified representing the different value-sets across our customer base, enabling us to 'step into another's shoes and view the world from their perspective'. Personas formed a critical part of our early work and have been consistently used alongside traditional demographics to ensure the diversity of our customers is represented and their values considered.
- **The Insights – listening and co-creating outcomes** (August to September 2016). We wanted to understand our customers' views and service expectations - in particular what was important in relation to their water and sewerage services. To do this we undertook a series of research pieces with different customer segments including local government, business, community groups and households. In response, we developed three preliminary outcomes: reliability and timeliness of our services; fair treatment for all customers; and operating in a way that cares for and protects the environment.
- **The Value Creation – choices and design** (October 2016 to July 2017). We needed to know if these initial outcomes resonated with customers. Through focus groups with customers and our Customer Advisory Group, we tested the initial outcomes and draft measures to ensure we weren't misinterpreting or misunderstanding this broad customer input.

This phase identified that water quality was the most important aspect of our service for customers^{1 2}. We therefore created a fourth outcome - quality water services separating it out from reliable and timely services. We continued to test and validate these outcomes through focus groups, customer and stakeholder engagement and broadly promoted online engagement.

We then sought to understand customers' willingness to trade-off price and service. This was explored through conjoint choice modelling and our citizens' jury, which identified a clear distinction between what is important to customers and what they value.

1 Newfocus, Customer shaping & informing options – data mining project, June 2016, page 13

2 Nature, Yarra Valley Water: Conjoint Choice Modelling Research Debrief, June 2017

• **The Proposal – decisions and reporting** (August 2017 to September 2017). All previous insights, together with results from conjoint choice modelling and recommendations from the citizens' jury, determined the final outcomes in this Price Submission. This included:

- further emphasis on the distinction between core service (what's necessary and important), and community based outcomes (source of increased value)
- water is a scarce and valuable resource - customers prioritise saving water for the future even at a cost
- expectations for customer service are set from outside the water industry
- customers value performance reporting that speaks to their personal experience and interests.

To better reflect these insights, we expanded the four outcomes to seven. These are expressed to reflect the experience of customers, delineated by what customers have said is important and expected of us, and the outcomes which customers have identified as providing additional value. These are listed in order of customer preference:

"as a customer, I expect..."

- water that is safe to drink (safe drinking water)
- water and sewerage services I can rely on (reliable water and sewerage services)
- fast response and effective restoration of my service when it is interrupted (timely response and restoration)

"as a customer, I value..."

- support for customers having difficulty paying their bill (fair access and assistance for all)
- modern, flexible service and advice that suits my needs (modern flexible service)
- saving water now so it's available in the future (water availability and conservation)
- looking after the environment (care for and protect the environment)

Our journey is shown in the following diagram.

OUR ENGAGEMENT JOURNEY

KEY DATA

24,000+

CUSTOMERS ENGAGED

800

HOURS OVER 6 MONTHS OF ENGAGEMENT

30

CITIZENS' JURY MEMBERS OVER 40 HOURS

1,164

CUSTOMERS PARTICIPATED IN CONJOINT CHOICE MODELLING

10

CUSTOMER WORKSHOPS

8

IN-HOME IMMERSIONS

PHASE 1

THE STORY – UNDERSTANDING & EMPATHY (MAR TO AUG 2016)

Customers told us:

- Deliver core services to a high standard and keep prices down
- They are confident we are doing the best we can for them
- Increase awareness and uptake of programs for customers experiencing difficulty paying
- Be responsive and act quickly

We developed:

8 personas representing our diverse customers

PHASE 2

THE INSIGHTS – LISTENING & CO-CREATING OUTCOMES (AUG TO SEP 2016)

Customers Told Us

- 49% of customers have struggled to pay a utility bill in the past 12 months
- Continue to deliver core services at no increased cost

This led us to focus on and consider:

- 3 preliminary outcomes
- Strengthening and expanding our programs for vulnerable customers
- Further review our productivity strategy

CARE & PROTECTION OF ENVIRONMENT

RELIABLE & TIMELY SERVICE

FAIR FOR ALL CUSTOMERS

50 FACE TO FACE SURVEYS WITH HARD TO REACH GROUPS

3 STAKEHOLDER DELIBERATIVE WORKSHOPS

2 MULTICULTURAL EVENT ENGAGEMENTS

3 ABORIGINAL & TORRES STRAIT ISLANDERS ENGAGEMENT ACTIVITIES

10 COMMUNITY ADVISORY GROUP MEETINGS

2,000 'HAVE YOUR SAY' PORTAL - OVER 2,000 VISITS

RELIABLE & TIMELY SERVICE

QUALITY WATER SERVICES

CARE & PROTECTION OF ENVIRONMENT

FAIR FOR ALL CUSTOMERS

PHASE 3

THE VALUE CREATION - CHOICES & DESIGN (OCT 2016 TO JULY 2017)

The Insights

- Quality drinking water is the most important service, so we created a new outcome
- Small incremental bill increases preferred
- Current service levels meet expectations

Citizens' Jury Convened

- Increasing support for vulnerable customers
- Conjoint choice modelling
- Incentivise electronic billing and on-time payment
- Support for digital metering
- Increase water conservation education and advice



CUSTOMERS EXPECT:

CUSTOMERS VALUE:

SAFE DRINKING WATER

RELIABLE WATER & SEWERAGE SERVICES

TIMELY RESPONSE & RESTORATION

FAIR ACCESS & ASSISTANCE FOR ALL

WATER AVAILABILITY & CONSERVATION

MODERN FLEXIBLE SERVICE

CARE FOR & PROTECT THE ENVIRONMENT

PHASE 4

THE PROPOSAL - DECISIONS & REPORTING (AUG TO SEP 2017)

- Adopted 10 Citizens' Jury Recommendations
- Evolution of 4 Outcomes to 7 further emphasising the distinction between importance and value
 - 3 core service based (what customers expect)
 - 4 community based (source of increased value)
- Customers engaged on performance reporting



FOCUSING EFFORT TO IMPROVE CUSTOMER VALUE

Board and Management have consciously planned to provide our 'best offer' to customers. We are committed to the achievement of our seven outcomes and their associated measures and targets over the five-year period 2018-19 to 2022-23.

Our proposal is underpinned by strong customer sentiment: they do not want a bill increase, and they value increased service levels over a bill decrease.

Consistent with this sentiment, our customer satisfaction data shows we are currently meeting customer expectations in what they see as our 'core services'. Customer research demonstrates there is no longer a willingness to pay for improved core infrastructure related services – *safe drinking water, reliable water and sewerage services and timely response and restoration* outcomes – compared to previous submissions. In seeking to strike a balance between price and improved service offerings, we are not proposing to charge customers for service improvements they do not want. We are focusing on where customers tell us they are seeking additional value including:

- *Fair access and assistance for all* through improving awareness and access to services and programs for disadvantaged customer segments who experience barriers to our services
- *Modern flexible service* by:
 - increasing efficiency and reducing environmental impacts of paper bills by incentivising the take-up of e-billing with direct debit payment
 - advancing the potential of digital meters through the completion of pilots. We will then consider broader implementation (as recommended by the citizens' jury), including a maximum customer contribution of \$12.50 per annum. Our preference is to roll-out at no cost to customers and we would not seek to recover any costs before 2023.
- *Water availability and conservation* through:
 - investing in more proactive pursuit of network water losses
 - increasing education and awareness across all aspects of our services, particularly to promote water conservation
 - considering the most appropriate way to reward customers for wise water use
 - supporting community based decision making and community events to encourage efficient use of water and where feasible, greater use of recycled water and stormwater.
- *Care for and protect the environment* through significant reductions in greenhouse gas emissions

In addition, our customer research has identified opportunities to increase customer satisfaction with our core services through improved communication to enhance our timely response and restoration of core services.

BEING EFFICIENT TO KEEP BILLS DOWN

The overwhelming majority (92%) of customers told us that small annual bill changes are better than a single large change³. In line with this, and consistent with customers not wanting a price increase, we propose for the average household, tenant and water only customer, and for all business customers, no increase in their bill (estimated real decrease 2.3%) in 2018-19, followed by an annual price change of 0.7% less than inflation. This will be achieved through:

- Reduced controllable operating costs with a continuing decline in costs per property over the next 10 years, which will maintain our position on (or very close to) the efficiency frontier. Key to our forecast expenditure is a compounding annual total efficiency of 2.5%.

3 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 46
Q 20 Now thinking specifically about your water bill, which of the following would be your preference for managing changes to the amount you pay? (n=1,071).

- An overall investment of \$1,186 million to maintain an efficient and prudent capital program, demonstrated via:
 - independent rigorous review – using Monte-Carlo and cost curve analysis, business cases for the top 10 projects
 - independent prudency and efficiency review of 80% of all capital expenditure
 - a comprehensive process to identify, quantify and determine the most appropriate party to manage risk based around the ISO55001 standard
 - using a best practice approach to optimise and prioritise our capital investments to achieve the outcomes. Initially developed by Jacobs for use by the UK water businesses, the capital investment prioritisation tool optimised expenditure based on customer priorities and preferences, alongside our own risk framework
 - where there are uncertain projects (in timing, costs, scope and benefits), we have only included the minimum forecast costs for the 2018-23 regulatory period, equating to \$117 million of potential projects excluded from forecast prices.
- Matching regulatory depreciation with asset utilisation by deferring the claiming of regulatory depreciation on the net growth related capital expenditure, until the commencement of the 2023-24 regulatory period.

To give assurance, we have also independently verified our financial viability through a credit rating review, which confirmed our BBB+ rating, and engaged experts to assist us in developing our proposals and provide the Board with an independent view of the efficiency and prudency of our forecast costs.

DELIVERING CUSTOMER OUTCOMES

In addition to those matters in which customers have supported an increase in service levels, the outcome-based customer measures and deliverables have been developed using customer insights (refer to section 2.3). Strong themes and sentiments have emerged including:

- Overall value would be diminished if we trade-off activities associated with increasing value by decreasing core service levels⁴.
- Ensuring service issues are resolved the first time, leading to indicators and activities focused on customers who experience multiple interruptions or service failures.
- Customers express dissatisfaction when repair crews are not on-site within an hour of an interruption occurring, or an interruption extends for four hours or more⁵.
- Three water or sewerage interruptions in a 12-month period causes dissatisfaction for most customers, with greater tolerance for multiple water interruptions compared to sewerage⁶.
- Customers indicate that two minutes is the tipping point for customer satisfaction when waiting for a phone call to be answered by a consultant⁷.

We have developed a hierarchy of outcome-based customer measures and deliverables with performance targets, which we will hold ourselves to account over the regulatory period and report ongoing progress to customers.

4 Nature, Customers Shaping and informing our options, pages 37 to 40
Q 14 To what extent do you agree or disagree with the following statement? (n=1,078). "I would accept higher water prices if the money was used to improve water services"

5 Nature, Customers Shaping and informing our options, pages 37 to 40
Qs B2 – B5 Thinking about this scenario, how satisfied would you be if Yarra Valley Water? (n=828).

6 Nature, Customers Shaping and informing our options, August 2016, pages 37 to 40
Qs B2 – B5 Thinking about this scenario, how satisfied would you be if Yarra Valley Water? (n=828).

7 Nature, Yarra Valley Water Conjoint Choice Modelling Research Debrief, June 2017, page 35

OVERVIEW-THE STORY OF OUR SUBMISSION (CONTINUED)

The framework consists of commitments and deliverables associated with key activities and major capital projects, together with a primary measure for each of the seven outcomes.

In the past we have used 'best endeavours' to achieve our performance targets and commitments. Our performance has been continuously monitored, reported and benchmarked both internally to management and externally through mechanisms such as our Annual Report, the Commission's Annual Performance Report and Bureau of Meteorology National Performance Report. This reporting provides incentives (reputational), however there has been an absence of other consequences for underperformance or for exceeding targets.

Consistent with the Commission's new pricing approach to improve value for customers and our customer research that customers expect us to be financially penalised if we do not meet our commitments⁸, we propose to hold ourselves to account for delivery of the customer outcomes. We will annually assess our performance and where we have not met the target for any of the seven outcome measures, we will return \$1.5 million through lower prices in the following year for every target not achieved. In addition, for our top 10 capital projects, if at any time we defer one of these projects we will reduce prices to reflect the interest saved.

We consulted with customers in regards to rebates and the economic incentives to resolve the underlying causes of service failures. Customers, our Customer Advisory Group and citizens' jury did not recommend the introduction of new or increased rebates that would provide further incentives.

Based on customer preferences, we have fine-tuned our guaranteed service levels (further details are contained in section 4.3.5) for any individual customer who experiences poor performance as follows.

- Amending the \$50 rebate paid to customers who experience multiple service failures. Currently we pay customers who experience more than three unplanned sewerage interruptions or more than five combined unplanned water and sewerage interruptions during any 12-month period. The amended rebate will be paid to customers who experience a third, and each subsequent, unplanned interruption of either their water or sewerage service in a 12-month period.
- Amending the water pressure rebate, from \$50 to the equivalent of the water supply service charge (or proportion thereof) where a customer does not receive water at the minimum water flow rate.
- Doubling to \$100 the rebate paid to customers who experience a water or sewerage service interruption more than 12 hours in duration.
- Extending the \$50 rebate currently paid for letters not replied to within four days to include contact made through other channels.
- Doubling the \$1,000 rebate paid to customers who experience multiple sewage spills in their homes or on their property in a 12-month period, which are not contained within one or four hours respectively.
- Introduction of a \$50 rebate to be paid to customers who experience a third, and each subsequent, water quality related issue where they contact us in a 12-month period.

The citizens' jury had a preference to remove the rebate for water interruptions of a shorter duration (4 hours). We have not removed these rebates as other research has shown that an interruption extending beyond four hours is a source of dissatisfaction. Acknowledging the citizens' jury understood that removing this rebate would save approximately \$500,000 per year, we will not charge customers the estimated cost to retain this rebate. This approach, together with proposing the outcome measure for reliable and timely restoration of services within four hours, places additional economic incentive on the business to manage programs and activities to reduce the number of customers who receive poor performance.

Our engagement insights have informed our performance reporting approach and the principles we will use to guide our reporting. At a minimum, we will report to customers annually in relation to our performance, primarily focused on our outcome measures and commitments. To ensure that reporting reflects the breadth of customers' experiences, we will report on localised performance and both the range of individual customer experience (outliers), as well as average performance. Commencing with communications via established channels including bills inserts, social media, our website and online engagement portal, we will evolve our approach during the period; building on customer

8 String, Yarra Valley Water: Service Expectations research report, August 2016, p. 37.

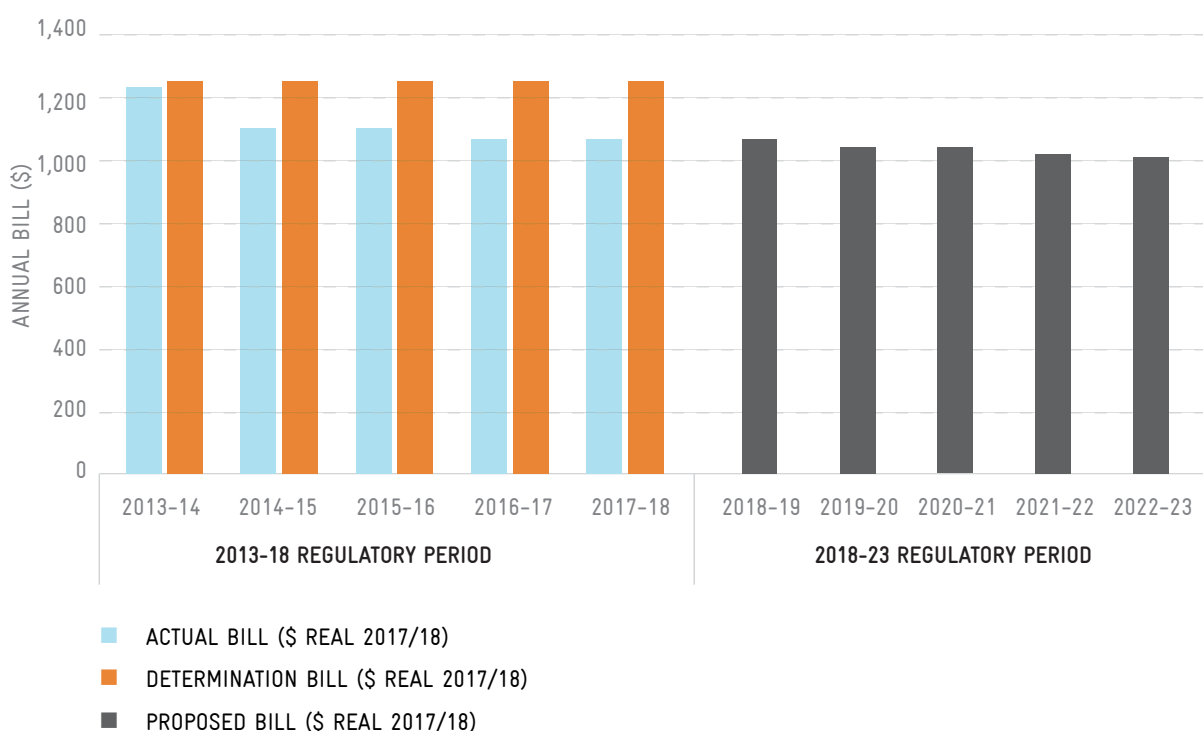
feedback to ensure we can deliver on our reporting principles of being transparent, accessible, trusted and efficient (further details are contained in section 2.4).

A VALUE FOR MONEY SERVICE

We propose an 9.1% weighted-average real price reduction for residential and non-residential customers in 2018-19 and from 2019-20 to 2022-23 price decreases in real terms. For comparative purposes, if we did not have a revenue cap that has already returned \$19 million to customers, the overall price reduction would be 12.7%. These price reductions are enabled by significant efficiencies in operating and capital expenditure and exclude projects where cost, scope, timing or benefits are uncertain. These efficiencies will mean that customers' bills are forecast to be less than inflation in the next five years. This is in addition to the significant efficiencies achieved between 2013-14 and 2017-18 that delivered lower bills and funded the government's \$100 water rebate.

The ongoing real reduction in the typical 150 kilolitre household bill over ten years is shown in Figure 1 below.

Figure 1. Typical 150 kilolitre household bill 2013-14 to 2022-23 (\$ million January 2018)



We have focused our changes to 2018-19 prices on minimising the impact of the removal of the \$100 government water rebate on customers.

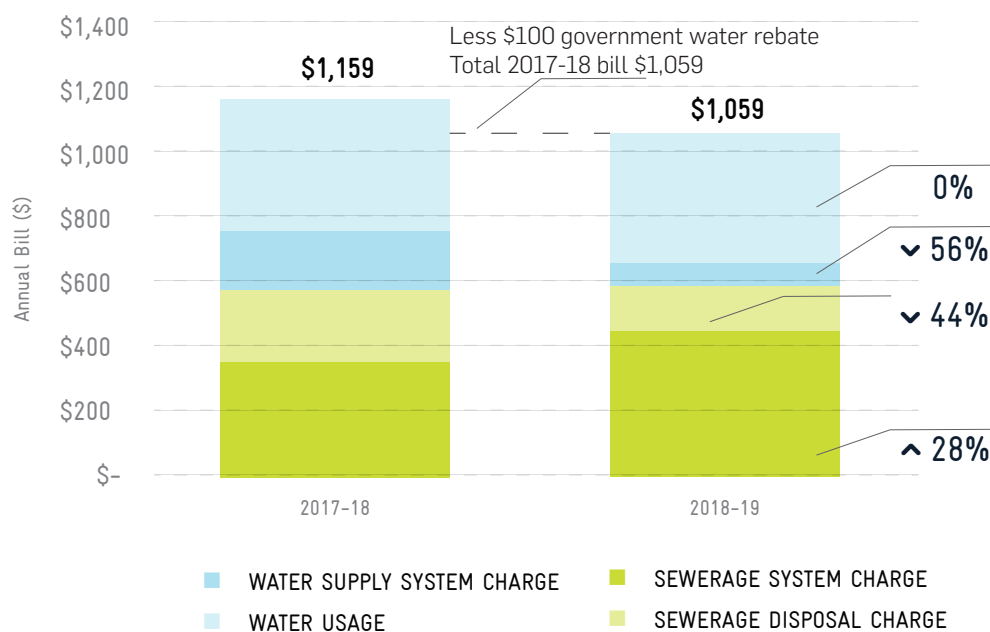
Currently all residential water use customers receive a \$100 government water rebate in the July to September quarterly bill. The rebate is passing on efficiencies that have been made. It is planned the rebate will be replaced in 2018-19 by a commensurate reduction in price. Because an across-the-board price decrease would result in significant bill increases to residential tenants, who only pay usage charges, and water-only residential customers, we will rebalance prices to minimise this impact.

We will achieve this by reducing the sewage disposal charge and transferring \$100 from the water service charge to the sewerage service charge. In addition, we will introduce a mechanism for large households having difficulty paying their bills that adjusts the water volumetric step charge based on the number of people in the property (refer

OVERVIEW-THE STORY OF OUR SUBMISSION (CONTINUED)

to Section 3.5 for further details). These changes are consistent with the preferences expressed by the citizens' jury. Depicted in Figure 2 below, are the impacts of the price changes that also maintain a water conservation signal consistent with our customers' expectations.

Figure 2. Typical 150 kilolitre household bill 2017-18 to 2018-19 (\$ million January 2018)



Our typical household (using 150 kilolitres of water per year) and business customers will not receive a bill increase in 2018-19 (in nominal terms) after we remove the \$100 per year government rebate. From 2019-20 to 2022-23, the annual price change will be 0.7% less than inflation. The bill impacts for a range of customers using 150 kilolitres are shown in Table 1 below.

Table 1: Typical customer bills based on our proposed price path

150 KILOLITRES TYPICAL ANNUAL WATER USAGE		2017-18	2018-19	2019-20	2020--21	2021-22	2022-23
Tenant	real \$	\$524	\$512	\$509	\$505	\$502	\$498
	nominal \$	\$524	\$524	\$533	\$541	\$549	\$558
Landlord	real \$	\$535	\$523	\$519	\$515	\$511	\$508
	nominal \$	\$535	\$535	\$543	\$551	\$560	\$569
Owner occupier	real \$	\$1,059	\$1,035	\$1,028	\$1,020	\$1,013	\$1,006
	nominal \$	\$1,059	\$1,059	\$1,076	\$1,092	\$1,109	\$1,127
Water only owner occupier	real \$	\$477	\$467	\$463	\$460	\$456	\$453
	nominal \$	\$477	\$477	\$485	\$492	\$500	\$508
Business	real \$	\$2,123	\$2,075	\$2,060	\$2,045	\$2,030	\$2,016
	nominal \$	\$2,123	\$2,123	\$2,156	\$2,190	\$2,224	\$2,258

Notes:

- Assumes inflation to be 2.3% per annum over the pricing period
- Customers who rent pay volume charges only. The property owner pays the fixed charges.
- For those customers with concession cards, the impact may vary per the concession provided by the Department of Health and Human Services. The concession from 1 July 2017 has a maximum cap of \$313.10. Customers who are billed for a single service are entitled to a maximum of \$156.55.
- There is not a 'typical' business customer.
- The business customer bill includes a trade waste contract fee.

AN ADVANCED SUBMISSION

Our submission represents a well informed and fit-for-purpose package that delivers value for our customers, reflects their voice and preferences and balances fairness and service for current and future generations.

We are proposing an 'advanced' self rating of our submission which optimises value for customers in terms of 'what they get' and 'what they pay'. Whilst we believe our submission could be rated as 'leading', this would increase prices to customers. Our proposal optimises and delivers improved outcomes for our customers at the lowest possible price and focuses on areas where customers identify increased value, by including commitments to:

- keep bills flat in 2018-19 with annual adjustments 0.7% less than inflation thereafter
- limit the impact on all customers following the removal of the \$100 government rebate in 2018-19 with compounding annual savings in our base operating costs of 2.5% and approximately \$117 million of capital expenditure not passed on to customers in the current regulatory period
- invest \$1,186 million of capital to maintain existing service levels. This proposed level of expenditure is a similar level to the 2013-2018 regulatory period, including 14% cost rate efficiencies for ongoing programs and 21% reduction in growth related capital expenditure forecasts that reflect a more conservative rate of development
- reduce prices to reflect the interest saved if at any time we defer one our top 10 capital projects
- significantly increase our programs that support customers who sometimes or always struggle to pay their bills
- work in partnership with the community to improve water conservation and reduce leakage and ensure water for the future
- demonstrate strong commitment to the delivery of customer outcomes including the annual assessment of performance against outcome targets and returning \$1.5 million through prices in the following year for each of the seven outcome targets not achieved
- provide an open and transparent reporting framework that will evolve to meet the changing needs of customers - we will report on average customer performance and those who experience service at the outer bounds of performance, and localised reporting.

1. PREMO - ENGAGEMENT

We have undertaken a leading engagement process with our customers and stakeholders to develop our outcomes for this Price Submission. This engagement culminated in two significant trade-off activities – conjoint choice modelling and the citizens' jury - both of which gave us insights into the relative value of our activities across the full breadth of our services.

1.1 A COMPREHENSIVE ENGAGEMENT PROGRAM

We've had an ongoing customer research program in place for the past decade to track customers' satisfaction, confidence and trust in our interactions with them. Collectively these insights, which have produced more than 24,000 customer responses, have provided a stable foundation for our engagement program.

Building on our customer research, we reviewed our customer engagement approach and established the engagement objective: *"To understand our customers and what they value"*. We leveraged this strategy in the development of our engagement program for this Price Submission which meant we aimed for ongoing, deep, extensive and meaningful engagement with our customer base.

We delivered the engagement program for this Price Submission in four phases, each building on the insights from the previous phase and focused on delivering what customers value. The phases were:

- **The Story – understanding and empathy** (March to August 2016). We wanted to better understand our customers, their lives and what was of most importance to them. We sought to identify personas to allow us to connect to our customers as real people with differing values, taking us well beyond simple demographics. Eight personas were identified representing the different value-sets across our customer base, enabling us to 'step into another's shoes and view the world from their perspective'. Personas formed a critical part of our early work and have been consistently used alongside traditional demographics to ensure the diversity of our customers is represented and their values considered.
- **The Insights – listening and co-creating outcomes** (August to September 2016). We wanted to understand our customer's views and service expectations, in particular what was important to them in relation to their water and sewerage services. We undertook a series of research pieces with different customer segments including local government, business, community groups and households. In response, we developed three preliminary outcomes: reliability and timeliness of our services; fair treatment for all customers; and operating in a way that protects the environment.
- **The Value Creation – choices and design** (October 2016 to July 2017). We needed to know if these initial outcomes resonated with customers. Through focus groups with customers and our Customer Advisory Group, we tested the initial outcomes and draft measures to ensure we weren't misinterpreting or misunderstanding this broad customer input.

This phase identified that water quality was the most important service for customers^{9 10}. We therefore created a fourth outcome: 'quality water services' separating it out from 'reliable and timely services'. We continued to test and validate these outcomes through focus groups, customer and stakeholder engagement and broadly promoted online engagement.

We then sought to understand customers' willingness to trade-off price and service. This was explored both through conjoint choice modelling and our citizens' jury, which identified a clear distinction between what customers expect and what they value.

9 Newfocus, Customer shaping & informing options – data mining project, June 2016, page 13
10 Nature, Yarra Valley Water: Conjoint Choice Modelling Research Debrief, June 2017

1. PREMO - ENGAGEMENT (CONTINUED)

- **The Proposal – decisions and reporting** (August 2017 to September 2017). All insights together with the results and recommendations from the conjoint choice modelling and citizens' jury determined the final outcomes in this Price Submission. This included:
 - further emphasis on the distinction between core service (what's necessary and important), and community based outcomes (source of increased value)
 - water is a scarce and valuable resource - customers prioritise saving water for the future even at a cost
 - customers value performance reporting that speaks to their personal experience and interests.

To better reflect these customer preferences, we evolved the four outcomes to seven – three infrastructure outcomes *safe drinking water; reliable water and sewerage services; and timely response and restoration;* and four community based outcomes; *fair access and assistance for all; modern flexible service; water availability and conservation; and care for and protect the environment.*

1.2 ENGAGEMENT METHODS

We engaged multiple providers and adopted a wide variety of both qualitative and quantitative research methods. We engaged across all levels of the IAP2 Community Engagement Spectrum from inform to empower. We investigated customer and stakeholders' stated and latent needs and sought to better understand their determinants of value. We believe this approach gave us the best framework to challenge our own views and eliminate, as much as possible, the potential for bias in our engagement and most critically in the resultant outcomes.

To ensure effective engagement across the breadth of our customer base, all activities were planned to ensure they were timely, accessible, appropriate and inclusive.

- We utilised community representatives, customer panels, our own customer data, customer personas, specialist recruiters, attended multicultural events and undertook door knocking to ensure that hard to reach, disadvantaged and underrepresented customers were able to participate and have their unique perspective represented.
- We ensured the objectives of our surveys were clearly articulated and were cognitively tested outside of the organisation before being released.
- Documents were produced in accessible language and available in languages other than English on request. We attempted to reduce barriers to response by customers and stakeholders by using on-line and physical distribution to community access points, utilising telephone and in-person interviews.
- We worked with MosaicLab and newDemocracy Foundation, to ensure the citizens' jury participants had open access to information. The process was designed on the principles of independence, transparency and objectivity. The jury was provided a comprehensive information pack (also published on our website) and we responded to all requests for information throughout the process. Stakeholders nominated speakers and independent content experts in addition to sources and content chosen by the jurors themselves. The breadth and depth of deliberation was made possible by the generous three-month timeframe allocated to the activity (refer to section 1.6 for further details).
- An online engagement portal ensured that information was available and opportunity for input was provided in a timely, effective, accessible and transparent way. Information was available in languages other than English and the online engagement portal was widely promoted through flyer distribution to local councils and community access points such as maternal health centres, libraries and community centres and via two quarterly bill inserts to all residential customers.
- We communicated our insights and tested our learnings at each phase. We spoke to our customers and stakeholders through multiple channels including face-to-face meetings and workshops, the Yarra Valley Water 'Have Your Say' website, bill inserts, surveys, social media, focus groups and online forums.
- We hosted three facilitated community consultation forums with Aboriginal community members to ensure that their unique perspective was represented.
- A bill simulator was developed to support the understanding of service level choices and trade-offs. Following focus group feedback where we tested the model for impact, we repositioned the model as an education tool for customers and stakeholders and launched the model through our 'Have Your Say' engagement portal.

- We sought the view of our Community Advisory Group on all facets of our price submission.

Our research and engagement activities culminated in two significant price and service trade-off activities: conjoint choice modelling and the citizens' jury. These activities covered the breadth of our services and form the cornerstone of our customer outcomes and service levels proposed in this Price Submission.

- Conjoint choice modelling was conducted with more than 1,000 customers who considered different service package offers. The results identified price and service combination choices that would increase customer value compared to the status quo (refer to section 1.5 for further details).
- A citizens' jury was chosen as the ideal approach to ensure that a descriptively representative group of our customers were empowered to participate in decision making by responding to the challenge posed: *"we need to find a balance between price and service which is fair for everyone. How should we do this?"*

We provided an information pack to the jury that focused on four outcomes covering 18 topics which were developed following the initial customer research. In addition, the jury heard from stakeholder-nominated experts and other experts of their own choosing.

We have accepted the jury's recommendations and incorporated them into this Price Submission (refer to section 1.6, Appendix 1 and Appendix 2 for further details).

The content of our engagement program ensured a wide range of themes was deeply explored helping us to consider the balance between prices and services now and for future generations.

WITH REFERENCE TO THE COMMISSION'S CUSTOMER ENGAGEMENT DIAGRAM, WE HAVE REACHED THE OUTER EXTREMITIES OF EACH ELEMENT

Considering our engagement program in context of the Commission's Customer Engagement Diagram, we believe that we have reached the outer extremities comprising:

- **Form** - the citizens' jury was a descriptively and geographically representative group of customers who were empowered through the provision of time, information and authority to provide a set of recommendations. Their deliberations were deep and covered the whole breadth of content impacting the Price Submission. The jury was informed through collaboration with stakeholders and key business customers. All customers were provided with information and opportunity to participate through other aspects of the engagement program.
- **Timing** – formal engagement began in early 2016 and continued into 2017, culminating with the citizens' jury which considered all research insights. Our engagement strategy will ensure ongoing customer insights will continue to influence our services and programs.
- **Content** – our engagement activities have been broad in scope and have included project-based and single-issue engagement, including topics such as the community sewerage program and billing and digital metering, for example.

We have further engaged customers across the breadth of our service offering to enable comparative analysis and trade-off decision-making about relative value and price.

The citizens' jury presented its report to the Yarra Valley Water Board on 7 August 2017. The Board responded to the recommendations in person on 31 August 2017. In honour of the commitment made to the citizens' jury, the report has been attached un-edited to this document in Appendix 1.

Customer feedback has assured us that we chose an appropriate and high quality engagement program and we feel very confident we have delivered against our engagement commitments.

- Conjoint choice modelling: 96% of participants found the features easy to understand and 85% found the choices presented were realistic. Of the remaining 15%, they considered what was important to them and chose accordingly¹¹.

1. PREMO - ENGAGEMENT (CONTINUED)

- Citizens' jury: all jury participants were invited back post jury to reflect on their experience of our engagement activity. The feedback was overwhelmingly positive with jurors making the following statements (verbatim) when asked what was the most significant thing that happened:
 - "There was good consensus in the end, nobody disgruntled or left behind"
 - "YVW wants feedback from community/consumers, would that other services follow YVW's lead"
 - "Hearing from independent speakers – particularly Environment Victoria and Planning"
 - "The speed at which our final approach on the submission was scrutinized and agreed on"
 - "29 people came to agreement on 10 priorities. Consolidation of many ideas into concise thoughts – agreed"
 - "The realisation that we actually could and did produce a good document"
 - "The jury were listened to and YVW have outlined a course of action based on our recommendations that will have an impact"
 - "People were willing to change their opinions after receiving more information"
 - "A wake up to myself as to how much water I have wasted at home. Now I am much more aware of water wastage. I also have a deeper understanding of what YVW does!"
 - "The learning about water and YVW was amazing. I have a whole new appreciation and understanding of both"

When asked if "... enough and appropriate information to undertake your task?", all participants provided a rating of 8 or above (scale 1-10).

The jury's debrief report and feedback is attached as Appendix 3 and 4.

1.3 WHAT CUSTOMERS VALUE

CUSTOMER RESEARCH WAS UNDERTAKEN TO IDENTIFY THOSE ASPECTS OF OUR SERVICE THAT CUSTOMERS MOST VALUED. INFORMATION PROVIDED TO CUSTOMERS WAS APPROPRIATE FOR ITS PURPOSE, FORM AND CONTENT.

Customer research was undertaken to identify those aspects of our service that customers most valued¹². Since 2016 we have promoted customer participation through an online engagement portal¹³, over 100 social media posts, 32 e-newsletters, 10 media releases and bill inserts delivered to all residential customers twice between January and June 2017.

In July 2016, we undertook research, conducting more than 1,000 online and 50 face-to-face interviews with low income customers and those who had never participated in research; had no internet access; or whose first language was not English, to develop a fact-based data-driven base line for decision making on service improvement. To ensure the baseline was without bias, the survey was academically peer reviewed¹⁴. The specific objectives of the research included:

- service priorities - understand what customers believe are the most important areas of service
- improvement expectations – what improvements, if any, customers would like in services
- price changes – understand the impact of pricing decisions on the household
- price and value – understand customer preferences with respect to trade-offs between improved services and higher bills.

The key take-outs from the research were:

- ultimately what customers want is reliable and continuous provision of water at a reasonable price
- satisfaction with each core service is stronger than it is for overall satisfaction
- customers have limited suggestions for improvements

¹² Nature, Customers Shaping and informing our options, August 2016,

¹³ Online engagement portal <http://yoursay.yvw.com.au/water-price-review>

¹⁴ Professor Sara Dolnicar, University of Queensland

- while customers are receptive to us doing more the environment it is not something they are willing to pay for.

The content of our engagement program ensured a wide range of themes were deeply explored and generated many insights to consider in our Price Submission. Prior to the citizens' jury and conjoint choice modelling:

- we contacted more than 90,000 customers by phone and online for feedback between July 2015 and June 2016 - more than 24,000¹⁵ customer responses were reviewed to generate insight.
- more than 30 topics were explored through 20 different engagement pieces
- 200 plus customers participated in the qualitative research during 2016 and 2017¹⁶
- approximately 800 hours were invested during 2016 engaging with customers on their preferences, choices, attitudes, needs and service expectations - 4,037 provided survey responses in 2016 alone¹⁷

In the final phase of our engagement all prior activities, learning and insights were incorporated in to our conjoint modelling and citizens' jury trade-off activities, empowering customers in decision making and the formulation of recommendations presented directly to the Board.

- Conjoint choice modelling¹⁸ was conducted to identify what changes in prices and services customers value and what choices they would make related to service levels (refer to section 1.5)
- 30 people participated in our citizens' jury, attending five-and-a-half-days of meetings over four months - allowing sufficient time for the jury to fully consider the remit, seek additional information and consult with their peers and communities (refer to section 1.6).

A wide range of matters were explored.

- **Confidence, trust and satisfaction of customers:** overall satisfaction levels; advocacy; effort; customer services; support for vulnerable customers; key top of mind preferences.
- **Fair charges:** value for money; late bill fees; the bill; the impact of bill changes; metering.
- **Core services:** reliable, safe, clean drinking water; trouble-free sewerage system; water quality, interruptions, fault repair, scheduled maintenance, risk appetite for changing service levels; call centres; billing.
- **Future services:** general views on resilience; drought; restrictions; digital; self-service.
- **Supply meets demand:** perceptions of pressures on the system; customers and water efficiency (reducing demand); our water efficiency (including leaks); alternative sources of water (recycled water and stormwater).
- **A flourishing environment:** general views on the environment; waterway water quality.
- **Climate change:** general views about climate change; carbon reduction.
- **Caring for communities:** recreation; education in schools; community education and behaviour change; the impact of operations on the community, liveability, mortgage and rental stress.
- **Investing for tomorrow:** maintenance of and investment in assets.
- **Performance and expectations:** penalties; service levels; governance; comparisons with other utilities and water companies.
- **The whole service offering:** exploring over 100 alternative service packages.

To bring additional rigour to our approach, we used both qualitative and quantitative research to gather important and different insights to each topic. The depth and content of the engagement activities varied according to subject matter,

15 Newfocus, customer shaping & informing options – data mining project, June 2016

16 Various focus groups, online panels, in-home interviews, phone interviews and workshops

17 Service Expectations, Preference study, persona sizing, tap water research, digital metering research

18 Conjoint choice modelling evaluates product/service attributes in a superior way. It surpasses its alternatives, such as SIMALTO (simultaneous attribute trade-off) and Willingness to Pay Studies, in its predictive power. Conjoint choice modelling has been widely employed for product/services analysis purposes since 1970s. It has been shown repeatedly to accurately reflect the cognitive thinking of buyers as they evaluate purchases for value. The technique has been applied in a broad range of products and services, from telecommunications and industrial products to healthcare, electricity and banking services. Our conjoint choice modelling determines how people value the different features that make up our service when they consider the full package, many alternatives and price. Traditional choice approaches ask respondents to estimate how much value they place on each single attribute. Conjoint simulates a market condition by asking respondents to consider a package of attributes

1. PREMO - ENGAGEMENT (CONTINUED)

the form of the engagement and the audience. For example, an online engagement forum was established to ensure the broad customer base could stay informed on the development of our engagement and could feed in to the process as it suited them.

More intensive engagement activities higher up the IAP2 spectrum of participation were concurrently activated. An example is a range of customer focus groups to retest and refine the outcomes development and together with consultation with Aboriginal and Torres Strait Islander community groups, in several forums held across our geographic catchment.

This approach ensured opportunities for engagement which appealed to a broad range of customer' preferences, while meeting our objectives of timely, accessible, appropriate and inclusive engagement.

1.4 DEVELOPING OUTCOMES THAT REFLECT CUSTOMERS' PRIORITIES

THE DEVELOPMENT OF THE OUTCOMES OCCURRED THROUGH AN ONGOING AND ITERATIVE PROCESS THAT INCLUDED MULTIPLE PHASES OF RETESTING AND REFINING. THE OUTCOME AND OUTPUTS REFLECT CUSTOMERS' PRIORITIES AND PREFERENCES AND ARE LISTED IN ORDER OF THEIR RELATIVE IMPORTANCE TO CUSTOMERS.

Our initial engagement led to the identification of three outcomes, which were progressively refined and tested over the past 12 months, developing into four outcomes. The engagement process culminated in the conjoint choice modelling and citizens' jury, following which the four outcomes were expanded to the final set of seven outcomes.

The more expansive insights achieved through the in-depth exploration of price and service trade-offs enabled greater focus and detail previously masked. The resulting seven outcomes have been identified as those most highly valued by our customers. Expressed to reflect the experience of customers, and listed in order of customer importance, they are:

three core service outcomes

- *safe drinking water*
- *reliable water and sewerage services*
- *timely response and restoration*

four community based outcomes

- *fair access and assistance for all*
- *modern flexible service*
- *water availability and conservation*
- *care for and protect the environment.*

Inside two overarching themes of 'don't increase the bill' and 'value', the key insights we identified and their relationship to the seven customer outcomes are:

- customers want a reliable and continuous provision of water and the effective removal of waste at a reasonable price¹⁹ (outcome – *reliable water and sewerage services*)
- customers want us to solve issues once and for all and deliver core services to a high standard (outcomes – *safe drinking water, reliable water and sewerage services* and *timely response and restoration*)

19 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 17
Q1b What are the main reason why you chose to rate your satisfaction with Yarra Valley Water as <<Q1 response>> out of 10? (n=1,078)

- communication and responsiveness is valuable to customers in all aspects of our services - particularly when it comes to works²⁰ (outcomes – *timely response and restoration* and *modern flexible service*)
- almost half our customers' state that they have struggled at some point in the past year to pay their utility bills²¹ (outcome – *fair access and assistance for all*)
- while they believe that we do support customers experiencing difficulty, they think we can do more²² (outcome – *fair access and assistance for all*)
- customers support innovation on environmental services, as long as there is no bill impact, and opportunity exists to focus efforts for improvement and innovation on environmental services - specifically recycled water, encouraging water conservation, minimising carbon emissions²³ and reducing pollution (outcomes – *water availability and conservation* and *care for and protect the environment*)
- many of the citizens' jury recommendations were underpinned by the theme of saving water now for the future (outcome – *water availability and conservation*)
- the standard for exemplary service is set from outside the water industry based on experience from other providers (outcome – *modern flexible service*).

In addition, customers told us:

- liveability outcomes must not be pursued at the expense of core services or improving reliability²⁴
- they are seeking greater certainty in their bill with 92% of customers overall preferring price changes to be handled in smaller increments more frequently²⁵.

Following the citizens' jury recommendations and supported by the conjoint choice modelling and customer feedback, we propose to maintain core service levels associated with *quality water services* and *reliable and timely service* outcomes. With the *fair access and assistance for all*, *modern flexible service*, *water availability and conservation* and *care for and protect the environment* outcomes, we are proposing initiatives that will increase customer value.

1.5 CONJOINT CHOICE MODELLING

Conjoint choice modelling is a trade-off technique that replicates a purchase situation, comparing packages of services and their associated price. It has been shown repeatedly to accurately reflect the cognitive thinking of buyers as they evaluate purchases for value. The technique has been applied in a broad range of products and services, from telecommunications and industrial products to healthcare, electricity and banking services. Conjoint analysis is regularly referred to by academics and researchers as the optimal market-based approach for measuring the value that consumers place on features of a product or service.

It is used extensively in competitive pricing environments to analyse trade-offs; understand how customers make purchase decisions; and predict behaviour; as well as to determine how people value different features that make up a service offering.

We presented a representative sample of customers with a series of hypothetical, yet realistic scenarios which included existing service levels. Through a series of reiterative tests, customers were asked to identify which of two options they preferred or would choose – thereby forcing them to ‘trade off’ the strengths and weakness of each offering. The process elicits data that is then modelled using econometric methods to determine the variable/s driving preference/choice and providing:

20 String, Yarra Valley Water: Service Expectations research report, August 2016, page 52,

21 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 26
Q16 In the past year have you struggled to find the money to pay utility bills? (n=1,011).

22 Newfocus, Customer shaping & informing options – data mining project, June 2016, page 7

23 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, pages 29-34

24 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 19

25 Nature, Yarra Valley Water: Customers Shaping and informing our options research report, August 2016, page 46

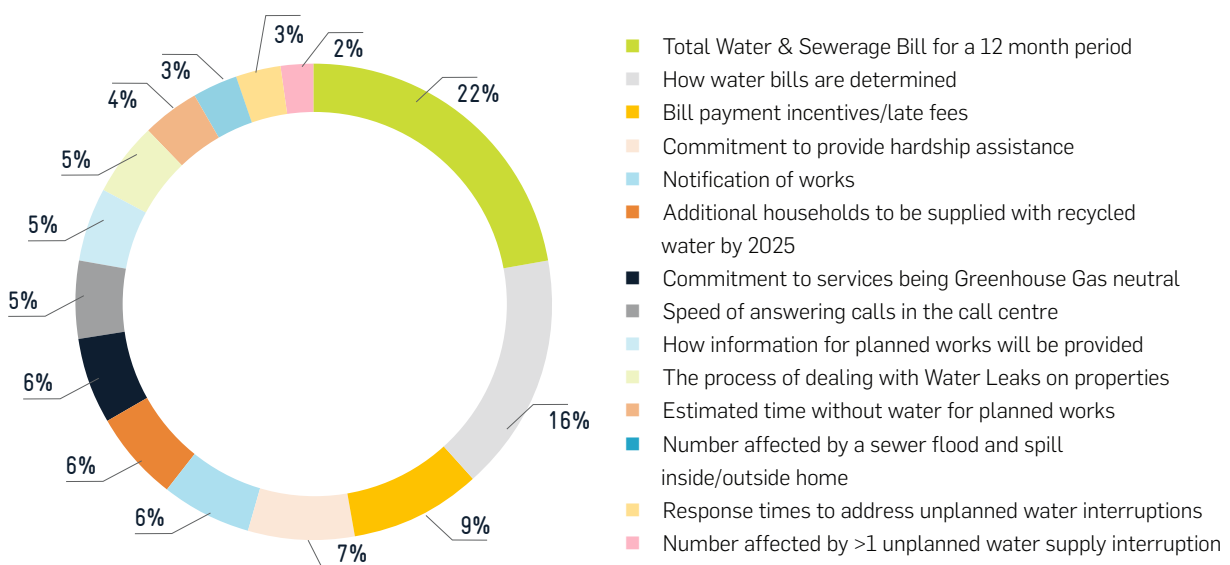
Q20 Now thinking specifically about your water bill, which of the following would be your preference for managing changes to the amount you pay? (n=1,078)

1. PREMO - ENGAGEMENT (CONTINUED)

- a reliable view of what customers prefer
- a tool to objectively evaluate potential features to maximise customer value
- identification of the price impact in customers' decision-making
- customer preference when it comes to decisions on service levels and price.

The analysis shows that pricing mechanisms are the biggest contributors to customer choice – refer Figure 3 below. It also shows there are increased service offerings that provide greater value compared to a reduction in price. At the same time the analysis confirms that increasing core infrastructure service levels will not improve customers' perception of value.

Figure 3. Overall importance of the features of the service offering



1.6 CITIZENS' JURY

WE PURPOSEFULLY DELAYED THE CITIZENS' JURY SO THAT IT WAS PROVIDED WITH THE COMPLETE BREADTH AND DEPTH OF CUSTOMER RESEARCH ENSURING THE JURY'S DELIBERATION WOULD CONSIDER ALL RELEVANT INFORMATION.

Our citizens' jury was convened to challenge our inputs and make recommendations for how we could best meet the challenge before them – 'We need to find a balance between price and service which is fair for everyone. How should we do this?'. The principles of our approach were as follows.

- **Remit:** ensure a clear remit providing a strong and open platform about the trade-offs.
- **Information:** detailed in-depth information across the breadth of our services, from multiple, diverse sources enabling participants to move past opinion to an informed and more balanced view.
- **Representative:** representative random sample of people affected by the decision.
- **Influential:** the report was presented to the Board unedited and we responded to each recommendation.
- **Blank page:** we did not provide a draft position for review or ask the jury for comment on a pre-prepared document. The jury members created the report in its entirety from a blank page.

We engaged two providers for the delivery of our citizens' jury: MosaicLab and newDemocracy Foundation. Both organisations were clear from the outset that their objective was to design a process with sufficient rigour as to withstand (understandable) sceptical scrutiny, which visibly cannot be influenced by a politician, an interest group, or financial interest.

MosaicLab was responsible for overseeing the activities within the jury sessions and newDemocracy Foundation managed the processes that fed in and out of the jury process. To ensure the jury was not 'led, coerced or lobbied' in any way, newDemocracy Foundation oversaw:

- all planning and delivery of the process
- the facilitation approach and facilitators (in this case MosaicLab)
- any speakers or presenters at jury sessions
- the input from Yarra Valley Water staff or Board members and by jurors.

The jury was provided with an information pack²⁶ which focused on four outcome areas and set out objectives we sought their views on. Our Board, Executive team and subject matter experts provided information to the citizens' jury by attending sessions and enabling the jurors to access information in an informal and direct way. In addition, Board members participated in a question and answer session, which allowed the jurors to test their ideas.

In preparation for the jury, stakeholders were consulted on matters they wanted put before the jury. They nominated and elected by popular vote the speakers who would present to the jury. The jury also selected speakers to present on areas where they had identified gaps or suspected bias in the information provided. All stakeholders and customers were encouraged to provide submissions to the jury for consideration. During the process, jury members requested additional information to aid their deliberations. All requests were responded to with sufficient time for the jurors to consider the information before their next sitting.

All customer research and insights were made available to the jurors, who deliberated for five-and-a-half days, over four months. This allowed sufficient time for the jury to fully consider the remit, seek additional information and consult with their peers and communities.

We purposefully held off convening the citizens' jury until the latter part of our process so that it was provided with the complete breadth and depth of customer research and could consider all relevant information.

The jury deliberated on behalf of all Yarra Valley Water customers, over the balance between price and services that is 'fair for everyone'. The jury made ten recommendations (verbatim):

1. Targeted Research and Development to reduce maintenance costs, self-repair infrastructure and prevent leakage to secure future water supply.
2. Preventative Maintenance to reduce Network Water Loss.
3. Access to two sources of water of different qualities:
 - High quality water used for drinking;
 - Lower quality water used for toilet flushing, washing clothes, gardening etc.
4. Further enhance welfare education and services to support vulnerable customers (concession, pensioners, hardship) customers. By increasing the education and support, more people will be aware of the options available to them so that they can pay their bills. The more people that are able to pay their bills, means less money spent on cost recovery activities. Educating customers on the options available will also reduce the level of bad debt that is written off and therefore never collected.
5. Installation of Digital Meters for all customers (when technologically available and when cost increase to be capped at \$12.50 per year) to help change user behaviour and protect our natural resource.
6. Price discount for incentive for electronic bills and direct debit. More (optional) direct debit.
7. Reduce average water use per person by rewarding people for wise water use.

1. PREMO - ENGAGEMENT (CONTINUED)

8. To delete rebates paid to Customers for short term disruption of water supply (4 hours). Rebates of \$1000 to be paid for long term disruptions (more than 12 hours). Repeat failures (more than twice in one year) should be compensated. (Rebate amount not specified and water/sewage not specified). Continue rebates of \$1000 for sewage spills.
9. Investigate and pursue community based solutions for localised needs.
10. Increase education and awareness.

The jury's unedited report can be found in Appendix 1 with our response to the recommendations attached as Appendix 2.

1.7 HOW CUSTOMERS INFLUENCED THIS SUBMISSION

OUR ENGAGEMENT PROCESS HAS ENABLED CUSTOMERS TO HAVE A SIGNIFICANT INFLUENCE ON OUR PRICE SUBMISSION

Our customers have had significant influence on key areas of our Price Submission.

- As a consequence of the insight that customers do not want a bill increase, while they value increased service levels rather than a bill decrease, we have continually challenged our costs and programs to ensure the proposed price path does not result in a bill increase. Our programs are more efficient with an annual compounding 2.5% savings in operating expenditure and a capital investment program that includes 14% cost rate efficiencies for ongoing programs and 21% reduction in growth related capital expenditure forecasts that reflect a more conservative rate of development.
- We have developed measures on the number of customers who experience multiple service failures and interruptions – this reflects the customer sentiment 'fix it first time'.
- Prioritised the outcome - *high quality water* – which comprises product quality, continuous supply of water and good pressure, from the *reliable and timely services* outcome after strong focus group feedback.
- We have proposed to maintain core infrastructure service levels associated with *quality water services, reliable and timely service and timely response and restoration outcomes*, reflecting customers are satisfied with the existing service levels.
- To increase value the conjoint choice modelling and citizens' jury identified:
 - supporting hard-to-reach disadvantaged customers
 - incentivising electronic billing and on-time payment
 - adoption of digital metering
 - increasing education and communication in all aspects of our services
 - ensuring drinking water supply for the future through alternative water supply options, pursuit of network leakage and water conservation
- We have accepted the citizens' jury recommendations, with two minor amendments supported by other customer research – retention of guarantee service level rebates for short-term interruptions and only charging customers for the value of water savings achieved through our leakage reduction program - and incorporated them into this Price Submission.

2. PREMO - OUTCOMES

2. PREMIO - OUTCOMES

Our customer engagement has resulted in a hierarchy of outcomes together with a primary measure and target for each outcome. We are committed to achieving the measures we have set, and report ongoing progress to customers.

2.1 OUR OUTCOMES

Distinguishing between what customers have told us they expect and what they value, our seven outcomes have been defined in ways that reflect the customer service experience. These are listed in order of customer preference:

"As a customer, I expect..."

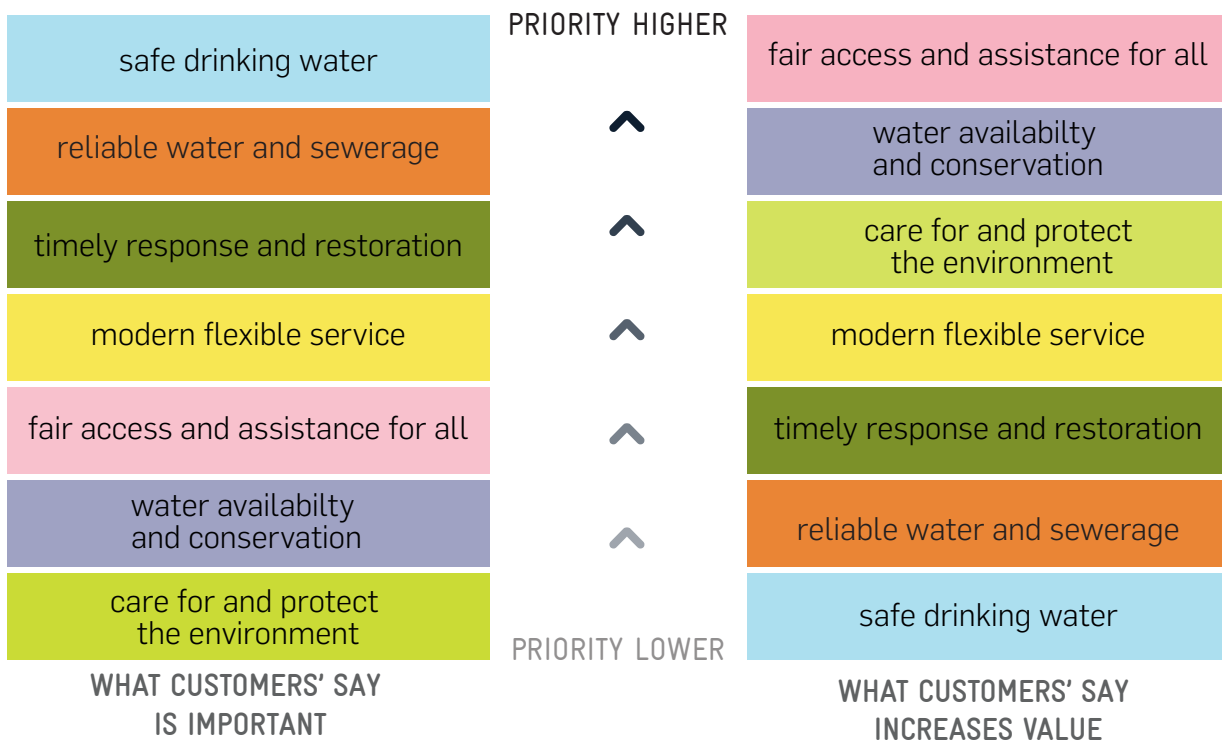
- water that is safe to drink (safe drinking water),
- water and sewerage services I can rely on (reliable water and sewerage services)
- fast response and effective restoration of my service when it is interrupted (timely response and restoration)

"As a customer, I value..."

- support for customers having difficulty paying their bill (fair access and assistance for all)
- saving water now so it's available in the future (water availability and conservation)
- information, assistance and advice in a way that suits my needs (modern flexible service)
- the environment (care for and protect the environment)

Our customers told us our core infrastructure-related service levels are still the most important outcomes, however when considering increasing value, customers favour the community-based outcomes as shown below in Figure 4.

Figure 4. Customer priority in terms of importance and value



Consistent with this customer feedback as well as the citizens' jury recommendations and conjoint choice modelling, we will maintain infrastructure-related service levels associated with *safe drinking water, reliable water and sewerage services* and *timely response and restoration outcomes*. Appendix 5 contains our proposed service levels for the next regulatory period.

To increase value in those areas that customers have identified, we propose to:

- improve awareness and access to services and programs for disadvantaged customer segments who experience barriers to our services, with an additional annual \$1.2 million to extend the WaterCare program to reach 150,000 customers, and better service these customer segments (outcome - *fair access and assistance for all*) which the conjoint choice analysis indicates an increase in customer value of 8%
- provide discounts, in the order of \$2 per quarterly bill, to customers who elect to receive an electronic bill and make payment via direct debit from their bank account (outcome – *modern flexible service*) which the conjoint choice analysis indicates an increase in customer value of 7%
- undertake additional activities, at an estimated capital cost of \$27 million, to reduce network water losses from our pipes by 2.5 gigalitres by 2023 (outcome - *water availability and conservation*)
- targeted research and development and new asset innovations, to keep pace with the impacts of climate change and population growth, to reduce maintenance costs and optimise our infrastructure investment to ensure a sustainable water source in the future (outcome - *water availability and conservation*)
- assist in achieving the forecast total per capita water use of 210 kilolitres in 2023, with an additional annual \$1 million allowance for water conservation activities and education that encourages customers to both reduce their own water consumption and increase awareness of options and services that may be available (outcome - *water availability and conservation*)

The conjoint choice analysis shows additional investments to save drinking water results in increased customer value by about 5%.

In addition to the areas where customers support an increase in service level, the outcome-based measures and deliverables have been developed using customer insights and a focus on strong themes and sentiments including:

- we should not trade-off activities associated with increasing value by decreasing core service levels²⁷
- where there is an unplanned service interruption, be on-site within 60 minutes and restore service within 4 hours²⁸
- ensure service issues are resolved the first time and activities focus on customers who experience multiple interruptions or service failures rather than the average level of performance. Additionally:
 - in line with the citizens' jury recommendation, guaranteed service rebates will be paid to customers who experience a third and each subsequent water or sewerage interruption in a year
 - capital expenditure renewal programs have been assessed to determine where processes can be improved to reduce the potential for customers to experience repeat issues. For example, the house connection branch renewal program has incorporated a program to target pipes which have a greater propensity to fail and are proactively renewed.
- provide customers with one week of notice for planned works²⁹
- customers indicate that two minutes is the tipping point for customer satisfaction when waiting for a phone call to be answered by a consultant³⁰.

27 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, pages 37 to 40 Q 14 To what extent do you agree or disagree with the following statement? "I would accept higher water prices if the money was used to improve water services" (n=1,078).

28 String, Yarra Valley Water: Service Expectations research report, August 2016, pages 36-40 source B2-5 Thinking about this scenario, how satisfied would you be if Yarra Valley Water ...? (n=828).

29 String, Yarra Valley Water: Service Expectations research report, August 2016, pages 39-40 source B2-3 Thinking about this scenario, how satisfied would you be if Yarra Valley Water ...? (n=828).

30 Nature, Yarra Valley Water: Conjoint Choice Modelling Research Debrief, June 2017

2. PREMO - OUTCOMES (CONTINUED)

Measures and deliverables

We have developed a hierarchy of outcome-based customer measures and deliverables and associated performance targets, to which we will hold ourselves to account. These include:

- for each of the seven outcomes, one customer related performance indicator
- various commitments and deliverables associated with key activities
- Top 10 capital projects (refer to section 4.3.1).

There are also a further set of measures (refer to Appendix 5) that will be managed and monitored over the regulatory period. We will continue to use customer feedback, including our customer insights program, to identify and adapt our measures and activities to meet our customer outcomes.

2.2 MANAGING OUR PERFORMANCE

In the past, we used 'best endeavours' to achieve our performance targets and commitments. Our performance has been continuously monitored, reported and benchmarked both internally by management and externally through mechanisms such as our Annual Report, the Commission's Annual Performance Report and Bureau of Meterology National Performance Report. This reporting provides incentives (reputational), however, there is no financial consequences for underperformance or reward for achieving or exceeding output targets.

Now, if we fail to meet our commitment to customers, there will be consequences. We will annually assess our performance and where we have not met the target for any of the seven outcome measures, we will return \$1.5 million through prices in the following year for each target not achieved.

We are continuing with performance targets either reflecting average historical performance or an improved target that is linked to increased activities and expenditure. With our commitment to lower prices if we fail to meet a target, we will be focused on achieving performance levels at/or above the target each year. Overall, this commitment will deliver increased performance for all outcomes over the period.

In addition, for the top 10 capital projects, if at any time we decide to defer one of these projects, we will reduce prices to reflect the interest saved.

2.3 THE 'GOLDEN THREAD' – LINKING INSIGHTS, OUTCOMES, OUTPUTS, ACTIVITIES AND COSTS

Each outcome has been co-created with customers and linked by:

- outputs and measures of performance, that fulfil on the outcome
- deliverables, which are specific actions and commitments we are taking in response to customer insights and recommendations to increase customer value
- our action, activities and programs together with their associated costs.

Costs for most outcomes largely reflect historical expenditure less our forecast operating and capital expenditure efficiencies. Shared costs have been proportionally allocated on a direct cost basis. Each outcome is discussed more fully in the following sections.

2.3.1 SAFE DRINKING WATER

“AS A CUSTOMER, I EXPECT WATER THAT IS SAFE TO DRINK”

Customers told us the most important outcome we deliver is safe and pleasant drinking water^{31 32}.

The most appropriate measure that reflects the intent of this outcome and customer sentiment is 'compliance with Safe Drinking Water regulations' on parameters as currently reported in our Water Quality Annual Report.

In addition, we propose to undertake several other measures associated with actions and programs that will significantly contribute to this customer outcome. Table 2 outlines the measures and targets together with the deliverables, activities and costs for the *safe drinking water* outcome.

Table 2: Outputs, activities and costs for safe drinking water outcome

OUTCOME	SAFE DRINKING WATER
The primary measure of our success is	Compliance with Safe Drinking Water Regulations 2015 (<i>target 100% compliance</i>)
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	<ul style="list-style-type: none"> Number of water quality complaints per 1,000 customers Number of customers who contact us more than once with a water quality issue % of customers who drink our water Number of guarantee service rebates paid to customers
We will undertake these actions, activities and programs to deliver the customer outcome	<p>To manage the risks associated with drinking water quality, we will increase our focus and investment in:</p> <ul style="list-style-type: none"> • inspection of service reservoirs for structural integrity and undertake necessary remediation works • secondary chlorination/ disinfection facilities where required <p>We will continue to:</p> <ul style="list-style-type: none"> • conduct independent water quality tests to ensure the water customers receive is of high quality • resolve customer complaints and escalate to case management when there is an ongoing issue • clean water mains in areas where sediments accumulate • provide advice and education to customers on the quality and safety of our water, including when there is a change in the water source • manage and monitor compliance of our bulk water supply agreement at interface points with Melbourne Water • promote the health benefits of drinking tap water
Operating Costs	\$6.46 million (average annual forecast 2018-19 to 2022-23)
Capital Expenditure	\$6.72 million (average annual forecast 2018-19 to 2022-23)

31 Newfocus, Customer shaping & informing options – data mining project, June 2016, page 13

32 Nature, Yarra Valley Water: Conjoint Choice Modelling Research Debrief, June 2017

2. PREMO - OUTCOMES (CONTINUED)

2.3.2 RELIABLE WATER AND SEWERAGE SERVICES

“AS A CUSTOMER, I EXPECT WATER AND SEWERAGE SERVICES I CAN RELY ON”

Customers want us to invest in maintaining our core services and have told us that for both water and sewerage services, they expect these services to be provided in a cost-effective way that doesn't increase their bills. They want to know the service is dependable and they want us to address repeat interruptions. Customers identify three interruptions as a cause of dissatisfaction³³.

There appears to be some recognition of increasing pressures on the network due to the growing population and customers want to know we're planning effectively for both now and the future.

Service reliability has traditionally been measured by a vast array of indicators which we intend to continue to manage and monitor. The single measure that best reflects the intent of this outcome is '% of customers who experience three or more water and sewerage service interruptions in 12 months'. This is not currently reported as a single measure. We intend for this indicator to reflect the % of customers who either:

- experience three or more water supply customer interruptions as currently reported to the Commission.
The five-year performance of customers affected is 7,144
- experience three or more sewerage supply customer interruptions as currently reported to the Commission.
The five-year performance of customers affected is 37

Our target for '% of customers who experience three or more unplanned water or sewerage service issues in 12 months' is 0.96%, which reflects maintenance of current five-year performance of the items above. We will measure our success against the annual target using a five-year rolling average to minimise the influence of significant weather impacts.

Table 3 outlines the measures and targets together with the deliverables, activities and costs for the reliable water and sewerage services outcome.

Table 3: Outputs, activities and costs for reliable water and sewerage services outcome

OUTCOME	RELIABLE WATER AND SEWERAGE SERVICES
The primary measure of our success is	% of customers who experience three or more unplanned water or sewerage service interruptions in 12 months (<i>target 0.96%</i>)
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	<p>Total number of water supply interruptions (planned and unplanned) per 1,000 customers</p> <p>Number of customers who experience:</p> <ul style="list-style-type: none"> • an unplanned water supply interruption • two or more unplanned water supply interruptions <p>Total number of sewerage supply interruptions (planned and unplanned) per 1,000 customers</p> <p>Number of customers who experience:</p> <ul style="list-style-type: none"> • an unplanned sewerage supply interruption • two or more unplanned sewerage supply interruptions <p>Number of complaints per 1,000 customers</p> <p>Number of customers who contact us more than once in relation to either their water flow, reliability of water or sewerage service</p> <p>Number of guarantee service level rebates paid</p> <p>Average frequency of:</p> <ul style="list-style-type: none"> • Customer water supply interruptions • Customer sewerage interruptions

³³ Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, pages 37 to 40, Qs B2 – B5 Thinking about this scenario, how satisfied would you be if Yarra Valley Water? (n=828).

Table 3: Outputs, activities and costs for reliable water and sewerage services outcome (continued)

OUTCOME	RELIABLE WATER AND SEWERAGE SERVICES
<p>We will undertake these actions, activities and programs to deliver the customer outcome</p>	<p>Construct the following key projects that provide services to new customers:</p> <ul style="list-style-type: none"> • Kalkallo to Bald Hill Drinking Water major assets (drinking water pump station, transfer main, pressure reducing station and distribution main) by 2019-20 at a cost of \$21.3 million (total project cost \$24.1 million) • Lockerbie Main Sewer by 2021-22 at a cost of \$84.9 million (total project cost \$91.1 million) • Doreen Sewer Pressure Main by 2020-21 at a cost of \$27.8 million (total project cost \$30.6 million) • Epping Branch Sewer Tunnel by 2019-20 at a cost of \$11.2 million (total project cost \$42.8 million) • Kalkallo Creek Branch Sewer by 2018-19 at a cost of \$11.5 million (total project cost \$48.7 million) • Craigieburn Flow Storage and Distribution Hub – Stage 2 by 2020-21 at a cost of \$9.0 million (total project cost \$9.0 million) <p>We will continue to:</p> <ul style="list-style-type: none"> • undertake ongoing preventative maintenance for mechanical and electrical assets across the water supply and sewerage networks • renew water reticulation pipes and main to meter pipes where they no longer provide a reliable water service to customers • replace customer water meters which are not accurately recording water usage • renew sewerage reticulation, branch and mains and house connection branches where they no longer provide a reliable sewerage service to customers • replace sewer vents and maintenance holes which pose safety risks to our staff and the community • optimise operation, hydraulic performance and management of the water supply network including activities and programs for: <ul style="list-style-type: none"> – long-term planning and modelling of the water network to optimise performance – maintaining hydrants, valves, pump stations that have the potential to impact water availability for customers – managing water pressure across the network and undertaking remediation works if pressures are found to be low, resulting in customer issues, or high to prevent the occurrence of leaks and water supply interruptions • optimise the operation, performance and management of the sewerage network including activities and programs for: <ul style="list-style-type: none"> – long-term planning and modelling of the sewerage network to optimise performance – operate and maintain our local sewage treatment plants in accordance with their EPA licence conditions – operate and maintain odour control facilities to minimise customer complaints – undertake trade waste compliance and management activities to ensure the protection of sewerage assets – undertake a proactive sewerage main cleaning program to reduce the likelihood of repeat blockages and customer interruptions

2. PREMO - OUTCOMES (CONTINUED)

Table 3: Outputs, activities and costs for reliable water and sewerage services outcome (continued)

OUTCOME	RELIABLE WATER AND SEWERAGE SERVICES
We will undertake these actions, activities and programs to deliver the customer outcome (continued)	<ul style="list-style-type: none"> – fully investigate any sewage spill that occurs within a customer’s property and undertake works to ensure the problem does not recur (where the cause of the spill is our responsibility) – work with Melbourne Water under the bulk sewage agreement for the removal and treatment of wastewater • provide new infrastructure for a growing customer base enabling new customers to connect • provide pressure and flow information for proposed developments • manage customer complaints and escalate cases when they experience ongoing issues • maintain an ongoing customer awareness and information program
Operating Costs	\$26.61 million (average annual forecast 2018-19 to 2022-23)
Capital Expenditure	\$166.94 million (average annual forecast 2018-19 to 2022-23)

2.3.3 TIMELY RESPONSE AND RESTORATION

“AS A CUSTOMER, I EXPECT FAST RESPONSE AND EFFECTIVE RESTORATION OF MY SERVICE WHEN IT IS INTERRUPTED”

Customers have told us that interruptions that extend beyond four hours are a cause of dissatisfaction³⁴. The measure we propose, that best reflects this sentiment is ‘% of customers whose service has been restored within four hours’. We propose to continue to maintain the average performance over the last five years of 91.1% as the target for the 2018-19 to 2022-23 period.

This measure is consistent with our proposal to retain service level rebates for unplanned water and sewerage service interruptions where restoration of services does not occur within four hours.

We currently measure response and restoration of service through multiple indicators which we will continue to manage and monitor. Customers tell us there are a number of actions and activities that reduce the inconvenience of an interruption³⁵ including:

- fast response to unplanned service interruptions, with customers expecting response within 60 minutes
- for any interruption, notifying the customer of the estimated time for restoration of service
- when an interruption is scheduled, clear notice of the interruption, the work required and estimated time and duration of the interruption
- notification when works are complete
- availability of alternative water supplies during the interruption.

Consistent with these insights we propose several new management and monitoring measures.

Table 4 outlines the measures and targets together with the deliverables, activities and costs for the timely response and restoration outcome.

³⁴ String, Yarra Valley Water: Service Expectations research report, August 2016, page 10

³⁵ String, Yarra Valley Water: Service Expectations research report, August 2016, page 10

Table 4: Outputs, activities and costs for timely response and restoration outcome

OUTCOME	TIMELY RESPONSE AND RESTORATION
The primary measure of our success is	% of customers whose service has been restored within four hours (<i>target 91.1%</i>)
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	<p>% of jobs, where there is an interruption to a customer's service and where crews have arrived on-site and commenced work within 60 minutes</p> <p>% of customer satisfaction with:</p> <ul style="list-style-type: none"> • the overall time taken to complete works • the restoration of the site where we have undertaken works <p>% of work sites restored within 30 days of completion of works</p> <p>% of calls to the emergency fault line answered in 30 seconds</p> <p>% of customers, whose service has been impacted by our works, who say they were not unduly inconvenienced</p> <p>% of customers, whose service has been impacted by a disruption, who say the communications met or exceeded their expectations</p> <p>Average time taken:</p> <ul style="list-style-type: none"> • to attend bursts and leaks (priority 1,2 and 3) • to restore customers water supply – planned and unplanned (minutes) • to attend sewer spills and blockages (minutes) • to rectify a sewer blockage (minutes) <p>% of spills contained within five hours</p> <p>Number of guarantee service rebates paid to customers</p>
We will undertake these actions, activities and programs to deliver the customer outcome	<p>We will continue to:</p> <ul style="list-style-type: none"> • provide service fault response and restoration services which are in line with customer expectations, including: <ul style="list-style-type: none"> – 24-hour faults line – customer call back program with an opportunity for customers to give feedback on their service experience – online fault map, providing real-time information about service outages in a readily accessible way • partner with our maintenance service provider for optimal maintenance services consistent with our customer commitments • provide site restoration services including: <ul style="list-style-type: none"> – clean up for spills within a house – clean up of a customer's property and/ or the surrounding area following works • minimise customer inconvenience by: <ul style="list-style-type: none"> – providing customers a weeks' advanced notice of a planned interruption – not planning service interruptions between 5am and 9am and 5pm and 11pm – advising estimated time of arrival and completion of works – providing communications during the interruption – notifying when works are complete
Operating Costs	\$31.86 million (average annual forecast 2018-19 to 2022-23)
Capital Expenditure	\$0 million (average annual forecast 2018-19 to 2022-23)

2. PREMO - OUTCOMES (CONTINUED)

2.3.4 FAIR ACCESS AND ASSISTANCE FOR ALL

“AS A CUSTOMER, I VALUE SUPPORT FOR CUSTOMERS HAVING DIFFICULTY PAYING THEIR BILL”

Research indicates almost 50% of customers ‘sometimes’ or ‘always’ struggle to pay their utility bills in the last 12 months³⁶, and 43% said they regularly pay their bill using some form of credit (including borrowing from family or payday lenders) because they didn’t have funds available.

Customers have told us they value supporting customers to access support services. The citizens’ jury and conjoint choice analysis supported greater investment to reach additional customers. As a result, we propose an additional \$6 million investment over the five year period to improve awareness and access to services and programs for disadvantaged customer segments who experience barriers to our service.

The measure ‘% of customers who believe Yarra Valley Water helps customers experiencing difficulty paying for their water and sewerage services’ best reflects on the quality of these services. While we regularly ask this question through our biannual customer insights program, we recently asked it in our customer support program for the first time, with the result of 89%. Although we do not have historical performance information, we propose a minimum target for this measure of 89%.

In addition, we will manage and monitor another perception measure to target the broader awareness of our programs. Table 5 outlines the measures and targets together with the deliverables, activities and costs for the fair access and assistance for all outcome.

Table 5: Outputs, activities and costs for fair access and assistance for all outcome

OUTCOME	FAIR ACCESS AND ASSISTANCE FOR ALL
The primary measure of our success is	% of customers, who have accessed our services, who believe Yarra Valley Water helps customers experiencing difficulty paying for their water and sewerage services (target 89%)
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	% of customers who say they are confident that we will look after customers experiencing difficulty paying for essential water and sewerage services
We will undertake these actions, activities and programs to deliver the customer outcome	<p>We will continue to:</p> <ul style="list-style-type: none"> • provide hardship and vulnerability programs for customers who are unable to pay • improve awareness and access to services and programs for disadvantaged customer segments who experience barriers to our services • partner with other organisations to ensure customers can access support services more broadly • protect customers who may not have a capacity to pay and we will not restrict water supply without first ascertaining ability to pay • provide customers with a variety of payment options that suit their circumstances <p>We will introduce a mechanism for large households having difficulty paying their bill that adjusts the water volumetric step charge based on the number of people in the property</p>
Operating Costs	\$4.41 million (average annual forecast 2018-19 to 2022-23)
Capital Expenditure	\$0 million (average annual forecast 2018-19 to 2022-23)

36 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 26
Q16 In the past year have you struggled to find the money to pay utility bills? (n=1,011).

2.3.5 WATER AVAILABILITY AND CONSERVATION

“AS A CUSTOMER, I VALUE SAVING WATER NOW SO IT’S AVAILABLE IN THE FUTURE”

Customer research identified opportunities to focus efforts for improvement and innovation associated with alternative sources of water (such as stormwater and recycled water) and encourage water conservation.

- the primary opportunity to improve customer satisfaction is through the environmental services of encouraging efficient water use/conservation and restrictions in times of drought³⁷
- 30% of customers believe the water industry must play a larger role in conservation
- 59% of customers agree that stormwater and wastewater recycling should be mandatory³⁸
- 64% of customers expect us to implement infrastructure that provides recycled water for non-drinking purposes³⁹
- Aboriginal consumers consulted were of the view that all Australians need to conserve our water because it is very precious and that out of the four key issues care and protection of the environment was the main priority that Yarra Valley Water should focus on in the future⁴⁰.

The citizens' jury and conjoint choice modelling also supported saving water, even at a cost, to protect water resources for the future, including:

- pursuit of network leakage
- information, advice and programs to increase water conservation knowledge and awareness
- activities and programs targeted at both the customer and community level focused on water conservation and greater utilisation of alternative water supplies.

We propose the measure 'total water usage' expressed as litres/ per person/ per day best reflects the intent of the outcome and customer sentiment as it takes into account leakage and usage by all customer segments. As reflected in our demand forecasts, we are targeting a reduction of 5.8% from 223 litres/ per person/ per day in 2016-17 to 210 by 2023.

Table 6 outlines the measures and targets together with the deliverables, activities and costs for the water availability and conservation outcome.

37 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 21
Q4 How satisfied are you with Yarra Valley Water on each of the following? (n=667 to 1,011).

38 Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 29 , Q14 To what extent do you agree with the following statements? Stormwater and wastewater recycling should be mandatory (n=1,078).

39 String, Yarra Valley Water: Service Expectations research report, October 2016, page 42, Source. B6 Please think about Yarra Valley Water and their role in encouraging water saving activities. How satisfied would you be if Yarra Valley Water implemented infrastructure that provides recycled water for non-drinking water purposes,(n=828).

40 Karen Milward Consulting Services, Yarra Valley Water, Water Price Review Aboriginal Community Consultations, May 2017

2. PREMO - OUTCOMES (CONTINUED)

Table 6: Outputs, activities and costs for water availability and conservation outcome

OUTCOME	WATER AVAILABILITY AND CONSERVATION				
The primary measure of our success is	Total water usage (litres/ per person/ per day)				
	<i>targets:</i>				
	2018-19	2019-20	2020-21	2021-22	2022-23
	221	217	213	211	210
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	Household drinking water usage (litres/ per person/ per day) Metered volume of recycled water delivered to customers (megalitres) % of non-revenue water Infrastructure Leakage Index				
We will undertake these actions, activities and programs to deliver the customer outcome	We will continue to: <ul style="list-style-type: none"> • provide targeted water conservation resources, education and programs for customers and the community • undertake a proactive program that identifies and resolves undetected leakage issues in our network • provide recycled water services to customers in mandated areas and pursue the provision of new recycled and alternative water services/options where there is strong customer support • only impose water restrictions where unforeseeable circumstances require us to ensure the supply of water • work with stakeholders and partners to optimise water resource management at a community level, particularly through Integrated Water Management Forums established under the Government's Water for Victoria policy • undertake various demand and bulk water management activities including: <ul style="list-style-type: none"> – short to medium term demand management at a local and community level – preparation of annual Water Outlook for Melbourne with Melbourne Water and other retailers – short to medium term supply management, including optimisation of water allocations, management of water entitlements and the annual desalination order process – long term water resource planning for Melbourne together with Melbourne Water and other retailers 				
Operating Costs	\$12.90 million (average annual forecast 2018-19 to 2022-23)				
Capital Expenditure	\$13.56 million (average annual forecast 2018-19 to 2022-23)				

2.3.6 MODERN FLEXIBLE SERVICE

“AS A CUSTOMER, I VALUE MODERN, FLEXIBLE SERVICES AND
ADVICE THAT SUITS MY NEEDS”

Customers can contact us by phone, email, via our website, online chat and social media. Despite living in today's connected, 'always-on' digital world, our research indicates the telephone is still the preferred way to contact us, especially when customers want an immediate response, if the enquiry is complex or they want to make a complaint and know the issue is being dealt with.

Customers look outside the water industry when talking about preferences, needs and expectations, including retail services and products such as:

- real-time usage advice like broadband and mobile phone operators
- online capability to monitor accounts and usage
- incentives for prompt payments and electronic billing and/or disincentives for paper bills and late payment.

We have previously investigated offering tariff choice to customers and while customers expressed some interest, when presented with the options they saw little benefit⁴¹. Nevertheless, there are opportunities to provide modern and flexible services that reflect offers customers receive from other providers. The conjoint choice analysis and citizens' jury recommended an incentive for customers who elect an e-bill together with payment by direct debit. They also supported rollout of digital metering technologies at an additional cost of up to \$12.50 once the technology is proven.

We propose the measure '% of customers who are satisfied with their most recent experience' best reflects the intent of the outcome and customer sentiment. Currently we track this measure biannually through our existing customer insights program.

Consistent with historical performance, we propose the target of 86% for the 2018-19 to 2022-23 period.

Table 7 outlines the measures and targets together with the deliverables, activities and costs for the *modern flexible service* outcome.

41 Ipsos, Tariff pilot study, May 2015

2. PREMO - OUTCOMES (CONTINUED)

Table 7 : Outputs, activities and costs for modern flexible service outcome

OUTCOME	MODERN FLEXIBLE SERVICE
The primary measure of our success is	% of customers who are satisfied with their most recent interaction (<i>target 86%</i>)
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	<p>% of customers who have contacted us and say that their issue has been satisfactorily resolved</p> <p>% of customer who say:</p> <ul style="list-style-type: none"> • they are satisfied with Yarra Valley Water overall • the services they receive from Yarra Valley Water represent value for money • they have confidence that Yarra Valley Water will meet their needs now and in the future <p>% of customers who contact us with an account enquiry and have their phone call answered within 2 minutes</p> <p>% of issues resolved at the first contact</p> <p>% of all bills that will be based on an actual meter read</p>
We will undertake these actions, activities and programs to deliver the customer outcome	<p>To meet customer needs, we will:</p> <ul style="list-style-type: none"> • introduce the option to receive a discount when electing to receive an e-bill and pay by direct debit • advance the potential of digital metering through the completion of pilots that may enable the broader implementation in the 2023-28 regulatory period depending on the readiness of the technology <p>We will continue to:</p> <ul style="list-style-type: none"> • have a customer centred approach to our customer contacts and enquiries, including: <ul style="list-style-type: none"> – maintain a local customer contact centre as the primary avenue for customers supported by various online and social mechanisms – ensure the bill design supports improved communications and information for customers – deliver customers a bill consistent with their preferences, including an accurate meter read – maintain customer services and relationships with specific customer segments such as developers, builders, plumbers and trade waste customers – a range of bill payment options and channels that allow customers to manage their payments in a way that suits them – fair and equitable debt management and collection approaches that ensure customers that are unable to pay are identified and supported • ensure that customers who want to have a self-serve relationship receive accessible and clear communications • engage with customers, including those segments that have traditionally been hard to reach, to gather insights and reflection of their needs and experiences to continually improve our services
Operating Costs	\$49.91 million (average annual forecast 2018-19 to 2022-23)
Capital Expenditure	\$16.83 million (average annual forecast 2018-19 to 2022-23)

2.3.7 CARE FOR AND PROTECT THE ENVIRONMENT

“AS A CUSTOMER, I VALUE LOOKING AFTER THE ENVIRONMENT”

Customers tell us that caring for and protecting the environment is something that is important to them, with:

- 85% of customers are concerned or have some concern about the environment;
- our Aboriginal community indicating that looking after the environment is the most critical aspect of what we do.

Overall, when customers think about looking after the environment their main concern is climate change and its impact. We know our operations impact the environment in three key areas - in order of impact these are:

- carbon emissions
- extracting water from the environment (refer to section 2.3.5)
- discharging treated wastewater.

We propose the measure '% reduction in carbon emissions' for this outcome, given our drinking water consumption target (refer to section 2.3.5) addresses the concern relating to water availability, and our discharge levels are forecast to remain within our self-imposed cap (ensuring no detrimental impacts on waterways).

Consistent with our emissions reduction target to achieve net zero emissions by 2030, we propose to target % reduction in emissions from the 2016-17 baseline of 34,742 tCO₂e. A significant contributor to the reductions in emissions is our 'ReWaste' facility at Aurora Treatment Plant.

Table 8 outlines the measures and targets together with the deliverables, activities and costs for the care and protect the environment outcome.

2. PREMO - OUTCOMES (CONTINUED)

Table 8: Outputs, activities and costs for care for and protect the environment outcome

OUTCOME	CARE FOR AND PROTECT THE ENVIRONMENT									
The primary measure of our success is	Carbon emissions									
	<i>target - x% reduction in emissions (cumulative)</i>									
	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #d9ead3;">2018-19</th> <th style="background-color: #d9ead3;">2019-20</th> <th style="background-color: #d9ead3;">2020-21</th> <th style="background-color: #d9ead3;">2021-22</th> <th style="background-color: #d9ead3;">2022-23</th> </tr> </thead> <tbody> <tr> <td>5.8%</td> <td>16.1%</td> <td>32.8%</td> <td>47.1%</td> <td>53.4%</td> </tr> </tbody> </table>	2018-19	2019-20	2020-21	2021-22	2022-23	5.8%	16.1%	32.8%	47.1%
2018-19	2019-20	2020-21	2021-22	2022-23						
5.8%	16.1%	32.8%	47.1%	53.4%						
We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome	<p>% of customers:</p> <ul style="list-style-type: none"> • believe Yarra Valley Water operates in a way that looks after the environment • say they trust Yarra Valley Water to do the right thing <p>We have kept nitrogen discharges under our annual Nutrient Cap of <87 tonnes.</p>									
We will undertake these actions, activities and programs to deliver the customer outcome	<p>We will continue to:</p> <ul style="list-style-type: none"> • take a long-term planning view of climate change and environmental sustainability, • minimise our impacts on the environment to: <ul style="list-style-type: none"> – sustain GHG neutrality each year consistent with our reduction strategy and energy efficiency programs – reduce impacts on local waterways that may occur from stormwater, treatment plant failures or discharges and sewage spills • comply with our sewage treatment plant licences issued by the EPA and other EPA environmental standards, including wastewater spills incident management and reporting • deliver our community sewerage program to provide customers with failing septic tanks an alternative sustainable solution - including major capital projects to provide sewerage services to 2,927 properties with failing septic tank systems: <ul style="list-style-type: none"> – Monbulk Community Sewerage Program by 2020-21 at a project cost of \$28.5 million (total project cost \$36.5 million) – The Patch Community Sewerage Program by 2020-21 at a project cost of \$13.7 million (total project cost \$14.8 million) – Sassafras Community Sewerage Program by 2022-23 at a project cost of \$9.2 million (total project cost \$11.2 million) – Sherbrooke/ Kallista Community Sewerage Program by 2020-21 at a project cost of \$12.0 million (total project cost \$14.4 million) 									
Operating Costs	\$3.11 million (average annual forecast 2018-19 to 2022-23)									
Capital Expenditure	\$32.73 million (average annual forecast 2018-19 to 2022-23)									

2.4 PERFORMANCE REPORTING TO CUSTOMERS

Our proposed approach will drive our performance to ensure we deliver on our outcomes and commitments.

OUR PROPOSED PERFORMANCE REPORTING APPROACH REFLECTS CUSTOMER FEEDBACK THAT ANY PERFORMANCE REPORT MUST BE TRANSPARENT, ACCESSIBLE, TRUSTED AND EFFICIENT

Our engagement insights have informed the principles we will use to guide our performance reporting. At a minimum, we will report our performance on primary measures and commitments to customers annually. Where outcomes are dependant on the delivery of any of our top 10 projects or major programs we will report the status. To ensure we capture the breadth of customers' experiences, we will report on localised performance and both the range of individual customer experience (outliers), as well as average performance.

We will communicate performance through established channels including bills inserts, social media, our website and online engagement portal. We will evaluate the cut-through of reporting and evolve our approach to meet customers' needs and expectations.

We will also engage with customers during the period to explore preferences in relation to bill reductions or additional value creation should further efficiencies be achieved.

Consistent with our commitment to reduce prices in the following year by \$1.5 million for any of the seven outcome targets we do not achieve (refer section 2.2), we will measure annual performance on a rolling 12-month cycle of 1 April to 31 March. The performance together with price changes will then be reported in the first quarter bill each year.

We have an ongoing customer research and engagement that tracks customers' satisfaction, confidence and trust in our interactions with them. We also undertake targeted quantitative and qualitative research on emerging topics and issues. We will continue to analyse and test these insights, including with our Customer Advisory Group, to see whether we need to change activities, programs, outputs and even outcomes to maximise value for our customers.

We will pilot our reporting approach with customers in July 2018 with specific focus on introducing the new outcome commitment, measure and performance targets. This will provide the opportunity to more broadly test collateral and explore more fully customers' reporting needs and expectations. An example of possible collateral and dashboard are provided below.

OUR PERFORMANCE MEETING OUR COMMITMENTS

- SAFE DRINKING WATER**
Target: Compliance with Safe Drinking Water regulations
Result: Achieved
- RELIABLE WATER & SEWERAGE SERVICES**
Target: less than 7,180 customers experienced 3 or more unexpected water or sewerage service interruptions in 12 months
Result: 6,300
- SWIFT RESPONSE & RESTORATION**
Target: customers' services have been restored within 4 hours 91% of the time
Result: 89%
- FAIR ACCESS & ASSISTANCE FOR ALL**
Target: 91% of customers who have accessed our services believe we will help those having difficulty paying for water and sewerage services
Result: 96%
- WATER AVAILABILITY & CONSERVATION**
Target: Total water usage of less than 221 litres per person per day
Result: 219
- MODERN FLEXIBLE SERVICE**
Target: 86% of customers say that they are satisfied with their most recent customer service interaction
Result: 86%
- CARE FOR & PROTECT THE ENVIRONMENT**
Target: 2% reduction in carbon emissions
Result: 5%

To find out more visit: yvw.com.au/performance

Yarra Valley Water

OUR PERFORMANCE MEETING OUR COMMITMENTS

- SAFE DRINKING WATER**
The primary measure of our success is 100% compliance with Australian Drinking Water Standards
TARGET: 100%
RESULT: 99%
In 2017/18, there were 7 instances where the testing resulted in non-compliance with the Standard.
These locations were: Camberwell, Craigieburn, Doncaster, Epping, Mount Evelyn, Wallan, Yan Yean
- RELIABLE WATER & SEWERAGE SERVICES**
We have a comprehensive water quality monitoring program to ensure that the water we supply is high quality and pleasant to drink. Every year our independent laboratory collects and tests over 7,000 samples, whilst we monitor the water supply at selected representative customer taps in 52 separate water quality zones. We are committed to providing you with the highest quality water.
- SWIFT RESPONSE & RESTORATION**
You can access water quality test results from across these specific zones, including descriptions of the elements tested. All you need is a postcode or suburb and we can provide you with the results.
- FAIR ACCESS & ASSISTANCE FOR ALL**
Access Water Quality Results
Our Statement of Obligations is issued by the Government and specifies obligations and requirements for the supply of water to our customers and an annual audit is undertaken by the Essential Services Commission to ensure that we comply.
- WATER AVAILABILITY & CONSERVATION**
We communicate these results to our customers in our Annual Water Quality Reports.
- MODERN FLEXIBLE SERVICE**
Download our annual water quality reports.
 - Water Quality Report 2016-17 (1.7MB)
 - Water Quality Report 2015-16 (1.7MB)
 - Water Quality Report 2014-15 (1.7MB)
 - Water Quality Report 2013-14 (2MB)
 - Water Quality Report 2011-12 (1.8MB)
 - Water Quality Report 2010-11 (1MB)
 - Water Quality Report 2009-10 (1MB)
- CARE FOR & PROTECT THE ENVIRONMENT**
To manage the risks associated with drinking water quality, we will increase our focus and investment in:
 - Inspection of X service reservoirs for structural integrity and remediate or replace X service reservoirs
 - providing secondary chlorination/ disinfection facilities at X locations
 We will clean X kilometres of water mains in areas where sediments accumulate

3. PREMO - MANAGEMENT

Our Board and management have consciously planned to provide our ‘best offer’ to our customers for the achievement of our seven outcomes and the associated measures and commitments to be delivered over the next regulatory period. Key management actions relate to the Board’s attestation, our forecast operating and capital expenditure for the next regulatory period and minimising customers’ bills.

3.1 ENABLING BOARD ATTESTATION

The Board and particularly the Sustainability, Planning, Infrastructure and Regulation (SPIR) Board sub-committee, has been actively involved in the development, review and approval of the Price Submission. The SPIR Committee has primary accountability on behalf of the Board for regulatory matters with the primary objectives of the SPIR, being to:

- oversee and appraise the scope and quality of the audits in the Integrated Audit Program, which covers environment, safety and quality
- review objectives, strategies, policies, compliance, actions, risks and audits in relation to minimising impacts on the environment
- understand the effectiveness and efficiency of asset management practices and infrastructure investment programs in relation to water and sewerage infrastructure
- review and recommend the adoption of the Price Submission to the Board
- review and assess the measure up of the Price Submission on an annual basis
- monitor innovative developments being implemented by the business on a broad scale.

A comprehensive program of papers and briefings was developed for SPIR associated with the price review including the Commission’s review of its pricing approach for the 2018 price review. Since October 2015, the Board has received briefings at 12 of 20 Board meetings, in addition all SPIR Committee meetings over the same period have discussed various aspects of the Price Submission. These briefings related to the Commission’s Guidance, updates about attestation, our strategic approach to the process and key project and program delivery.

Table 9 presents a summary of papers prepared for Board and SPIR meetings over the past three years

Table 9: Number of papers prepared for Board and SPIR Committee 2015-2017

	2015	2016	2017
Asset management and servicing approach and programs	3	7	1
Customer engagement and insights	-	3	5
Demand forecasting, pricing and tariffs	-	4	2
PREMO framework	2	4	-
Overarching approach, Price Submission document and attestation	2	1	9
Total papers prepared for Board and SPIR Committee	7	19	17

The Board members actively engaged with customers at the citizens’ jury, logging more than 100 hours as participants and observers of the process, and responded to the recommendations.

A key part of the new PREMO is for the Board to attest to the quality and accuracy of the Price Submission.

The Board recognised that to provide attestation, it needed to establish a process with an auditable trail of accountability throughout the business. This process included the appointment of an independent advisor reporting to the Board to provide the appropriate assurance and enable detailed scrutiny of the key elements of our Submission.

3. PREMO - MANAGEMENT (CONTINUED)

This process provided the Board and Executive Team with the confidence that appropriate procedures have been adopted in developing our Price Submission.

The attestation process included a three-stage approach, with independent reviews, allowing for iterative review and approval of input information prior to inclusion in the Price Submission including:

- independent advice on our approach and plan to produce a Price Submission and the establishment of robust internal governance arrangements comprising:
 - an Executive Steering Committee
 - a Project Team reporting to the Executive Steering Committee
 - specific sign off of information/data by General Managers to enable population of the Commission's Information Template, preparation of our Price Submission and provide the Board assurance to enable attestation
 - scrutiny of signed off information/data from General Managers by the Board's independent advisors
- review of the prudence and efficiency of expenditure and demand forecasts including:
 - presentation on our approach to demand forecasting to SPIR and review of our demand forecasting methodology and forecasts by the Board's independent advisors
 - preparation of business cases for top 10 and other capital expenditure programs which were signed off by the responsible General Manager and reviewed for prudence and efficiency by the Board's independent advisors
 - review of the efficiency of our controllable operating cost forecasts including by Board's independent advisors
- confirmation the Price Submission and information template are accurate, consistent and complete including:
 - ensuring all data input into our Price Submission and Information Template were consistent with the signed off date/information from General Managers through an audit process
 - review of the Information Template and Price Submission by the Board's independent advisors.

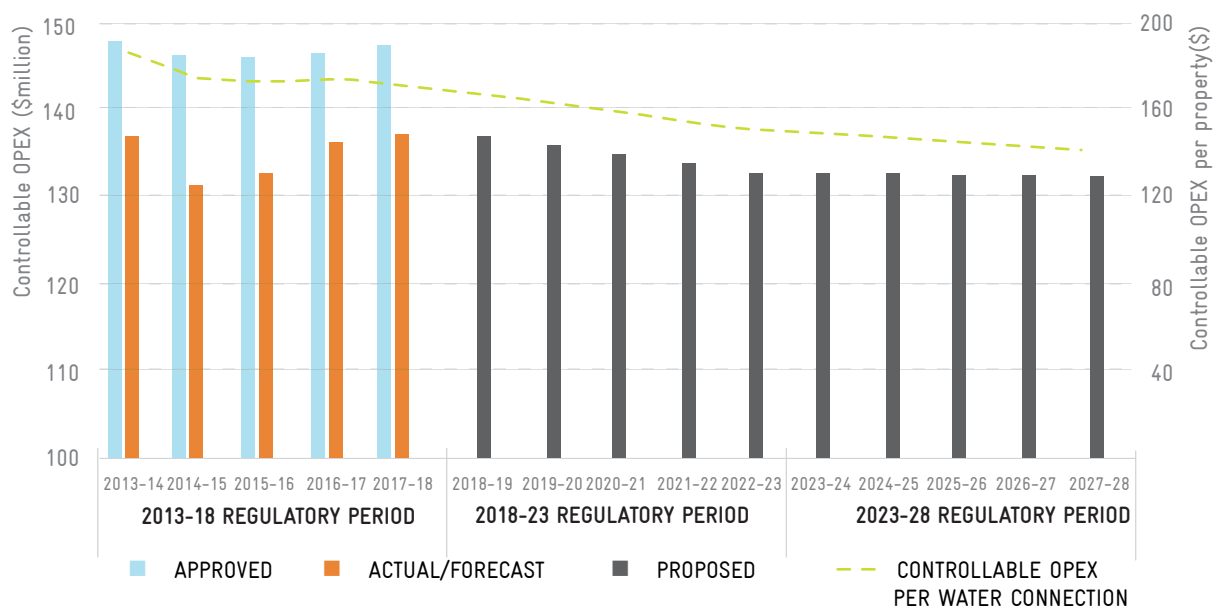
3.2 CONTROLLABLE OPERATING EXPENDITURE

We have an ongoing commitment to improve operating cost efficiency and take pressure off customers' prices. Key features of the delivery of this commitment are:

- outperforming our regulatory cost benchmarks set by the Commission – during the last five years we out-performed our baseline 1% per annum controllable operating costs efficiency target by \$42.5 million (in real terms). In part, these efficiencies enabled us to deliver the \$100 annual government rebate to our residential customers
- outsourcing of major inputs to deliver efficiency gains – currently 51% of our controllable operating costs are competitively procured to ensure we get the best market price. Benchmarking is undertaken in relation to a further 44 % of our operating costs to enable us to adjust our processes to achieve best practice. This approach provides a high degree of confidence that opportunities are identified and we can deliver improvements to ensure our actual costs are consistent with efficient practices.

Over the course of 2018-23 regulatory period, our controllable operating costs per property is forecast to continue to decrease as shown in Figure 5.

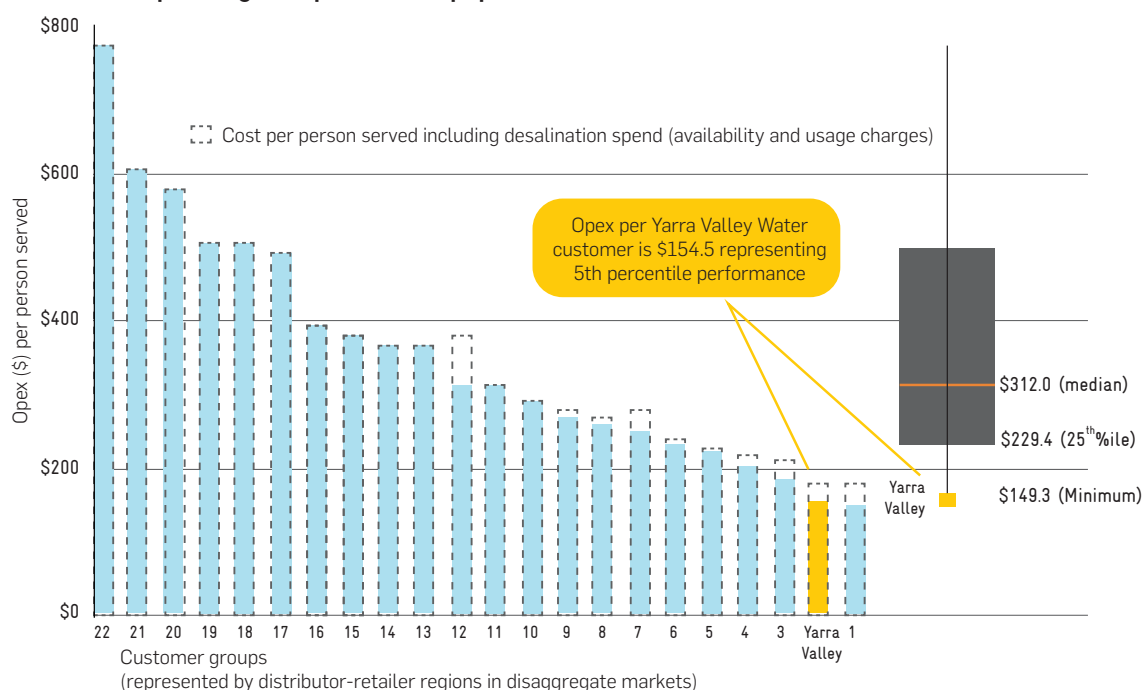
Figure 5: Yarra Valley Water’s controllable operating expenditure profile 2013-14 to 2027-28 (\$ January 2018)



Recent benchmarking also suggests we are on, or very close to, the efficiency frontier, including:

- participating in national econometric and process benchmarking projects carried out by the Water Services Association of Australia (WSAA)
- working with consultants Third Horizon to analyse the results of the 2014-15 WSAA financial benchmarking exercise. The analysis worked out the total operating expenditure per head of population in each retailer’s service area. To enable comparison between regions with separate bulk service providers (such as Melbourne, Sydney and South East Queensland) and regions with vertically integrated utilities (such as South Australia, Western Australia and regional Victoria), Third Horizon combined each retailer’s comparable operating cost components with an allocation of any bulk service provider’s operating costs. The results confirmed that our customers receive a lower cost service, with our operating cost, per head of population, coming in lower than 95% of Australian water utilities (refer Figure 6).

Figure 6: WSAA operating cost per head of population



3. PREMO - MANAGEMENT (CONTINUED)

To ensure customers continue to have prices as low as possible, and to drive ongoing cost efficiencies through pursuit of emerging technologies and process improvements, we are committed to achieve compounding productivity improvements of 2.5% per annum on our controllable operating costs, amounting to approximately \$50.5 million over the course of the next regulatory period. We forecast to achieve efficiencies of \$45.2 million in 2013-18 regulatory period over the 1.0% per annum price determination benchmark.

Our controllable operating expenditure is forecast to decrease by about 5.2% over the next regulatory period compared to the 2016-17 base year of \$140.35 million as shown in Table 10 below.

Table 10: Controllable operating expenditure forecast 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	\$ MILLION					\$ MILLION				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
2016-17 baseline spend	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35
Less 2016-17 adjustments	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)
Plus net 2017-18 growth & efficiency allowances ⁴²	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
Less annual efficiency	(3.40)	(6.78)	(10.14)	(13.47)	(16.77)	(18.74)	(20.70)	(22.67)	(24.63)	(26.59)
Plus growth allowance ⁴³	2.54	4.98	7.33	9.56	11.67	13.67	15.60	17.46	19.29	21.12
Plus net additional expenditure items	1.70	1.71	1.72	1.73	1.74	1.75	1.76	1.77	1.78	1.79
Total controllable operating expenditure	136.90	135.97	134.98	133.89	132.70	132.75	132.72	132.63	132.50	132.38

3.2.1 2016-17 BASE YEAR ADJUSTMENTS

The 2016-17 baseline expenditure has been reduced by \$5.90 million.

- Maintenance volumes (\$2.34 million) which reflects a long-term average of maintenance volume rather than the 2016-17 volumes which are 6% higher than historical maintenance volumes. Emergency fault volumes have the potential to be impacted by a variety of external and uncontrollable factors such as weather conditions, soil conditions and location.
- 2017-18 saving commitments underpinning funding of the \$100 government water rebate (\$1.45 million) primarily from customer service savings achieved through reduced contact (telephone and correspondence) volumes and process efficiency through automation and self-service functionality. Increased take up of electronic billing and improvements in asset management and treatment plant operations are also being targeted.
- Rebates paid to customers under the guarantee service level scheme (\$0.56 million) that reflect an average level of rebates.
- Net recoverable works (\$1.55 million) where the actual costs are above the five-year average expenditure levels.

⁴² Net growth and efficiency allowances comprise a 2.1% allowance for growth less 1% efficiency target.

⁴³ Consistent with the Commissions Information Template the growth allowance is equal to our demand forecast growth rate for new properties connecting to our network forecasts which are based on the Victoria in the Future 2016 report.

3.2.2 NET ADDITIONAL EXPENDITURE ITEMS

Both conjoint choice analysis and citizens' jury recommendations identified the following initiatives to increase value.

- Additional support for disadvantaged customer segments who experience barriers to our services – Our WaterCare vulnerability program is an early intervention program. We work with community groups and cross referral programs with other organisations. Funding of \$2 million was included in our 2013-18 Price Submission to enhance existing hardship policies, expand programs, adopt best practice and improve associated infrastructure - not direct financial customer assistance.

After day four the citizens' jury requested information on the implications of their draft proposal to further enhance education and services to support vulnerable customers. We provided them with details of how an additional \$4 to \$6 million investment in WaterCare programs over five years would increase awareness in the number of households (100,000 – 150,000) of the services available to those having difficulty paying their bills. The impact on customer bills ranged from \$1 to \$1.50. On the final day the citizens' jury recommended an additional \$6 million over five years. We have adopted the citizens jury's recommendation.

- Increased water conservation education and awareness advice for customers, based on the citizens' jury recommendation, of \$5 million over five years.

The citizens' jury also requested information on how we could increase awareness of all our services. We advised that we could increase our expenditure by \$1 million per annum (doubling our current investment) to enable targeted communication and education, e.g. high water users with sensible water use information. The final recommendations of the jury included the increase in expenditure in education and awareness with a particular emphasis on water conservation.

- Acknowledging the citizens jury understanding that removing rebates for service interruptions that extended beyond four-hours would save approximately (\$0.50 million)-we will not charge customers the estimated cost to retain this rebate.

Table 11 below summarises the additional costs for these two initiatives over the next two regulatory periods.

Table 11: Net additional forecast expenditure supported by customers from 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	\$ MILLION					\$ MILLION				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Water conservation – increased education and awareness	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Additional support for disadvantaged customer segments who experience barriers to accessing our services	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Reduction to GSL's to match our response to the citizens' jury recommendation	(0.50)	(0.49)	(0.48)	(0.47)	(0.46)	(0.45)	(0.44)	(0.43)	(0.42)	(0.41)
Total net costs over the 2016-17 baseline	1.70	1.71	1.72	1.73	1.74	1.75	1.76	1.77	1.78	1.79

To ensure bills remain as low as possible for customers, in addition to the 2.5% annual compounding efficiency, we propose to absorb an estimated \$14.5 million of costs between 2018-19 and 2022-23 associated with:

3. PREMO - MANAGEMENT (CONTINUED)

- electricity - retail electricity prices are forecast to increase substantially from 2016-17 baseline costs over the regulatory period due to substantial rises in the wholesale price of electricity
- wages growth above inflation – labour costs are forecast to increase in real terms over the next regulatory period. We recently completed a new Enterprise Agreement, which was approved by Fair Work Australia.

Non controllable activities and their associated costs are discussed in section 6.1.1.

3.3 CAPITAL EXPENDITURE

Our capital expenditure plans have been developed using P50 cost forecasts that are underpinned by detailed cost curve information derived from historical costs, previously completed projects and submitted tenders.

Project specific cost estimates have been completed for all the top 10 projects including a Monte Carlo analysis.

Our capital planning process has three broad stages; planning; design and tendering.

- The planning phase involves high level analysis that includes scenario planning and options analysis to identify the assets and work required to deliver the desired customer outcome in an efficient manner.
- The design phase builds on the information generated during the planning phase and carries out more specific analysis to develop the specific asset characteristics. This includes consideration of constructability, construction methodology, technology and materials.
- The tendering phase provides the opportunity for contractors to put forward their most competitive pricing to deliver the required asset including the proposal of opportunities for innovation and risk mitigation.

Through the ongoing scenario and option analysis, our approach enables us to optimise the prudence and efficiency of our capital expenditure programs.

3.3.1 OUR APPROACH TO CAPITAL DELIVERY

We have robust and efficient investment analysis and asset management processes in place to assist in preparing our capital expenditure program. Having established an efficient investment program, we execute our planned capital works in the most cost-effective manner to ensure that overall value is maximised.

The capital works program described in this Price Submission will be procured through competitive mechanisms to ensure the works are delivered in the most efficient manner. The key elements of our approach to the efficient procurement and creation of assets include:

- strong governance arrangements which include Executive Team member oversight - established for all complex major projects
- competitive tendering of all capital works construction activities
- using sequential contracts of design and construction, which lowers construction risk and cost by completing the design before the construction tendering process
- adopting an industry leading single designer partnership model to deliver increased capital delivery efficiency through removal of program overhead, improved workload certainty and the use of a performance based incentive mechanism
- using multiple contractors and large, annual or longer-term contracts for works involving ongoing programs, such as water and sewerage main renewals, to capture economies of scale and create comparative performance incentives
- using electronic procurement as part of streamlined purchasing practices.

Delivery of our capital expenditure program is supervised by the Capital Delivery Performance Team. This team is accountable for driving the efficiency and effectiveness of our water and sewerage infrastructure capital works programs as well as coordinating the reporting of all capital expenditure performance to both the Executive Team and the Board.

We optimise our capital delivery processes to minimise the potential for project overruns and delays through:

- ensuring stakeholder analysis is completed during the functional design of each project and early dialogue with approval authorities ensuring regulatory approvals and customer consultation requirements are understood early in the delivery process
- use of accredited capital works construction panels who are familiar with our requirements and therefore reduce the tendering assessment period and potential for pricing uncertainty during tendering processes. Panels also ensure we are able to provide a forward view of our works program to contractors. This ensures they can undertake capacity planning to support the volumes of work within in our program
- minimising construction risks by engaging contractors early in the design process
- completing project specific reviews for all complex/ major projects to identify the most effective contract model for delivery. The review considers project risks, contractor capability, the technical expertise available from design consultants and project uncertainties.

Our planned capital expenditure is \$1,186 million for the 2018-23 regulatory period. There are three key drivers of our capital expenditure forecasts:

- maintenance of customer service levels through water and sewerage renewals
- providing new water and sewerage services to growing suburbs
- meeting environmental and other obligations.

In response to customer preferences we are planning to largely maintain our current service levels for 2018-23 regulatory period which means that we have not included any additional capital costs for service improvements other than \$27 million, over five years, to reduce network water losses consistent with the citizens' jury recommendation. Refer to section 3.3.2 for additional information.

Table 12 below outlines our forecast capital expenditure for the next two regulatory periods categorised by drivers. We are planning to maintain a similar level of capital expenditure, on average, over these two regulatory periods to that incurred in the 2013-18 regulatory period.

Table 12: Forecast capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

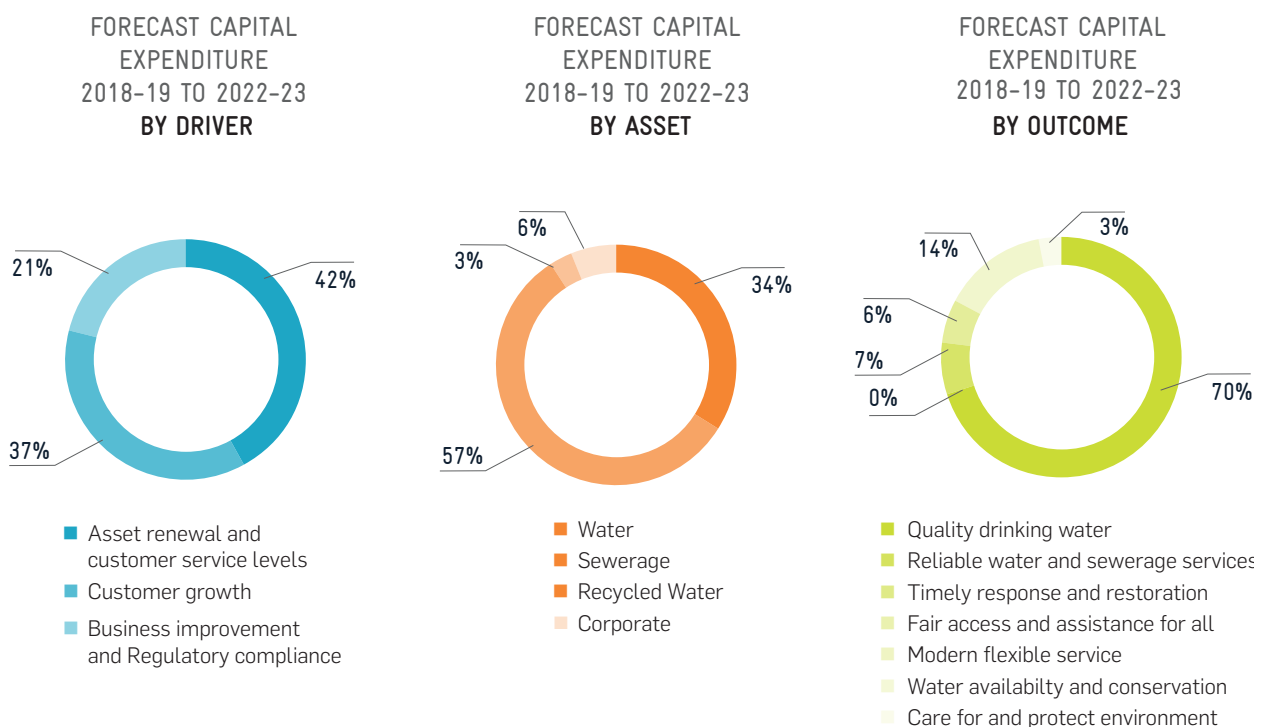
DRIVER OF SPEND	AVERAGE ANNUAL SPEND 2013-18	REGULATORY PERIOD 2018-23					AVERAGE ANNUAL SPEND	AVERAGE ANNUAL SPEND 2023-28
		\$ MILLION						
		2018-19	2019-20	2020-21	2021-22	2022-23		
Asset renewal and customer service levels	103.96	104.50	104.32	97.10	96.68	90.97	98.71	88.99
Customer growth	95.38	97.41	98.89	117.79	69.39	55.40	87.78	92.23
Business improvements and Regulatory compliance	37.28	47.75	51.91	52.17	50.34	49.29	50.29	63.01
Total Capital Expenditure	236.62	249.66	255.12	267.06	216.41	195.66	236.78	244.23

3. PREMO - MANAGEMENT (CONTINUED)

We have categorised our capital expenditure for this period by driver, asset and outcome as shown in Figure 7. The different perspectives show:

- **Driver:** Asset renewals to maintain customer service levels and growth expenditure to service new customers accounting for nearly 80% of our spend
- **Asset:** Expenditure on sewerage is the dominant asset class at 57%. This is related to growth infrastructure, modernisation of treatment plants and compliance programs associated with replacing septic systems and preventing/ limiting the environmental impacts of spills
- **Outcome:** Providing reliable water and sewerage services accounts for 70% of our capital expenditure. Capital expenditure also makes significant contributions to the *care and protect the environment, modern flexible service and water availability and conservation* outcomes.

Figure 7. Capital expenditures by different drivers 2018-19 to 2022-23 (\$ million January 2018)



3.3.2 ASSET RENEWAL AND CUSTOMER SERVICE LEVELS

Our infrastructure assets service multiple generations and can last for up to 100 years. The water and sewerage network is expanding to service new suburbs and we are renewing old assets each year. There is a small proportion of our network nearing the end of its life, and will be replaced as there are significant community impacts when these assets fail.

At a minimum, our customers want a continuous supply of safe clean drinking water and safe removal of waste. Customers also expect us to maintain our service and manage future challenges such as population growth, ageing infrastructure, affordability, and climate change.

In the short to medium term, the challenge will be how to maintain existing customer service levels in the face of more extreme climate events and temperature variations predicted, without significant customer and community inconvenience, cost and bill impacts.

“AS A CUSTOMER I EXPECT WATER AND SEWERAGE SERVICES I CAN RELY ON”

Table 13 below shows the renewals capital expenditure over a 15-year period categorised by outcomes at a program level. Overall, our renewals capital expenditure for the 2018-23 regulatory period is forecast to be less than the current 2013-18 period. The expenditure for the 2018-23 period has been reprioritised amongst asset classes with some expenditure reductions in areas such as water distribution mains and IT system improvement where additional expenditure may be required but we are taking on the financing risk.

Table 13: Forecast renewals capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

RENEWAL PROGRAM	AVERAGE ANNUAL SPEND 2013-18	REGULATORY PERIOD 2018-23 \$ MILLION					AVERAGE ANNUAL SPEND	AVERAGE ANNUAL SPEND 2023-28
		2018-19	2019-20	2020-21	2021-22	2022-23		
OUTCOME: Reliable Water and Sewerage Services								
Water services								
Reticulation mains	23.04	17.59	17.59	17.59	17.59	17.59	17.59	15.73
Main to meter	2.40	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Customer meter replacements	4.01	2.32	2.32	2.32	2.32	2.32	2.32	2.32
Distribution mains	1.51	1.60	1.54	1.13	1.28	1.13	1.34	7.91
Reliability works (civil and mechanical/ electrical)	8.21	11.83	12.08	11.91	11.38	11.56	11.76	12.99
Sewerage services								
House connection branch sewers	9.52	9.96	9.96	9.96	9.96	9.96	9.96	9.51
Reticulation, branch and main sewer	22.15	18.27	18.27	18.27	18.27	18.27	18.27	12.86
Reliability works (civil and mechanical/ electrical)	6.89	14.06	13.79	14.25	12.97	13.21	13.66	9.86
Other works								
Financed Works	1.05	2.01	3.31	0.51	0.51	0.51	1.37	0.61
OUTCOME: Water availability and conservation								
Water Conservation	1.01	10.87	9.28	3.61	1.97	1.28	5.40	0.55
OUTCOME: Modern flexible service								
IT system improvement	14.57	5.11	5.11	5.11	5.11	5.11	5.11	5.11
IT infrastructure	3.95	4.95	5.16	6.74	9.34	4.39	6.12	5.71
Facilities	3.38	1.22	1.20	0.99	1.27	0.93	1.12	1.12
Motor vehicles	2.27	2.16	2.16	2.16	2.16	2.16	2.16	2.16
Total capital expenditure	103.96	104.50	104.32	97.10	96.68	90.97	98.71	88.99

3. PREMO - MANAGEMENT (CONTINUED)

Customers have told us that they are satisfied with current service levels – including those customers who have had recent interactions. They are similarly saying there should be a focus on ensuring issues are fixed the first time. Consistent with these insights our water and sewerage renewal programs are focused on maintaining service levels, measured by the number of interruptions, and those customers who experience repeat interruptions.

Below is a synopsis of each of the 14 renewals programs.

PROGRAM: WATER RETICULATION MAIN RENEWALS

Context

Water reticulation mains are pipes less than 300mm in diameter. They make up almost 93% of our water supply network. The immediate response to a break is to repair the pipe, however after several breaks within a defined period, the pipe is deemed to have reached the end of its useful life and is renewed.

We use industry-recognised prioritisation software known as Pipeline Asset and Risk Management System (PARMS) that incorporates data sets gathered from several other water utilities across the country (including Melbourne's retailers). PARMS predicts future system performance using historical data to test a range of investment scenarios, allowing them to be compared against each other. The software allows us to forecast the investment levels required to achieve a desired service level.

Given that customers do not want to experience multiple interruptions, we are pursuing process improvements to manage the instances of repeat interruptions. A key component is to develop and implement a case management process to ensure customers do not receive more than two interruptions in a 12-month period, identifying the root cause and potentially escalating the pipe renewal to the front of the queue ahead of the third interruption. Areas we will be focusing during the pricing period include:

- ensure our renewal processes are agile to allow for escalation and rapid reprioritisation where required
- reduce the time to renew - there are opportunities to work with our construction partners to improve renewal delivery times as well as reduce the lead time to start work; currently there can be up to a 2-month lag and reducing the time to renew will potentially eliminate failures occurring
- potentially provide temporary water supply arrangements to customers connected to water reticulation mains which are programmed for renewal to further ensure the customer does not experience any additional interruptions.

Key assumptions

- Water reticulation mains will be renewed based on a combination of their service performance/failure rates and pipe characteristics such as construction material and age. Asbestos cement (AC) and cast iron (CI) pipes will be prioritised for renewal after two failures per year, as these pipe materials perform worse than other materials, and all other pipes after three failures per year (note a pipe failure does not necessarily result in a customer interruption).
- PARMS assumes that water reticulation mains continue to fail at a rate which is consistent with the historical deterioration curves.
- Weather patterns continue to be variable as observed over the last 20 years.

Prudent and efficient program cost estimates

We are currently renewing water reticulation pipes at an average annual rate of 56 kilometres and cost of \$21.83 million.

The prudence and efficiency of this program is improving over time through both:

- better identification of pipes for replacement
- lower market construction rates including the way we engage and work with our contractors.

These efficiencies mean we are forecasting to deliver the same level of service with fewer kilometres of mains renewed at a lower unit cost.

We have a panel of contractors who deliver water reticulation main renewals under schedule of rates contracts. Over the many iterations of our water renewals contracts, we have driven efficiency in our rates by giving certainty to the

market through long-term and limited party contracts, promoting the adoption of trenchless technologies, creating standardised design and construct contracts, introducing new temporary supply arrangements, and building in efficiency targets (i.e. CPI – X mechanisms).

We regularly test the market, most recently in late 2015 (with the new contracts commencing in January 2016) achieving an overall cost reduction from the old contracts of 2.95% (based on a typical 3-month program consisting of varying pipe diameters, renewal methods and reinstatement conditions etc.). The unit rate used for costing the 2018-23 program has been derived by applying this 2.95% efficiency gain to the historical average rates resulting in an assumed rate of \$372 per meter from January 2016. This rate is inclusive of project management, design and approvals, the actual renewal, temporary supply arrangements, traffic management, and reinstatement costs.

We are proposing to invest in new technologies and to continue our work with both suppliers and contractors to refine the renewal and inspection technologies to improve reliability and increase efficiency. Water assessment and renewal technology lags sewer technology due to the complexity of performing an inspection on a 'live' and pressurised pipe. This limits our ability to leverage new methods and replace partial pipe sections rather than the whole length. Our most recent trial included the Australian first use of spray lining which has the potential to significantly reduce the cost of renewing asbestos cement pipes and pipes underneath major roadway where significant traffic management would usually be required. We are in the process of assessing this trial and if successful, intend to utilise the technology during the upcoming regulatory period. Our forecast costs reflect only the minimum spend on trials.

Table 14 shows the forecasts reduction in expenditure over the next two regulatory periods due to a combination of better identification of assets for renewal (reduced length) and unit rate efficiencies.

Table 14: Forecast average annual water reticulation mains renewals capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY	AVERAGE ANNUAL			
	2013-18	2018-23	2023-28	
Pipe renewal	<i>kilometres</i>	56	47.8	42.8
	<i>unit rate</i>	390	372	372
	\$ million	21.83	17.39	15.53
Trial new technologies	\$ million	1.21	0.20	0.20
Total	\$ million	23.04	17.59	15.73

PROGRAM: MAIN TO METER REPLACEMENTS

Context

We are responsible for maintaining the property service pipes from the water mains to the meter.

Key assumption

Main to meter pipes will be repaired on failure and renewed after three failures in three years

Prudent and efficient program cost estimates

Recently there has been an increase in the number of emergency repairs for main to meter jobs attended by our maintenance contractor. We undertook a review and identified that at three failures in three years, it is economically viable to replace the pipe rather than continue to repair.

Between 2018-19 and 2022-23, we plan to renew an average of 1,228 of main to meter pipes per year for a total cost of \$2.55 million per year.

3. PREMO - MANAGEMENT (CONTINUED)

Table 15 below shows our forecast capital expenditure over the next two regulatory periods which is forecast to rise slightly due to the increased number of water main to meter renewals.

Table 15: Forecast average annual water main to meter replacements capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Water main to meter	<i>number</i>	1,155	1,228	1,228
	<i>unit rate</i>	2.08	2.08	2.08
	\$ million	2.40	2.55	2.55
Total	\$ million	2.40	2.55	2.55

PROGRAM: CUSTOMER METER REPLACEMENTS

Context

Our citizens' jury supported the installation of digital meters for customers to help change user behaviours and protect our natural resource. When the technology is available and viable for implementation, the jury also supported a charge of up to \$12.50 per annum for the rollout to proceed.

The jury indicated the benefits of digital meters assist customers with real time information to avoid higher bills so they can become aware of their usage behaviour. They also enable us to:

- assist and alert customers when they have a leak in the house
- identify leakages in the network, which will protect our valuable resource and save costs
- better forecast usage.

We apply the Australian Standard for selecting meter populations (year installed and brand) to test and replace pending the results of these tests (meter populations which have an accuracy of greater than $\pm 4\%$ are replaced). The average life of a household meter (less than or equal to 25 mm) is 18 years. For a business meter the average life is 10 years.

There are two categories of meter replacements:

- unplanned – stolen, damaged or faulty
- planned – replacement of meter populations which have failed accuracy testing.

Key assumption

We will continue with unplanned meter replacements, and testing of meter populations in accordance with the standards.

Prudent and efficient program cost estimates

Over the past three years, we have investigated the potential for digital metering, however the technology is still maturing and needs further development.

In conjunction with South East Water and City West Water, we will continue to trial digital metering technologies until we are confident they are ready for large-scale deployment. We will also ensure our information technology systems can support the high volume of data generated by these meters and refine the business case, including further stakeholder and customer engagement. We forecast to spend up to a further \$18 million between 2018-19 and 2022-23 associated with pilots to prove the technology and feasibility of digital metering. We do not propose to include any costs associated with digital metering in the Regulatory Asset Base (RAB) until the next price determination at the earliest.

Table 16 below shows our forecast capital expenditure over the next two regulatory periods. We have not forecast planned replacement of meters during the 2018-23 period, hence the drop in expenditure from the 2013-18 period (which included both planned and unplanned replacements). We assume the number of unplanned meter replacements will remain consistent with historical averages, at an estimated annual cost of \$2.32 million. For the 2018-23 regulatory period, if an existing population of meters fails, we will review the specific circumstance of the failure and determine whether to replace the meters with a similar model or digital capability.

Table 16: Forecast average annual customer meter replacement program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Meter replacement	\$ million	4.01	2.32	2.32
Total	\$ million	4.01	2.32	2.32

PROGRAM: WATER DISTRIBUTION MAIN RENEWALS

Context

We have approximately 700 kilometres of distribution mains (pipes that are 300mm or greater in diameter) across our water supply network. These mains transfer water from storage infrastructure (e.g. tanks, reservoirs, or Melbourne Water's transfer mains) to reticulation mains, which distribute water to customers' homes.

When a distribution main fails, the consequence can be significant due to the volume of water it carries and the number of customers that are impacted. Distribution mains are often located under major roads, near public transport infrastructure or in sensitive environmental areas, which contributes to the impacts of failure. Our aim is to replace distribution mains before they reach end of life and reduce the risk they pose in relation to:

- widespread customer interruptions which could include a loss of water pressure, flow and/ or quality
- damage to other assets
- road closures and impacts on public transport operations and local businesses
- public safety.

Key assumptions

The approach to managing our distribution mains is:

- desktop risk assessment and analysis of the community and customer cost of failure
- condition assessment to confirm actual condition and the specific scope of works
- renewal of confirmed high-risk pipes where any part of the main is confirmed as high risk following field condition assessment and has a positive community cost benefit.

Prudent and efficient program cost estimates

During the 2013-18 period, as part of funding the \$100 government water rebate, we reviewed the overall capital program and deferred much of the distribution main replacement program. Since the 2013 – 2018 Price Submission, we have significantly improved assessment of distribution mains. The key improvements are:

- a more sophisticated risk management framework, reflecting a revised version of our Corporate Strategy and Risk Framework and broader community impacts
- an enhanced tool that enables us to quantify the risk and associated community cost, which informs our NPV analysis for all high-risk mains
- mandated condition assessment prior to any design work for renewal providing greater confidence that the right mains are renewed.

3. PREMO - MANAGEMENT (CONTINUED)

Renewal costs are based on individual project cost assessments using historical costs from comparative projects. To avoid the premature renewals of the main at an average cost of \$3,500 per metre, we undertake a distribution main assessment at the average cost of \$88 per metre. The assessment includes a scan of the entire pipe and then a physical inspection of targeted sections of the main using corrosion detection methodologies.

As condition assessment for all high-risk mains as identified by desktop analysis has not been completed, there is uncertainty in relation to the costs and timing of the program. We are only proposing costs associated with completing condition assessment and functional designs for the nine highest risk distribution mains at a total of \$6.18 million (noting the preliminary estimated cost for the three highest prioritised mains is \$33.3 million). If any distribution mains require renewal during the 2018-23 regulatory period we will absorb the associated financing costs and include in the opening RAB for the next regulatory period.

We will continue to invest in new technologies and work with both suppliers and contractors to refine the renewal and inspection technologies. The aim is to improve reliability of assessments and increase efficiency of construction methodologies. Our most recent trial of the acoustic technology called P-Cat was successful and this approach will be utilised in the preliminary scan of all distribution mains that require assessment. This is a significant enhancement to the distribution main assessment methodology and reduces the risk of missing sections of the main that are in poor condition.

Table 17 below shows our forecast capital expenditure over the next two regulatory periods. As indicated above, the 2018-23 regulatory period is focussed around condition assessment and functional design of the highest priority distribution mains. Distribution mains renewals are planned to commence in the 2023-28 regulatory period.

Table 17: Forecast average annual water distribution mains renewals program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Condition assessment	<i>kilometres</i>	-	6.40	3.98
	<i>unit rate</i>	-	88	88
	\$ million	-	0.56	0.35
Functional design	\$ million	-	0.67	0.37
Renewal	\$ million	1.51	-	7.09
Trial new technologies	\$ million	-	0.10	0.10
Total	\$ million	1.51	1.34	7.91

PROGRAM: WATER RELIABILITY (CIVIL AND MECHANICAL AND ELECTRICAL ASSETS)

Context

In addition to the water pipes in our network, we have a significant number of associated civil, mechanical and electrical (M&E) assets. These include water pump stations, valves and hydrants, pressure reducing stations and network flow meters. We maintain these assets and renew or replace at the end of their useful life.

The driver of this program is provision of a reliable and efficient water supply that support customer service levels using sound asset management principles.

Key assumptions

- The rate of asset failure will remain consistent with historical levels.
- Renewal and rehabilitation will only be undertaken when field condition assessment confirms the asset has reached end of life.
- M&E assets generally require renewal after 10 to 25 years of service and civil assets between 50 and 100 years.
- Forecasts do not assume material changes in technology, safety legislation, availability of spares, reliability and efficiency of the assets.
- The program is complemented by planned preventative maintenance for many assets to reduce the number and severity of breakdown and unscheduled renewals.
- We continue to manage changes to standards and maintain our assets consistent with our organisational risk appetite.

Prudent and efficient program cost estimates

Our proactive approach uses operational monitoring data and hydraulic models to determine potential system deficiencies. This has highlighted areas which present significant customer water reliability risk which has resulted in an increase to our program. Options assessments for each issue will ensure we identify the most cost effective solution and packaging of work will ensure efficiency on these rates attributed to economies of scale benefits.

In the early 2000s, we implemented a zone metering program to monitor network performance (i.e. incident response, pump efficiency, operational optimisation) and significantly reduced non-revenue water. Most of our existing zone meters have reached end of life (i.e. of our 133 water distribution zones we only have reliable data to monitor 45 zones for non-revenue water purposes) and require replacement. In the last decade, there has been significant improvements in meteorology and communications, leading to better accuracy and issues identification, decision-making and interventions. Refer to page 67 for more information in relation to water conservation investments.

Flow meter replacement cost estimates are based on the historical cost for individual jobs. We propose to package up this work and expect a 5% efficiency on these rates attributed to economies of scale benefits. All other material programs remain unchanged relative to historical volumes and investments.

Table 18 shows our forecast capital expenditure over the next two regulatory periods with the increase principally associated with replacement of zone meters and small scale civil assets.

3. PREMO - MANAGEMENT (CONTINUED)

Table 18: Forecast average annual water reliability (civil, mechanical and electrical assets) program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Water reliability (civil assets)	\$ million	4.97	6.44	8.96
Water reliability (mechanical and electrical assets)	\$ million	3.06	3.44	2.15
Network meter replacement	\$ million	0.18	1.88	1.88
Total	\$ million	8.21	11.75	12.99

PROGRAM: HOUSE CONNECTION BRANCH SEWERS

Context

There are approximately 727,000 customers connected to our sewerage network.

Customer plumbing within their property connects to a short length of our sewer pipe - called a house connection branch (HCB) – which typically extends about one metre inside the property and connects into our sewer main. We have approximately 665,000 HCBs.

HCB failures account for approximately 60% of about 7,800 sewer service interruptions annually. Pipe condition related blockages account for 72% of these failures (tree root 63%, 9% structural failure). Tree roots seeking water enter HCBs through minor pipe defects. These blockages are usually cleared by maintenance crews; however, roots can re-grow resulting in repeat interruptions. Replacing the sewer pipe or frequent clearing and cleaning of the pipes are the only ways to eradicate tree root intrusion.

Those customers impacted by a HCB failure experience:

- an interruption to their sewer service
- spills of sewage within their property (inside or outside the house)
- additional inconvenience if repairs are required as HCBs are often located in customer backyards.

We currently have a reactive approach to HCB renewals where we repair or replace the HCB after a second service interruption in a 12-month period, or when we identify they have already failed.

Key assumption

It is assumed that with no intervention pipes will continue to degrade over time and will result in an increased number of failures – estimated to be approximately 10% by 2028.

Prudent and efficient program cost estimates

We have historically had a reactive program to manage HCB failures and the subsequent interruption. As a result, we have experienced a number of extremely expensive HCB renewals e.g. complete rebuild can cost up to \$100,000 compared to a proactive reline of \$4,700.

Where full structural collapse has occurred, emergency renewal is required. These jobs account for 33% of current renewal costs despite representing only 7% of the actual number of jobs. These situations also result in higher impacts for customers including increased likelihood of sewage spills and prolonged impact due to the duration and complexity of the works. They often require access to customer backyards and temporary closure of footpaths and roads.

To address this, we have established a new risk assessment tool that has enabled us to target HCBs identified as being at risk of collapse and would require expensive renewal costs. By targeting higher risk categories, we can prevent failures occurring. If we did not shift to this proactive approach, HCB renewals and costs would increase above historical levels in the future.

We will invest in new technologies and continue our work with suppliers and contractors to refine the renewal and inspection technologies, improve reliability, and increase efficiency. Our most recent trials include technologies that enable inspection of the HCB from within the sewer main, optimising the inspection of both the sewer main and HCB and reducing customer inconvenience.

Table 19 below shows our forecast capital expenditure over the next two regulatory periods which is planned to be at a similar level to the 2013-18 period including proactive inspections and consequential increase in renewals.

Table 19: Forecast average annual house connection branch sewers renewal program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY	AVERAGE ANNUAL			
	2013-18	2018-23	2023-28	
Reactive program - emergency renewal	<i>number</i>	460	500	415
	<i>unit rate</i>	5.969	5.275	5.275
	\$ million	2.74	2.64	2.19
Reactive program - planned renewal	<i>number</i>	1,443	1,500	1,500
	<i>unit rate</i>	4.701	4.118	4.118
	\$ million	6.78	6.18	6.18
Proactive program – inspect	<i>number</i>	-	1,650	1,650
	<i>unit rate</i>	-	0.250	0.250
	\$ million	-	0.41	0.41
Proactive program – renewal	<i>number</i>	-	165	165
	<i>unit rate</i>	-	4.118	4.118
	\$ million	-	0.68	0.68
Innovation Trials for new HCB renewal methods	\$ million	-	0.05	0.05
Total	\$ million	9.52	9.96	9.51

PROGRAM: RETICULATION, BRANCH AND MAIN SEWER RENEWAL PROGRAM

Context

There are approximately 9,500 kilometres of sewer mains in our network, of which 890 kilometres are main and branch (≥ 300 mm diameter) sewers and 8,407 kilometres are reticulation (< 300 mm diameter) sewers. Failure of sewer mains can cause environmental impact, through spills, customer and community disruption and inconvenience. Failures of sewer mains are usually due to blockages, which can be caused by:

- tree root intrusion
- solidified fats and other objects blocking the pipes
- structural or capacity related failures.

All sewers, regardless of material and age, are susceptible to failure. We proactively renew our sewers, to provide a reliable sewerage service to our customers. Proactive sewer renewal reduces the likelihood of a structural collapse which has a significant impact on customers and the community. Several trenchless rehabilitation methods are used for proactive sewer renewals, at a much cheaper cost than for a structural collapse.

3. PREMO - MANAGEMENT (CONTINUED)

Key assumptions

- Sewer mains will be renewed based on confirmed CCTV condition assessment to the WSA standard.
- The renewal program is complemented by sewer cleaning and manhole monitoring maintenance programs.
- The proportion of sewer failures by risk category remain consistent with historical levels.
- Weather patterns continue to be variable as observed over the last 20 years.

Prudent and efficient program cost estimates

Over the current regulatory period, we will inspect an average of 306 kilometres of sewer pipes for a total cost of \$3.50 million per year and renew an average of 52 kilometres of sewer pipes for a total cost of \$17.32 million per year.

The efficiency of this program is significantly improving over time due to better identification of pipes for replacement, and lower market construction rates (including how we engage and work with our contractors). We have a panel of contractors who deliver sewer main renewals under schedule of rates contracts. We regularly review our program and processes to improve efficiency and mitigate delivery risk. Recent examples follow.

- Improvements in risk assessments has enabled us to better target pipes which require renewal. The inspection-to-renewal ratio has improved as a result from 1:11 to 1:5 principally due to the inclusion of odour and corrosion criteria in the assessment methodology.
- Improvement in our renewal methodology ensures the sealing of property branches as part of a sewer main renewal is only undertaken when required. In the past, we required every property connection to be sealed and this practice was contributing up to 50% of the total renewal job cost. We now only seal property connections that have a history of blockages.
- Competitive tendering of the sewer renewal contracts in 2016-17 has resulted in improved contract rates.
- Renewals contracts were awarded to two contractors to mitigate the delivery risk – previously all renewals were completed by a single contractor.
- Overall, the new contracts and new methodology, will deliver significant reductions of 33.5%.

Our aim is to implement a program that maintains our current levels of service (total customer interruptions and number of repeat customer interruptions) which is reflected in our customer research. This approach is proposed to continue for the 2023-2028 regulatory period.

To determine the optimal investment program for the 2018 – 2023 regulatory period, a range of scenarios were modelled and three were shortlisted for detailed assessment. To maintain service levels, it is proposed we will proactively renew 44 kilometres of sewer reticulation mains per year with a CCTV inspection of 180 kilometres per year.

Between 2004 and 2007, after a series of major sewer failures, we inspected nearly all branch sewers (375mm and above) and undertook associated renewals, since that time there has been no targeted branch sewer program. Of the assets inspected, there have been no failures. Our new risk assessment methodology, used for all sewer mains, has identified 250 kilometres of branch sewers that require inspection. We expect, based on the 1:5 inspection to renewal ratio observed in reticulation mains, that 50 kilometres of these mains will require renewal. We recently inspected the Eltham main sewer as a result of the new assessment methodology confirming a significant portion of the main requires renewal. We are confident, based on this example, that the 1:5 inspection to renewal ratio for reticulation sewers can also be applied to branch sewers.

Investment in technology continues to produce reliability and efficiency gains. Our most recent trials include emerging acoustic inspection technologies to lower the cost of inspections.

Table 20 shows our forecast capital expenditure over the next two regulatory periods which is planned to significantly reduce due to increased efficiency in delivering the program. In the 2018-23 regulatory period, there will be a focus on branch main renewals and a corresponding reduction in reticulation main inspections and renewals.

Table 20: Forecast average annual reticulation, branch and main sewer renewal program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY	AVERAGE ANNUAL			
	2013-18	2018-23	2023-28	
Inspection – retic pipe	<i>kilometres</i>	306	180	180
	<i>unit rate</i>	11.437	8.081	8.081
	\$ million	3.50	1.45	1.45
Inspection – branch mains	<i>kilometres</i>	-	50	-
	<i>unit rate</i>	-	16.151	-
	\$ million	-	0.81	-
Pipe renewal – retic pipe	<i>kilometres</i>	52.15	44	44
	<i>unit rate</i>	332.128	245.685	245.685
	\$ million	17.32	10.81	10.81
Pipe renewal – branch main	<i>kilometres</i>	-	10	-
	<i>unit rate</i>	-	460	-
	\$ million	-	4.60	-
Pipe renewal – rising main	\$ million	0.80	0.40	0.40
Trial new technology	\$ million	0.02	0.20	0.20
Other	\$ million	0.51	0.00	0.00
Total	\$ million	22.15	18.27	12.86

PROGRAM: SEWER RELIABILITY CIVIL MECHANICAL AND ELECTRICAL

Context

This program is centred around sound asset management principles that ensures a reliable and efficient sewerage service in line with customers' expectations and safety for the public and our staff.

In addition to the sewer pipes in our network, we have a significant number of associated civil, mechanical and electrical (M&E) assets. These include sewer pump stations, pressure sewer systems, maintenance⁴⁴ holes, odour control facilities, valves, sewer vents and siphons. We maintain these assets and renew or replace at the end of their useful life.

Key assumptions

- M&E assets generally require renewal after 10 to 25 years of service and civil assets between 50 and 100 years.
- Renewal and rehabilitation will only be undertaken when field condition assessment confirms the asset has reached end of life.
- Forecasts do not assume material changes in technology, safety legislation, availability of spares, reliability and efficiency of the assets.
- The program is complemented by planned preventative maintenance for many assets to reduce the number and severity of breakdown and unscheduled renewals.
- We continue to manage changes to standards and maintain our assets consistent with our organisational risk appetite.

44 Previously known as manholes

3. PREMO - MANAGEMENT (CONTINUED)

Prudent and efficient program cost estimates

We know there is a direct link between odour and corrosion and asset failure. Based on the WSAA H₂S scoring methodology⁴⁵ and active involvement in the Australian Research Council Sewer Corrosion & Odour Research (SCORE) linkage project, we recently built an odour corrosion model. This enables us to better target, initially through desktop assessment, civil assets at risk of structural failure and locations in our network where odour and corrosion (O&C) is likely to occur.

A key area of focus is maintenance holes and vents, as collapse poses a significant health and safety risk to personnel accessing the sewer for maintenance and to the public. Following desktop assessment, we conduct field investigations and undertake detailed options assessments to confirm O&C projects that are the most efficient and prudent for intervention.

The O&C and maintenance hole programs are a more efficient means of preventing service interruptions, compared to sewer and HCB renewals. Based on ageing infrastructure, our modelling suggests we can maintain the historical length of sewer main renewals which would otherwise have increased significantly. We have identified opportunities to improve the efficiency and performance of our maintenance hole cleaning program. The installation of level monitoring will allow for just-in-time cleaning, achieving a reduction in spills caused by blockages which inconveniences customers and impacts the environment. These efficiencies contribute to our overall operational expenditure efficiency target.

Following several vent collapses, we reviewed our risk assessment procedures that underpin the vent renewal program. To understand the effectiveness of our processes, we then undertook an inspection program that identified a high proportion of sewer vents were at their end of life than we had previously assumed. We have revised our procedures and developed a new program to target those vents at greatest risk of collapse.

Our forecast expenditure for maintenance hole and vent programs uses rates based on recently completed competitive tenders. We are targeting a 5% efficiency that captures economies of scale benefits from future competitive tendering.

In addition, to minimise greenhouse gas emissions that contribute to the achievement of our 'pledge'⁴⁶, we are pursuing opportunities to gain greater efficiency from our M&E assets and increase our energy generation capacity.

Based on a positive business case, we propose to generate renewable energy from pressure reducing valve sites, and new solar and wind projects. We have factored this initiative into our forecast operational energy costs, and the positive reduction in energy use from these projects which will further protect us from future movements in energy prices.

All other material programs remain unchanged relative to historical volumes and investments.

Table 21 shows our forecast capital expenditure over the next two regulatory periods which is increasing largely due to civil sewer reliability projects and sewer vent replacements.

45 WSAA 02-2014-3.1 (MRWA) EDITION Version 2.0

46 Yarra Valley Water, Emissions Reduction Pledge, March 2017

Table 21: Forecast average annual sewer reliability civil, mechanical and electrical program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Sewer reliability (Civil)	\$ million	3.89	6.49	6.34
Sewer reliability (M&E)	\$ million	2.42	2.71	2.70
Sewer vents (Civil)	\$ million	0.50	3.84	0.03
Gas check manholes (Civil)	\$ million	-	0.37	-
Greenhouse gas reduction initiatives (M&E)	\$ million	0.08	0.24	0.80
Total	\$ million	6.89	13.66	9.86

PROGRAM: WATER CONSERVATION

Context

Our customers value saving water for the future. This is reflected in customer research and has been a particular focus for the citizens' jury *"We believe that water is not actually being valued as it should. Water is a valuable resource. We're all going to die without it. Trying to encourage better use of water and all sorts of efficiencies and savings that people can make, and how they can use that to affect the price of their own bill"*⁴⁷

This program aims to reduce water wastage and leakage through improved measurement and monitoring of the water network to accurately identify and measure non-revenue water (NRW).

NRW is the difference between the bulk water volume purchased from Melbourne Water and the sum of the volume sold to our customers. The three main categories of NRW are:

- leakage - from our pipe network (from small leaks through to major bursts)
- metering inaccuracies - mechanical meters with moving parts slow down over time and under register
- unmetered usage - including operational use (mains cleaning), water carters, fire services and firefighting, losses through private services, theft, and unmetered properties.

We actively work to reduce NRW, such as our pressure reduction strategy, zone meter installations, active leak detection and private mains metering programs. These programs, in conjunction with improved network monitoring and analytics, have resulted in a decrease in NRW from 28% in 1995-96 to 11.8% in 2015-16.

Key assumptions

The targeted reduction of 2.5 gigalitres off the 2017-18 forecast non-revenue water volume of 16 gigalitres.

Prudent and efficient program cost estimates

Our citizens' jury identified water losses as a key concern and requested that we reduce non-revenue water by 2.5 gigalitres by increasing our investment in this area. We are proposing to:

- Reduce the size of our district metered areas to an average size of 3,000 connections or approximately 30 kilometres in water mains length by installing an additional 450 network flow meters and approximately 800 network pressure monitoring locations.

3. PREMO - MANAGEMENT (CONTINUED)

- Meter the remaining 800 unmetered private mains.
- Assess 2,800 kilometres of water mains through the proactive leak detection program using acoustic sounding techniques.

Whilst we have included the capital expenditure of \$27 million, we do not propose to seek recovery from customers during the 2018-23 regulatory period as the benefits of leakage reduction may not be fully realised in this period.

Table 22 below shows our forecast capital expenditure over the next two regulatory periods. Our forecast capital expenditure for 2018-23 regulatory period is increasing due to the district metering program as described above.

Table 22: Forecast average annual water conservation program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Private mains metering	<i>number</i>	160	160	-
	<i>unit rate</i>	3.8	3.8	3.8
	\$ million	0.62	0.61	0.00
District metering program	<i>number</i>	20	250	30
	<i>unit rate</i>	19.1	18	18
	\$ million	0.38	4.94	0.55
Other	\$ million	0.02	0.30	0.00
Total	\$ million	1.01	5.40	0.55

PROGRAMS: INFORMATION AND COMMUNICATION TECHNOLOGY (SYSTEM IMPROVEMENT AND IT INFRASTRUCTURE)

Context

Our Information and Communication Technology (ICT) assets are integral to our business operations, and support all our business functions.

The major drivers of this program include:

- maintaining existing systems
- compliance with regulatory requirements
- improved functionality of existing systems to support customer service levels
- leveraging new and emerging technologies.

Our Digital Strategy supports our transformation into a customer-centric digital business. Our ICT programs are focused on customer service, effective asset management, regulatory compliance and operational resilience.

The core components of the ICT program are investment in:

- Workplace mobility; server storage; network and security infrastructure and related software including replacement of end of life infrastructure and software; and growth in our operations. This is the minimum we must spend to maintain our business operations and ensure appropriate security controls for the protection of 'personal information'.
- Systems including asset management; corporate and billing; and customer systems that service our residential, commercial, plumbing and land development customers; finance and HR functions; and our communication platform OpenText. The overall outcomes from these investments are increased functionality for customer self-service, optimal revenue and efficiency improvements that reduce internal costs.

The ICT governance framework provides oversight, guidance and direction to our ICT capital expenditure program. All

investment in ICT is business case driven and approved by an Executive Portfolio Investment Committee (PIC), which convenes monthly. Underpinning the Governance framework is:

- a portfolio practice which aligns itself to the Office of Government Commerce (OGC) Portfolio Framework and provides sound decision support guidelines. These have enabled us to determine and prioritise ICT investment considering alignment to strategic objectives and return on investment.
- an ICT delivery approach which utilises Waterfall and Agile methodologies based on PRINCE2 and the Scaled Agile Framework (SAFe). These provide two sound governance frameworks to guide delivery of the IT capital expenditure program.

Key assumptions

- Consistent with Board Policy to ensure core applications remain supported and software is no more than three versions behind what is currently available.
- No core ICT application systems require upgrade or replacement between 2018-19 and 2022-23.
- Replacement of the enterprise hosting environments, as well as our SCADA and SCADA Historian software is required in 2020-21.
- All ICT asset investment is business case driven, including risk assessments which includes consideration of our ability to deliver the programs and projects within the projected timeframes and budget.
- Internal ICT workforce is supplemented with the required skills and capabilities to successfully deliver program outcomes.
- Compliance with regulatory obligations, including the Victorian Protective Data Security Framework (VPDSF).

Prudent and efficient program cost estimates

Gartner, the world's leading IT analysts, advise that ICT spend in utilities to enable organisations to maintain operations represented 3.1% of revenue and 3.9% of operating expense in 2016 and continues to rise⁴⁸. Our spend profile in the same year represents 1.2% of revenue and 1.7% of operating expense, less than our industry peers.

Our 'Waterfall' approach for delivery of major projects aligns with PRINCE2. Business cases are built through a gating process (1-4) maturing as the project progresses and are tabled at the PIC for approval. The option to stop or continue is made within this forum based on a cost benefit analysis. Additionally, the Agile delivery approach for other projects has enabled us to incrementally deliver business value, and provide greater focus on customer centricity in our decision-making. Utilising an Agile prioritisation technique, the Weighted Shortest Job First (WSJF), priority is given to deliver the highest valued business and customer solutions within our core applications. Both methodologies allow for continual and progressive oversight of ICT investments supporting informed decision making that ensures we continue to support business and customer efficiencies.

Our forecast expenditure:

- Defers future capital investment of approximately \$75 million (for replacement billing system) and \$25 million (replacement asset management system) by upgrading systems and enhancing functionality where needed to continue to meet customers' expectations.
- All ICT asset investment is business case driven, this includes a risk assessment which includes consideration of our ability to deliver the programs and projects within the projected timeframes and budget. The cost to deliver our programs will be determined as part of business case development and in accordance with our procurement guidelines.
- Based on previous expenditure, investments that support functional enhancements in existing systems and business case development for new systems and solutions is likely to be in the order of \$60 million between 2018-19 and 2022-23. However, as specific programs are yet to be identified and timing is unclear we are not seeking the full amount in this submission. Rather we are proposing \$25 million over five years for business case development and minimum spend on functionality of existing business systems. We estimate this investment will deliver about \$40 million over the 2018-19 to 2022-23 period in additional revenue and reduced operating expenditure.

3. PREMO - MANAGEMENT (CONTINUED)

- The proposed investment for IT Infrastructure has been determined based on historical spend ensuring, we can replace end of life infrastructure and increase for growth, meet new regulatory and compliance objectives to secure our information and support the infrastructure requirements for business improvement initiatives.

Table 23 below shows our forecast capital expenditure over the next two regulatory periods with our forecast capital expenditure showing a significant reduction from 2013-18 regulatory period as only the minimum forecast spend for IT system improvements has been included.

Table 23: Forecast average annual Information and Communication Technology program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
IT Infrastructure - Keep things running & Victorian Protective Data Security Standards (Compliance)	\$ million	3.95	6.12	5.17
IT System Improvements - New capabilities	\$ million	12.57	5.11	5.11
Total	\$ million	18.52	11.23	10.82

PROGRAM: FACILITIES

Context

Our Mitcham site provides office spaces and facilities for about 700 staff and contractors in multiple buildings. In addition, we have two depots in Mitcham and Coburg primarily used by our maintenance service provider. Treatment plants, infrastructure and operational sites are not included in this program of work.

We aim to maintain the head office facility to:

- fit-out standard, including addressing any occupancy health and safety issues
- ensure essential services compliance
- replace end of life assets with modern equivalents.

Key assumption

Minor capital works will be required for maintenance depots to ensure they remain fit-for-purpose and meet all occupancy health and safety standards.

Prudent and efficient program cost estimates

Overall expenditure is forecast to reduce following the extension and refurbishment of the Mitcham site between 2009 and 2014, purchase of the eastern maintenance depot in 2013 and construction of the northern depot in 2015.

Table 24 shows our forecast capital expenditure over the next two regulatory periods showing a substantial reduction from the 2013-18 regulatory period.

Table 24: Forecast average annual facilities program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Facilities	\$ million	3.38	1.12	1.12
Total	\$ million	3.38	1.12	1.12

PROGRAM: MOTOR VEHICLES

Context

We own and operates a fleet of approximately 190 vehicles which are renewed as the vehicles age, and replacement vehicles are required.

Key assumptions

In developing this program, we have assumed the level of vehicles in the fleet will remain constant over the period of 2018-19 to 2027-28 and all vehicles purchased attract the government fleet discount.

Prudent and efficient program cost estimates

Expenditure is forecast to fall slightly in total over each five-year regulatory period attributed to a 2017 fleet option review that resulted in extension of the retention period for some vehicles.

Table 25 below shows our forecast capital expenditure over the next two regulatory periods showing a similar level to the 2013-18 period.

Table 25: Forecast average annual motor vehicles program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Motor Vehicles	\$ million	2.27	2.16	2.16
Total	\$ million	2.27	2.16	2.16

3.3.3 CUSTOMER GROWTH

Servicing customer growth and new development includes providing water and sewerage services to new suburbs on the fringe of Melbourne, major urban renewal and infill developments. Our growing northern suburbs between Craigieburn and Wallan will contain over 100,000 new serviced properties in the next 20 years.

Table 26 outlines our key capital infrastructure programs related to customer growth.

3. PREMO - MANAGEMENT (CONTINUED)

Table 26: Forecast customer growth capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

GROWTH PROGRAM	AVERAGE ANNUAL SPEND 2013-18	REGULATORY PERIOD 2018-23 \$ MILLION					AVERAGE ANNUAL SPEND	AVERAGE ANNUAL SPEND 2023-28
		2018-19	2019-20	2020-21	2021-22	2022-23		
OUTCOME: Reliable water and sewerage services								
Drinking water infrastructure, including developer reimbursements	11.83	22.72	23.46	14.58	11.92	18.28	18.19	15.16
Sewerage infrastructure, including developer reimbursements	64.33	46.74	54.63	86.95	38.92	18.61	49.17	45.21
New customer meters	10.80	12.26	12.26	12.26	12.26	12.26	12.26	13.22
OUTCOMES: Water availability and conservation								
Recycled water infrastructure, including developer reimbursements	8.42	15.69	8.54	4.00	6.29	6.25	8.15	18.63
Total Capital Expenditure	95.38	97.41	98.89	117.79	69.39	55.40	87.78	92.23

Below is a synopsis of these customer growth programs.

PROGRAMS: GROWTH - DRINKING WATER, NON-DRINKING WATER AND SEWER

Context

Our service area includes the growing northern suburbs which includes two of the fastest growing suburbs in Australia. We have developed servicing strategies for all growth areas. In developing these strategies, we worked with relevant stakeholders including Melbourne Water and the relevant councils. The largest of these is the Northern Growth Area (NGA) with more than 100,000 properties forecast for construction by 2040. This servicing strategy involves the provision of recycled water to all new homes. This represented the lowest community cost and the most sustainable solution, utilising a complete Integrated Water Cycle Management (IWCM) approach. This outcome also aligns with our customer engagement that has identified strong support for saving drinking water for the future.

The primary driver for these programs is to provide availability of service to our customers in a timely and efficient manner. The growth programs (drinking water, non-drinking water and sewerage) are best considered in two components:

- key assets required to enable development on a macro scale which are driven by overall growth – large assets which are required to 'open up' an area for development
- assets required to service individual developments (non-key assets) – smaller assets for which the timing is highly dependent on the rate of development in an area.

Key assumptions:

- Growth will continue broadly consistent with VIF 2016 forecast rates of development.
- Capital expenditure rates for the 2018-23 the regulatory period are based on a large data set from successful tenders. While industry expectations are for a rise in rates "*The spate of large construction projects that have been recently announced have generated enormous demand for labourers and technical contractors...With shortage of*

supply, contractors will be able to demand higher wages, driving up the capital cost of planned investments.”⁴⁹, we are not reflecting this risk in expenditure forecasts.

Prudent and efficient program cost estimates

Key elements of our growth servicing program are:

- just-in-time development servicing
- continual evolution of our asset operation strategies to ensure we utilise the full capacity of existing assets to delay and minimise capital investment
- logical asset sequencing plans, which encourage the most efficient development (which typically occurs on the outskirts of the existing developed area) – if a developer decides to go ahead with out-of-sequence development we require them to fund a contribution to the costs of building the assets ahead of schedule to minimise the impacts on customer prices
- using temporary solutions (e.g. temporary pumps stations, water mains) to avoid investment in major infrastructure and limit the likelihood of assets being constructed prior to utilisation
- continuously monitoring customer usage behaviours and patterns to ensure optimisation of asset sizing

Our development forecasts are based on:

- Victoria in the Future forecast (Department of Environment, Land, Water and Planning)
- Precinct Structure Plans
- development projections from local developers
- our own knowledge and experience of development in growth areas.

To further refine timing in the short term (five years), we obtain lot forecasts from the developers working in the growth areas. Developer forecasts are often optimistic and we adjust for this based on our understanding of current and predicted lot sales. Across the growth areas, the aggregated result is an adjustment down to 86% of developer forecasts. While we expect 14% of development will not occur, we do not know where. Therefore, we maintain all assets in our capital expenditure plan. However, an allowance is made for this by reducing our overall capital expenditure allocation for 'non-key' assets by 14%.

It is anticipated that some assets will be deferred either within the 2018-23 regulatory period or pushed out to 2023-28 regulatory period. Based on our historical experience, we have made a further 17% allowance for this as a program delivery efficiency factor. The total reduction in growth expenditure from the 14% non-key asset reduction and the 17% program delivery efficiency factor is \$77.5 million, which is a 21% reduction for all growth capital expenditure. For comparison, during the current regulatory period the equivalent actual reduction was 19%.

Our cost forecasts for smaller projects use costs curves based on analysis of tendered construction rates of past projects for similar assets types. These cost curves have been independently reviewed by engineering consultant, GHD. The cost curves only relate to the construction costs. In addition, the full project costs comprise costs for design, project management and unforeseeable construction issues. Based on historical performance these amounts total 30% for drinking water and non-drinking water projects and 40% for sewerage projects. To ensure only efficient costs are included, additional contingency allowances have not been included. Cost estimates for all growth projects in the top 10, are based on a detailed project specific costing assessment.

We have deferred key drinking water supply assets in the northern growth corridor by maximising the operation of existing assets through to 2018. The construction of these assets cannot be delayed further and are required between 2018-23. Any further delay is likely to result in us not being able to provide water services to new customers and consequently breach our customer charter in relation to the continuous supply of water. The assets form the backbone of the drinking water supply system which will allow growth in the area to continue. Once these assets are constructed we will have sufficient capacity to service the forecast growth in the corridor. This is the basis for the increase in capital investment expenditure early in the next regulatory period and the reduction in expenditure post 2023.

3 PREMO – MANAGEMENT (CONTINUED)

Having delivered the key foundation infrastructure, there will be a shift in capital expenditure between 2023-28 to more developer-delivered assets that is distribution mains in new estates. Additionally, the increase is attributed to long sections of main required to service areas further away from the key infrastructure.

There will also be some early investment in the period to improve system storage and production capacity in the non-drinking water network. Further major augmentations will be required in the 2023-28 period when recycled water treatment plants will need to be constructed in our mandated areas – this is reflected in the increased annual spend between 2023-28.

The urban growth boundary was expanded in 2010, freeing up a large expanse of land for development, mostly with no sewerage system in place. Thus, a large amount of foundation sewer infrastructure was required upfront to enable development to proceed. Much of this infrastructure was constructed during the 2013-18 period, which is reflected in the reduced forecast spend in the next regulatory period and the subsequent regulatory period.

Table 27 below shows our forecast capital expenditure over the next two regulatory periods showing an overall decrease in average annual capital expenditure from the 2013-18 regulatory period associated with completion of foundation infrastructure required to service the Northern Growth Area.

Table 27: Forecast average annual growth (drinking water, non-drinking water and sewer) program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Drinking Water Infrastructure				
Growth assets	\$ million	6.16	10.43	6.41
Developer reimbursements	\$ million	5.67	7.76	8.75
Non-Drinking Water Infrastructure				
Growth assets	\$ million	7.60	5.90	14.24
Developer reimbursements	\$ million	0.82	2.25	4.39
Sewerage Infrastructure				
Growth assets	\$ million	59.92	40.62	37.87
Developer reimbursements	\$ million	4.41	8.55	7.34
Total	Lots serviced	5,001	5,858	4,268
	\$ million	84.58	75.51	79.00

PROGRAM: NEW CUSTOMER METERS

Developers meter new lots as they are developed. The costs of the meters are fully recovered via miscellaneous products and services which fully offset this capital expenditure.

3.3.4 BUSINESS IMPROVEMENTS AND REGULATORY COMPLIANCE

We are regulated by the Department of Health and Human Services (DHHS) and the Environment Protection Authority (EPA) in relation to product quality, including the safety of drinking water and reliability of the sewerage network.

Table 28 outlines our key capital infrastructure programs related to business improvements and regulatory compliance.

Table 28: Forecast business improvements and regulatory compliance capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

IMPROVEMENTS & COMPLIANCE PROGRAM	AVERAGE ANNUAL SPEND 2013-18	REGULATORY PERIOD 2018-23					AVERAGE ANNUAL SPEND	AVERAGE ANNUAL SPEND 2023-28
		\$ MILLION						
		2018-19	2019-20	2020-21	2021-22	2022-23		
OUTCOME: Quality drinking water								
Improve quality of drinking water	3.19	5.58	6.95	8.26	6.95	5.86	6.72	4.70
OUTCOMES: Water availability and conservation								
Community Sewerage	22.52	23.55	22.71	24.81	24.41	23.03	23.70	23.26
Sewer Improve System Capacity	3.74	4.49	8.37	9.55	11.45	11.30	9.03	27.64
Sewage Treatment & Recycling	7.83	14.13	13.88	9.55	7.53	9.10	10.84	7.41
Total Capital Expenditure	37.28	47.75	51.91	52.17	50.34	49.29	50.29	63.01

Below is a synopsis of these business improvement and regulatory compliance programs.

PROGRAM: IMPROVE QUALITY OF DRINKING WATER

Context

Safe, clean drinking water is of greatest importance to customers.

The primary driver of this program is to deliver high quality, safe, clean drinking water to customers in accordance with the requirements specified under the Safe Drinking Water Regulations 2015 and the Australian Drinking Water Guidelines 2011.

Our Risk Management policies and procedures manage risks from catchment-to-tap. We use a quality system known as Hazard Analysis and Critical Control Points (HACCP) to ensure water quality is not compromised. This includes managing the risks associated with the delivery of recycled water.

We continue to expand our recycled water network to enable the provision of recycled water to 100,000 homes in new estates and we continue to mature our management systems and practices to support the safe delivery of recycled water and protect drinking water.

Key assumptions

In 2015, DHHS revised the Safe Drinking Water Regulations. The new regulation stipulates any detection of E.coli from a tank will result in non-compliance.

Our programs are designed to meet regulatory standards, including a multi-barrier approach to protect community health. We will meet all regulatory standards and we assume there is no further material change in recycled water and Safe Drinking Water Regulations over the planning period.

Prudent and efficient program cost estimates

Following detection of E.coli at several of our tanks coupled with the change in standards, we undertook a comprehensive tank inspection program, including a review our existing controls. This inspection program identified a number of improvement opportunities, including ensuring we maintained adequate chlorine residual levels in all tanks.

3. PREMO - MANAGEMENT (CONTINUED)

Using a risk-based approach, we have determined the type and frequency of inspection for each tank. Following inspection, we identified the program of remediation or replacement of the tanks and/or additional chlorination facilities. We have completed an assessment of tank roof materials; the business case supports a change in roof standard to welded steel rather than light gauge steel. Once completed, this will result in a reduced likelihood of non-compliance with regulations, reduced inspection frequency and lower remediation costs.

We are undertaking various trials, including how drones can be used for the inspection and condition assessment of our storage tanks and reservoirs. The use of drones provides a safe, cheaper and rapid way of conducting up close and detailed examinations of our infrastructure, and in particular, the inspection of joints and welds on tank roofs and segments.

In addition, we have developed a new hydrant insertion device, which significantly expands our capability to monitor real-time water quality. As a result, we will be able to prevent the occurrence of non-compliance, pre-empt customer complaints and optimise our operational costs associated with chlorination.

All remediation and replacement work estimates are based on costs of similar projects undertaken in the past. All projects will be competitively tendered.

Table 29 below shows our forecast capital expenditure over the next two regulatory periods showing an increase in expenditure from the 2013-18 regulatory period associated with water tank projects to ensure compliance with regulatory standards.

Table 29: Forecast average annual improve quality of drinking water program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Water quality projects	\$ million	2.23	0.89	0.95
Water tanks projects	\$ million	0.96	5.83	3.75
Total	\$ million	3.19	6.72	4.70

PROGRAM: COMMUNITY SEWERAGE

Context

Many homes in Melbourne were built before sewerage infrastructure was available. As a result, many homes in the outer northern and eastern suburbs use septic tank systems to manage their domestic wastewater on site.

The State Environment Protection Policy Waters of Victoria (SEPP WoV) (June 2003) requires all councils that have properties serviced by septic tank systems within their municipality to have a Domestic Wastewater Management Plan (DWMP). It is the responsibility of councils, in conjunction with the Environment Protection Authority, to identify properties in the DWMP that are not capable of treating and retaining wastewater within their property boundaries and to recommend these properties be provided a sustainable sewerage service.

We have a regulatory obligation in our Statement of Obligations (General) to provide a sustainable sewerage service to the properties identified in Council DWMPs within our sewerage district.

We work with councils, EPA, Department of Environment, Land, Water and Planning (DELWP) and Melbourne Water (MW) to prioritise (called our Reprioritisation process) our Community Sewerage Program (CSP) to target those areas where environmental and health benefits can be achieved most cost effectively. The CSP is targeted at properties that are not capable of onsite containment under the current council-led management framework.

Key assumptions

The provision of sustainable sewerage services for all the properties on our program is planned to be completed by 2033, assuming:

- the SEPP WoV requires that water corporations provide a new sustainable sewerage service to properties that are not capable of containing their wastewater onsite and those that pose a high or medium risk of pollution without a higher level of design and oversight
- we are required to provide services to a further 8,927 properties under SEPP WoV
- we forecast that 2,927 lots will be provided with a service on the CSP in the 2018-23 regulatory period and 3,524 in the 2023-28 regulatory period (the remainder of 2,435 will be provided with services in the 2028-2033 regulatory period).

Prudent and efficient program cost estimates

Historically, we have provided traditional sewerage networks to non-sewered areas and encouraged customers to connect to our system. Recently we have run trials which show that in some remote areas, reticulated sewerage services would be comparatively expensive and, in some instances, wastewater could be more efficiently managed using decentralised solutions (such as small sewage treatment plants to manage a cluster of properties).

Our servicing costs for each area are dependent upon the requirements of local communities, the size of the properties, the proximity to the existing sewer network and the topography of the area. The costs for servicing each of the future areas of the CSP have been developed as part of the reprioritisation process. This cost assessment has considered both traditional servicing options and decentralised servicing options. Key aspects of the analysis were as follows:

- The financial assessment method applied to the CSP areas is built on the same principles as the Multi Criteria Assessment process. A set of agreed criteria with weightings was agreed with relevant stakeholders. A workshop with representatives from Melbourne Water, EPA, DELWP and all councils with CSP areas determined the revised weightings and the criteria. Scoring for each CSP area was assigned, which resulted in the ranking of the areas against the agreed criteria and weightings.
- Decentralised servicing costing information has been obtained from our recent construction work on the Park Orchards trial, which involves upgrading septic tanks to more modern standards.
- Costs for traditional servicing options are derived from our asset cost curves. The curves are derived by analysing historical project data and fitting a regression curve to each group and were updated in 2017. The cost curves are relevant to a large but limited range of assets.

It should be noted that, while expenditure on this program is relatively stable year to year, the number of properties serviced in any given year can vary significantly. This is because projects typically take multiple years to deliver and often rely on construction of major assets to allow servicing of an entire area.

The CSP is focused on servicing individual communities. Recently we have:

- focused the program to better target the areas that are the worst polluters
- investigated improvements and innovations in how we service areas, including decentralised servicing and intelligent pressure sewer networks
- removed properties from the program that can contain sewage onsite and are deemed to have a low risk of pollution, even if the systems were to fail.

These initiatives have reduced forecast expenditure in the period by \$44 million.

Table 30 shows our forecast capital expenditure over the next two regulatory periods showing a similar level of expenditure to the 2013-18 regulatory period.

3. PREMO - MANAGEMENT (CONTINUED)

Table 30: Forecast average annual community sewerage program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY	AVERAGE ANNUAL			
	2013-18	2018-23	2023-28	
Total	Lots serviced	607	585	705
	\$ million	22.52	23.70	23.26

PROGRAM: SEWER SYSTEM CAPACITY

Context

Customers have told us that avoiding pollution from sewage discharge is a high priority and that sewage spills on their property are unacceptable. The primary drivers of this program include:

- reduction in the health risks and customer dissatisfaction associated with exposure to raw sewage
- compliance with regulatory requirements
- reduction in the risk of adverse impacts to waterways and property damage.

Spills from our network can occur because of pipe blockages, pump failures or capacity constraints. The network is designed with controlled overflow points, known as emergency relief structures (ERS), typically located near waterways, that allow wastewater to spill (if required) into waterways or the drainage system. This helps avoid spills occurring at the lowest point in our systems, which can often be on customers' properties.

Over time, defects in our sewer mains and maintenance holes develop, allowing stormwater and groundwater to enter. Rainwater also enters the sewer network through cross connections between sewerage and stormwater pipes. This significantly increases peak sewage flows during wet weather, on average by a factor of six, which can result in spills (highly diluted with stormwater) to waterways or the surrounding environment (e.g. roads, parks).

The State Environmental Protection Policy - Waters of Victoria (SEPP WoV) stipulates that the sewerage network shall contain all sewage during rainfall events, up to and including a one-in-five-year annual recurrence interval (ARI). Where spills occur during rainfall events less than or equal to a one-in-five year ARI, they are typically the result of insufficient system capacity and are considered non-compliant.

Key assumptions

- New assets will be designed to contain the one-in-five-year ARI while existing infrastructure will be progressively upgraded, based on the risk to the waterway, beneficial uses and desired outcomes.
- The first draft of the replacement to the current SEPP WoV allows for a risk-based approach to sewer upgrades and is consistent with our recommended approach.
- The major waterways within our service area face similar urbanised issues and an outcome-based approach can be applied to all – with the exception of the Darebin Creek where the primary impact is sewer overflows.

Prudent and efficient program cost estimates

We are required under SEPP WoV to meet our environmental obligations to protect waterways.

In 2015, together with Melbourne Water, the Department of Environment, Land, Water and Planning and the relevant councils partnered to develop a case study on waterway investment prioritisation (WIP) for the Merri Creek catchment. The objective of the study was to test whether integrating water agencies and council waterway investments could deliver greater environmental value and lower cost to the community, in terms of improved waterway health and amenity.

The study concluded that the main impacts to waterway health are from stormwater runoff (from roads and other hard surface areas) rather than infrequent wastewater spills. As such, expenditure to upgrade the sewerage network to prevent infrequent spills to the Merri Creek is not a cost-effective means from a community perspective for achieving desired waterway outcomes. The study demonstrated that investment should be prioritised to focus on

improving stormwater quality, improving aesthetics and amenity, and eradicating illegal sewerage to stormwater cross connections. The result of the study highlights the need to focus on the desired 'outcomes' and work with all relevant stakeholders to develop a program of works to best achieve those outcomes.

It should be noted that our 'outcomes-based approach' does not meet the one-in-five-year containment standard and is not compliant with the current SEPP WoV. The outcomes based approach aligns with emerging world best practice and is being considered in the review of the proposed SEPP (Waters). The review is unlikely to be completed prior to the start of the 2018-23 regulatory period and may not fully endorse our approach. Nevertheless, based on the compelling evidence that the outcomes-based approach is the lowest community costs and keeps customer bills down, we propose to continue with this approach. This means that on behalf of customers we are taking the risk that the review of SEPP (Waters) will not support this approach and we will be required to undertake a significant program of works to achieve the one-in-five year ARI.

Addressing capacity constraints is traditionally done by upgrading or duplicating sewerage assets. Depending on the size of the issue, this can involve extensive and costly works (e.g. pipes, storage tanks, pump stations).

In relation to spills from controlled points, we have spent \$283 million since 1999 eliminating 29 non-compliant spills. There are 33 known constraints remaining, which generate significantly less spill volumes and have a lesser environmental impact than the projects already completed. The estimated cost of resolving these using a traditional approach is \$278.7 million and as such we propose the following approach.

- Waterway Quality Monitoring to confirm wastewater overflow impacts and identify threats to desired outcomes.
- Retrofitting of ERS screens to reduce aesthetic impact of wastewater overflows on waterways.
- Upgrading ERS monitoring to improve response to sewage spills.
- Improved stormwater management through:
 - installing strategic stormwater to sewage diversions to reduce pollutant loads to waterways
 - removing identified illegal sewer to stormwater cross connections
 - undertaking rectification works to reduce the volume of inflow and infiltration of stormwater and rainwater into the sewer network where economically viable.

The approach outlined above will seek to improve outcomes in six waterways, namely Gardiners Creek, Koonung Creek, Merri Creek, Mile Creek, Moonee Ponds Creek and the Plenty River. Sewer spills are the primary cause for poor water quality in Darebin Creek and as such, a traditional engineering approach to eliminating spills will be required with design to take place in the 2018-23 regulatory period and construction in the 2023-28 regulatory period.

All other spills from our network are unpredictable and usually result in large volumes of sewage on customer properties. The primary focus in resolving these issues is to reduce the impact on customers and the community including health risks associated with exposure to sewage. The following approach is proposed to manage these spills.

- A hydraulic options assessment to refine the recommended solution, including development of options, modelling and monitoring – forecast costs are based on historical labour costs for similar assessments.
- The installation of ERSs. These projects have been costed individually, using cost curve unit rates based on an initial modelling assessment of the network to determine what is required to control all spills below a one-in-five-year ARI event.

The outcomes-based approach to improved sewer capacity for all spill types, results in significant cost savings in comparison to the traditional approach. There is uncertainty in relation to the costs of the outcomes-based approach and as such we are only proposing the minimum forecast investment in the next regulatory period proposal (\$45.15 million instead of \$75 million). This is summarised in Table 31.

3. PREMO - MANAGEMENT (CONTINUED)

**Table 31: Comparison of traditional and outcomes approaches to improved sewer capacity
(\$ million January 2018)**

SPILL TYPE		TRADITIONAL APPROACH	OUTCOMES BASED APPROACH \$ MILLION	
			MINIMUM	MAXIMUM
Controlled	\$ million	70.00	23.06	30.83
Uncontrolled	\$ million	106.70	22.09	44.17
Total	\$ million	176.70	45.15	75.00

The exception to the outcomes based approach outlined above is with the Darebin Creek main sewer, where there is a significant hydraulic deficiency and a substantial increase in forecast flows. We propose to commence in 2021-22 the upgrade, using a traditional approach, to meet the one-in-five-year ARI standard.

Table 32 below shows our forecast capital expenditure over the next two regulatory periods showing a significant increase in capital investment expenditure. In the 2013-18 regulatory period, we deferred expenditure associated with a tradition approach, in favour of conducting an 'outcomes' based study.

Table 32: Forecast average annual sewer system capacity program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Controlled spill projects	\$ million	3.04	-	-
Uncontrolled spill projects	\$ million	0.31	4.42	1.05
ERS monitoring	\$ million	0.09	0.45	-
ERS screening	\$ million	-	0.37	-
Baseline waterway monitoring	\$ million	-	1.34	1.34
Sewer to stormwater cross connection removal	\$ million	-	0.30	0.24
Stormwater to sewer diversions	\$ million	-	0.65	0.40
Inflow and infiltration reduction program	\$ million	0.30	0.61	0.61
Darebin catchment project	\$ million	-	0.60	24.00
Whittlesea upgrade	\$ million	-	0.30	-
Total	\$ million	3.74	9.03	27.64

PROGRAM: SEWAGE TREATMENT AND RECYCLING

Context

Around 90% of the sewage collected from customers is transferred to Melbourne Water for treatment at either the Western or Eastern Treatment Plants. The remainder is treated in one of our ten local sewage treatment plants (STPs). These plants principally service outer areas that are too distant for sewage to be economically transferred to the Melbourne Water system or provide class A recycled water.

All treatment plants are operated in accordance with the corporate licence issued by the EPA or EPA guidelines where individual plants do not require a licence. The driver of this program is to provide a reliable and efficient sewerage service centred around compliance and sound asset management principles that support customer service levels.

We also need to ensure our assets are safe and prevent harm or injury to the public and our staff. This includes:

- compliance with EPA licence and other regulations
- no net impact on waterways we discharge to
- appropriate treatment and reuse of recycled water
- operating the sewage treatment plants more efficiently and effectively.

Key assumptions

- We are aware the EPA is proposing discharge licence reform that may result in increased expenditure, we have not forecast any increase due to any changes.
- We will maintain our assets consistent with our organisational risk appetite. Very high risk and extreme risk assets, in terms of consequence of failure, and those reaching end of life will be replaced.
- Renewal and rehabilitation will only be undertaken when field condition assessment confirms the asset has reached end of life.
- STPs are a combination of M&E and civil assets. M&E assets generally require renewal between 10 and 25 years of service and civil assets between 50 and 100 years.
- The program is complemented by planned preventative maintenance for many assets to reduce the number and severity of breakdown and unscheduled renewals.
- Unplanned emergency works are forecast to remain stable despite additional plants coming online. It is envisaged that new plants will require less reactive maintenance and the asset management program will manage to hold emergency works at current levels.

Prudent and efficient program cost estimates

Our approach to managing these assets has evolved following some asset failures. We now have an increased understanding of condition of our assets and the health, safety, environmental and licence risks when they fail. Our desktop analysis has identified the need to replace significant assets in the next regulatory period, however as this is contingent on condition assessment, we have spread the program of works over the next two regulatory periods.

Following a pilot at Upper Yarra Treatment Plant, we plan to further automate our STPs to provide a foundation for more efficient, effective and safe operation of our plants. With labour, electricity and chemicals representing approximately 65% of operational expenditure, automation of our plants will enable efficiency gains and provide continuous visibility of product quality compliance.

All elements of this program will be competitively tendered. We are forecasting efficiency savings of 5% in the latter years of the program to reflect learnings about the optimum packaging of works and leveraging the experience and benefit from the delivery of initial projects.

All other material programs remain unchanged relative to historical volumes and investments.

Table 33 shows our forecast capital expenditure over the next two regulatory periods. Capital expenditure is forecast to increase in the 2018-23 regulatory period compared to the 2013-18 period due to asset renewals and automation of our sewage treatment plants.

3. PREMO - MANAGEMENT (CONTINUED)

Table 33: Forecast average annual sewage treatment and recycling program capital expenditure 2018-19 to 2027-28 (\$ million January 2018)

ACTIVITY		AVERAGE ANNUAL		
		2013-18	2018-23	2023-28
Planned - asset management	\$ million	4.74	6.89	3.82
Automation	\$ million	0.41	1.41	1.05
Unplanned emergency works	\$ million	2.57	2.49	2.49
Trialling of new technology	\$ million	0.11	0.05	0.05
Total	\$ million	7.83	10.84	7.41

3.4 MATCHING DEPRECIATION TO ASSET UTILISATION

Major assets required to service a growth area are generally required at the start of development and are not fully utilised until many years later when the area is fully developed. Using a straight-line depreciation method, the customer base pays the same amount for the depreciation of the assets at the start of the asset's life as they do at the end. This means that in the short-term customers are paying for assets that exceed their utilisation thus transferring costs that should be paid by future customers onto current customers.

To reduce the burden on current customers, we propose to have zero depreciation of net capital expenditure for growth assets constructed during the 2018-23 regulatory period. This reduces the revenue requirement by \$8.0 million over the regulatory period, reducing the typical customers' total bill over five years by \$3.50.

3.5 MINIMISING BILL IMPACTS FOR CUSTOMERS

3.5.1 REMOVAL OF THE \$100 GOVERNMENT WATER REBATE

In May 2014, the then Minister for Water announced that a \$100 annual rebate would be provided to all residential water use customers for the 2014-15 to 2017-18 period to reduce cost of living pressures. The rebate is primarily funded by productivity and efficiency gains made by Yarra Valley Water and Melbourne Water.

Currently all residential water use customers receive a \$100 government water rebate in the July to September bill. It is planned for the rebate to be removed in 2018-19.

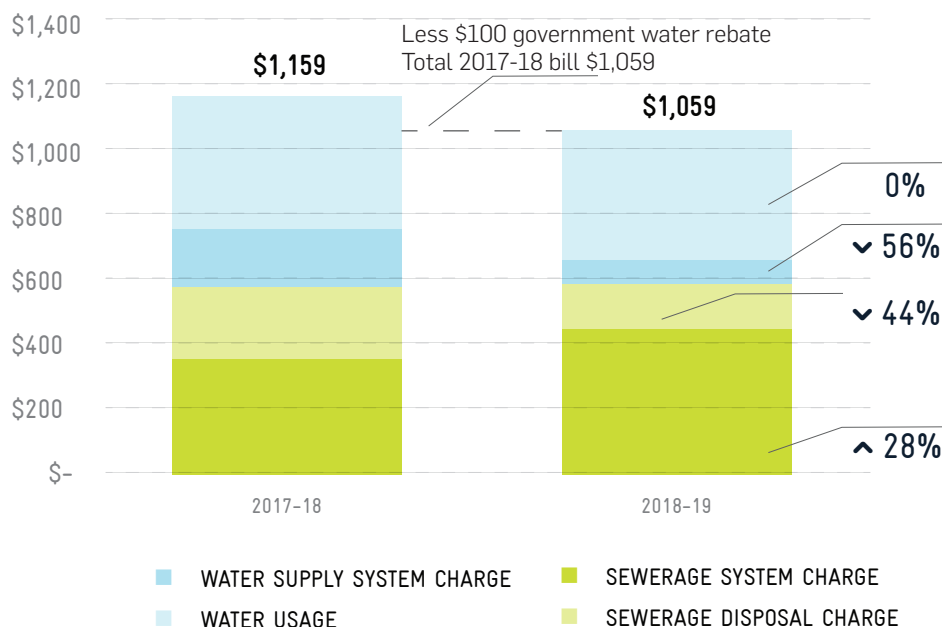
The efficiencies supporting the rebate, and other efficiencies and reductions in costs proposed in this Price Submission could be passed on to all customers via an 9.1% real price reduction on all major products. However, an across the board price decrease would result in significant bill increases to residential tenants, who only pay usage charges and water-only residential customers who also receive the full benefit of the \$100 rebate.

To reduce these impacts, we propose reducing the sewage disposal charge and transferring \$100 from the water service charge to the sewerage service charge. These changes maintain a strong water conservation signal consistent with customer expectations. The specific real price changes for 2018-19 are:

- decrease residential volumetric water charges by 2.3%
- decrease residential water system charges by 57.2%
- decrease residential sewage disposal charges by 45.7%
- increase residential sewerage system charges by 25.1%
- decrease all non-residential prices, including trade-waste charges by 2.3%.

Figure 8 below shows overall the typical household (150 kilolitres) will not experience a bill change after the removal of the \$100 rebate. Consistent with customer feedback to promote water conservation the volumetric component of the water charges increases from 69% to 84%. Alternatively, the sewage disposal charge component of the sewerage charge has decreased from 39% to 22%.

Figure 8: Typical household customer bill (150 kilolitres per year water use)



From 2019-20 to 2022-23, the annual price change will be 0.7% less than inflation.

The bill impacts for the five years of the next regulatory period for a range of customers are shown in Table 34 below.

3. PREMO - MANAGEMENT (CONTINUED)

Table 34: customer bills based on our proposed price path

CUSTOMER TYPE		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
150 kilolitres typical annual water usage							
Tenant	real \$	\$524	\$513	\$509	\$505	\$502	\$498
	nominal \$	\$524	\$524	\$533	\$541	\$549	\$558
Landlord	real \$	\$535	\$522	\$519	\$515	\$511	\$508
	nominal \$	\$535	\$535	\$543	\$551	\$560	\$569
Owner occupier	real \$	\$1,059	\$1,035	\$1,028	\$1,020	\$1,013	\$1,006
	nominal \$	\$1,059	\$1,059	\$1,076	\$1,092	\$1,109	\$1,127
Water-only owner occupier	real \$	\$477	\$467	\$463	\$460	\$456	\$453
	nominal \$	\$477	\$477	\$485	\$492	\$500	\$508
Business	real \$	\$2,123	\$2,075	\$2,060	\$2,045	\$2,030	\$2,016
	nominal \$	\$2,123	\$2,123	\$2,156	\$2,190	\$2,224	\$2,258
100 kilolitres annual water usage (low user)							
Tenant	real \$	\$314	\$341	\$337	\$335	\$333	\$330
	nominal \$	\$314	\$348	\$353	\$359	\$364	\$370
Landlord	real \$	\$535	\$522	\$519	\$515	\$511	\$508
	nominal \$	\$535	\$535	\$543	\$551	\$560	\$569
Owner occupier	real \$	\$849	\$863	\$856	\$850	\$844	\$838
	nominal \$	\$849	\$883	\$896	\$910	\$924	\$939
Water-only owner occupier	real \$	\$342	\$335	\$332	\$330	\$327	\$325
	nominal \$	\$342	\$342	\$348	\$353	\$358	\$364
Business	real \$	\$1,890	\$1,848	\$1,834	\$1,821	\$1,807	\$1,794
	nominal \$	\$1,890	\$1,890	\$1,919	\$1,949	\$1,979	\$2,010
250 kilolitres annual water usage (high user)							
Tenant	real \$	\$977	\$891	\$884	\$878	\$871	\$864
	nominal \$	\$977	\$911	\$925	\$940	\$954	\$968
Landlord	real \$	\$535	\$522	\$519	\$515	\$511	\$508
	nominal \$	\$535	\$535	\$543	\$551	\$560	\$569
Owner occupier	real \$	\$1,512	\$1,413	\$1,403	\$1,393	\$1,382	\$1,372
	nominal \$	\$1,512	\$1,446	\$1,468	\$1,491	\$1,514	\$1,537
Water-only owner occupier	real \$	\$780	\$763	\$757	\$751	\$746	\$741
	nominal \$	\$780	\$780	\$792	\$805	\$817	\$830
Business	real \$	\$2,590	\$2,531	\$2,513	\$2,495	\$2,476	\$2,458
	nominal \$	\$2,590	\$2,590	\$2,630	\$2,671	\$2,712	\$2,754

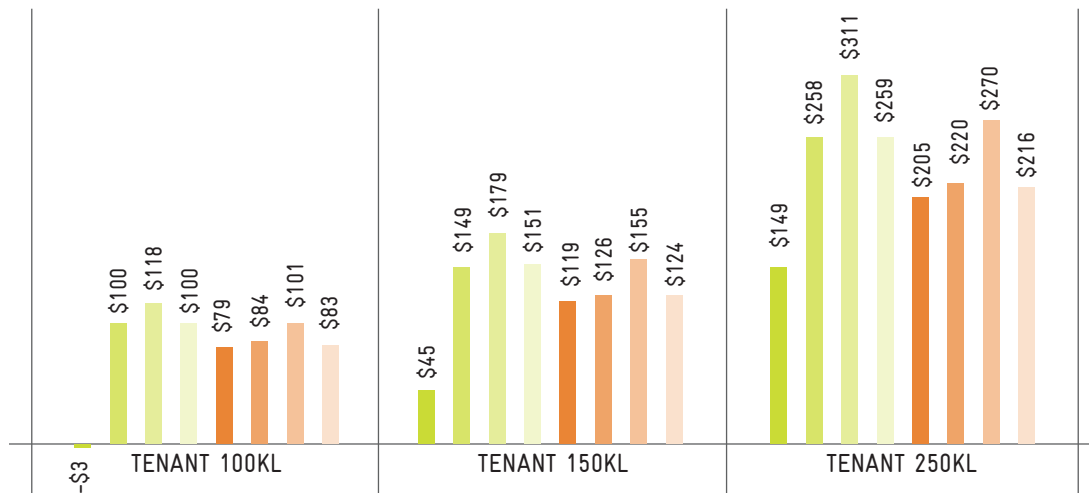
Notes:

1. Assumes inflation to be 2.3% per annum over the pricing period
2. Customers who rent pay volume charges only. The property owner pays the fixed charges.
3. For those customers with concession cards, the impact may vary per the concession provided by the Department of Health and Human Services. The concession from 1 July 2017 has a maximum cap of \$313.10. Customers who are billed for a single service are entitled to a maximum of \$156.55.
4. There is not a 'typical' business customer.
5. The business customer bill includes a trade waste contract fee.

While there is an increase in the annual amount paid by tenants with low use in 2018-19, Figure 9 below shows that:

- tenants with high use have greater bills than low users
- seasonal usage is the main cause of variation in bills
- all tenant bills decrease when they compare their bill with the previous quarter (and the preceding two quarters)

Figure 9: Quarterly bill of a household tenant between quarter 1 2017-18 and quarter 4 2018-19



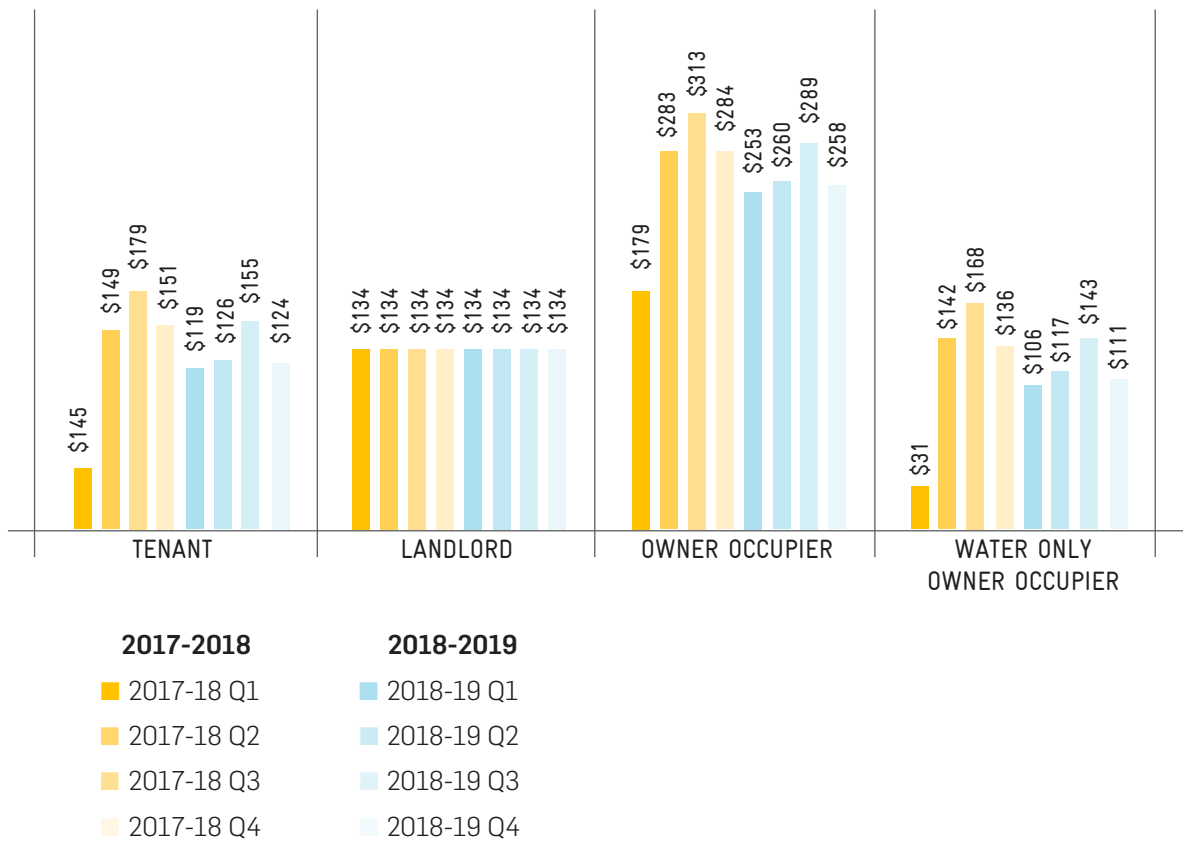
2017-2018		2018-2019	
■	2017-18 Q1	■	2018-19 Q1
■	2017-18 Q2	■	2018-19 Q2
■	2017-18 Q3	■	2018-19 Q3
■	2017-18 Q4	■	2018-19 Q4

3. PREMO - MANAGEMENT (CONTINUED)

Figure 10 shows that when a residential customer with typical water usage compares their last bill in 2017-18 with the first water and sewerage bill in 2018-19 they will experience a decrease. For tenants and water-only customers the decrease is approximately 21% and 11% for owner occupiers. Landlords will experience no change in their bill.

All other usage customers, including those with low demand, will also have a decrease in their first quarter 2018-19 bill when compared with the previous quarter.

Figure 10: Quarterly bill for customers/properties with consumption of 150 kilolitres between quarter 1 2017-18 and quarter 4 2018-19



3.5.2 SUPPORTING VULNERABLE CUSTOMERS

For customers identified as vulnerable or are currently experiencing financial hardship, we provide various programs to assist them in managing their water and sewerage bills. Our support model is built on pillars of behavioural change, early identification, increased awareness and holistic and targeted support, including:

- Case management where customers have a single point of contact within our Customer Support Team who they work with to tailor solutions to meet their needs. The Customer Support Team continue to work with the customer to ensure support programs are effective and provide the 'right' assistance
- Specialised payment plans individualised to suit the customer's needs. We work with customers to understand their specific circumstances and then agree on an affordable payment arrangement that suits them and enables ongoing and regular payments
- CareRing – Through the CareRing partnership we are able to refer customers who are experiencing complex issues, to a holistic support program, that provides an extensive range of assistance services through a centralised, co-ordinated point of contact
- Working with eligible customers to assist them in accessing appropriate government grants and concessions including the Utility Relief Grants
- Providing a Customer Retrofit Program that assists customers in reducing water use and costs by providing eligible customers with a free water audit and retrofit of inefficient water fittings on their property
- Supporting customers who have medical conditions that causes higher water usage through a medical allowance that reduces their bills e.g., dialysis patients.

Our WaterCare vulnerability program is an early intervention program. We work with community groups and have cross referral programs with other organisations. \$2 million funding to develop the program was made available in the 2013 price submission process to enhance existing hardship policies, expand programs, adopt best practice and improve associated infrastructure.

For the next regulatory period, we have adopted the citizens' jury's recommendation to improve awareness and access to services and programs by an additional \$6 million over five years.

In addition – also consistent with the citizens' jury preferences, we will introduce a mechanism for large households having difficulty paying their bill that adjusts the water volumetric step charge based on the number of people in the property.

4. PREMO - RISK

We have undertaken a comprehensive process to identify, quantify and determine the most appropriate party to manage risk in developing our Price Submission. We have particularly assessed the risk of outcome delivery in terms of the price impact on our customers. We have also considered our Guaranteed Service Levels scheme as part of this risk element of PREMO.

4.1 OUR CORPORATE RISK MANAGEMENT APPROACH

Effective risk management plays an integral role in our decision-making and strategic planning and helps us sustain business performance and achieve our strategic goals.

We are committed to managing risks to ensure good corporate governance and to protect our customers, products and services, asset and operations, the environment and our employees and partners. The principal objective of our risk management philosophy is to ensure that no one single event can jeopardise the organisation.

IN LINE WITH OUR STATEMENT OF OBLIGATIONS (GENERAL), WE ARE MANAGING BUSINESS RISKS IN ACCORDANCE WITH ISO 31000.

Our risk management process is centred on the Risk Management Standard ISO 31000:2009 and we are well advanced in aligning our asset management processes with ISO 55000 standards to be in a position to obtain certification by the end of 2017-18.

Implicit in the way we manage risk is our ongoing process of risk identification, quantification, control, monitoring and review. We maintain several risk registers including a strategic risk profile, an operational risk profile and functional risk profile relating to risk areas such as safety, water and sewage quality and the environment.

We have articulated our risk tolerance through our risk appetite statement, which describes our attitude towards risk taking and defines the amount and type of risk we are willing to accept or retain to achieve our objectives.

Our approach encompasses comprehensive, fully defined and clear accountability for risks, risk controls and risk mitigation tasks. On an annual basis, a review of the risk profiles is undertaken. For any emerging risks identified, if strategic in nature, a recommendation is made to the Risk Management and Audit Committee and Board for their inclusion in the strategic risk profile.

Comprehensive and frequent reporting on significant risks and risk management is part of our corporate governance framework. We comply fully with the attestation requirement of the Victorian Government Risk Management Framework. We contribute to the development of the annual Victorian Water Industry Risk Report.

We undertake an integrated risk based internal audit program, which is developed annually and submitted to various Board Committees for endorsement. In developing the program, we consider key risks within our risk profiles. When our annual audit program is developed and endorsed, an assurance map is established linking internal and external audit programs to the risks contained in the profiles. The purpose is to provide confidence that the total audit program covers the organisation's key risks.

WE HAVE COMMENCED THE PROCESS TO GAIN CERTIFICATION ISO 55000, UNDERTAKING A GAP ANALYSIS. WE ARE WORKING TOWARDS REACHING A CERTIFIED STANDARD ON CIVIL ASSETS BY THE END OF 2017-18.

4. PREMO – RISK (CONTINUED)

We will continue to strengthen our processes by benchmarking against best practice and self-scrutiny. In 2016, we again participated in an Asset Management Customer Value Project undertaken by the Water Services Association of Australia (WSAA)⁵⁰. Forty-four water utilities from Australia, the United States, Canada, New Zealand, Japan and the United Kingdom participated in this project. The project involved a review of each water utility's process efficiency and effectiveness in undertaking seven functional areas. The process comprised a self-assessment of 506 water and sewerage performance measures across these seven functions, followed by an independent audit by consultants, CH2M Hill and AECOM on behalf of WSAA. The process aligned with the ISO 55001 standard. We had the highest score among the utilities in four out of the seven functional areas and were well above the 90th percentile in the remaining areas.

We have commenced the process to gain certification ISO 55001, having already undertaken a gap analysis⁵¹ and working towards reaching a certified standard by the end of 2017-18.

4.2 RISK ASSESSMENT ACTIONS FOR THIS PRICE SUBMISSION

For our Price Submission, we have assessed the risk of delivery of outcomes in terms of the impact on our customers, particularly customer prices. We recognise that any under-achievement of service outcomes or under-expenditure of forecast operating or capital expenditure during a regulatory period results in customers paying a premium.

We maintain a strong commitment to ensure that we achieve our corporate objectives within our risk appetite parameters and that any threats are suitably mitigated. Customer and community expectations reflected in the level of government and regulatory intervention, complaints, court rulings and the breadth and level of media coverage are used to monitor whether we have appropriately balanced risks with customers and shareholder/government. For example, if courts started making rulings that our risk approaches were not appropriate, this would indicate we had transferred an inappropriate level of risk to customers. There is currently no empirical evidence that the current risk balance is not appropriate.

WE HAVE IMPLEMENTED A NEW PROCESS WITH OUR EXISTING RISK MANAGEMENT PROCESS THAT SPECIFICALLY IDENTIFIES, QUANTIFIES AND DETERMINES THE MOST APPROPRIATE PARTY TO MANAGE AND THEREFORE MITIGATE AGAINST RISKS.

The revised pricing framework, has caused a shift in how we have approached our Price Submission, particularly testing inputs against the risk criteria of PREMO. This has involved:

- explicit testing of proposed investments against the corporate risk framework
- ensuring all business cases specifically addressed or considered risk and were independently reviewed for both prudence and efficiency
- conducting a risk workshop to identify and test changes in assumptions for capital investments and the implications or effect on the corporate risk framework – that is, have new controls been identified, or have changes in assumption resulted in a revision of any residual risk rating? – thereby indicating a potential risk shift between customers, the business and government
- elevating an existing operational risk to a strategic risk associated with delivering on customer commitments associated with the performance element of PREMO
- implemented the Jacobs capital investment prioritisation model developed for water businesses in the UK. Aligned to our corporate risk framework, the model identifies where the capital program can be reduced without negatively impacting where customers identify value.

50 AECOM, Asset Management Customer Value (AMCV) Project, Participant Report for Yarra Valley Water, January 2017

51 Undertaken by GHD, 2016

4.3 ENSURING CUSTOMERS' BILLS DO NOT INCLUDE A TRANSFER OF RISK

Areas where risk based decisions or considerations have been made are:

- capital expenditure programs
- demand and growth forecasts
- tariff structures and price control mechanism
- efficiency/productivity commitment
- customer expectations and guaranteed service levels.

Each of these areas is explored in detail in the following sections.

4.3.1 CAPITAL EXPENDITURE

We use a robust capital delivery process for identifying and building new and upgrading existing assets.

The process has three broad stages; planning and functional design; preliminary design; and detailed design and tender.

- The planning and functional design phase involves high level analysis that includes scenario planning and options analysis to identify the assets required to deliver the desired function in an efficient manner. For assets in new growth areas, the scenario analysis involves testing various infrastructure configurations, locations and growth and climate forecasts. For existing assets, the planning and preliminary design phase involves a risk-based approach to prioritise the assets requiring repair or renewal.
- The preliminary design phase builds on the information provided in the functional design and carries out a more specific scenario analysis with higher resolution. Scenario analysis in preliminary design may include variables such as asset alignment and location, asset configuration and sizing.
- The detailed design and tender phase builds on the preliminary design by considering factors such as constructability, construction methodology, technology and materials.

OUR P50 COST FORECASTS ARE UNDERPINNED BY DETAILED COST CURVE INFORMATION DERIVED FROM PREVIOUSLY COMPLETED PROJECTS AND SUBMITTED TENDERS. PROJECT SPECIFIC COST ESTIMATES HAVE BEEN COMPLETED FOR ALL THE TOP 10 PROJECTS BY JACOBS (ENGINEERING DESIGN CONSULTANTS) INCLUDING A MONTE CARLO ANALYSIS. THE P50 COST ESTIMATE HAS BEEN ADOPTED FOR ALL PROJECTS NOT YET IN CONSTRUCTION. FOR PROJECTS IN CONSTRUCTION THE TENDERED PRICE HAS BEEN INCLUDED.

Where projects are at functional and preliminary design phases we have developed the cost estimates based on our cost curve database. The forecast costs from the cost curve database represent a P50 estimate as they are based on the mean values of recent historical project and tender rates.

4. PREMO – RISK (CONTINUED)

Table 35 outlines the Top 10 capital projects to be undertaken between 2018-19 and 2022-23, including the P50 Monte-Carlo estimates.

Table 35: Project cost attributes for top 10 projects (\$million January 2018)

PROJECT	SPECIFICATION	CURRENT PHASE	2018-23 FORECAST \$ MILLION	TOTAL PROJECT COST \$ MILLION
Lockerbie main sewer	DN750 to DN1500, 9.2km deep gravity sewer main	Detailed design (P50)	\$84.9	\$91.1
Monbulk community sewerage program	20km of pressure sewer main and sewage pump station	Detailed design (P50)	\$28.5	\$36.5
Doreen sewer pressure main	DN600 sewage pressure main, 12.5km in length and sewage pump station	Functional design (P50)	\$27.8	\$30.6
Epping branch sewer tunnel	DN1800 deep gravity sewer main, 2.4km in length	Construction (tender price)	\$11.2	\$42.8
Kalkallo Creek branch sewer	DN1385 gravity sewer, 1.25km in length	Construction (tender price)	\$11.5	\$48.7
Kalkallo to Bald Hill drinking water major assets	New drinking water pump station, transfer main, pressure reducing station and distribution main	Functional design (P50)	\$21.3	\$24.1
The Patch community sewerage program	7.3km of pressure sewer main	Functional design (P50)	\$13.7	\$14.8
Sassafras community sewerage program	7.3km of pressure sewer main	Functional design (P50)	\$9.2	\$11.2
Sherbrooke/ Kallista community sewerage program	6.7km of pressure sewer main	Functional design (P50)	\$12.0	\$14.4
Craigieburn flow storage and distribution hub – Stage 2	15ML storage tank, pump station and chemical dosing facility	Functional design (P50)	\$9.0	\$9.0
TOTAL			\$229.1	\$323.2

FOR PROJECTS WHERE THERE IS SIGNIFICANT UNCERTAINTY IN REGARDS TO SCOPE, COSTS, TIMING, WE HAVE EITHER NOT INCLUDED ANY COSTS OR THE MINIMUM FORECAST COSTS.

We have \$71.8 million of potential projects which we have not included in our Price Submission due to uncertainty.

- Three distribution mains (\$33.3 million) awaiting condition assessment, which based on a desktop assessment are ranked among the highest risk mains and have a positive NPV analysis taking into account customer and community impacts in the event of catastrophic failure. The uncertainty associated with this project is due to the unknown actual condition of the main which will be ascertained following condition assessment. Future renewal or management plans will be made following the condition assessment. Capital forecasts include the condition assessment for all high-risk distribution mains together with design to enable rapid renewal when required. (refer to section 3.3.2 for further details)

- Improve sewerage capacity program (\$29.9 million), where we propose to adopt an outcome-based approach for six waterways impacted by 'non-compliant' spills. The expenditure required using this approach ranges between \$45.1 million and \$75 million. Due to the uncertainty in costs we are proposing to claim the lower bound of the cost range (refer to section 3.3.4 for further details).
- Park Orchards community sewerage project (\$8.6 million) where cost estimates assume successful completion of trials that support decentralised solutions, such as small sewerage treatment plants to manage a cluster of properties, rather than the more expensive traditional reticulated sewerage system (refer to section 3.3.4 for further details).

We are accepting the additional financing risk of \$6.6 million should the full amount of capital expenditure be required during the regulatory period.

In addition:

- The citizens' jury recommended that leakage be reduced in our network to save water for the future, understanding that the cost would outweigh the financial benefit of the water saved – however, the jury ultimately valued the water saved above the direct cost. We are accepting the jury's recommendation to undertake additional activities to reduce leakage by 2.5 gigalitres by 2023 at an estimated capital cost of \$27 million.

Given the uncertainty about whether an estimated investment of \$27 million will achieve the full 2.5 billion litres of water savings forecast we will bear the risk and only charge customers the lesser of the cost of the investment or the value of the water savings that are achieved.

- The citizens' jury supported digital metering. We propose absorbing an estimated \$18 million of pilot costs associated with proving the technology and feasibility of digital metering. We will only recover the capital and interest costs in the regulatory period commencing 2023-24 if full-scale roll-out proceeds. Refer to section 3.3 for a comprehensive overview of our capital investment program.

4.3.2 DEMAND AND GROWTH FORECASTS

Customer prices and tariffs are set to recover the prudent and efficient costs based on forecasts of the number of customers and product demand.

The typical cause of short term demand fluctuations is weather conditions and over the medium-term is the rate of customer growth stemming from development.

Demand and customer growth forecasts have been developed, and independently reviewed, using the latest available information including:

- end use model studies undertaken at a household level
- government projection of population and households (Victoria in Future 2016)
- trends in residential property type, informed by Australian Bureau of Statistics residential building approvals data for detached houses and flats
- trends in appliance efficiency using findings from appliance stock surveys
- water leakage and loss informed by proposed programs, such as, leak detection, network sensors, meter replacement programs, and technological advancements such as digital metering
- continuation of permanent water conservation rules and the ongoing promotion of Target 155
- price elasticity studies that continue to show that price has limited influence on changes in demand.

Further details on our demand forecast are contained in Chapter 7.

4. PREMO – RISK (CONTINUED)

4.3.3 TARIFF STRUCTURES AND PRICE CONTROL MECHANISM

The risk to customers that actual demand is higher than initially forecast, and therefore that customer prices are higher than necessary, is mitigated through our price control mechanism.

WE PROPOSE TO CONTINUE WITH THE REVENUE CAP FORM OF PRICE CONTROL TO MINIMISE PRICE SHOCKS BETWEEN PRICE DETERMINATIONS AND ENSURE WE HAVE SUFFICIENT REVENUE TO COVER OUR COSTS AND PREVENT US FROM OVERCHARGING OUR CUSTOMERS.

We are proposing to maintain a revenue cap form of price control where customer prices will adjust on an annual basis to fully pass-back or recoup the shortfall, capped at 2% real price impact, for variances in demand from the forecast in the Price Determination. This mechanism ensures that customers only pay what is required to meet our forecast revenue requirement. In addition, both customers and stakeholders expect us to actively promote water efficiency and conservation. Therefore customers are best placed to manage the demand risk.

Specifically, in relation to the revenue cap - from a risk perspective:

- in the short-term customers incur the risk of lower than forecast water usage (capped at 2% real price impact)
- we incur the risk at the price reset of a lower headline price reduction as price benefits have been passed on to customers in prior years
- the business together with our shareholder forgoes the potential for higher ongoing profits from step increases in demands and mitigates against lower ongoing profits from step decreases in demand
- at the next price review, large price fluctuations are minimised because small annual adjustments have been made over the previous period – which is consistent with customer preferences.

In the current regulatory period our customers have benefited from the revenue cap as:

- \$19 million in excess net revenue between 2013-14 and 2016-17 has been returned
- forecast demand for 2017-18 is greater than the Price Determination demand, resulting in current prices being 2.5% less than they would have been under a price cap.

We propose to revise the revenue cap formula from 2018-19, while still minimising price shock to customers by returning surplus net excess revenue in the following year and recovering any shortfall over one or more years by limiting price increases due to the revenue cap to no more than 2% in any year. The revised revenue cap formula, outlined in Appendix 6, improves on our current formula as it:

- removes adjustments for Melbourne Water's bulk charges that will be subject to specific direct pass-through mechanisms associated with desalination water orders and desalination contract costs
- includes a 'true up' – prices are set using April forecasts of revenue and costs, not year-end actual costs
- is administratively simpler as it focuses solely on changes in revenue and costs from changes in customer numbers and demand.

WE ARE NOT PROPOSING TO MAKE ANY ADJUSTMENTS TO EXISTING TARIFF STRUCTURES

In relation to tariff and prices - our focus in this Price Submission has been utilising the real weighted price reduction in 2018-19 of 9.1% to target price changes that minimise the impact of the removal of the \$100 government rebate. Consistent with our customer engagement and research, we have also been able to retain the strong water conservation incentive associated with our inclining three step water usage tariffs.

In addition, any changes in tariff structures will result in some customers benefiting but is offset by making other customers worse off. With half of our customers sometimes or always struggling to pay their utility bills in the last 12 months, we do not want to increase their financial burden by proposing changes to tariff structures where we do not have strong customer support.

Refer to Chapter 8 for additional information in relation to proposed prices and tariff structures.

WE PROPOSE TO CONTINUE WITH A FIVE-YEAR REGULATORY PERIOD AND EXISTING PRICE PASS THROUGH MECHANISMS

We propose to continue with a five-year regulatory period and existing price pass through mechanisms associated with:

- uncertain and unforeseen events
- the pass-through of changed Melbourne Water prices in 2021-22 and 2022-23.

In addition, we propose to introduce price pass through mechanisms for:

- desalinated water contract costs
- desalinated water order costs
- purchase and sale of water allocations
- annual regulatory rate of return update
- non-achievement of service outcomes
- recovery of expenditure to reduce leakage.

Details on our price adjustment proposals are contained in Appendix 7.

WE HAVE INDEPENDENTLY VERIFIED OUR FINANCIAL VIABILITY THROUGH A CREDIT RATING REVIEW

Fitch Ratings has undertaken an independent review of the financial forecasts contained in the Price Submission. Based on the analysis, presentations and discussions with management, Fitch issued a BBB+ credit opinion, which is consistent with the existing rating.

4.3.4 EFFICIENCY AND PRODUCTIVITY COMMITMENT

We propose a compounding annual 2.5% efficiency factor applied to operating expenditure, which is significantly greater than the 1% required by the Commission. Overall, taking into account allowances for customer growth and additional expenditure items, forecast operating expenditure is expected to decline in real terms over the period. We are accepting the risk of this aggressive target given the uncertainty about how it will be achieved.

4. PREMO – RISK (CONTINUED)

4.3.5 CUSTOMER EXPECTATIONS AND GUARANTEED SERVICE LEVELS

Throughout our engagement with customers we have explored minimum service standards and the mechanism of Guaranteed Service Levels (GSL) schemes more broadly.

Customers are generally unaware of the GSL scheme; they acknowledge the appropriateness of a gesture payment or rebate to individuals affected by performance that drops below a minimum standard.

Our citizens' jury reviewed the current GSLs and made a number of recommendations which we have largely adopted. In addition, we have retained the GSL associated with undertaking appropriate measures to assess a customer's ability to pay prior to restricting supply of water.

It should be noted that the jury was provided the option to introduce a GSL or change the amounts for existing GSLs that would provide a strong economic incentive to resolve the underlying cause of the service failure. The jury did not make any recommendation to increase significantly any GSLs to provide this incentive. Our Customer Advisory Group (CAG) also did not propose GSL's that provided an increased economic incentive.

Table 36 shows our current and proposed guaranteed service levels and the rebate amounts based on the citizens' jury recommendations.

Table 36: Current and proposed guaranteed service levels and rebate amounts

CURRENT		PROPOSAL
GUARANTEE SERVICE LEVEL	AMOUNT	
Interruption to water and sewer supply: planned		
We cut off your water for more than five hours.	\$50	Retain
The planned interruption is longer than we said it would be.	\$50	Retain
We fail to give at least three days' notice of planned water interruptions.	\$50	Revise based on customer insight <ul style="list-style-type: none"> We fail to give at least a weeks' notice of planned water interruptions.
We cut off your water between 5 am and 9 am and/or 5 pm and 11 pm.	\$50	Retain
Interruption to water supply: unplanned		
Your water supply is lost for more than four hours.	\$50	Revise based on jury & CAG recommendations <ul style="list-style-type: none"> Your water supply is lost for more than four hours \$50. Where your interruption extends for more than 12 hours an additional \$50 (total \$100).
We allow more than five unplanned water interruptions in total during any 12-month period.	\$50	Revise, based on jury recommendation <ul style="list-style-type: none"> We allow more than two unplanned water interruptions during any 12-month period - \$50 for the third and each subsequent interruption.
We do not provide adequate water flow rate. Note – the price rebate may only be claimed once, unless we fail to take reasonable action.	\$50	Revise, consistent with the customer service code <ul style="list-style-type: none"> Where we fail to provide the minimum water flow requirements we will waive the water service charge until we meet the minimum standard.

Table 36: Current and proposed guaranteed service levels and rebate amounts (continued)

CURRENT		PROPOSAL
GUARANTEE SERVICE LEVEL	AMOUNT	
Sewage spills where we are at fault		
We fail to contain a sewage spill within your house within one hour.	\$1,000	Revise, consistent with our response to the jury <ul style="list-style-type: none"> We fail to contain a sewage spill within your house within one hour - \$1000. If you experience a subsequent sewage spill in your house within 12-months which is not contained within one hour - \$2,000.
We fail to contain a sewage spill on your property within four hours.	\$50	Revise, consistent with our response to the jury <ul style="list-style-type: none"> We fail to contain a sewage spill on your property within four hours - \$1,000. If you experience a subsequent sewage spill on your property within 12-months which is not contained within four hours - \$2,000.
Interruption to sewer supply: unplanned		
We fail to restore a sewerage service interruption within four hours. This does not include sewer service interruptions caused by your pipe work.	\$50	Revise, based on jury recommendation <ul style="list-style-type: none"> We fail to restore a sewerage service interruption within four hours \$50. Where the interruption extends to more than 12 hours an additional \$50 (total - \$100). This does not include sewer service interruptions caused by your pipe work.
We allow more than five (or three) unplanned sewerage interruptions in total during any 12-month period.	\$50	Revise, based on jury recommendation <ul style="list-style-type: none"> We allow more than two unplanned sewerage interruptions during any 12-month period - \$50 for the third and each subsequent interruption.
Response to customers		
We do not reply to your letter within four working days.	\$50	Revise, acknowledging that customers use a variety of contact channels <ul style="list-style-type: none"> We do not reply to your contact within four working days - \$50.
Water quality complaint		
n/a	n/a	Introduction, consistent with our response to the jury <ul style="list-style-type: none"> You experience more than two separate water quality related issue where you contact us in a 12-month period - \$50 for the third and each subsequent complaint.
Entry on residential property		
We enter your property other than as allowed.	\$50	Remove, as it would be illegal to enter a property other than allowed.
Debt recovery actions		
If we commence legal action or take steps to restrict a household's water supply prior to taking reasonable endeavours to contact the customer and provide information about the help that is available for customers experiencing financial difficulty.	\$300	Retain consistent with the Customer Service Code and Commission's Guidance.

5. PREMO - LEVEL OF AMBITION

5.1 SUMMARY OF OUR AMBITION LEVEL ASSESSMENT

Our submission represents a well informed and fit-for-purpose package that balances fairness and service for current and future generations. We believe this is a high quality, challenging submission that delivers value for our customers and reflects their voice throughout.

It is informed by a leading customer engagement process that culminated in conjoint choice modelling and a citizens' jury that ultimately determined our outcomes and outputs.

Using the Commission's Guidance we assessed the level of ambition that would be appropriate. Our view is that our engagement, management and risk elements are consistent with a 'leading' submission with outcomes meeting the criteria for 'advanced' with an improved outcome for our customers focused on areas where there is increased value.

We have self assessed each element of PREMO using the Commission's Guidance and this is summarised in Table 37 below.

Table 37: PREMO self-assessment

PREMO ELEMENT	AMBITION LEVEL
Engagement	Leading
Outcomes	Advanced
Management	Leading
Risk	Leading
Proposed ambition level	Advanced

We are proposing an 'advanced' self rating of our submission which optimises value for customers in terms of 'what they get' and 'what they pay'. Whilst we believe our submission could be rated as 'leading', this would increase the typical household bill by about \$29 in real terms over the next regulatory period. In terms of value creation, our conjoint choice modelling identifies changes in the relative value score for different price and service offerings. The results show:

- an 'advanced' submission significantly increases the value score from the current service and price offering of 47.3 to 70.1
- a 'leading' submission would generate greater value than the current service and price offering with a value score of 50.4. However, it is still significantly below an 'advanced' submission value score of 70.1.

Our extensive customer engagement program did not reveal any other areas of substantial customer benefit that would offset the impact of higher bills. Given our starting point of relative high efficiency, any additional productivity and efficiency targets to reduce price would be an unacceptable risk that would not be in the best interests of customers nor the sustainability of the organisation. We are confident that an 'advanced' submission creates our 'best offer' for customers through balancing outcomes, risk and price.

The sections below provide further details supporting the self assessed PREMO ambition levels.

5.2 ENGAGEMENT

We have undertaken a comprehensive engagement process with our customers and stakeholders to gain the insights which led to the development of our outcomes and outputs. This culminated in conjoint choice modelling and a citizens' jury that made recommendations to increase value for customers. We have addressed each matter in the Commission's Guidance in relation to engagement and we believe we have a 'leading' rating for this element demonstrated by:

- The seven outcomes reflect the experience of customers, delineated by what they have said is of importance to them and expected of us, and those that customers have identified as providing additional value.
- Information provided to customers was appropriate for its purpose, form and content.

5. PREMO - LEVEL OF AMBITION (CONTINUED)

- A citizens' jury was convened to answer the question “we need to find a balance between price and service which is fair for everyone. How should we do this?”. The jury was provided with a comprehensive plain English information pack that focused on our four outcome areas (at that time) and set out the objectives we sought their views on.
- In preparation for the jury, stakeholders were consulted on matters they wanted put before the jury and decided on the speakers to present to them. The jury also selected speakers to present on areas where they had gaps or suspected bias in the information provided. All stakeholders and customers were encouraged to provide submissions to the jury for consideration. During the process, jury members requested additional information to aid their deliberations. All requests were responded to with sufficient time to consider before their next sitting.
- Conjoint choice modelling was conducted with more than 1,000 customers who considered different service offerings. The results identify what changes in prices and services customers value and could influence choice. The structure of the engagement piece tested both price and service.
- Customer feedback assures us that we chose an appropriate and high quality engagement program and that we feel satisfied we have delivered against our engagement commitments.
 - › Conjoint choice modelling: 96% of participants found the features easy to understand and 85% found the choices presented were realistic. Of the remaining 15%, they considered what was important to them and chose accordingly
 - › Citizens' jury: All jury participants were invited by Mosaic Lab to reflect on their experience of our engagement activity. When asked if “enough and appropriate information to undertake your task?” all participants provided a rating of 8 or above (scale 1-10).
- Customer research was undertaken to identify those aspects of our service that customers valued most.
 - Since 2016 we have promoted customer participation through an online engagement portal, social media posts, e-newsletter, media releases and bill inserts to all customers.
 - We sought to reach over 90,000 customers via phone and online for feedback between July 2015 and June 2016. Over 28,000 customer responses have been received from the quantitative research.
 - We specifically engaged our hard-to-reach customers to ensure that disadvantaged and underrepresented segments were also included in our research. We attended multicultural events and engaged with indigenous groups to ensure that we could capture these customers' views.
 - We have explored more than 30 topics in more than 20 different research pieces.
 - More than 1,000 customers participated in the qualitative research during 2016 and 2017:
 - › 800 hours were invested during 2016 engaging with customers on their preferences, choices, attitudes, needs and service expectations. Over 4,000 provided survey responses in 2016 alone
 - › all customer research and insights were made available to the citizens' jury, who deliberated over for five-and-a-half days over four months – with sufficient time allowed for the jury to fully consider the remit, seek additional information and consult with their peers and communities.
- Our process included multiple phases to ensure it were ongoing and captured issues as they evolved. As a result, the initial three outcomes became four, and following the citizens' jury, this figure became seven. We developed a bill simulator to enable customers to trade-off price and services. However, following focus group feedback, we repositioned the model as an education tool and incorporated the trade-off discussion in the jury remit and the conjoint choice modelling.
- We purposefully scheduled the citizens' jury so it received the complete breadth and depth of customer research and could consider all relevant information before making its recommendations. Through the engagement process, customers have had significant influence in key areas of our price submission.

- Customers do not want a bill increase; however, they value increased service levels rather than a bill decrease and nearly all customers say that small annual bill changes are better than a single large change⁵². Leveraging these insights, we have:
 - › challenged our costs and programs to ensure the proposed price path does not result in a bill increase for customers
 - › designed a price path, that has no nominal increase in 2018-19, followed by annual changes less than inflation.
- We have developed measures to track the number of customers who experience repeats service failures and interruptions, reflecting the customer sentiment 'fix it first time'
- We have proposed to maintain core service levels, reflecting that customers are satisfied with the existing service levels
- To increase value the conjoint choice modelling and citizens' jury identified:
 - › support for hard-to reach-disadvantaged customers
 - › incentives for electronic billing and on-time payment
 - › adoption of digital metering
 - › greater education and communication in all aspects of our services
 - › safeguarding drinking water supply for the future through alternative water supply options, pursuit of network leakage and water conservation.
- We have reached the outer extremities of each of the elements of the Commission Customer Engagement Diagram, including:
 - Form – we involved all customers through other aspects of our engagement program including research, engagement portal and bill inserts. Our jury was empowered to make recommendations resulting from its deliberations. We have also collaborated with stakeholders and key business customers who were also empowered to decide jury speakers and provide input to the jury process.
 - Timing – formal engagement began in early 2016 and continued into 2017, culminating with the citizens' jury which considered all research insights. The engagement strategy will ensure ongoing customer insights will continue to influence our services and programs.
 - Content – our engagement activities have been broad in scope and have included project-based and single-issue engagement, including topics such as the community sewerage program, tariffs and guaranteed service levels.

5.3 OUTCOME

In addition to the outcome information provided in section 5.2, we have addressed each matter in the Commission's Guidance in relation to outcomes and we believe we an 'advanced' rating for this element demonstrated as follows.

- From engagement to costs, the outcomes (defined in terms of the customer service experience and priority) are depicted by a golden thread and reflect our full service offering to customers.
- Outcomes are expressed in terms of measurable outputs and deliverables.
- Consistent with our customer research, conjoint choice modelling and the citizens' jury, we propose to maintain service levels associated with water quality, core water and sewerage reliability, and timeliness of response indicators. For outcomes where customers have identified increased value, we propose to improve awareness and access to services and programs for disadvantaged customer segments; water conservation and leakage detection programs; pilot digital metering; and provide incentives to customers who elect to receive an electronic bill with a commitment to pay-on-time.

⁵² Nature, Yarra Valley Water: Customers Shaping and informing our options [residential customers] research report, August 2016, page 46
Q 20 Now thinking specifically about your water bill, which of the following would be your preference for managing changes to the amount you pay?
(n=1,071).

5. PREMO - LEVEL OF AMBITION (CONTINUED)

- Our engagement insights have informed our performance reporting approach and the principles we will use to guide our reporting. At a minimum, we will report our performance to customers annually, primarily focusing on our outcome commitments. To ensure the reporting reflects the breadth of customer experiences, we will report on localised performance and both the range of individual customer experience (outliers), as well as average performance.
- We propose to reprioritise or adjust investments during the period to ensure that outcomes are achieved, while checking the reprioritisation is in keeping with customer insights.

5.4 MANAGEMENT

Board and management have been strongly involved in the development of the proposals since October 2015. Papers presented to Board for this Price Submission included servicing options, progress reports, draft Price Submission documentation, as well as independent, external audit advice on the robustness of business cases.

We have addressed each matter in the Commission's Guidance in relation to management and we believe we have a 'leading' rating for this element demonstrated as follows.

- We have undertaken a comprehensive approach to enable the Board attestation to the Submission, including:
 - independent advice on our approach and plan to produce a Price Submission – including governance arrangements
 - prudent and efficient cost and demand forecasts
 - confirmation the Price Submission and information template are accurate, consistent and complete.
- Our existing operating costs are on or near the efficiency frontier – supported by Water Services Association of Australia⁵³ benchmarking. Our proposal includes:
 - reduced operating expenditure by \$6.0 million to establish a base year (2016-17) level of spend, including \$2.3 million which reflects a long term average of maintenance volume rather than the 2016-17 volumes which are 6% higher
 - annual compounding 2.5% controllable operating expenditure efficiency plus additional costs to implement the citizens' jury recommendations for increased investment in water conservation and support for vulnerable customers. We will absorb all other known and potential operating cost increases.
- Capital expenditure represents an efficient and prudent investment program:
 - 14% cost rate efficiencies for ongoing programs and 21% reduction in growth related capital expenditure forecasts that reflect a more conservative rate of development
 - business cases for the top 10 projects, which are based on Monte-Carlo analysis have been rigorously reviewed for prudence, timing and cost
 - 80% of all capital expenditure has been reviewed for prudence and efficiency – and costed based on detailed cost curve information.
- We have sought to better match regulatory depreciation with asset utilisation by deferring the claiming of regulatory depreciation on growth related capital expenditure, net of new customer contributions, until the commencement of the 2023-24 regulatory period
- Consistent with government policy from 1 July 2018, the \$100 government water rebate for residential water users will be removed and the efficiency passed through to all customers. To minimise the impact on residential tenants (the average tenant is not impacted by the removal of the rebate) we have decreased volumetric charges by an average of 13.5% in real terms in 2018-19.

53 Undertaken in 2015

5.5 RISK

Building on our corporate risk management framework and processes to ensure proposed prices are not higher than they need to be, we have undertaken a comprehensive process to identify, quantify and determine the most appropriate party to manage the risk. We have taken on considerable risk, in terms of our ambitious operating expenditure and capital expenditure efficiencies and only including minimal expenditure with there is uncertainty around the timing and scope of a project, and at the same time proposing to decrease prices if we do not meet our outcome targets. As a result, customers prices are considerably lower due to us bearing more risk.

We have addressed each matter in the Commission's Guidance in relation to risk and we assess that our proposal achieves an 'leading' rating as follows.

- Proposing a compounding annual 2.5% efficiency applied to operating expenditure, which is significantly greater than the 1% required by the Commission, where we are accepting the risk of this aggressive target given the uncertainty about how it will be achieved.
- Capital expenditure which is comparable to current levels which:
 - has been informed by a new process with our existing risk management process that specifically identifies, quantifies and determines the most appropriate party to manage and therefore mitigate against risks.
 - excludes \$72 million worth of potential projects that may be required during the period, where there is significant uncertainty in regards to costs and timing,
 - excludes an additional \$27 million of leakage detection where we will bear the risk of achieving the savings. We will only charge customers whichever is the least; the cost of the investment or the value of the water savings that are achieved.
 - excludes \$18 million for digital metering pilots where the benefits are uncertain.
 - has been prioritised, considering customer value and risk assessment.
- Committing to the achievement of the seven outcome targets and we will lower prices by \$1.5 million annually for each and every target not achieved. In addition, for our top 10 capital projects, if at any time we defer one of these projects we will reduce prices to reflect the interest saved.
- We manage business risks in accordance with ISO 31000 and have regard to the ISO 55001 series in relation to managing assets in line with our Statement of Obligations (General).
- Achieving high scores, amongst the participating utilities in the international benchmarking study undertaken by the Water Services Association of Australia (WSAA) based around the ISO 55001 standard.
- We have commenced the process to gain certification to ISO 55001 on civil assets by the end of 2017-18.
- We are proposing a five-year regulatory period.
- Our financial viability has been independently verified through a credit rating review.
- We propose to continue with the revenue cap form of price control to minimise price shocks between price determinations and ensure we have sufficient revenue to cover our costs but also prevent us from making excess revenue. Further we have not proposed tariff structure changes.
- Our Guaranteed Service Level proposal reflects the citizens' jury recommendation to compensate a customer for the impact of a lower level of service.

6. REVENUE REQUIREMENT

6.1 SUMMARY OF OUR REVENUE REQUIREMENT

The revenue we require to efficiently provide services to our customers and provide a return to our shareholder is calculated using the Commission's 'building blocks' methodology. The total revenue requirement is shown in Table 38 below.

Table 38: Total revenue requirement 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Operating expenditure	682.46	678.25	664.53	663.90	661.33	660.73	660.21	659.64	659.07	658.70
Return on assets	172.46	176.53	181.17	185.31	187.96	191.25	196.41	201.80	206.24	209.94
Regulatory depreciation of assets	96.08	99.65	95.75	96.98	99.31	92.86	93.73	95.32	97.36	90.57
Adjustments from last period	(8.71)	(8.71)	-	-	-	-	-	-	-	-
Non-prescribed revenue offset of revenue requirement	-	-	-	-	-	-	-	-	-	-
Tax liability	11.69	12.76	14.04	14.16	14.65	15.06	15.26	15.88	16.34	15.21
Total revenue requirement	953.98	958.48	955.49	959.34	963.26	959.90	965.61	972.63	979.01	974.42

Each element of the building block is discussed briefly below:

6.1.1 OPERATING EXPENDITURE

Our prescribed operating expenditure comprises both controllable and non-controllable operating expenditure, plus bulk charges. Details of operating costs can be found in section 3.2 and growth forecasts in Chapter 7 of this submission.

The allocation of operating expenditure into the major service categories is consistent with the 2015-16 regulatory accounts and is further disaggregated in the financial template.

Operating expenditure for each major service category is shown in Table 39.

6. REVENUE REQUIREMENT (CONTINUED)

Table 39: Total prescribed operating expenditure 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Controllable operating expenditure										
Water	78.77	78.24	77.66	77.03	76.35	76.37	76.36	76.30	76.22	76.15
Sewerage	57.02	57.43	57.01	56.55	56.05	56.08	56.07	56.03	55.98	55.93
Recycled water	0.31	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Total controllable operating expenditure	136.90	135.97	134.98	133.89	132.70	132.75	132.72	132.63	132.50	132.38
Non-controllable operating expenditure										
Environmental contribution	41.89	40.95	40.03	39.13	38.25	37.39	36.55	35.73	34.92	34.14
Licence fees – ESC	0.60	0.60	0.60	0.60	0.75	0.60	0.60	0.60	0.60	0.75
Licence fees – DHS	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Licence fees - EPA	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Total non-controllable operating expenditure	42.89	41.95	41.03	40.13	39.40	38.39	37.55	36.73	35.92	35.29
External bulk charges										
Water	340.15	336.37	324.31	324.58	324.84	325.09	325.35	325.59	325.85	326.12
Sewerage	162.52	163.96	164.21	164.30	164.40	164.50	164.59	164.69	164.79	164.91
Total external bulk charges	502.67	500.33	488.52	488.88	489.24	489.59	489.94	490.28	490.65	491.02
Total operating expenditure	682.46	678.25	664.53	662.90	661.33	660.73	660.21	659.64	659.07	658.70

CONTROLLABLE OPERATING EXPENDITURE

Our 2016-17 controllable operating expenditure was \$140.35 million which has been reduced by removing costs associated with higher than long term average activity on:

- maintenance volumes (\$2.34 million)
- recoverable works costs (\$1.55 million)
- guaranteed service level rebates (\$0.56 million).

In addition, we removed:

- 2017-18 efficiency commitments underpinning the \$100 Government water rebate (\$1.45 million).

For the regulatory period, we are proposing:

- a compounding controllable operating cost efficiency improvement rate of 2.5% per annum (1.5% per annum for the 2023-2028 regulatory period)
- a customer growth forecast that averages 1.7% per annum (1.4% per annum for the 2023-2028 regulatory period)
- adding \$1.2 million per annum for the citizens' jury's recommendation to improve awareness and access to our WaterCare vulnerability program
- adding \$1 million per annum for the citizens' jury's recommendation to increase water conservation education and awareness advice for customers
- removing \$0.5 million per annum acknowledging the citizens' jury understanding of the impact of removing rebates.

Table 40 below shows the calculation of the controllable operating expenditure.

Table 40: Controllable Operating Expenditure forecast 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
2016-17 Baseline spend	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35	140.35
Less 2016-17 adjustments	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)	(5.90)
Plus net 2017-18 growth & efficiency allowances	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61	1.61
Less annual efficiency	(3.40)	(6.78)	(10.14)	(13.47)	(16.77)	(18.74)	(20.70)	(22.67)	(24.63)	(26.59)
Plus growth allowance	2.54	4.98	7.33	9.56	11.67	13.67	15.60	17.46	19.29	21.12
Plus net additional expenditure items	1.70	1.71	1.72	1.73	1.74	1.75	1.76	1.77	1.78	1.79
Total Controllable Operating Expenditure	136.90	135.97	134.98	133.89	132.70	132.75	132.72	132.63	132.50	132.38

NON-CONTROLLABLE OPERATING EXPENDITURE – EXTERNAL BULK CHARGES

Expenditure on bulk charges reflects our demand forecasts and assumptions around future prices. For the regulatory period, we have assumed:

- Melbourne Water's prices change in accordance with the prescribed price movement detailed in Melbourne Water's 2016 determination for the 2018-19 to 2020-21 period
- Melbourne Water's prices change by 0% real for the 2021-22 to 2027-28 period
- No change in prices due to the annual update of the regulatory rate of return
- No change in prices due to changes to Desalination contract costs.

We propose that where Melbourne Water prices differ from those assumed in this Submission, there will be a direct a pass-through, with the change in costs reflected in customer prices. Refer to Appendix 7 for more details.

6. REVENUE REQUIREMENT (CONTINUED)

NON-CONTROLLABLE OPERATING EXPENDITURE – OTHER

For the regulatory period, we have assumed:

- Essential Services Commission licence fees are \$0.60 million annually and increase to \$0.75 million for the year prior to a new regulatory period (2022-23 and 2027-28) as advised by Commission
- Department of Health and Human Services licence fees are \$0.30 million per annum
- Environment Protection Authority licence fees are \$0.10 million per annum
- Environment contribution will be \$42.855 million (nominal) per annum as advised by the Department of Environment, Land, Water and Planning.

The current tranche of the environmental contribution is due to conclude in 2019-20, prior to which the government will decide any future arrangements. We have assumed that the contribution continues at the current level.

We propose that where the licence fees and/or the environment contribution differ materially from those assumed in this submission, there will be a direct a pass-through to customers. Refer to Appendix 7 for further details.

We have excluded any costs associated with non-prescribed services from the revenue requirement.

6.1.2 ROLL FORWARD OF THE REGULATORY ASSET BASE (RAB)

The roll forward of the RAB is impacted by actual and forecast capital expenditure, government and customer contributions and proceeds from asset disposals. The return on assets and regulatory depreciation is dependent on the RAB. Regulatory accounts have been used as the source of data to update the RAB (note the regulatory accounts for 2012-13 incorrectly included recoverable works as a capital contribution).

Table 41: Updated regulatory asset base 2012-13 to 2016-17 (\$ million January 2018)

	2012-13	2013-14	2014-15	2015-16	2016-17
Opening RAB	3,418.22	3,580.05	3,660.90	3,717.52	3,842.25
Plus Gross capital expenditure	252.45	211.11	181.17	257.08	227.414
Less Government contributions	3.81	-	-	-	-
Less Customer contributions					
New customer contributions	17.60	22.43	27.24	36.51	34.61
Financed works	1.98	0.68	0.83	1.74	0.15
New meter installations	6.24	8.38	9.88	12.02	12.52
Less Proceeds from disposals	0.32	0.88	2.27	6.13	1.99
Less regulatory depreciation	60.67	97.88	84.33	75.94	81.60
Closing RAB	3,580.05	3,660.90	3,717.52	3,842.25	3,938.79

Table 42: Rolled forward regulatory asset base 2017-18 to 2027-28 (\$ million January 2018)

RENEWAL PROGRAM	REGULATORY PERIOD 2018-23						AVERAGE ANNUAL SPEND 2023-28
	\$ MILLION						
	AVERAGE ANNUAL SPEND 2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	
Opening RAB	3,938.79	4,058.43	4,154.03	4,252.21	4,375.10	4,449.06	4,501.25
Plus Gross capital expenditure	248.29	238.79	245.84	263.44	214.43	194.36	1,221.12
Less Government contributions	-	-	-	-	-	-	-
Less Customer contributions							
New customer contributions	32.22	31.84	31.45	31.03	29.73	29.09	139.47
Financed works	0.50	2.01	3.31	0.51	0.51	0.51	3.07
New meter installations	10.00	12.26	12.26	12.26	12.26	12.26	66.11
Less proceeds from disposals	1.00	1.00	1.00	1.00	1.00	1.00	5.00
Less regulatory depreciation	84.94	96.08	99.65	95.75	96.98	99.31	469.83
Closing RAB	4,058.43	4,154.03	4,252.21	4,375.10	4,449.06	4,501.25	5,038.89

Note, compared to the capital expenditure described in this submission, the financial template has:

- The gross capital expenditure for 2017-18 is based on the 2013 determination value which is \$54.6 million less than the current forecast of \$303.5 million
- We have removed the additional \$27 million of expenditure on our water leakage program from 2018-19 to 2022-23 roll forward of the Regulatory Asset Base. We do not propose to charge customers for expenditure where the benefits are uncertain. Where we realise reductions in non-revenue water we propose to pass-through the value of the benefits in the calculation of prices to customers. The value of is the sum of Melbourne Water's Volumetric Charge and the unit price for a 50 gegalitre order from the Victorian Desalination Plant. The pass through of gegalitres savings will be capped at the financing costs of the \$27 million capital expenditure. Refer to Appendix 7 for additional details.

Customer and Government contributions to capital reduce the RAB and return on assets. Table 41 above shows the forecast contributions by:

- Government – there are no contributions forecast
- New customer contributions – forecasts are based on growth in customer numbers and the prices proposed in this submission
- New meter installations – the costs of which are paid via miscellaneous products. The forecasts are based on growth in customer numbers and the prices proposed
- Financed works – are where works are carried out upon the request of other authorities. The expenditure and contributions can vary substantially from year to year.

6. REVENUE REQUIREMENT (CONTINUED)

6.1.3 REGULATORY DEPRECIATION OF ASSETS

Our existing RAB has an opening value in 2018-19 of \$4.06 billion with an average remaining asset life of 59 years, varying from one year for computer software to 94 years for recycled water mains. Due to the value of assets with a short remaining life, depreciation in the first two years is approximately 2.4% of the average RAB, before reducing to approximately 2.2% for the remaining years of the regulatory period. This change is attributed to not including information technology capital expenditure where the timing, scope, costs and benefits are uncertain.

The rate of depreciation for new assets is consistent with rates in our financial accounts and the useful life of the assets. For new growth assets, we have better matched regulatory depreciation with asset utilisation by deferring the claiming of regulatory depreciation on the net growth related capital expenditure, until the commencement of the 2023-28 regulatory period.

We have used a straight-line method of depreciation for all assets.

Table 43: Regulatory depreciation of assets 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Depreciation of existing assets	93.88	92.95	84.33	80.43	79.23	71.11	70.29	70.29	70.29	61.58
Depreciation of new assets	2.20	6.70	11.42	16.55	20.08	21.75	23.44	25.03	27.07	28.99
Total depreciation	96.08	99.65	95.75	96.98	99.31	92.86	93.73	95.32	97.36	90.57
Depreciation as a proportion of average RAB	2.3%	2.4%	2.2%	2.2%	2.2%	2.0%	2.0%	2.0%	2.0%	1.8%

6.1.4 RETURN ON ASSETS

The return on assets is a function of the RAB and the regulatory rate of return.

We are proposing an 'advanced' rating (refer to Chapter 5) which allows a maximum real return on equity of 4.9% with a real regulatory rate of return of 4.2%.

We support the Commission's benchmark cost of debt based on a ten-year trailing average approach as it results in smaller price changes as preferred by our customers and better matches our debt profile.

Where the return on assets differs from assumed in this submission due to changes in the ten-year trailing average cost of debt, there will be a direct a pass-through to our customers. Refer to Appendix 7 for further details.

Table 44: Return on assets 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Return on existing assets	168.46	164.50	160.73	157.23	153.83	150.64	147.62	144.63	141.64	138.82
Return on new assets	4.00	12.03	20.44	28.08	34.12	40.61	48.78	57.17	64.60	71.12
Total return on assets	172.46	176.53	181.17	185.31	187.96	191.25	196.41	201.80	206.24	209.94

6.1.5 PRIOR PERIOD ADJUSTMENTS

Our revenue cap forecasts excess net revenue at April each year - returning to customers through price the excess in the following year. A “true up” based on June actual net revenue is returned the year after.

In April 2017 we forecast a shortfall of net revenue in 2016-17 but elected to defer the recovery of the shortfall beyond 2017-18. The current estimate of the “true up” of June actuals is an excess net revenue of \$10.7 million which is forecast in 2018-19 prices. In addition, during 2017-18 we have identified \$5 million of eligible customer charges that are currently not being levied. These changes are included in prices from 2018-19.

Appendix 6 contains details of our proposed revenue cap and Appendix 7 details of our proposed adjustment mechanisms.

6.1.6 TAX LIABILITY (ALLOWANCE)

The tax liability has been calculated in accordance with the Commission's guidance and Information Template. In 2016-17 the income tax expense rate in our Financial Statements was 30.07% and we are forecasting a 30% tax rate for all years. Our tax liability is \$11.69 million in 2018-19 increasing to \$14.65 million in 2022-23 and further to \$15.21 million in 2027-28 as shown in Table 38 on page 105 (section 6.1).

6.2 FORECAST REVENUE

The vast majority of regulated revenue will be collected via water, sewerage, recycled water and trade waste tariffs. Our proposed price path for the 2018-23 regulatory period is an average 9.1% real price reduction in 2018-19 followed by annual price change of 0.7% less than inflation.

Non-tariff revenue reduces the amount of revenue required to be collected via tariffs and includes:

- **Sewerage contract revenue**
Includes the revenue received from Goulburn Valley Water to treat sewage collected within its service area and treated at our Wallan treatment plant
- **Water contract revenue**
The revenue received from the sale of water allocations
- **Recycled water contract revenue**
The sale of bulk class B recycled water to golf courses and irrigators
- **Miscellaneous services**
The revenue received from the sale of miscellaneous products and is net of costs of providing new meters and carrying out financed works (treated as a contribution to capital expenditure)

6. REVENUE REQUIREMENT (CONTINUED)

- **Other revenue**

The revenue received from recoverable works such as maintenance of council hydrants, damaged and altered assets and the education of sewage in new developments. The associated costs are included in controllable operating expenditure

Table 45: Forecast prescribed revenue 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Tariff revenue	932.74	939.31	944.79	949.04	951.87	940.30	949.54	958.62	967.88	977.38
Sewerage contract revenue	0.26	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.23
Water contract revenue	0.83	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Recycled water contract revenue	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Miscellaneous services (net of capital contributions)	17.25	17.26	17.32	17.25	17.26	16.24	16.24	16.24	16.24	16.52
Other revenue	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39	6.39
Less revenue not received	9.54	9.92	10.29	10.66	11.03	11.41	11.78	12.14	12.51	12.88
Total prescribed revenue	948.17	954.42	959.63	963.46	965.91	952.94	961.80	970.52	979.41	988.81

6.3 REVENUE NOT COLLECTED

Revenue not collected is predominantly associated with bad debts and rebates provided to customers and includes:

- **Bad debts**

This increases with bill and price changes and growth in the number of customers. It is forecast that additional expenditure on our WaterCare vulnerability program will offset some of the increase due to the growth in customer numbers.

- **Arrange and save rebates**

Associated with our financial assistance and vulnerable customer programs, these are rebates given to customers who enter into payment arrangements and honour their commitment. The payment arrangements also assist offsetting some of the increase in the level of bad debts due to the growth in customer numbers.

- **Electronic bill and direct debit**

The citizens' jury recommended a \$2 per bill discount for customers who elect to receive an e-bill and pay by direct debit. Customers who currently receive e-bills and pay by direct debit will be eligible for the discount at a cost of \$0.17 million per annum. As new customers choose this option, the value of the rebates given will be offset by reduced operating expenditure and have zero impact on prices.

- **Leakage allowance**

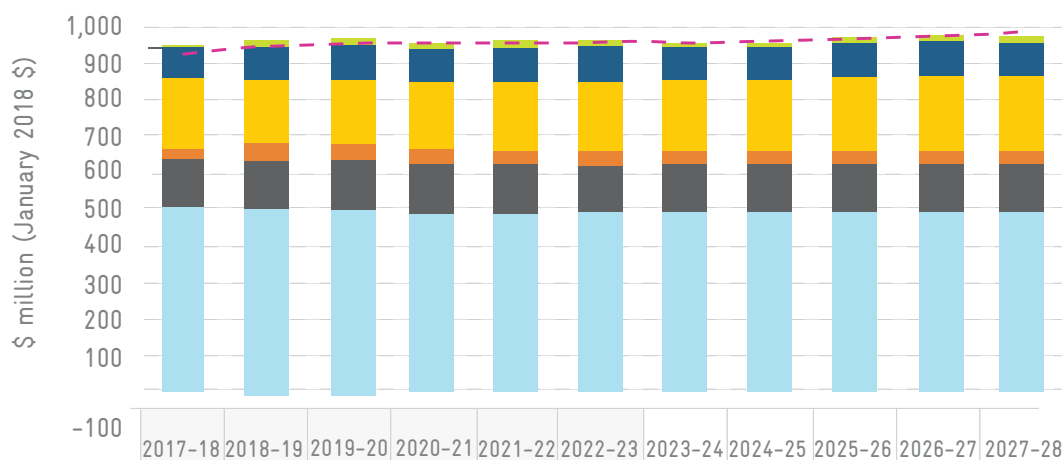
This allowance is given to customers who experience an unusually high bill due to an undetected leak in their property. There are guidelines to assess the value of the allowance and limits the time over which the allowance will be calculated. This encourages the customer to repair the source of the leakage as soon as possible. The total value of the leakage allowance is a function of customer numbers and the age of the customer's pipes.

Table 46: Forecast revenue not collected 2018-19 to 2027-28 (\$ million January 2018)

	REGULATORY PERIOD 2018-23					REGULATORY PERIOD 2023-28				
	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Bad debts	3.66	3.71	3.74	3.76	3.79	3.84	3.86	3.89	3.91	3.94
Arrange and save rebates	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Electronic bill and direct debit rebate	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Leakage allowance	4.21	4.55	4.89	5.23	5.57	5.91	6.25	6.59	6.93	7.27
Total revenue not received	9.54	9.92	10.29	10.66	11.03	11.41	11.78	12.14	12.51	12.88

Figure 11 below summarises the individual elements of the building blocks for our revenue requirement and forecast revenue.

Figure 11. Revenue requirement and forecast revenue 2017-18 to 2027-28 (\$ million January 2018)



	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
	2018-23 regulatory period					2023-28 regulatory period					
■ Tax liability	3	12	13	14	14	15	15	15	16	16	15
■ Prior period adjustment		-9	-9	-	-	-	-	-	-	-	-
■ Regulatory depreciation	85	96	100	96	97	99	93	94	95	97	91
■ Return on assets	190	172	177	181	185	188	191	196	202	206	210
■ Non-controllable OPEX	31	43	42	41	41	39	38	38	37	36	35
■ Controllable OPEX	137	137	136	135	134	133	133	133	133	132	132
■ Bulk charges	501	503	500	489	489	489	490	490	490	491	491
--- Forecast revenue	925	948	954	963	964	966	953	962	971	979	989

7. DEMAND FORECASTS

Demand forecasts are a key factor in estimating future customer prices. With our revenue cap, customer prices reflect actual rather than forecasts demands. Increases in prices caused by changes in demand are capped at 2% real (refer to section 4.3.3 and Appendix 6 for further details).

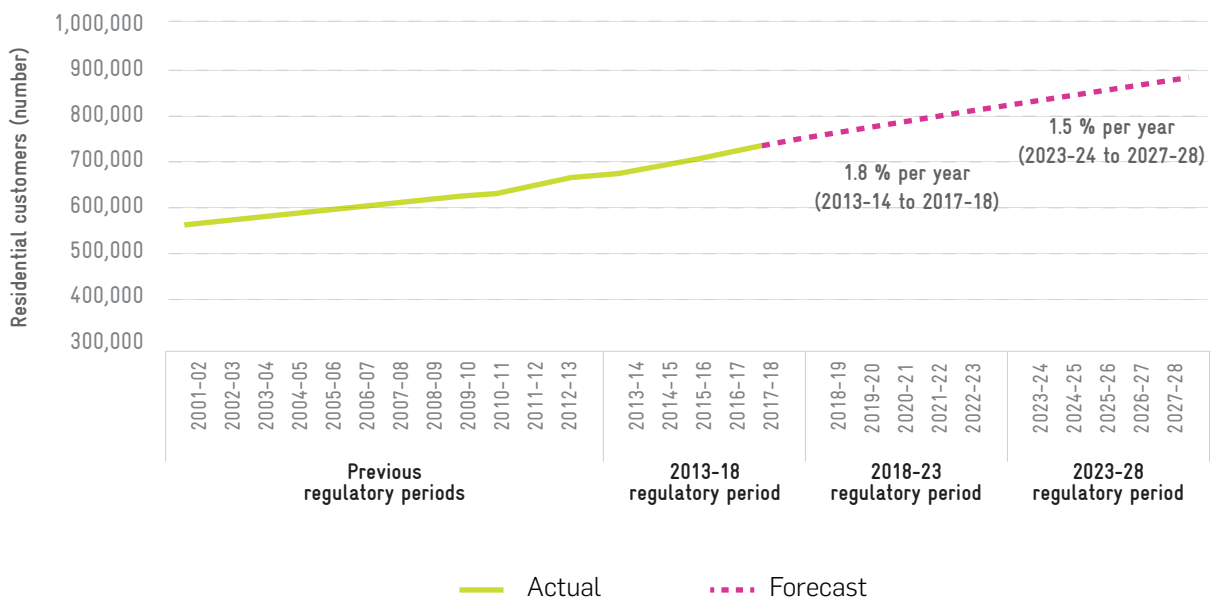
The two key demand forecasts relate to the number of customers and water usage. Customer numbers are used in calculating our benchmark operating expenditure for the next regulatory period (based on 2016-17 actual efficient operating costs less forecast annual efficiency gain plus customer growth rate) and determine the number of customers who are billed service charges and the associated revenue. Water usage volume forecasts determine our water usage and sewage disposal revenue.

7.1 GROWTH IN CUSTOMERS

Our residential water customers have grown steadily at an average rate of 2.0% per year over the last decade (2006-07 to 2016-17).

We have used the Department of Environment, Land, Water and Planning 'Victoria in Future 2016' forecasts for the growth rate in our residential customers. This publication projects population and households to grow in our area at the rate of 1.8% per year for the next regulatory period and 1.5% in the subsequent period – shown in Figure 12 below.

Figure 12 - Number of residential water customers with service agreements



The forecast for non-residential water customers has been established from the historical relationship between residential and non-residential customers and is considerably lower than residential customers at an average annual rate of 0.3% per year for period to 2027-28.

7. DEMAND FORECAST (CONTINUED)

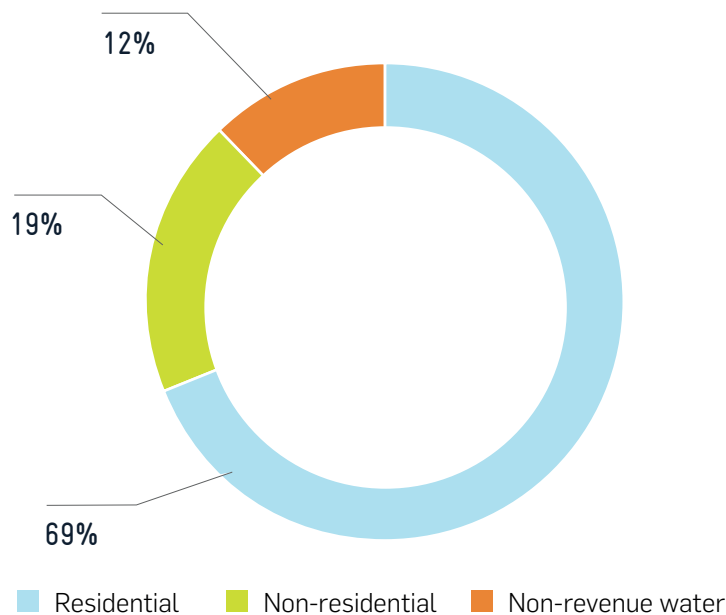
7.2 WATER CONSUMPTION

7.2.1 WATER USE

Yarra Valley Water's demand comprises residential, non-residential and non-revenue water uses with the components shown in Figure 13 below.

Residential use comprises 69% of our total water use. Non-residential water use (19%) includes water used by businesses, governments and councils. Non-revenue water (12%) is water not billed to customers because it is lost through operational losses such as leaks, used for fire-fighting or theft.

Figure 13 - Yarra Valley Water's water use by customer segment 2015-16

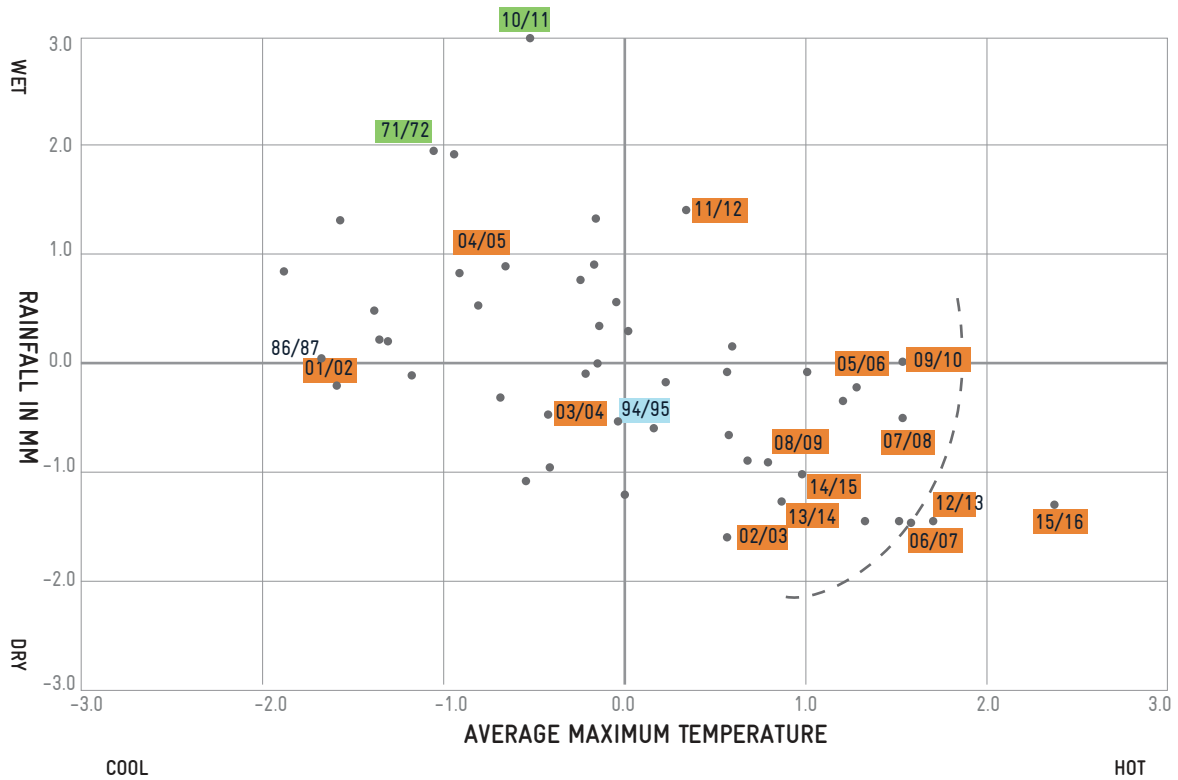


Since 2012, permanent water use rules have been in place and our water use demand forecasts take account of the continuing impact of these rules. Our water use forecasts also assume that there will be no restrictions between 2018 and 2028, which is consistent with the scenarios contained in our Urban Water Strategy. Additional desalinated water from the Victorian Desalination Plant is available to supplement our share of water from the Yarra and Thomson catchments in the event of a dry period. The additional costs for desalinated water are proposed to be passed through to our customers through the adjustment mechanism outlined in Appendix 7.

7.2.2 WEATHER IMPACTS

Weather conditions impact our demand forecasts. Figure 14 shows weather conditions for the seasonal months (October to May) compared to the average. In this chart if a year has average daily maximum temperature and rainfall it will be positioned around the origin whereas a hot and dry year will be positioned in the bottom right hand quadrant. As is evident from Figure 14, recent years (2012-13 to 2015-16) have been drier and warmer than the long-term average. For example, 2015-16 year was a particularly hot and dry which added an estimated 3.4% to demand compared to average weather conditions. Our demand forecasts are based on average conditions.

Figure 14: Maximum temperature and rainfall comparison to average (October – March) 1970 - 2016
 STANDARDISED AVG TEMP & RAIN MM FOR IRRIGATION SEASON (OCT-MAR) 70/71 TO 15/16



7.2.3 END USE MODELLING

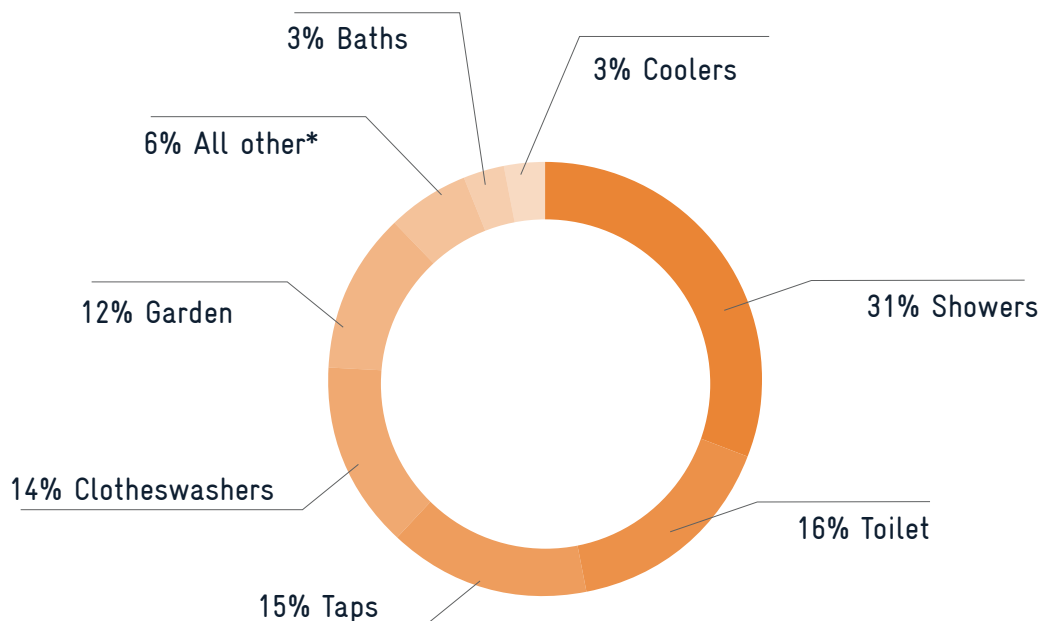
The primary methodology used for generating water use forecasts is our end-use model which uses actual data from a small representative number of households and models total residential demand for each end-use being shower, toilet, clothes washer, dishwasher, taps, evaporative cooler, irrigation and others.

End-use modelling is the preferred forecasting methodology as it provides a transparent approach in accounting for the continuously changing state of appliance efficiency. By splitting out seasonal uses from non-seasonal uses, it also has the additional benefit of providing an understanding of the considerable variation that can occur from year to year due to variable weather conditions. The same end-use modelling methodology was used in previous pricing reviews and was audited and accepted by the Commission's consultants, Frontier Economics.

The most recent survey findings incorporated into the model are those from our 2016 Appliance Stock and Usage Patterns survey which was an online survey with a sample size of 2,640 households. The model is calibrated to 2015-16 usage and the estimated end-use shares for this year are shown in Figure 15. Shower demand is the dominant end-use of water in the residential sector with 31% share followed by toilet, tap and clothes washer use which are all around the same share. Garden use is calibrated with a 12% share on a weather normalised basis but on actual data garden usage accounted for 15% of the total usage in 2015-16 with low rainfall and high average daily maximum temperatures for much of the year.

7. DEMAND FORECAST (CONTINUED)

Figure 15: Residential end-use shares (weather normalised volume)



*Other include dishwasher and pool use and In-house leakage.

7.2.4 RESIDENTIAL WATER USE

Demand forecasts consider specific drivers that impact residential demand. The three main drivers are:

- customer growth
- trends in residential property type, informed by Australian Bureau of Statistics' residential building approvals data for detached houses and 'other' dwellings
- trends in appliance efficiency using findings from appliance stock surveys.

Many other factors are also considered, such as the gradual decline in average household size, possible impacts of climate change, reduced garden size of separate-dwelling properties, water conservation programs (e.g. Target 155), pricing changes and the penetration of rainwater tanks.

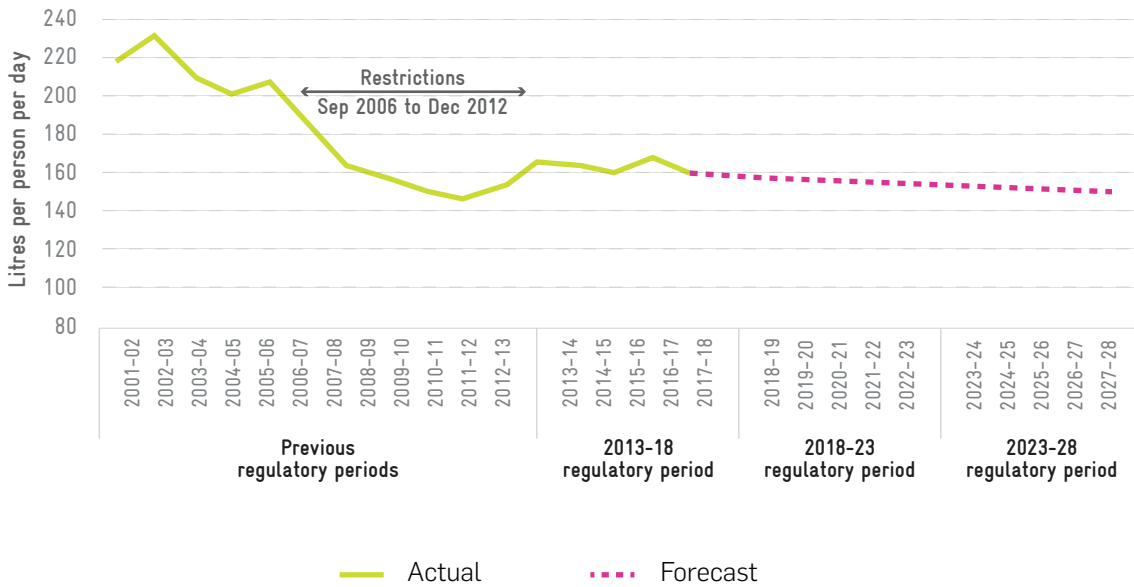
We have not included a price elasticity factor into our water use demand forecasts due to:

- our typical residential water bill not increasing in nominal terms in 2018/19 followed by annual price change of 0.7% less than inflation for the period from 2019/20 to 2022/23
- no changes being proposed to our tariff structures
- relatively inelastic demand impacts of any price changes – our recent study suggests a residential price elasticity impact of between -0.09 to -0.3⁵⁴
- other factors such as weather masking any observed price elasticity impacts.

Modelled outcomes for per person residential usage forecasts (drinking and recycled water) show a decline from the 2016-17 actual of 159 litres per person per day to 150 litres by 2027-28 as shown in Figure 16.

54 Centre for Water Policy Management at La Trobe University and Yarra Valley Water, Estimated Residential Price Elasticity of Demand for Melbourne, February 2016

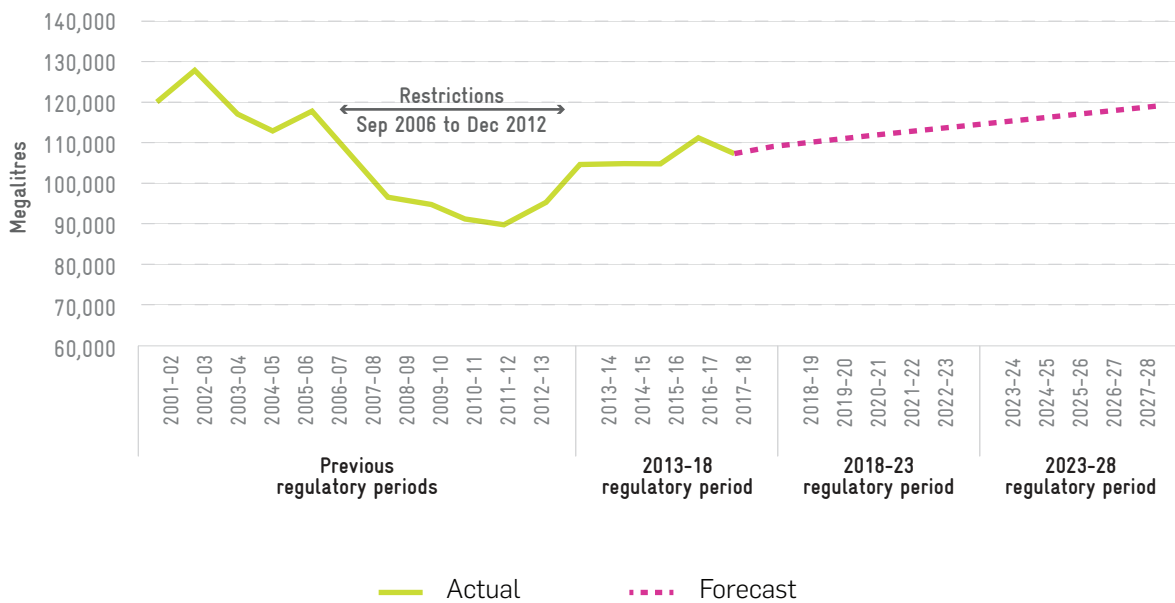
Figure 16 - Residential water use (average daily litres per person)



Residential water usage decreased by 30% between 2000-01 and 2010-11 before increasing after 2011-12 with the easing and then removal of restrictions. For the period to 2027-28, we are forecasting a reduction in average daily per person capita usage (refer above). This forecast takes account of continuing water efficiency gains through continuing in-house appliance efficiencies, reduced garden size with housing consolidation in existing urban areas and planned water conservation programs.

However, the total residential billed water use volume (potable and recycled) is forecast to grow at an average annual rate of 0.9% due to the growth in customer numbers as shown in Figure 17 below.

Figure 17 - Total residential water use (megalitres)

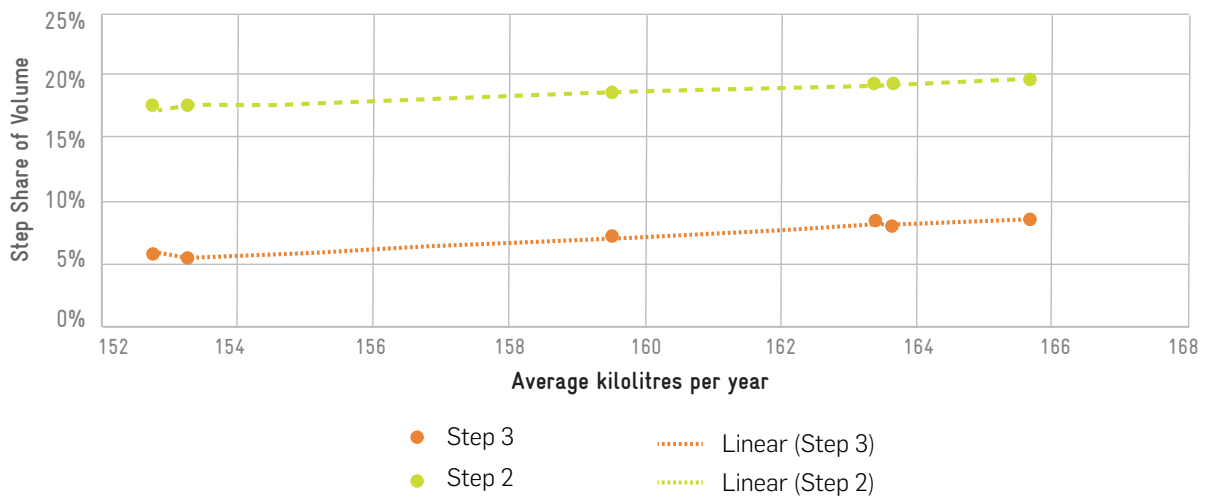


7. DEMAND FORECAST (CONTINUED)

As outlined in Chapter 8, we propose to continue with our three-step volume charge for water where the price of each step increases as higher usage thresholds are crossed. The proportion of demand that falls into each block depends on the time of the year and the relative weather conditions.

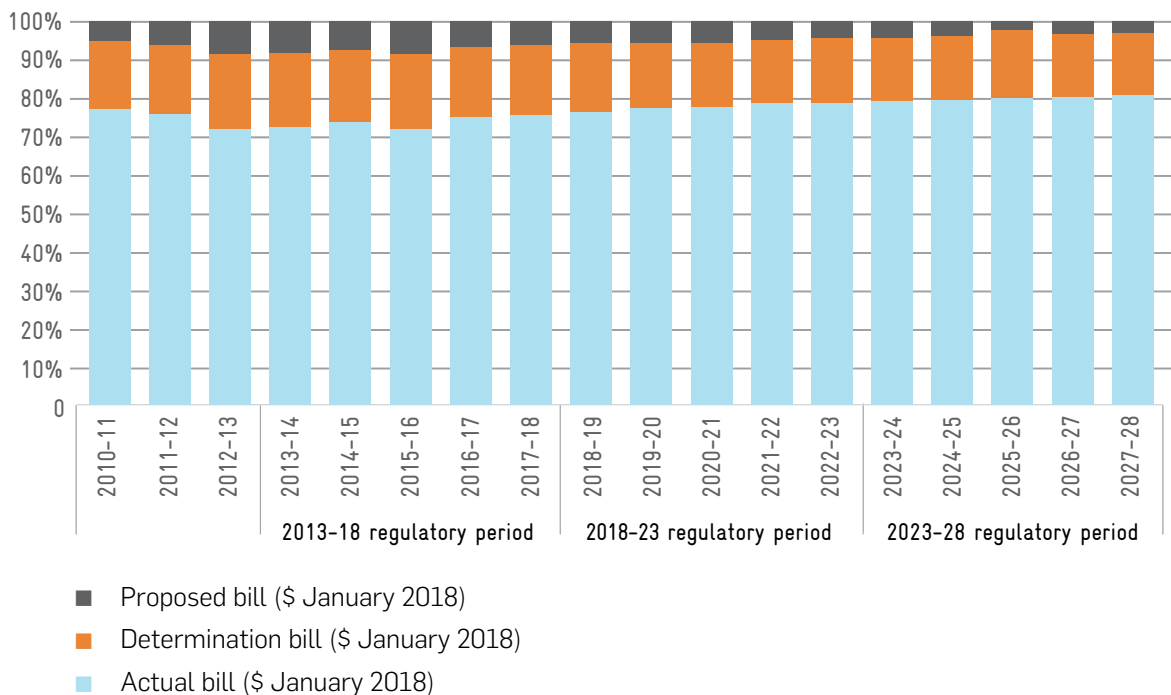
In a hot dry year, Steps 2 and 3 will have a higher proportion of demand than they would have in a cool wet year. As the forecast average usage decreases over the next two regulatory periods, there will be a declining proportion of demand in both Steps 1 and 2. The reasonably linear historical relationship between average annual demand and Steps 2 and 3 volume shares, shown in Figure 18, was used to generate the forecast step shares for the next two regulatory periods.

Figure 18: Relationship between average demand and steps 2 and 3 shares (kilolitres per year)



With the reduction in average usage, Step 2 and 3 shares are forecast to reduce to 16.1% and 3.4% respectively by 2027-28 as shown in Figure 19.

Figure 19: Forecast residential tariff step shares



7.2.5 RESIDENTIAL SEWAGE DISPOSAL VOLUMES

Customers connected to sewer receive a sewage disposal charge (SDC) which is calculated using water usage for the quarter adjusted for both seasonality and very high usage.

The methodology used to forecast total SDC volume uses estimated monthly volumes and weighted average seasonal and discharge factors, and also considers:

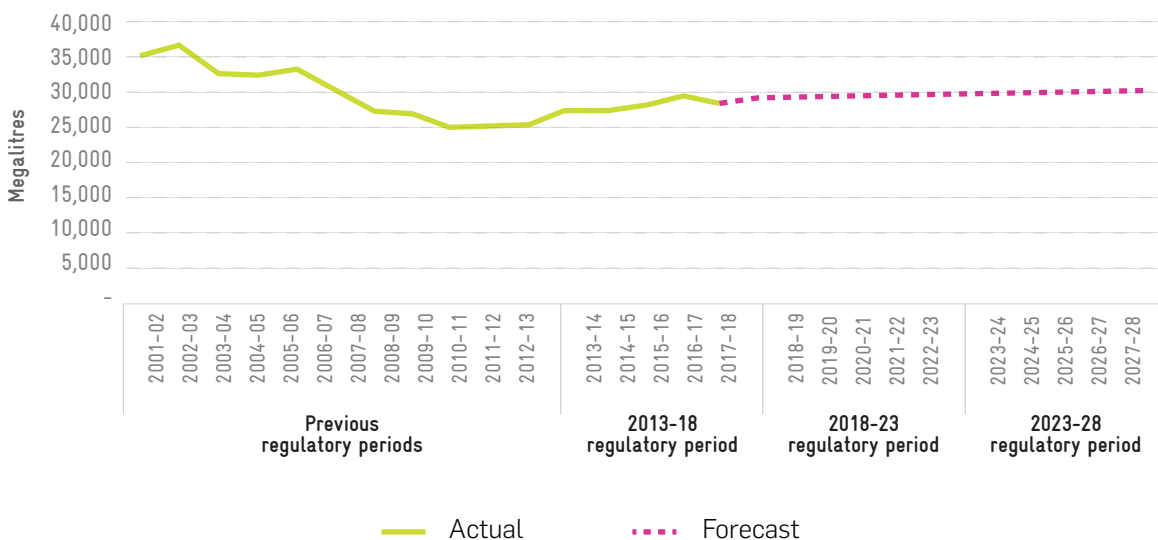
- slightly different seasonal factors in recycled water areas
- the removal of septic tanks and new customers receiving both water and sewerage services which results in an increased ratio of water customers that receive an SDC charge, from 93.8% in 2016-17 to 94.8% by 2027-28
- the increase ratio of flats to houses which increases the SDC ratio – from 68.3% to 69.4% by 2027-28.

For these reasons, the forecast SDC volume will increase at a slightly higher rate than water demand from a forecast of 73.1 gigalitres in 2016-17 to 82.8 gigalitres in 2027-28 at an average rate of 1.1% per year.

7.2.6 NON-RESIDENTIAL WATER USE

Non-residential water use is forecast by taking the key segments, such as schools, laundries and councils, and taking their historical trend in usage and adjusting for any programs that may be relevant, for example the Schools Water Efficiency Program. Non-residential demand is expected to grow at an average annual rate of 0.4% over the next two regulatory periods as shown in Figure 20 below.

Figure 20 - Non-residential water use (megalitres)



7.2.7 NON-RESIDENTIAL SEWAGE DISPOSAL VOLUMES

The SDC ratio has been steadily increasing over the past several years. This is due to the majority of new non-residential customers having a discharge factor of 0.9 (90%). As most of non-residential growth will be associated with this higher discharge factor, it is expected that the average SDC ratio will continue to increase gradually from 50.1% in 2015-16 reaching 50.9% by 2027-28.

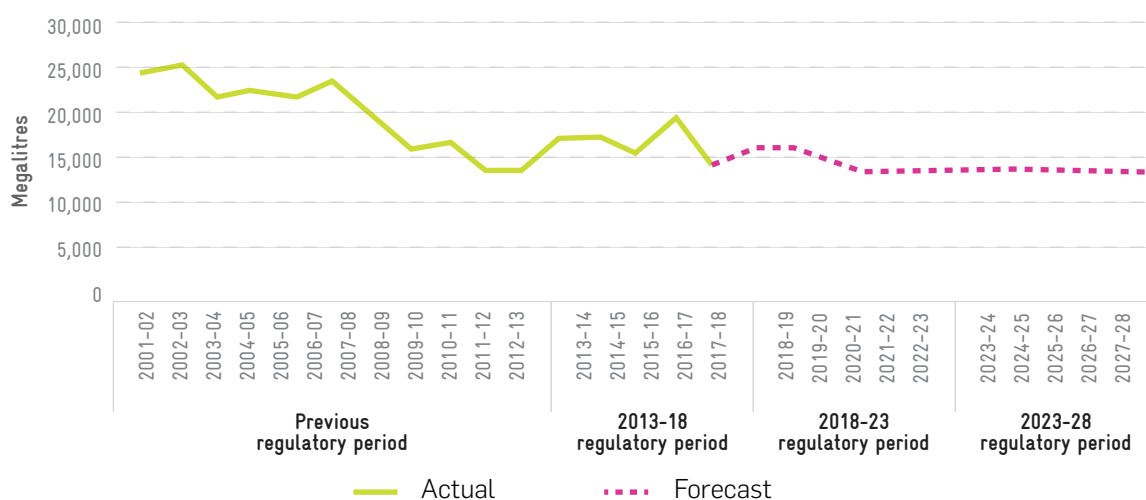
7. DEMAND FORECAST (CONTINUED)

7.2.8 NON-REVENUE WATER

The non-revenue water forecast builds in the expected savings of 2.5 gigalitres by 2022-23 associated with the zone metering program (refer to page 67) commencing in 2018-19 that will enable a more precise and timely response to leak detection and rectification. The estimated savings are in alignment with the roll out of the program and delivered by the end of 2020-21 after which it is assumed the program will enable the real losses volume to remain flat for the remainder of the outlook period.

Figure 21 below shows the trend with our non-revenue forecast over next two regulatory periods.

Figure 21- Non-revenue water (megalitres)



7.3 DEMAND FORECASTS AND EXPENDITURE FORECASTS

Our forecast controllable operating costs for the next two regulatory periods adopt our customer growth rate projections outlined in section 7.1. Forecast bulk charges and volumes from Melbourne Water are also consistent with our customer demand forecasts.

- The bulk water forecast is formulated as the following sum: Residential demand + Non-residential demand + Non revenue water + Potable water top up of the recycled water network⁵⁵ – Demand met from alternative sources (recycled water, rainwater).
- The forecast for flows to sewer is linked to the residential and non-residential water demand forecasts and takes into account historical analysis of last ten years of sewer flows including internal plumbing connections to rainwater tanks and inflow and infiltration of stormwater.
- The trade waste forecast is established in consultation with the trade waste team using the last full year's actual as the base year. The forecast is then varied for any known changes occurring over the forecast period.

The key area of our capital expenditure forecasts driven by our demand forecasts over the 2018-2028 period is our customer growth program, which has been previously outlined in section 3.3.3. Our growth development forecasts are based on:

- Victoria in the Future 2016 forecast – these have been outlined in section 7.1.
- Precinct Structure Plans.
- development projections from local developers.
- our own knowledge and experience of development in growth areas.

⁵⁵ It is assumed that one third of the flows through the recycled network will be potable water until the Wollert recycled water treatment plant comes online in 2029-30.

To further refine the timing of when assets are required in the short term (five years), we obtain from the various developers working in the growth areas their lot forecasts for each of their developments. We know from experience that developer forecasts are often optimistic. Therefore, we adjust for this based on our understanding of current and predicted lot sales. Applying this process across our varying growth areas, the aggregated result is an adjustment down to 86% of developer forecasts. We expect 14% of forecast development will not occur and, as a consequence, we reduce our overall capital expenditure allocation for 'non-key' assets by 14%. We have also adjusted overall growth capital expenditure to take into account possible deferral of projects. Overall this approach has resulted in a 21% reduction in growth related capital expenditure forecasts that reflect a more conservative rate of development.

8. PRICES AND TARIFF STRUCTURES

The overarching sentiment that is reflected in this submission is that customers have told us they do not want water bills to increase, while they value increased service levels over a bill decrease. In addition, nearly all customers say that small annual bill changes are better than a single large change.

Our proposed price path, satisfies both customer objectives by ensuring the water bills for our typical residential (using 150 kilolitres of water per year) and non-residential customers will not increase in 2018-19 (in nominal terms). In the years from 2019-20 to 2022-23, the annual price change will be 0.7% less than inflation.

In our last price submission, we explored tariff structures extensively with our customers. We also undertook joint research with South East Water and City West Water that revealed:

- Retaining the three-step inclining tariff for water usage was the most favoured option by customers.
- A lack of a strong alternative preference from customers for how we charged the Sewage Disposal Charge.

Our recent customer research including the citizens' jury did not reveal any strong or widespread support for changes in existing tariff structures – evidenced by:

- When customers were asked to what extent do you agree or disagree with the statement that "Water prices should be higher after you used a certain amount", 39% of customers either strongly agreed or agreed with the statement, 32% either slightly agreed or were indifferent and only 29% disagreed.
- The citizens' jury recommendations did not propose any changes in tariff structures, despite the information handbook detailing several questions for consideration in relation to tariff structures. However, an underlying theme from several of the citizens' jury recommendations was saving water now for the future which lends support to maintaining relatively high water volumetric charges and our inclining step tariffs. There were two minority reports which discussed tariffs but these were associated with prices rather than changes to existing tariff structures. These minority reports discussed
 - reducing the fixed and increasing the variable component of the bill
 - as water is a scarce resource, moving non-residential prices in line with residential prices.
- While customers regularly request less fixed and higher variable tariffs, our conjoint choice modelling research revealed the take up of such an offer is not as it seems. When presented with a higher variable portion of their bill (30% fixed and 70% variable charges) scenario, customer preferences decrease by 6.2%⁵⁶.
- Maintaining the structure of our tariffs reflects our commitment to considering the households financial situation and the impact significant changes may have on certainty and affordability: our research indicates that 49% of our customers have sometimes or always struggled to pay their utility bills in the last 12 months⁵⁷. We have therefore focussed more on demand management as opposed to changes in tariff structure.
- The citizens' jury recommendation 7 (refer to Appendix 1): to reduce average water use per person by rewarding people for wise water use included using price signals to achieve the reduction, with covenants for impacts on large families. We are aware that even when there has not been significant discretionary or outdoor usage some large households may have bills that include usage in steps 2 and 3. For large households having difficulty paying their bill we will introduce a process to adjust the water volumetric step charge based on the number of people in the property.

We have focused our changes to prices in 2018-19 to minimise the impact of the remove of the \$100 government water rebate. Refer to section 3.5 for further details.

56 (Source: Conjoint Analysis)

57 Nature, Customers Shaping and informing our options, P42

8. PRICES AND TARIFF STRUCTURE (CONTINUED)

8.1 MAJOR PRODUCTS AND SERVICES

8.1.1 RESIDENTIAL TARIFFS

As indicated above, we are planning few changes to our existing residential tariff structures. The current and proposed residential tariffs are:

- fixed charge for the water service
- fixed charge for the sewerage service
- fixed charge for recycled water
- three-step volume charge for water where the price of each step increases as higher usage thresholds are crossed
- volume charge for sewage, known as the sewage disposal charge
- volume charge for recycled water.

The water and recycled water volume charges are applied to the metered volume of water used by the customer with the sewage disposal charge being the estimated volume of sewage using the metered water and recycled volumes and a calculation that makes assumptions about the volume of water used for purposes that do not involve it being discharged to the sewer.

Table 47 shows our proposed residential water and sewerage tariffs and prices for 2018-19.

Table 47- Proposed residential water and sewerage tariffs and prices

TARIFF	UNIT	2017-18	2018-19	
			REAL	NOMINAL
Water fixed	per year	\$177.87	\$76.12	\$77.87
Sewerage fixed	per year	\$356.81	\$446.54	\$456.81
Recycled water fixed	per year	\$34.01	\$33.25	\$34.01
Water volume	Step 1: 0 – 440 litres (low usage) per day per kilolitre	\$2.6436	\$2.5842	\$2.6436
	Step 2: 441 – 880 litres (moderate usage) per day per kilolitre	\$3.1058	\$3.0360	\$3.1058
	Step 3: 880+ litres (high usage) per day per kilolitre	\$4.6193	\$4.5154	\$4.6193
Sewage disposal charge	per kilolitre	\$2.0487	\$1.1134	\$1.1390
Recycled water volume	per kilolitre	\$2.3191	\$2.2670	\$2.3191

8.1.2 NON-RESIDENTIAL TARIFFS

The current non-residential tariff includes:

- fixed charge for the water service
- fixed charge for the sewerage service
- fixed charge for recycled water
- single-step volume charge for water
- volume charge for sewage disposal.

We are not proposing changes to our non-residential tariffs.

Table 48 shows our proposed non-residential water and sewerage tariffs and prices for 2018-19.

Table 48 – Proposed non-residential water, sewerage and recycled water tariffs and prices

TARIFF	UNIT	2017-18	2018-19	
			REAL	NOMINAL
Water fixed	per year	\$288.72	\$282.23	\$288.72
Sewerage fixed	per year	\$555.29	\$542.81	\$555.29
Recycled water fixed	per year	\$34.01	\$33.25	\$34.01
Water volume	per kilolitre	\$2,8503	\$2,7862	\$2,8503
Sewage disposal	per kilolitre	\$2,0153	\$1,9700	\$2,0153
Recycled water volume	per kilolitre	\$2,7726	\$2,7103	\$2,7726

8.1.3 TRADE WASTE TARIFFS

Trade waste tariff comprise two components:

- volume and load charges
- annual contract fees.

Table 49 shows our proposed trade waste tariffs and prices for 2018-19.

Table 49: Proposed trade waste tariffs and prices

TARIFF	UNIT	2017-18	2018-19	
			REAL	NOMINAL
Contract fee – risk rank 1	per year	\$17,411.27	\$17,019.81	\$17,411.27
Contract fee – risk rank 2	per year	\$15,429.73	\$15,082.83	\$15,429.73
Contract fee – risk rank 3	per year	\$5,803.34	\$5,672.86	\$5,803.34
Contract fee – risk rank 4	per year	\$1,740.32	\$1,701.19	\$1,740.32
Contract fee – risk rank 5	per year	\$579.58	\$566.55	\$579.58
Health care institution bed charge	per bed per year	\$53.23	\$52.03	\$53.23
Accommodation and restaurants food waste unit ≥ 180W < 400W	per unit per year	\$1,514.17	\$1,480.13	\$1,514.17
Accommodation and restaurants food waste unit ≥ 400W < 700W	per unit per year	\$7,754.08	\$7,579.75	\$7,754.08
Accommodation and restaurants food waste unit ≥ 700W < 1,500W	per unit per year	\$15,621.38	\$15,270.17	\$15,621.38
Trade waste volume	per kilolitre	\$1.0620	\$1.0381	\$1.0620
Biochemical oxygen demand (BOD)	per kilogram	\$0.8476	\$0.8285	\$0.8476
Suspended solids (SS)	per kilogram	\$0.4933	\$0.4822	\$0.4933
Total kjeldahl nitrogen (TKN)	per kilogram	\$1.4179	\$1.3860	\$1.4179
Inorganic total dissolved solids (ITDS)	per kilogram	\$0.0353	\$0.0345	\$0.0353

8. PRICES AND TARIFF STRUCTURE (CONTINUED)

8.1.4 REVENUE INTEGRITY

We will continue initiatives to ensure we charge all customers for the services they receive through data interrogation, process mapping and audits of our systems. This work ensures our capture and maintenance of data is accurate and we are not creating situations where revenue remains unbilled or collection is inefficient. The revenue integrity projects are across both our residential and non-residential customers and include water, sewer and trade waste charges. In the 2013-2018 regulatory period, these projects identified an additional \$8.6 million of revenue. For the 2018-2023 regulatory period, we are forecasting to continue to identify an average of \$8 million per annum. This equates to a 2.3% increase in service charges in 2018-19 and 3.8% by 2021-22. This increase has not been included in the growth allowance for increasing operating expenditure.

8.1.5 NEW CUSTOMER CONTRIBUTIONS

New customer contributions (NCCs) are contributions made by developers towards the cost of providing major sewerage, water and alternative water infrastructure for new connections. The required infrastructure can be the expansion of the existing networks into the growth corridors or the augmentation of existing networks in our inner areas.

Our overarching principle is that new customer contributions should reflect the cost of providing water, sewerage and alternative water infrastructure for new connections and not be set so low that our existing customer base is subsidising development costs. Neither should it be set so high that the total revenue received from the new connections subsidises the existing customer base.

For the 2013 Determination, we modelled three areas where we proposed to introduce location specific charges that were greater than the standard charge. The models were audited by Sinclair Knight Merz on behalf of the Commission. Where the modelled contribution was much higher than the 2012-13 contribution, we proposed to transition towards the modelled contribution by increasing the combined contribution by a maximum of \$500 per annum.

We will continue to phase in increases in areas where the contributions do not yet match actual cost although at the lower rate of \$340 per annum to minimise the impact on new housing costs.

Table 50: Proposed transitioning of new customer contributions towards actual cost

COMBINED WATER, SEWERAGE AND RECYCLED WATER NEW CUSTOMER CONTRIBUTION	MODELLED CHARGE (2012-13 \$)	MODELLED CHARGE (2017-18 \$)	CURRENT CHARGE (2017-18 \$)	PROPOSED REAL INCREASE UNTIL MODELLED CHARGE ACHIEVED
New urban growth boundary	\$10,262	\$11,351	\$4,317	\$340 per annum
Greenvale / Mickleham	\$4,549	\$5,032	\$4,317	\$340 in 2018-19 and 2019-20, \$35 in 2020-21
Epping North	\$2,450	\$2,710	\$2,709	N/A modelled charge achieved

Specifically, all recycled water contributions will increase annually by inflation as will sewer and water contributions in the Standard and Epping North areas. Water and sewer contributions in the new urban growth area boundary will increase annually by inflation plus \$170. Water and sewer contributions in the Greenvale/Mickleham area will also increase annually by inflation plus \$170 until 2020-21 at which time they meet actual cost and then increase by inflation only.

We will continue to produce sequencing plans showing the extent and timing of growth assets and make them available on our website. If specific development requires assets to be provided earlier than programed, bring forward costs will be calculated and applied to a development in addition to new customer contributions.

For the next regulatory period, we will continue to use the negotiating framework supported by the Commission in the 2013 Determination.

Table 51 shows our proposed new customer contributions for 2018-19 and Table 52 our forecast growth-related capital expenditure and our new customer contributions revenue

Table 51: New customer contributions 2018-19

TARIFF	UNIT	2017-18	2018-19	
			REAL	NOMINAL
Standard				
Water	per lot	\$691.28	\$691.28	\$707.18
Sewer	per lot	\$691.28	\$691.28	\$707.18
Recycled water	per lot	\$691.28	\$691.28	\$707.18
Special charging area – new urban growth boundary				
Water	per lot	\$1,812.75	\$1,982.75	\$2,028.35
Sewer	per lot	\$1,812.75	\$1,982.75	\$2,028.35
Recycled water	per lot	\$691.28	\$691.28	\$707.18
Special charging area – Greenvale/ Mickleham				
Water	per lot	\$1,812.75	\$1,982.75	\$2,028.35
Sewer	per lot	\$1,812.75	\$1,982.75	\$2,028.35
Recycled water	per lot	\$691.28	\$691.28	\$707.18
Special charging area – Epping North				
Water	per lot	\$1,009.06	\$1,009.06	\$1,032.27
Sewer	per lot	\$1,009.06	\$1,009.06	\$1,032.27
Recycled water	per lot	\$691.28	\$691.28	\$707.18

Table 52 - Forecast growth- related expenditure and new customer contribution revenue 2017 – 2023 (\$ million January 2018)

ITEM	FORECAST					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Gifted assets	19.35	19.35	19.35	19.35	19.26	19.26
Estimated new customer contribution revenue	32.22	31.84	31.43	31.03	29.73	29.09

8.1.6 COMMUNITY SEWERAGE (BACKLOG) CUSTOMER CONTRIBUTIONS

As outlined in section 3.3.4, many homes in Melbourne were built before sewerage infrastructure was available, particularly on the urban fringe. Therefore, many homes in the northern and eastern suburbs use septic tank systems to manage their domestic wastewater. Of these systems, which are the responsibility of the owner to maintain, approximately 8,886 are not capable of meeting current environmental standards and present a risk to public health as well as the health and amenity of waterways. Every five years, in line with our Price Submission development, we work with councils to prioritise our community sewerage program to those areas where environmental and health benefits can be achieved most cost effectively.

Upon the provision of sewerage facilities, the owners of newly serviced properties are currently required to contribute \$1,618.63 (payable in quarterly instalments of \$28.24 over twenty years) towards the capital costs. In addition, property owners are required to pay for any on-property plumbing costs which may be incurred in connecting the property to the new sewerage system (including decommissioning of the existing septic tank).

For the community to gain the optimal economic and environmental benefits from these investments, we will continue our current practice of encouraging customers to connect to the sewerage system as soon as possible after a connection point is provided. We waive the contribution if the property owner connects within 12 months of the connection point being made available and also waiver the contribution to encourage connection where take-up rates are low.

8. PRICES AND TARIFF STRUCTURE (CONTINUED)

8.2 ADDITIONAL PRODUCTS AND SERVICES

The Commission has indicated that pricing principles be used for miscellaneous charges.

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 charges, this helps reduce the price for the wider customer base.

Our prices have been informed by:

- our commitment to protect vulnerable customers
- our customer service charter and commitments
- the degree of choice that would be available to customers in regard to the product or service charge
- common business practice both in the community and the water industry
- customer and stakeholder feedback.

Our significant miscellaneous fees and charges for the 2018-23 Price Submission period are shown in Table 53.

Table 53: Significant miscellaneous fees and charges

TARIFF AND PRICE COMPONENT	PROPOSED PRICE (1 JULY 2018)	PRICE INCREASE (1 JULY 2019)	PRICE INCREASE (1 JULY 2020)	PRICE INCREASE (1 JULY 2021)	PRICE INCREASE (1 JULY 2022)
New estate connection - drinking water (includes supply and installation of meter and meter lock)	414.38	0%	0%	0%	0%
New estate connection - combo drinking water and recycled water (includes supply and installation of meters and meter locks)	769.01	0%	0%	0%	0%
Complete connection supplement (Long)	1,836.98	0%	0%	0%	0%
Complete connection supplement (Short)	1,183.25	0%	0%	0%	0%
Standard meter and Install drinking water (includes supply and installation of meter lock)	235.36	0%	0%	0%	0%
Remote supplement	369.80	0%	0%	0%	0%
Recycled water audit Fee (includes GST)	374.50	0%	0%	0%	0%
Multi-unit 3 - 19 lot development application	666.14	0%	0%	0%	0%
Information statement	21.72	0%	0%	0%	0%
Asset protection charge	548.81	0%	0%	0%	0%
Non-core miscellaneous services	Actual cost	Actual cost	Actual cost	Actual cost	Actual cost

APPENDIX

APPENDIX 1

CITIZENS' JURY RECOMMENDATIONS

Yarra Valley Water
Price Submission Review
Jury Report

2017

Introduction

The citizens jury has come together for 40 hours over a three month period. The jurors of diverse backgrounds were representative of the YVW customer base. We considered information that was presented by YVW, external speakers and data specifically requested by the jury. The information was distilled into the recommendations presented below.

Fair for Everyone Criteria

We were asked to consider the demographics of the YVW community.

We brought to the jury our own circumstances and were asked to consider others and their differing circumstances.

We were asked to consider what issues might be addressed to create the definition of fairness for the representative demographics.

We were supported through a series of guest speakers to further add content to our understanding for considerations of fairness.

Utilising the process of fairness, the group applied the rule of 80% support as acceptance of a recommendation.

The list below was used as the defining parameters of fairness for the recommendations as to whether their application was worth carrying to YVW.

Criteria Heading	Criteria Description - What this means we look for
Equitable consideration for all customers	<p>A price that is acceptable to the majority of citizens jury as a representation of YVW customers.</p> <p>Minimising the impact on customers to which the price might be considered adversely unfair.</p> <p>Support those customers that might be disadvantaged by those pricing decisions.</p>
Understanding others and considering alternatives	<p>When we make a recommendation, we think about alternative points of view and different needs and expectations of diverse groups of people within the community. We also think about how the decision could impact people in different ways. We should consider the impact on individuals, local communities and society as whole.</p> <p>Free from individual and organisational bias.</p> <p>Capture and document these considerations and the rationale compared to these dimensions.</p>
Visibility	The process/framework are visible, transparent and documented.
Rationale	The rationale behind decisions are documented.
Information Availability	This information is made available to YVW Customers

Price & Payment Structure	<p>A system that is affordable and accessible to all, supported by mechanisms that recognize different circumstances require different structures.</p> <p>Minimising the impact on vulnerable customers to which the price might be considered unfair.</p>
Payment options	The provision of multiple varied options in aspect of payment types payment durations
Providing customer choice	<p>Providing each customer a choice to suit their needs.</p> <p>For example:</p> <ol style="list-style-type: none"> 1. Means by which customer could reduce water consumption (low flow shower heads) 2. Access to recycled water 3. Ability to come off the network (ie. use their own water tank only) 4. Payment option - level monthly payments 5. Ability to use a septic tank rather than mains sewer (modern version which doesn't affect environment)
Pricing transparency	<p>Is the price based on the real costs?</p> <p>Can the price be broken down into its various components?</p>
Re-investment of Revenue	Profits received for "water service" need to be re-invested (with accountability) to ensure the system of water delivery is sustainable for the foreseeable future.
Consistency of Service	Same standard of service should be available to every customer with the same service area.

Jury Recommendations

Over a period of five days of eight hours, spread over three months, twenty-nine people (initially thirty-five) deliberated on behalf of the 2.1 million customers of Yarra Valley Water over what is a balance between price and services that is 'fair for everyone'.

We used various methods to discern our personalities and biases over the concept. We started in small groups which then combined to make bigger groups and began to define what 'fair for everyone was'.

Once we had our 'fair for everyone' criteria defined, we would then use it to test our recommendations. The guidelines that were imposed is that unanimous outcome (100%) was the goal but in case of deadlock a consensus of 80% was an acceptable outcome.

Of twenty-one recommendations these were whittled down to ten with three minority reports and these are what you'll find below.

Idea/Recommendation 1

Idea/Recommendation:

Targeted Research & Development to reduce maintenance costs, self repair infrastructure and prevent leakage to secure future water supply.

Objective this relates to:

Re-investment of revenue in R&D to ensure sufficient water supplies for the future, whilst reducing short and long-term costs and delivering services with minimal interruption.

How will this achieve your 'fair for everyone' criteria:

Ensures investment is protected and maintained to expand its useful life. Supports multi-generational asset utilisation for adequate water service supply. Spending the money now, to ensure a sustainable water resource tomorrow.

Suggested changes to the service level: More/Less/Same

We recommend maintaining existing service levels, however, if Yarra Valley Water consider that inadequate, then we in agreement support a possible increase to R&D spend to supplement any shortfalls.

Make sure there is, however, a minimum benchmark to direct funds to meet the needs for future supply and new asset innovations.

We recommend that YVW make the process transparent and potentially under a Creative Commons licencing (for RD on innovation) to potentially drive community innovations.

Rationale or Reasoning:

Finding innovations to build a cheaper network, more efficiently and cost effectively.

More efficient means of getting recycled water from the source (treatment plant - catchment wide or localised) to the user at lower costs and lower overheads relating to maintenance and assets.

Research initiatives needs to keep pace with climate change impacts and population growth to ensure efficient and uninterrupted water supply.

Idea/Recommendation 2

<p>Idea/Recommendation: Preventative Maintenance to reduce Network Water Loss</p>
<p>Objective this relates to:</p> <ul style="list-style-type: none">● Minimising inconvenience caused by interruptions to water and sewerage services.● Charging customers fairly (by reducing the cost of water loss).● Guaranteed Service Levels.
<p>How will this achieve your 'fair for everyone' criteria: Spending money in the short term to prevent water wastage, pre-emptive replacement of infrastructure, and enabling use of recycled water, green measures</p> <p>This ensures a robust network that should require little on-going maintenance.</p>
<p>Suggested changes to the service level: More/Less/Same We recommend an increase to service levels. More active detection programs & preventative fixes of problems to infrastructure supply.</p>
<p>Rationale or Reasoning: Proactive maintenance before being forced into reactive, high cost resolutions.</p> <p>Ensuring the technology and preventative maintenance are deployed to;</p> <ul style="list-style-type: none">● Detect leaks● Prevent over use● Optimise current operational cost

Idea/Recommendation 3

Idea/Recommendation:

Access to two sources of water of different qualities;

1. High quality water used for drinking
2. Lower quality water used for toilet flushing, washing clothes, gardening etc

Objective this relates to:

1. Delivering high quality safe, clean drinking water
2. Reduce the amount of water being taken from our water catchments
3. Establishing the path for future development for water re-use as a priority in structural planning

How will this achieve your 'fair for everyone' criteria:

When customers have both high quality water for consumption, and lower quality water for everything else this allows for:

- multiple usage of water, rather than currently being used once
- Less water being taken from the dams/ reservoirs for non drinking purposes.
- Preservation of water resources for long term benefit
- Preservation of highest quality water for health / drinking purposes

Have a cost effective plan to introduce an alternate water source for different water qualities to existing, urbanised neighbourhoods. A structured long term phased approach for investment burden shared by developers, consumers, YVW.

A greater burden in the short term by those that will directly benefit from access to recycled water.

Suggested changes to the service level: More/Less/Same

Continue investment into new development / homes for recycled water facilities. YVW would need to look at how to get recycled water to the existing houses.

Synchronise implementation with the ongoing maintenance of the growing system / network.

Maintain current practices for new developments.

Rationale or Reasoning:

Preserving and safeguarding our precious water as a finite resource acknowledge responsibility towards future generations and our critical dependence on water.

YVW should work towards a future objective of the majority of customers have access to alternative qualities of water.

Idea/Recommendation 4

<p>Idea/Recommendation: Further enhance welfare education and services to support vulnerable (concession, pensioners, hardship) customers. By increasing the education and support, more people will be aware of the options available to them so that they can pay their bills.</p> <p>The more people that are able to pay their bills, means less money spent on cost recovery activities. Educating customers on the options available will also reduce the level of bad debt that is written off and therefore never collected.</p>
<p>Objective this relates to: Charging customers fairly</p>
<p>How will this achieve your 'fair for everyone' criteria: Reducing the number of people who struggle or cannot afford to pay their bill. This means less money spent on debt recovery and debt services.</p>
<p>Suggested changes to the service level: More/Less/Same Partnering with other welfare agencies (centrelink, DHHS, child care facilities, Electricity etc) to actively promote awareness of support for vulnerable customers.</p>
<p>Rationale or Reasoning: With more people able to pay their bills, will result in increased revenue and the ability for YVW to invest back into the business.</p>

Idea/Recommendation 5

<p>Idea/Recommendation: Installation of Digital Meters for all customers (when technologically available and when cost increase to be capped at \$12.50/year) to help change user behaviour and protect our natural resource.</p>
<p>Objective this relates to: Fair for all customers -</p> <ul style="list-style-type: none">• Assist customers with real time information to avoid higher bills so they can

become aware of their usage behavior

- Helps YVW assist and alert customers when they have a leak in the house
- Helps YVW identify leakages in the network, which will protect our valuable resource and save costs.
- Helps YVW forecast usage and possibly implement peak and off-peak pricing to reduce network stress

How will this achieve your 'fair for everyone' criteria:

Payment Options - mechanism which allows pay-as-you-go. Co-Share costs.

Equitable Consideration - Minimise impact on vulnerable customers by giving 'high bill notification'

YVW should not aim for this opportunity to be cost neutral. Example saving from reduction of rebates could be used.

Suggested changes to the service level: More/Less/Same

We want Yarra Valley Water to look at investment for updating existing meter systems, when economically and technologically feasible.

All new developments (greenfield and redevelopments) to have Digital Meters installed, cost to be charged to developer.

Rationale or Reasoning:

Will help customers see how much they've used as they go - gives control to the customers

Provides 'High Bill Notification' similar to mobile phones

Notifies customers of a leak

- Immediate response rather than seeing impact on next bill
- reduces wasted water and reduces customer bills

Provides each household an ability to check their daily water use per person

From YVW Input - it will cost \$100(supply/install) of each digital meter for water. it will cost \$1000(supply/install) of each digital meter for sewerage. The business case for water digital meter stacks up.

Idea/Recommendation 6

Idea/Recommendation: Price discount incentive for electronic bills and direct debit
Objective this relates to: <ul style="list-style-type: none">- Invoicing and payment programs that recognize different customer needs- Customer flexibility and choice in the way they receive their bills and make payment of the bill- Customer has the ability / choice to access a lower net cost on their bill- Lower cost for invoicing administration for YVW leading to lower costs of water supply for everyone- Environmentally friendly methods to receive your bill / minimising carbon emissions
How will this achieve your 'fair for everyone' criteria: <ul style="list-style-type: none">- Customer to be made aware of invoicing & payment options available with the ability choose- Customers are made aware of the risks and benefits of each option- Supported by mechanisms that recognise different circumstances that require different structures- Direct debit has the potential to help Yarra Valley Water retain more revenue because of bills being paid on time. Money that would normally be spent on debt collecting can be used assisting people in hardship and be put into more futuristic environmental endeavours
Suggested changes to the service level: More/Less/Same <ul style="list-style-type: none">- More (optional) direct debit- Less paper bills- Payment options to include charging a respective fee if the customer chooses a paper option
Rationale or Reasoning: <ul style="list-style-type: none">- Customer flexibility- Lower cost of YVW administration- Environmental impact (as it has been well established) that having paper bills has as opposed to electronic bills- There could be a propensity of more human error when it comes to the paper/postal method than the electronic method. Most bills are auto generated

Idea/Recommendation 7

<p>Idea/Recommendation: Reduce average water use per person by rewarding people for wise water use.</p>
<p>Objective this relates to: Using water sensibly. Protecting future water supply.</p>
<p>How will this achieve your 'fair for everyone' criteria: Gives people the freedom to forge their own water use patterns. Provides customer choice Pricing information readily available and transparent. Consistent and focused target, reducing use by all. Efficient use of water equates to less water use and less pressure on infrastructure. This should lower costs for YVW and their customers.</p>
<p>Suggested changes to the service level: More/Less/Same More education which can be achieved partly through Recommendation 10 - Increase education and awareness More availability and distribution of recycled water Encourage more water tanks to reduce use of supplied, metered water (potable water). i.e. cost saving opportunity for using your own water. More technology would help achieve this aim (ie digital meters) Encourage water saving measures by increasing the difference in the price of the step tariffs to encourage greater adoption of wise water use. Price signals could be used to do this with covenants for impact on large families More support for those unable to reduce their usage due to circumstances (ie can't afford water tanks etc)</p>
<p>Rationale or Reasoning: Current average is 165L/per head/per day, not sustainable with expected population growth. YVW are projecting a use of 127L/per head/per day by 2030 which is to be encouraged. Many have expressed lack of knowledge regarding rebates/waterwise shower etc., therefore encourage better education and advertising of available services. Better technology and communication will give customers a better understanding of their water usage patterns.</p>

Idea/Recommendation 8

<p>Idea/Recommendation: To delete rebates paid to Customers for short term disruption of water supply (4 hours). Rebates of \$100 to be paid for long term disruptions (<i>more than 12 hours</i>) Repeat failures (<i>more than twice in one year</i>) should be compensated. (Rebate amount not specified and water /sewage not specified). Continue rebates of \$1000 for sewage spills.</p>
<p>Objective this relates to: Fair for all customers: Objective 5 Guaranteed service levels</p>
<p>How will this achieve your 'fair for everyone' criteria: One plan for all customers, equitable treatment. Provides a consistent service delivery. Provide a choice option for longer disruptions.</p>
<p>Suggested changes to the service level: More/Less/Same No rebates for one-off supply disruptions. Rebates for frequent disruptions (<i>more than twice in one year</i>). Keep rebates for sewage spills.</p>
<p>Rationale or Reasoning: People can cope for a short period without water, no need to compensate with money.</p>

Idea/Recommendation 9

<p>Idea/Recommendation: Investigate and pursue community based solutions for localised needs</p>
<p>Objective this relates to: Protecting Environment & Community Care and protection of the environment Objective 2 - ensuring waterways are protected</p>

Objective 3 - providing modern wastewater systems (community sewerage)
Objective 4 - using water sensibly and ensuring sufficient water supplies for the future

How will this achieve your 'fair for everyone' criteria:

By supporting public events and schools within different communities, you're educating people about respecting how they use water and not to take this for granted.

Reduces the amount of water going into stormwater drains, and the subsequent stress placed on creeks and water ecosystems.

Ensures the amount of water consumed from the dams is viable and sustainable

Allows communities to be at the forefront of water usage, consumption and addressing local community based issues

Enabling communities to become self sufficient and a smart city means less costs to transport water, treat waste and consume recyclables

By creating local community services will mean sustainable water supplies intergenerationally

Suggested changes to the service level: More/Less/Same

Rationale or Reasoning:

Decentralising water sources and systems and achieving local community engagement.

Idea/Recommendation 10

Idea/Recommendation:

Increase education and awareness

Objective this relates to:

Bill payment education: ie - Assist customers to avoid paying higher bills than they have to by giving them means to better understand the bill. Provide clear and concise instructions. Ensuring that they know that there is assistance for them.

Educate customers in everyday water saving techniques and strategies to reduce water consumption.

Educate them about the techniques used by YVW to care and protect the

environment. ie waterways, (and the importance of these activities for society.)

Inform customers of the importance of using water sensibly and thus helping ensure sufficient water supplies for the future.

Educate vulnerable customers about support systems that are in place to help them pay their bills.

Have YVW provide clear information on what their plans and strategies for the future ie, investment decisions, future and planned technologies and solutions.

How will this achieve your 'fair for everyone' criteria:

By understanding the bill, how water is produced and the costs of producing water people are better educated in the justification of the price.

Most customers aren't aware of support available to them when in financial difficulty. Need to increase the education and awareness across all topics, as this will have a long lasting reduction in cost to serve.

Education allows for everyone to have access to reducing the cost of water supplies and consumption, as well as supporting vulnerable customers.

If a customer is better educated the overall process benefits, because it starts and ends with a customer. For example, if a customer is aware of all support available when in financial stress they are less likely to not pay their bill. Another example is if a customer is educated on how to reduce water consumption, which in turn reduces their bill, they're more likely to do it.

Suggested changes to the service level: More/Less/Same

Better explain the components that make up the bill - the breakdown of the actual cost and where the component goes. This will provide clarification and justification for fixed bill costs.

Provide centrelink, pensioners card, DHHS, welfare agencies etc with information/ services available to customers in financial stress. Place notifications on bill/ online/ statement inserts about support services.

Based on customer billing analysis (patterns and customers data) YVW would be able to future predict who might be in trouble. YVW could contact a customer to ask if they need support, and or provide targeted mail offering support service.

Provide education and awareness of what YVW is looking to implement in the future and the rationale behind the decision.

Rationale or Reasoning:

By being exposed to the story behind water on the citizens jury, has opened our eyes to how much the average water user doesn't know, and could greatly benefit from the education.

Minority Reports

No. 1

Heading: YVW to increase investment in the health of waterways and other environmental projects

Rationale: (A few sentences).

The original recommendation (an additional \$2 - \$8 charge to the bill annually) was not accepted due to a portion of the group believing that it was not part of YVW's core business and it was a non negotiable regressive cost to the consumer.

As a minority, we still believe this is important and should be mentioned because it protects YVW's primary resource. It also heightens YVW's image by increasing their involvement with the community, good public relations exercise

We would like this report to emphasise local funding for local projects that benefit the whole of the community

We think the concerns around the charge being regressive could be mitigated by concession card holders being exempt

No. 2

Heading: To reduce the fix component of the bill and increase the variable or usage component

Rationale: (A few sentences).

A minority (less than 80%) of the group supported this recommendation. We felt this was important because it would:

- Give people more control over their bill (by being able to vary their usage)
- Discourage excess water usage
- Be more fair for smaller households

We think that this recommendation was not supported due to the potential negative impacts on larger households. We think it should therefore be considered with additional safeguards for these families.

No. 3

Heading: More equitable prices between business and residential customers

Rationale: (A few sentences).

A minority group of the jury (< 80%) thought that there needed to be a greater equity between the revenue received from business and residential customer segments and that this should reflect the amount of water consumed by these segments.

Currently non-residential customers consume 21% of billed water and contribute only 17% of the revenue. To 'reduce the gap' between residential and non-residential charges, we recommend that a gradual adjustment to rates be made until revenue parity is achieved.

This is an important recommendation as the value of water as a scarce resource would be more recognised by Business users and priced accordingly.

The original idea was endorsed by over 75% of the jury, however, after much deliberation, nothing could be done to improve the idea to achieve the consensus mark. The main point of contention was concern around impact to businesses, particular if it would force businesses to close or move. We believe the gradual approach documented above would alleviate these impacts.

APPENDIX 2

RESPONSE TO CITIZENS' JURY RECOMMENDATIONS

YARRA VALLEY WATER CITIZENS' JURY OUR RESPONSE TO THE RECOMMENDATIONS



Every five years all water utilities in Victoria undergo a Water Price Review run by the Essential Services Commission (The Commission). Our price submission proposal aims to establish the services that our customers want at what they determine is the right price.

We have been listening to feedback and ideas for our services using a range of methods and processes to establish an understanding of what our customers value. In the lead up to our Citizens' Jury, Yarra Valley Water consulted widely with our customers to understand what they valued from their water and sanitation service.

What emerged from our research and consultation were four areas that customers told us they valued most. We defined these as the four outcomes:



QUALITY
WATER
SERVICES



RELIABLE
AND TIMELY
SERVICE



FAIR
FOR ALL
CUSTOMERS



CARE AND
PROTECTION OF
THE ENVIRONMENT

Over the duration of five, eight hour days across three months, the Jury considered the insights from our customer research and engagement, heard from speakers chosen and elected by our stakeholders and the Jury, read submissions made by the public, and deliberated over the content provided through these sources, and through the original information pack.

The Jury completed its deliberation and presented its report and recommendations to Yarra Valley Water's Chair and Managing Director in response to the remit:

WE NEED TO FIND A BALANCE BETWEEN PRICE AND SERVICE WHICH IS FAIR FOR EVERYONE

HOW SHOULD WE DO THIS?

We have summarised the Jury's criteria for assessing 'fair for everyone' and identified the following guiding principles:

- Equitable (in terms of price impact and service access)
- Representative (consideration given to all groups)
- Transparent and visible (in relation to information and pricing)
- Affordable (affordable service and support for those who need help)
- Flexible and responsive (provides choice and meets differing needs)
- Consistent service standards (for customers within the same service area)
- Sustainable over the long-term (reinvestment)

We have identified five significant underlying themes that emerged from the Jury's deliberations and have summarised them as follows:

- Assist vulnerable customers
- Ensure drinking water supply for the future, through leakage reduction, digital metering, alternative water supply options and water conservation
- Target efficiency and research to reduce costs and pass on benefits
- Protect the environment
- Use communication and education mechanisms to enhance the achievement of the above objectives

We have considered the Jury's recommendations along with its rationale for providing them. We have noted the 'fair for everyone', criterion and summarised the themes or objectives which underlie the Jury's recommendations, as outlined in its report. We have responded to the Jury's recommendations below and we have also tried to understand the sentiment behind the Jury's recommendations so we can focus our business efforts overall to deliver better value. Reflecting on our insights we have identified:

- a distinction between core service and community based outcomes
- water is a scarce and valuable resource – customers prioritise conserving water for the future

To better reflect these insights, we evolved the four outcomes to seven, to reflect what we now understand our customers expect and value.

Yarra Valley Water would like to extend our thanks and express our great appreciation to the members of our Citizens' Jury for committing their time and boundless energy to the task before them. We are grateful for their contribution.

Core service outcomes:



Water that is safe to drink



Water and sewerage services that I can rely on

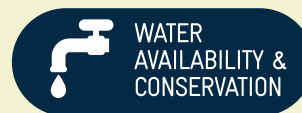


Fast response and effective restoration of my service when it is interrupted

Community focused outcomes:



Support for customers having difficulty paying their bill



Saving water now so it's available in the future



Modern, flexible service and advice that suits my needs



Looking after the environment

Yarra Valley Water will pursue all ten of the Citizens' Jury recommendations. Eight of the recommendations will be fully adopted with some minor variations to the remaining two. The table below provides our response to the recommendations and the commitments we will make.

OUTCOME	THE CITIZENS' JURY SAID....	WHAT WE'VE UNDERSTOOD
 RELIABLE WATER & SEWERAGE SERVICES		
RELIABLE WATER AND SEWERAGE SERVICES	<p>Recommendation 1.</p> <p>Targeted research and development to reduce maintenance costs, self-repair infrastructure and prevent leakage to secure future water supply</p>	<p>To keep pace with climate change impacts and population growth to ensure efficient and uninterrupted water, the Citizens' Jury expects us to continue to undertake research and development initiatives with a focus on:</p> <ul style="list-style-type: none"> ensuring sufficient water supplies for the future reducing short and long term costs delivering services with minimal interruptions. <p>The Citizens' Jury has recommended that YVW maintain existing service levels although have expressed their support for potential spending increases for research and development to ensure objectives around future supply and new asset innovations are achieved.</p> <p>The Jury has recommended we make our research and development process transparent to potentially drive community innovations.</p>
 FAIR ACCESS & ASSISTANCE FOR ALL		
FAIR ACCESS AND ASSISTANCE FOR ALL	<p>Recommendation 4.</p> <p>Further enhance welfare education and services to support vulnerable customers (concession, pensioners, hardship)</p>	<p>The Citizens' Jury supports an increase in education and support programs being offered to customers having difficulty paying their bill. By increasing the education and support, more people will be aware of the options available to them so that they can pay their bills. YVW should maximise our partnership with external welfare agencies for the delivery of these services.</p>

We have additionally included performance measures which we will use to monitor our performance in the achievement of our commitments and we will report on our progress against delivering those for the duration of the 2018-2023 price period.

WHAT YARRA VALLEY WATER WILL DO

PERFORMANCE COMMITMENT



RELIABLE WATER & SEWERAGE SERVICES

YVW accepts the Citizens' Jury recommendation.

For the pricing period, we will invest in research and development opportunities and will spend around 0.2% of revenue on research and development each year which is approximately \$2 million. This includes spending approximately \$850,000 per year on asset related research and development.

For the pricing period, the research and development program will focus on the following innovation areas identified by the Citizens' Jury:

- ensuring sufficient water supplies for the future
- reducing short and long term costs
- delivering services with minimal interruptions.

We will continue to achieve efficiencies in our research program by pursuing larger exposure to industry wide research at lower costs through Water Services Association of Australia, VicWater's Intelligent Water Network Program and other research and development organisations.

In relation to self-repairing infrastructure, YVW will continue to monitor the development and suitability of any technology over the pricing period.

We make the following commitment:

We will report annually the research, develop and innovation program undertaken to deliver on the Citizens' Jury recommendation.

We will target asset related innovations and focus on the following objectives:

- ensuring sufficient water supplies for the future
- reducing short and long term costs
- delivering services with minimal interruptions.



FAIR ACCESS & ASSISTANCE FOR ALL

YVW accepts the Citizens' Jury recommendation.

We will increase the investment in our education, awareness and support programs by an additional \$6 million over five years to increase the number of people (cumulative total of 150,000) who are aware of the services available for those having difficulty paying their bills.

We will:

- have additional staff to work more closely with at risk communities and their community advocate organisations in developing programs, outreach and communication materials for the wider customer base
- run targeted education campaigns to address specific issues such as the support available to customers impacted by family violence, medical health issues, mental health, disability etc
- create additional educational and communications materials about our WaterCare program to ensure customers can be aware, access and understand the support they can have access to, if in need
- increase the accessibility of our education material that includes: Aboriginal communities, multiple languages, large print, simple English and animations.

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We make the following commitments:

To support customers who face barriers accessing our services we will extend our WaterCare program to reach 150,000 customers (cumulative total).

To protect customers who may not have a capacity to pay, we will not restrict water supply without first ascertaining ability to pay.

We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome:

- % of customers who have experienced difficulty paying for essential water and sewerage services say that they are satisfied with the assistance they have received
- % customers are confident that we will look after customers experiencing difficulty paying for essential water and sewerage services
- number of customers who have accessed our support services.

Continued on next page...

OUTCOME

THE CITIZENS'
JURY SAID....

WHAT WE'VE UNDERSTOOD



FAIR ACCESS
& ASSISTANCE
FOR ALL

FAIR ACCESS
AND ASSISTANCE
FOR ALL

Recommendation 4.

Continued



FAIR ACCESS & ASSISTANCE FOR ALL

- train community outreach officers to increase visibility of support by attending Community Events to promote the WaterCare service offering and through working with trusted community organisations such as financial counsellors, maternal health centres, Centrelink, multicultural services, domestic violence centres
- increase support through several of our community partners such as front-line support agencies, including financial counsellors, family violence workers etc. to ensure customers are being referred to the appropriate support agencies.

We will undertake these actions, activities and programs to deliver the customer outcome:

We will continue to:

- provide hardship and vulnerability programs for customers who are unable to pay
- provide programs for customers that have difficulty accessing our services, including Culturally and Linguistically Diverse communities
- partner with other organisations to ensure customers can access support services more broadly
- provide customers with a variety of payment options that suit their circumstances.



MODERN FLEXIBLE CUSTOMER SERVICE

Recommendation 5.

Installation of digital meters for all customers to help change behaviour and protect our natural resource

The Citizens' Jury supports the implementation of digital meters when the technology is available and any bill increase is capped at \$12.50 per annum.

MODERN FLEXIBLE CUSTOMER SERVICE

Recommendation 6.

Price discount incentive for electronic bills and direct debit

The Citizens' Jury would like us to reduce the costs and environmental impact of paper bills and pass on savings to the individual customers adopting e-billing and direct debit.

MODERN FLEXIBLE CUSTOMER SERVICE

Recommendation 8.

- To delete rebates paid for short term disruption of water supply (4 hours)
- Rebates of \$100 to be paid long term disruptions (longer than 12 hours)
- Repeat failures (more than twice in one year) should be compensated
- Continue rebates of \$1,000 for sewage spills

The Citizens' Jury would like to see the following changes to Guaranteed Service Levels (GSLs):

- delete rebates paid for short term disruption of water supply (4 hours)
- rebates of \$100 to be paid long term disruptions (longer than 12 hours)
- repeat failures (more than twice in one year) should be compensated
- continue rebates of \$1,000 for sewage spills
- no rebates for one off supply interruptions but rebates for frequent disruptions (more than twice a year).

We understand that an objective of the Citizens' Jury making recommendations about GSL's was to save money that it would value being spent in other areas.

The Citizens' Jury rationale for deleting rebates for short term disruption of water supply was that 'people can cope for a short period without water and there is no need to compensate with money.'

The Citizens' Jury do not want to see a reduction in service levels because of changes in GSL payments.



YVW accepts the Citizens' Jury recommendation.

Together with the other water utilities in Melbourne, we will continue to trial digital metering and the associated telecommunications technology. These trials are expected to be completed during the 2018-2023 pricing period.

If the technology trials are successful and the bill increase is less than the \$12.50 per annum, we would likely commence roll out in 2021/22 over a three-year period. At the time the digital meter is installed and customers commence receiving the benefit of the digital meter, bills would increase by up to \$12.50 per year (this is only if required, as our goal has been for digital metering to be cost-neutral). This cost will be incorporated into the fixed charges.

YVW accepts the Citizens' Jury recommendation.

We will implement a financial incentive for customers who register for both e-billing and direct debit. Each eligible customer will be provided with a \$2.00 discount per bill.

Customers who are already registered for direct debit will also be provided with the discount.

We accept three of the four Citizens' Jury recommendations for rebates but will retain the rebate for the short-term disruption to water supply (4 hours).

Customer research conducted in June 2016, identified that a service interruption extending beyond 4 hours will result in significant dissatisfaction. In keeping with this insight, we will continue our current business practices and investment to achieve this service level and pay a \$50 rebate to those customers who experience a water supply disruption of greater than 4 hours.

Acknowledging the Citizens' Jury understood that removing this rebate would save approximately \$500K per year, we will not charge customers the estimated cost to retain this rebate.

Through our ongoing Customer Insights program, we will seek customer views associated with service levels and the point at which a rebate should be paid.

We accept the Citizens' Jury recommendation in relation to the other rebates:

- rebates of \$100 to be paid for long term disruptions (longer than 12 hours)

Continued on next page...

We make the following commitments:

To meet customer needs, we will:

- complete digital metering trials that will enable the rollout of digital meters to all customers
- introduce the option for customers to receive a \$2 discount on their bill when electing to receive an e-bill and pay by direct debit
- answer phone calls within 2 minutes and respond to all other contacts (e.g. letters) within four days
- focus on resolving issues at the first contact.

We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome:

- % of customers who have contacted us say that their issue has been satisfactorily resolved
- % of customers who call to report a fault or emergency will have their phone call answered within 30 seconds
- % of customers who contact us with an account enquiry will have their phone call answered within 2 minutes
- % of customer say they are satisfied with Yarra Valley Water overall
- % of customers say that the services they receive from Yarra Valley Water represent value for money
- % of customers say that they have confidence that Yarra Valley Water will meet their needs now and in the future.

We will undertake these actions, activities and programs to deliver the customer outcome:

We will:

- have a customer centred approach to our customer contacts and enquiries, including:
 - maintaining a local customer contact centre as the primary avenue for customers supported by various online and social mechanisms

Continued on next page...

OUTCOME

THE CITIZENS' JURY SAID....

WHAT WE'VE UNDERSTOOD



MODERN FLEXIBLE CUSTOMER SERVICE (CONT...)

Recommendation 8. Continued...

MODERN FLEXIBLE CUSTOMER SERVICE

Recommendation 10. Increase education and awareness

The Citizens' Jury supports increased education and raising awareness across all topics as a means of supporting their objectives and broadly YVW's plans and strategies for the future.

Areas for increased education and awareness includes bill payment options, water saving techniques and strategies, support for vulnerable customers and plans and strategies for the future.



- \$100 to be introduced for disruptions longer than 12 hours
- a \$50 rebate will be paid to repeat water complaints (more than twice in one year)
- a \$50 rebate will be paid to repeat unplanned water supply interruptions (more than twice in one year)
- a \$50 rebate will be paid to repeat sewerage services failures (more than twice in one year)
- continue rebates of \$1,000 for sewage spills.

Consistent with the Citizens' Jury recommendation with regards to sewerage spills, customers who experience multiple sewage spills inside their house or on their property will receive rebates. We propose to double the rebate with each occurrence.

In addition, customers who experience water flow below our minimum obligation will have their Service Charge waived until the flow meets this requirement.

We will not change our business practices negatively or decrease our expenditure on service levels because of the changes to Guaranteed Service Level rebates.

YVW accepts the Citizens' Jury recommendation.

In addition to the proposed increase in communication and education regarding vulnerability and hardship (Recommendation 4), we will increase our expenditure by \$1 million (doubling our current investment) to enable targeted communication and education appropriate to the audience., e.g. high water users – sensible water use information.

Potential strategies include:

- increased activity in the community (increase existing emphasis), participation in community events, school education programs, etc
- targeted communication programs to address different customer's needs
- maximise digital channels and engagement.

- providing a reliable meter and based on an accurate read and correct customer and property information, and provide customers a bill consistent with their preferences
- developing customer relationships & communications, including for developers, builders, plumbers and trade waste customers
- a range of bill payment options and channels that allow customers to manage their payments in a way that suits them
- fair and equitable debt management and collection approaches that ensure customers that are unable to pay are identified and supported
- ensure that customers who want to have a self-serve relationship are supported by accessible and clear communications and channels
- engage with customers, including those segments that have traditionally been hard to reach, to gather insights and reflection of their needs and experiences to continually improve our services
- evolve design of tariffs and prices considering the potential impacts on all customer segments
- provide rebates to customers where minimum service levels have not been delivered.

OUTCOME

THE CITIZENS' JURY SAID....

WHAT WE'VE UNDERSTOOD



WATER AVAILABILITY & CONSERVATION

WATER AVAILABILITY AND CONSERVATION

Recommendation 2.

Preventative maintenance to reduce network water loss

The Citizens' Jury wants YVW to take a proactive approach before being forced into reactive, high cost resolutions to:

- reduce network water loss
- minimise inconvenience caused by interruptions to water and sewerage services
- charging customers fairly (by reducing the cost of water loss)
- reducing the number of Guaranteed Service Levels payments.

We have understood that the Citizens' Jury want us to prevent water wastage even where the direct cost of doing so causes a minor bill increase.

WATER AVAILABILITY AND CONSERVATION

Recommendation 3.

Access to two sources of water of different qualities;

- High quality water used for drinking
- Lower quality water used for toilet flushing, washing clothes, gardening, etc.

YVW understand that the Citizens' Jury's objective is to reduce the consumption of potable water. We understand that the Citizens' Jury supports the ongoing provision of alternative water sources to greenfield areas and other areas of urban redevelopment as appropriate.

The Citizens' Jury would like us to provide water of different qualities for different uses:

- high quality drinking water used for drinking
- lower quality water used for toilet flushing, washing clothes, gardening, etc.

The Citizens' Jury would like us to look at how to get recycled water to the existing houses.



WATER AVAILABILITY & CONSERVATION

YVW accepts the Citizens' Jury recommendation to reduce network loss with some minor variation in how we charge customers.

During 2016/17, 14 billion litres of non-revenue water was lost. To reduce this to 11.5 billion litres per year (2.5 billion litres less) by 2022-2023, we will focus on reducing the size of our metered zones to an average of 3,000 connections, or less than 30km of water main length. Reducing the meter zone allows for more rapid leak detection as the zone is smaller. Any change in water flow is more discernible and we can respond and address issues more quickly.

Taking a more proactive and focused monitoring approach will allow improved management of our water supply network, reducing leakage and identifying problems before they become costlier reactive repairs that impact on our customers.

To reduce network water loss, we will invest \$27 million to identify and save an additional 2.5 billion litres of water.

Consistent with the ESC guidance not to charge customers where there is significant uncertainty about the outcome, we propose only to charge customers whichever is least: the cost of the investment or the value of the water savings that we achieve.

YVW accepts the Citizens' Jury recommendation.

Our Urban Water Strategy evaluates all forms of water supply and demand options for the next 50 years and is reviewed every five years. Through that strategy we will continue to assess the most efficient and effective options for securing water for Melbourne.

Storm water recycling and recycled water will be implemented where it is identified as a key part of the local servicing solution.

We will:

- provide recycled water for over 100,000 properties by 2040 in Melbourne's northern growth area. When development is complete, six billion litres of recycled water will be supplied to customers each year
- pursue the provision of recycled water for more than 5,000 properties in the Doncaster Hill precinct, including the nearby Tullamore development (formerly the Eastern Golf Course) and will save about 2.5 million litres of water each week. Approximately 25% reduction in drinking water will be saved for the area
- pilot advanced processes to recycle storm water to drinking water standard at Kalkallo.

We make the following commitments:

To conserve water for the future we will:

- prioritise our response to water interruptions to reduce water loss
- invest in leakage programs to save 2.5 gigalitres of water that would otherwise be lost through leakage in our pipes by 2023
- provide \$1 million per annum additional water conservation advice, information and programs for customers and the community that shape the way water is valued and used by future generations
- provide recycled water to homes and businesses.

We will not impose water restrictions except in the instance where unforeseeable circumstances require us to ensure the supply of water.

We will manage and monitor these measures and indicators that are important to ensure the delivery of the overall customer outcome:

- per capita household drinking water usage (KL)
- per capita household recycled water usage (KL)
- % of recycled water from our sewage treatment plants
- % of unaccounted water
- infrastructure leakage index.

Continued on next page...

OUTCOME

THE CITIZENS' JURY SAID....

WHAT WE'VE UNDERSTOOD



WATER AVAILABILITY & CONSERVATION

WATER AVAILABILITY AND CONSERVATION

Recommendation 3.

Continued...

WATER AVAILABILITY AND CONSERVATION

Recommendation 7.

Reduce average water use per person by rewarding people for wise water use.

YVW understand that the Citizens' Jury's objective is for customers to use water sensibly and protect future water supplies. The Citizens' Jury have made the following suggestions:

- increase education and awareness which can be achieved partly through Recommendation 10
- more availability and distribution of recycled water
- encourage more water tanks to reduce use of supplied, metered water (potable water). i.e. cost saving opportunity for using your own water
- more technology to help achieve this aim (i.e. digital meters)
- encourage water saving measures by retaining the existing 3-step water use tariff structure and increasing the difference in the price of the step tariffs to encourage greater adoption of wise water use
- price signals could be used to do this with covenants for impact on large families
- more support for those unable to reduce their usage due to circumstances (i.e. vulnerability programs – Recommendation 4).

spits and blockages

(target 82.3 minutes)



WATER AVAILABILITY & CONSERVATION

- complete alternative water supply assessments for all new infill development like Latrobe and Monash National Employment clusters that are identified during the period
- engage with Melbourne Water, other key stakeholders and the community to explore the feasibility of stormwater harvesting to protect waterways in the Northern Growth Corridor and supplement the drinking water system
- conduct a feasibility study for retrofitting recycled water to existing properties surrounding Doncaster and Brushy Creek recycled water schemes and conduct a customer willingness to pay study with those customers to assess the potential for recycled water implementation
- monitor trends and development for use of alternative water sources around the world.

We will undertake these actions, activities and programs to deliver the customer outcome:

- Provide targeted water conservation resources, education & programs for customers and the community
- Undertake a proactive program that identifies and resolves undetected leakage issues in our network
- Provide recycled water services to new customers in areas in line with our commitment and pursue the provision of recycled and alternative water services/options where there is strong customer support
- Working with stakeholders and partners the optimise water resource management at a community level
- Undertake various demand and bulk water management activities including:
 - short to medium term demand management at a local and community level
 - short to medium term supply management, including management of water entitlements and annual desalination order process
 - long term water resource planning together with other water utilities in Melbourne

YVW accepts the Citizens' Jury recommendation.

We support the intent of this recommendation and will explore with our customers what might be a meaningful reward to assist meeting the Citizen's Jury desired objective of reducing average water use per person.

Our Urban Water Strategy evaluates all forms of water supply and demand options for the next 50 years and is reviewed every five years. We are currently on a water usage trajectory of 127 litres per person per day by 2066. In the long term, using water wisely will avoid or delay the need for new supplies. Through the strategy, we will continue to assess the most efficient and effective options for securing water for Melbourne.

All new homes, home renovations, alterations and additions need to comply with the 6 Star Standard in the National Construction Code. The 6 Star Standard applies to the thermal performance of a home, renovation or addition and includes the requirement to install either a solar hot water system or a rainwater tank for toilet flushing. As this is now a standard requirement for new homes and renovations, we believe that providing a rebate for the installation of rain water tanks would be an unnecessary incentive.

We will:

- increase education and communication to help customers to reduce their water use (consistent with Recommendation 10)
- install digital meters for all customers once technology trials are complete and at a cost for customers of no greater than \$12.50 per year to help customers to reduce their water use (Recommendation 5)
- reduce the water supply system fixed charge by \$100 and maintain the variable prices. (This initiative will strengthen the incentive for all customers to save water)
- retain step tariffs reward those customers who use less water and encourage large water users to reduce their water usage. Due to our proposed changes the variable component of the water bill is expected to change from 35% to 38% next year
- work with larger households (WaterCare programs - Recommendation 4) to reduce the impact of the higher cost of Step 3 tariffs
- undertake research to explore with our customers what might be a meaningful reward to reduce their water use.

OUTCOME

THE CITIZENS' JURY SAID....

WHAT WE'VE UNDERSTOOD



WATER AVAILABILITY & CONSERVATION

WATER AVAILABILITY AND CONSERVATION

Recommendation 9.

Investigate and pursue community based solutions for localised needs

The Citizens' Jury would like us to continue to support community place based decision making and engagement associated with providing our services relating to:

- ensuring waterways are protected
- providing modern wastewater systems (community sewerage)
- using water sensibly and ensuring sufficient water supplies for the future.



WATER AVAILABILITY & CONSERVATION

YVW accepts the Citizens' Jury's recommendation.

We will:

- engage with communities to develop solution for their local needs. Stormwater recycling and recycled water will be implemented where it is identified as a key part of the local servicing solution
- engage with Melbourne Water, other key stakeholders and the community to explore the feasibility of stormwater harvesting to protect waterways in the Northern Growth Corridor and supplement the drinking water system
- utilise an integrated planning approach to ensure that we are implementing the most efficient and effective system in consultation with local communities, council and other stakeholders
- participate in regional forums as an aspect of the Integrated Water Management (IWM) Framework for Victoria. The Framework aims to achieve greater collaboration across organisations and disciplines that influence the water cycle in Victorian cities and towns
- collaborate with the water industry and local councils to confirm the priority opens spaces within our service area. We will complete a review of opportunities to develop local water supply solutions for these priority spaces
- enable community led planning for the delivery of the community sewerage program in Monbulk, Briar Hill, The Patch, Kallista, Sherbrooke, Sassafras East, Olinda, Park Orchards, Emerald (South), Clematis and Warburton
- seek community participation in the development of the integrated water and sewerage servicing solution developed for the La Trobe and Monash National Employment clusters
- deliver the Target 155 program, schools education and water efficiency programs
- undertake water efficiency research to understand future technology trends.

For an idea to become a recommendation it required an 80% consensus rate. Minority Reports were ideas that were supported by a small number of jurors that did not meet the 80% criterion.

THE CITIZENS' JURY SAID...

Minority Report 1.

Invest in the health of waterways funded by a \$2 increase per bill

Minority Report 2.

To reduce the 50-60% fixed component of the bill for water and sewerage

Minority Report 3.

More equitable prices between business and residences

WHAT WE'VE UNDERSTOOD

The Citizens' Jury would like to see us invest an additional \$1.4 million each year to improve the health of local waterways and the Jury would like us to report annually on the outcomes achieved.

The Citizens' Jury would like to provide customers with a greater capacity to impact on their bills through their usage.

The Citizens' Jury would like us to reduce the gap between business and residential charges. The Jury would like the costs to increase for businesses without them paying the same rate as residential customers.

WHAT YARRA VALLEY WATER WILL DO

The Jury did not reach 80% support for this recommendation, as such we will not allocate resources to implement additional activities during the 2018-2023 price period. Waterway health is more aligned with Melbourne Water's responsibilities, and we will discuss waterway health outcomes with them for consideration in their next Price Submission.

We will continue to seek customer views on the Citizens' Jury Minority Reports through our Customer Insights program for consideration for the 2024-2029 price period.

We will work with Melbourne Water, other key stakeholders and the community to explore the feasibility of stormwater harvesting to protect waterways in the Northern Growth Corridor and supplement the drinking water system. (Refer to Recommendation 9).

The Jury did not reach 80% support for this recommendation, as such we will not implement this during the 2018-2023 price period.

It should be noted that we still need to maintain the same amount of infrastructure regardless of how much water is used, and sewage is discharged. That is the reason for the proportionately higher fixed to variable charges.

We will continue to seek customer views on the Citizens' Jury Minority Reports through our Customer Insights program for consideration for the 2024-2029 price period.

As previously mentioned we have proposed changes to the fixed and variable components of the water bill. The fixed component of the water bill is expected to change from 65% to 62% next year. This change will send a stronger water conservation signal to our customers. (Refer to Recommendation 7).

The Jury did not reach 80% support for this recommendation, as such we will not implement this during the 2018-2023 price period. Increasing the price to business customers, may result in unintended impacts to business, employment and the economy.

We will continue to seek customer views on the Citizens' Jury Minority Reports through our Customer Insights program for consideration for the 2024-2029 price period.

APPENDIX 3

CITIZENS' JURY DEBRIEF REPORT



YARRA VALLEY WATER

CITIZENS' JURY - DEBRIEF

7 August 2017



INTRODUCTION

An opportunity was provided to all members of the jury to attend a debriefing session. The purpose of the session was for jury members to debrief their jury experience: to draw out insights for themselves and the project. This was a volunteer activity for jurors and the following ten members of the jury attended: Megan, Fred, Danielle, Paul, Louise, Elizabeth, Kristen, Greg, Jean Pierre and Natalie.

This report is provided primarily as a record for those who participated. It also provides some insights for the sponsor Yarra Valley Water and the facilitators and process designers, MosaicLab and the newDemocracy Foundation. However, as only ten of the thirty jurors took part in this debrief, the information cannot be considered representative of the whole jury.

HOPES FOR TONIGHT'S DEBRIEF

Participants spoke in pairs about their hopes for the debrief and then shared the following:

Sharing people's observations about process, hearing other's thoughts - do we see the same things?

There were times when it felt like hard work

Completion - some jurors considered that completion will come with tonight's workshop, for others it was handing over the report and others it will be when YVW has responded and we see how much of our submission is taken onboard

Talking about learnings

Acknowledging everyone - making sure everyone is complete and they are walking away satisfied. A lot of time has been committed and feeling acknowledged for our contribution.

Reflecting on what's in our minds, the benefits of the process, different views, and how we now look at the world a different way.

Reflecting on process - step back, think about how things worked and consider if we could have done anything differently or better, including the output.

Regardless of thinking about improvements, it was a fantastic process. It would be great to share how good it is compared to just surveys or other processes.

OUR LEARNINGS

Participants were invited to reflect on their experience under the following eight headings.

1. THE MOST SIGNIFICANT THING THAT HAPPENED



There was good consensus in the end, nobody disgruntled or left behind.

YVW wants feedback from community/consumers, would that other services follow YVW's lead.

Hearing from independent speakers – particularly Environment Victoria and Planning.

The speed at which our final approach on the submission was scrutinized and agreed on.

30 people came to agreement on 10 priorities. Consolidation of many ideas into concise thoughts – agreed.

The realisation that we actually could and did produce a good document.

The jury were listened to and YVW have outlined a course of action based on our recommendations that will have an impact.

People were willing to change their opinions after receiving more information.

A wake up to myself as to how much water I have wasted at home. Now I am much more aware of water wastage. I also have a deeper understand of what YVW does!

The learning about water and YVW was amazing. I have a whole new appreciation and understanding of both.

2. THE BEST THING



Meeting a group of fantastic people.

Have met some wonderful people that I'll stay in touch with.

Being part of the process. I've thoroughly enjoyed the whole process.

The facilitators were the best thing as they kept the jury on track, they made YVW provide info as required and they made sure all requests were addressed.

Having some great interaction and debate amongst other jury members who were passionate.

The diversity in the group and the respect shown to each other.

Being part of a community representative group with opportunity to give ideas to YVW.

Meeting a wide range of people.

Meeting and working with a diverse group of people.

Making new friends, achieving goals.

3. THE MOST FRUSTRATING THING



Listening to other ideas that I personally completely disliked and keeping my mouth shut.

Lack of time to eat, drink, go to the loo. The breaks weren't sufficient. I found myself bringing my food to the next session because by the time I got it and had been to the loo, we were starting again.

When the adjustments to business water consumption rates were voted out of the final recommendations.

Speed dating sessions – too much to process in quick time.

Losing people along the way.

Overwhelming at first with the volume of material to be digested.

Coming to a consensus.

When a few people kept debating on decisions and we couldn't move forward! It went on for ages!

Being drip fed the process and not being able to influence it at all as a jury.

4. THE HARDEST THING THAT I PERSONALLY HAD TO DEAL WITH



Talking in front of a lot of people. I have trouble putting words together.

Biting my tongue to allow others to talk. But I did interrupt when I really felt it was needed.

Watching my favourite idea get knocked out of the listed items for submission.

Couldn't dedicate enough time to reading the material.

Felt I only did just enough and wanted to do more.

Trying to avoid speaking out more.

Some of the sessions felt really long and it was difficult to focus on the tasks, particularly late afternoon.

To just "let it go".

Not being able to help my wife prepare for her 40th birthday party on one of the Saturdays.

5. THE THING THAT LED TO ME LEARNING THE MOST



Listening to a variety of speakers – very educational and valuable impact.

Listening to others.

First day of listening to YVW presentations. I learned more than I thought there was to learn about water.

The speaker that provided water quantities used in standard products like beer and chocolate.

Q&A sessions with panels of experts – both external to YVW and YVW management.

The process of finding a fair system for all.

Group interactions online and on jury days.

The YVW draft future plan. Included on the document library online. Gave me the chance to digest details in my own time at my own pace.

The handbook – it contained a massive amount of information that we could revisit throughout the process.

Listening to experts and having to put their knowledge into perspective for what goals we wanted to achieve.

6. THE THING THAT MOST CHALLENGED ME



Working on the computers! Finding the right words and structuring sentences.

Time – not being able to participate fully in the online forums.

Not having expert knowledge of the industry. Again, “letting go”. Not in total control.

Not knowing how it would come together, had to live on faith and not look ahead. Even though I really wanted to know.

Finding / making the time to get through all the material.

I found some individuals on the jury had very different beliefs to me and I had to constantly remind myself to lose emotions and maintain logic when discussions hovered in this area.

Dealing with the waiting process. Some were initially poorly written / unclear.

Still to come – board presentation.

Balancing the volume of content to take in.

7. THE THING THAT I HAD THE GREATEST IMPACT OVER



Assisting with writing the minority reports.

Ensuring that there was a strong focus on environmental sustainability issues.

I stood alone on the first decision making process and I think this facilitated a mentality to other jurors that it was ok to disagree.

Fighting for certain things to either be included or excluded. Some great debates happened because people had different views.

Taking charge of the pen, and crafting others ideas onto words on a page. I am a driver after all.

Putting in a couple of recommendations that were kept!

Crafting ideas into words, seeking compromise.

Helping to decide outcomes.

I didn't have an individual impact – it was a group impact.

8. THE MOST EXCITING THING



Group activities. The loath-love scale.

Hearing different ideas and ways of expressing ideas of jury members – building on my own thoughts.

Getting to D-day. Was nervous at first, wasn't sure it would turn out. Meeting like-minded people.

Typing the final submission as it symbolized the efforts made by the jury and that it was close to finished.

Seeing the level of commitment by YVW to the process. Heartened that it will inform future direction.

The surprise gift box at the end and Tanya's tenuous link of the goodies to our whims and feedback. Loved her forethought!

That YVW is developing smart meter system.

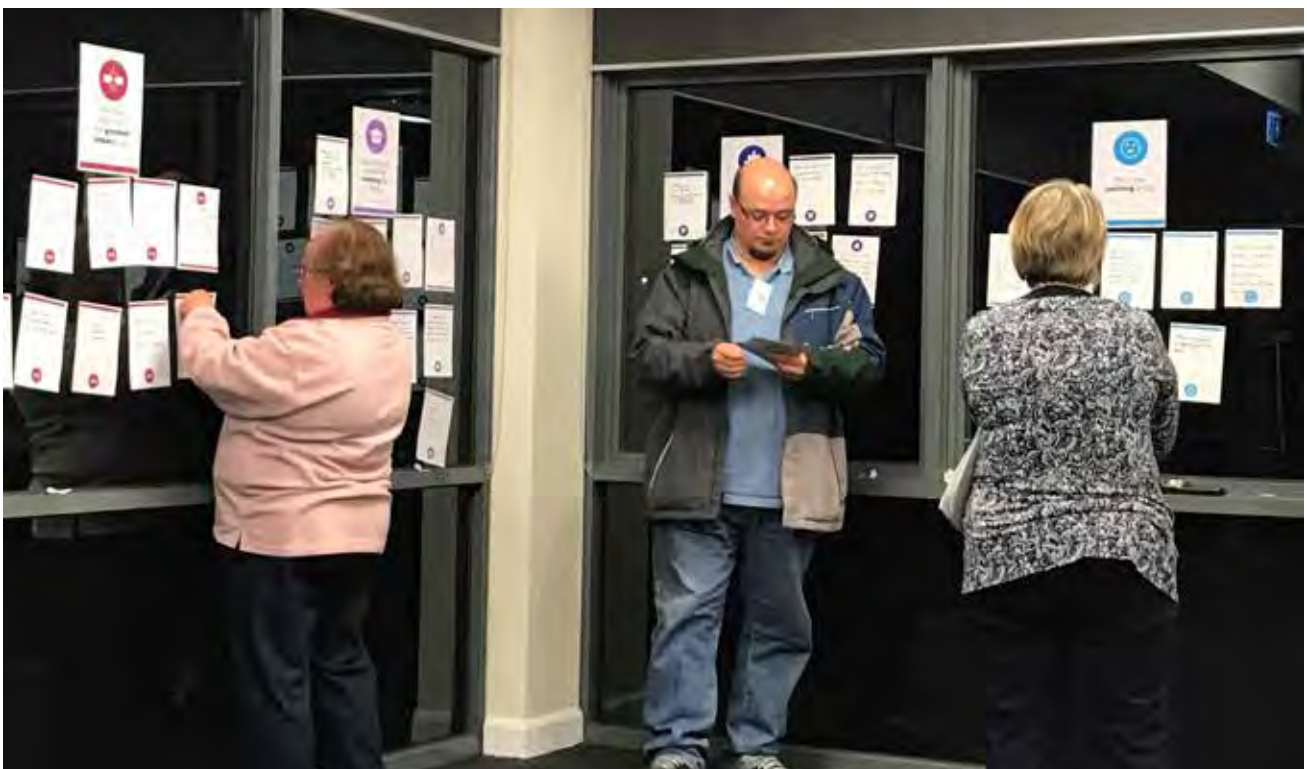
The whole process of decision-making. The group work, jumping from group to group was very interesting.

Being able to make small changes to recommendations and get 100% agreement on them on the last day.

Achieving our goal and agreeing upon our ideas.

At the completion of this activity the whole group reflected on what stands out from all of the individual reflections

- A couple of themes but lots of differences – we are seeking a lot of diversity in the reflections
- The **'best thing'** is the one with most commonality – working with people, working with the diversity, different people, meeting new people
 - We all bonded even though we were from different backgrounds
 - People got really connected and will stay connected after this
- A number of **frustrations** were discussed including:
 - Losing people along the way for different reasons (life happened) and perhaps some people signed up without realising what it was involved.
 - The group comprised some fully engaged people and some quieter or less engaged
 - Lack of time (including for minority reports) and not knowing the process in advance (though others considered this was not needed and would have been overwhelming) and not being able to influence aspects of the process. One person felt they were living on faith with the process
 - The conversation about 'fairness' was frustrating for some (would have been good to revisit this topic) though others considered there was enough time
 - Not having time to improve the grammar in the report



WERE OUR HOPES ACHIEVED

Participants were invited to find their hopes from the first session and reflect on whether their hopes were achieved.



ADVICE TO DESIGNERS OF FUTURE DELIBERATIVE PROCESSES

The participants worked in small groups to consider what advice they would provide to future designers (facilitators and sponsors) or deliberative processes.

1. WHAT ASPECTS OF THE PROCESS WOULD YOU ADVISE THEM TO DO DIFFERENTLY OR NOT AT ALL AND WHY?

Advice up front - more details of the involvement before committing.

Restructure the days to allow more online collaboration and consideration of the recommendations for the final report.

Final day - having more time.

Condense speakers, condense time spent choosing speakers.

Re-iterate the test so when re-writing / consolidating the core idea is kept.

Revisit personality differences - get people to actively seek out difference in types.

Guidance on possible speakers and reasons why.

Initial invite email from newDemocracy needed to be worded better to explain what we were entering into.

Provide jury with more info on the process and allow them input and influence into the process and how time is spent.

Started the final day / task earlier i.e. start day 5 in day 4.

Allow more time for consensus building on final recommendations.

Encourage more online discussion - targeted at issues that needed resolution prior to final day.

Paddle voting was flawed - count group not individual (*facilitator note: the number of individuals was counted as well as the number of groups*).

2. WHAT ASPECTS OF THE PROCESS WOULD YOU SUGGEST THEY REPEAT AND WHY?

The whole process was good so should be repeated.

Fact check board was good.

Stop, start and continue.

Rules and regulations – treating other people.

Level of observers that are invited to demonstrate honesty, transparency.
YVW had lots of people attend.

Personality differences understood and catered for, and made comfortable.

People pulling information together.

A well-crafted question to answer.

Quick and efficient turn-around of payment once the process finished.

Lots of different facilitation styles, small groups, speed dating, love-loathe etc.

Upfront handbook – fantastic!

Analysis provided between day 4 and 5 on provisional recommendations by YVW.

The process worked to achieve an outcome – didn't feel like we were dragging people along.

Laying the groundwork on respectful participation.

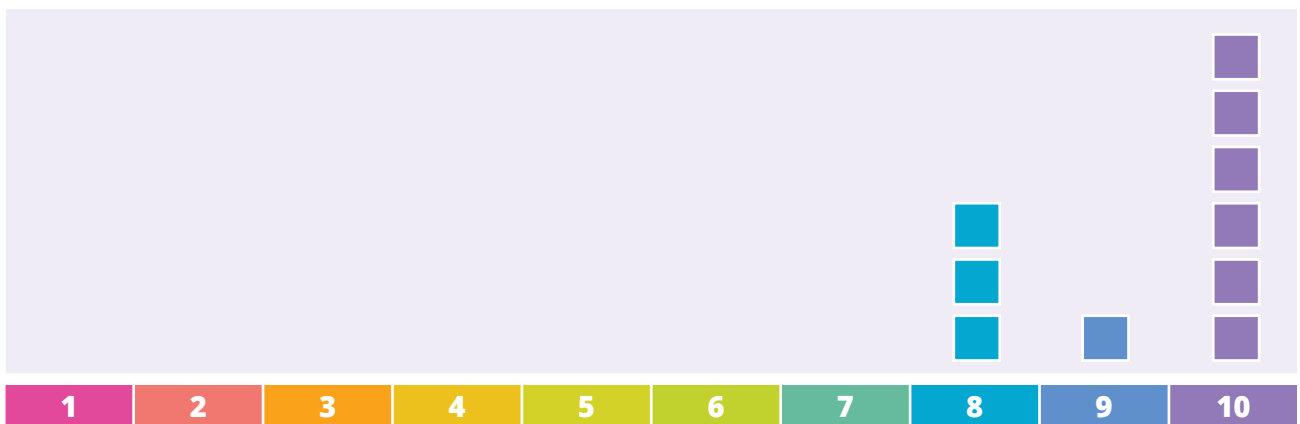


SPECIFIC QUESTIONS

The group were asked four specific questions. After a group conversation on each question, they provided individual answers as follows:

1. DID YOU HAVE ENOUGH AND APPROPRIATE INFORMATION TO UNDERTAKE YOUR TASK?

VOTING

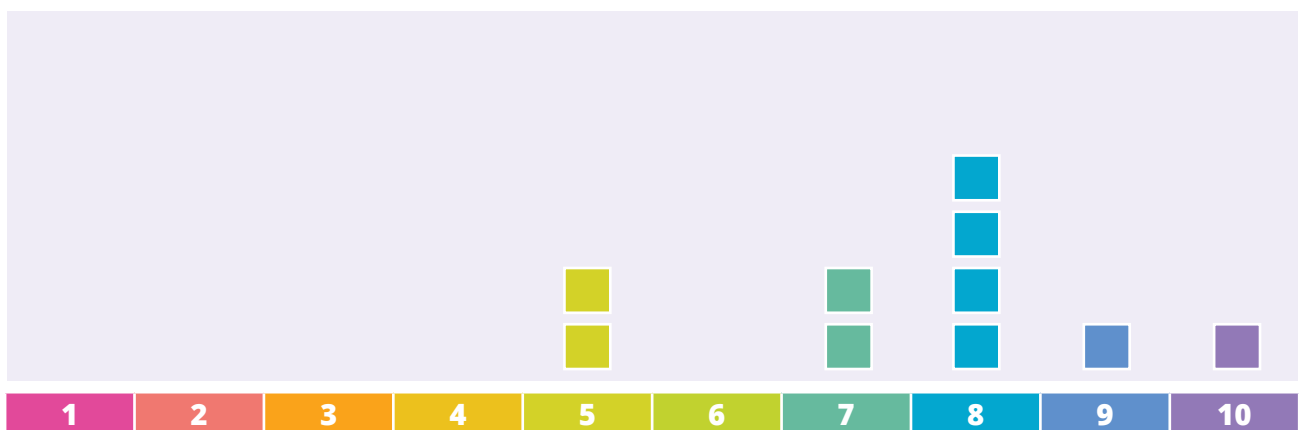


COMMENTS

	COMMENT COUNT
The pack on day 1 was outstanding	3
Ample/plenty of information	2
Content information was great	2
If we did not have it all, all we had to do was ask	2
Like more information about the process	2
Probably more than required, too many speakers	2
Draft future plan, urban growth boundary, Melbourne future – available earlier	2
More time on public submissions	2
Not knowing the direction/impact of some activities	2

2. DID YOU HAVE SUFFICIENT TIME TO LEARN ABOUT THE ISSUE?

VOTING



COMMENTS

Seminars were well spaced for research

Some of the sessions were too short and many people left with questions

I played in my 'wheelhouse' and left other topics to others hoping diversity would cover it

There was so much content – 10 days would not have been enough but it was enough give 5 days only

I think the total time allowed for the process was good but I prefer less speakers and less time to choose speakers and more time on deliberating

Good amount of time between days to digest/research

Know up front how much time is recommended

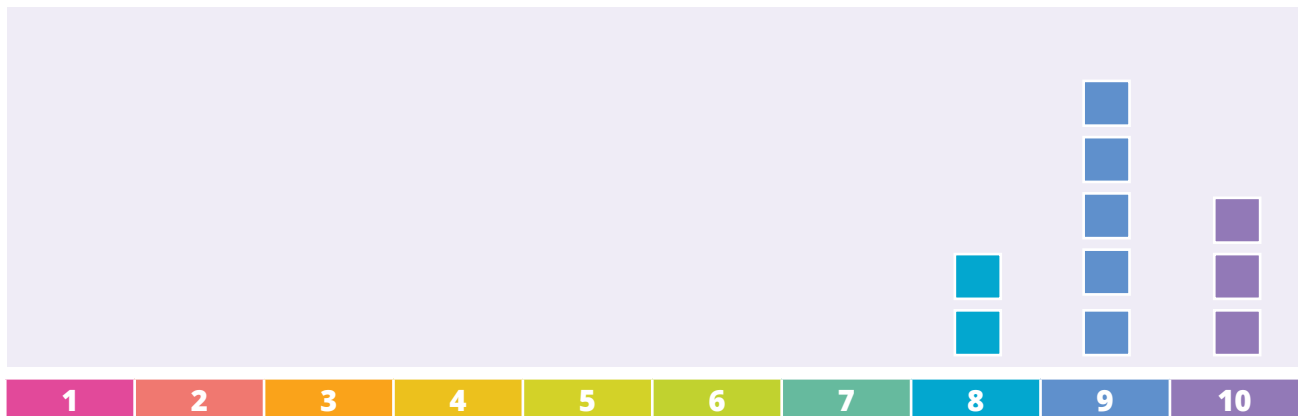
More question time with speakers

It requires personal time outside the days which you must commit to

Needed more

HOW CONFIDENT ARE YOU THAT YOUR RECOMMENDATIONS WILL BE TAKEN UP BY YVW?

VOTING



COMMENTS

Consumer feedback it vital, great power to represent to ESC

Some recommendations weren't explicit so degree is open to interpretation

Can't guarantee all recommendations will be used

(YVW) Wouldn't do this much effort if it wasn't for real

Listened to but not all ideas/recommendations are able to be implemented practically

They were very transparent during the process, I am always a little sceptical so that's why I've selected a 9 and not a 10

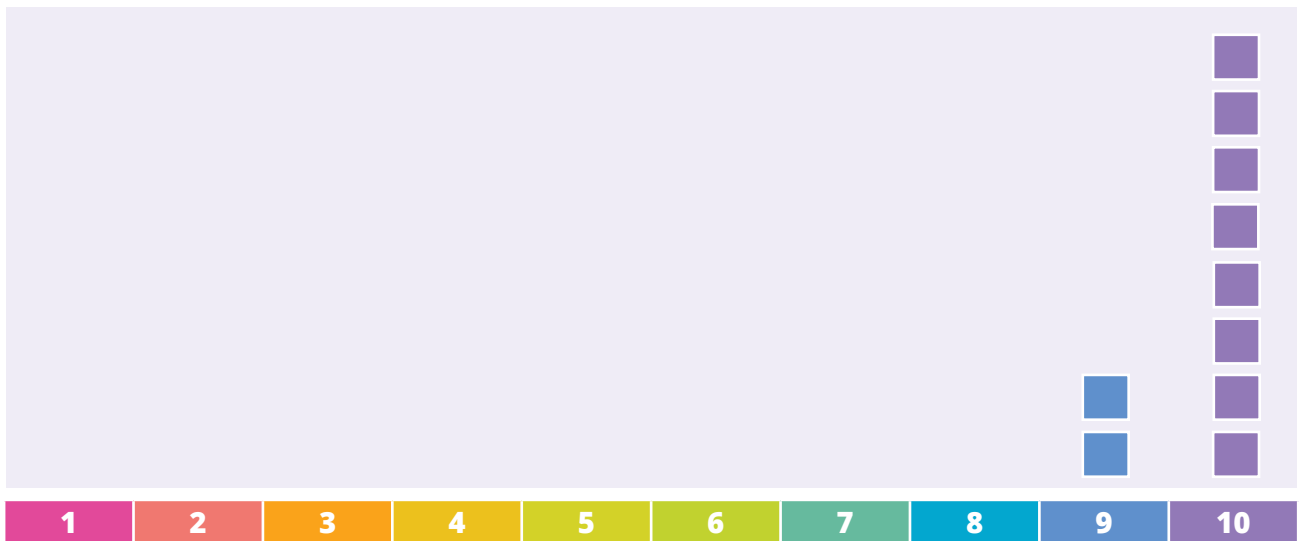
Staff were committed to the process

I trust them and have faith in the process and YVW's honesty

YVW showed commitment

HOW CONFIDENT ARE YOU THAT YVW WILL UPHOLD ITS PROMISE TO YOU?

VOTING



COMMENTS

The fact they are giving us the results on August 31st provides confidence

Commitment overall has been fantastic

Why invest in the process if you are not going to follow through

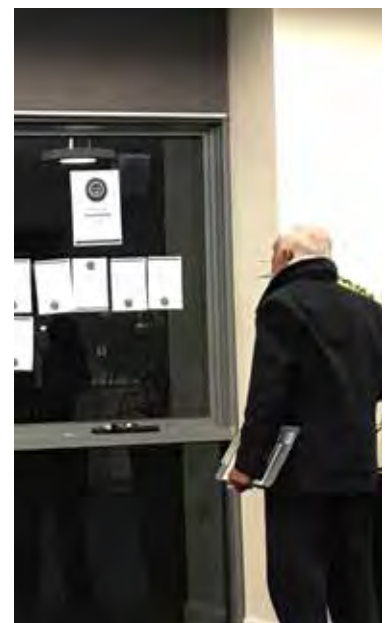
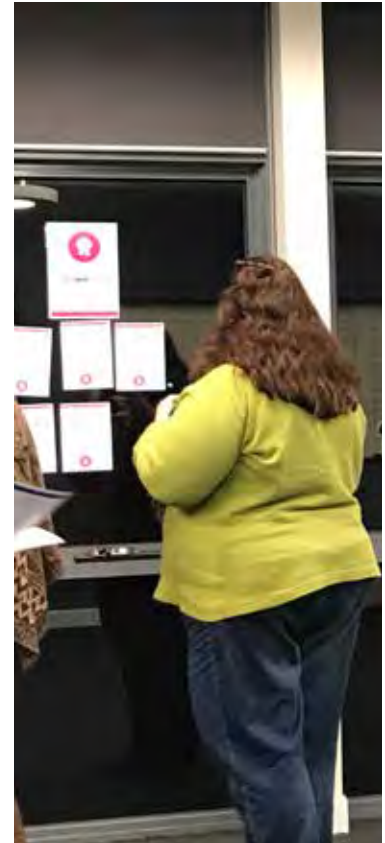
Quite confident

Sue promised and Pat promised. There is no reason or incentive not to follow through on their promises

ADVISE TO A PERSON THINKING OF JOINING A FUTURE JURY

Participants were individually invited to provide one piece of advice to a 'future juror'

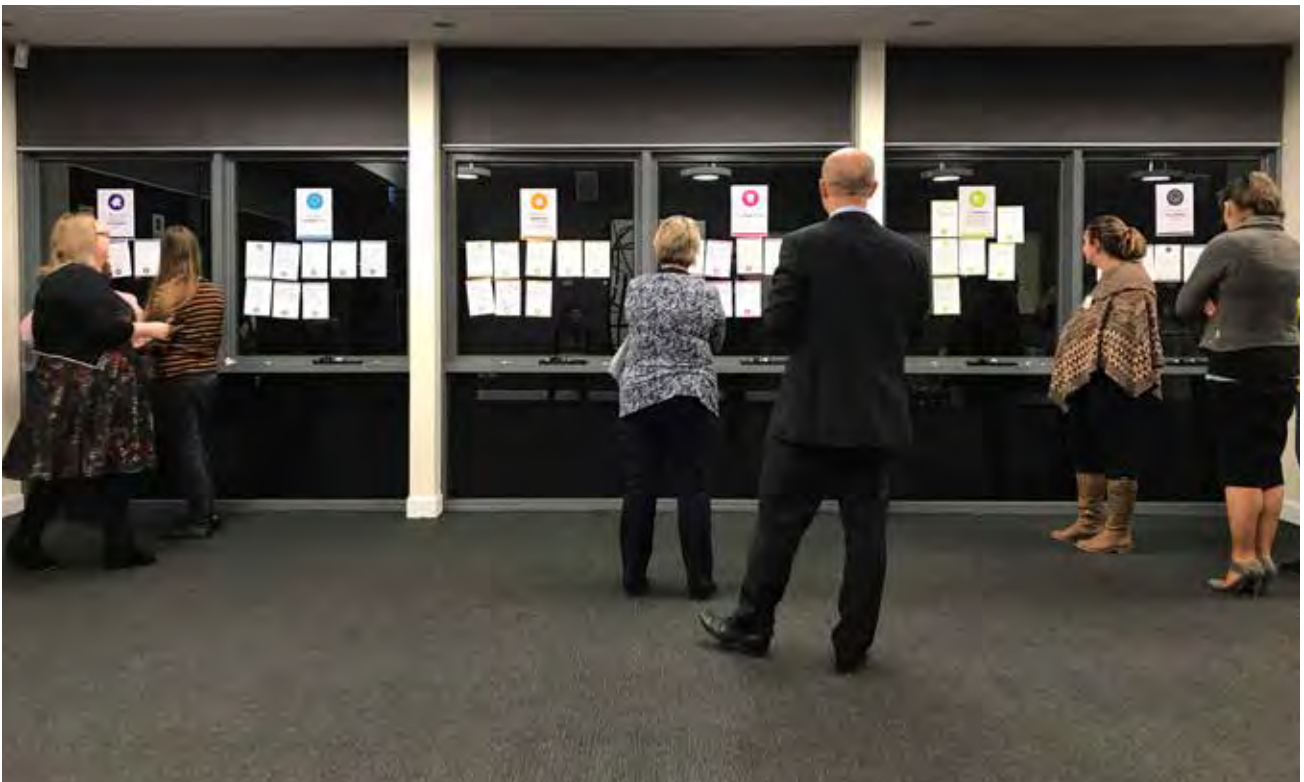
- **Be counted:** Your vote matters. Take it seriously. People will listen. Be in the driver's seat, not just a passenger. You will grow your skill set and knowledge. You can make a difference. Get an opportunity to change something you may just whinge about.
- **Be open-minded:** Be prepared to challenge both your own assumptions and the assumptions of others. Listen to and reflect on different opinions and information. Look for similarities as well as differences – it will help build consensus.
- **Definitely do it:** You'll learn a lot about the company and its operations that will amaze you. You'll be guided every step of the way in the process and make friends as you go. At the end you'll feel a sense of satisfaction in what is achieved.
- **Learn resilience and consensus building:** Joining a jury will allow you to grow personally.
- **Do it:** It is an opportunity to represent the community and to have an impact / influence on the decisions made by big business or government etc. These decisions will ultimately impact on you – have your say. Trust in the process and enjoy it.
- **People power:** You would be surprised how well a varying group of people can come together to achieve a common goal. Your voice matters, speak up, you can make a difference.
- **Be prepared to read,** research and communicate: It will give a deeper understanding and knowledge to make better decisions. More insight broadens the mind.
- **Be neutral when listening:** It means that you will hear everything. You can still overlay your own judgement, but you should hear all sides (there could be more than 2) of a point before committing to a position.
- **Get involved from start to finish:** So much more valuable way to get community feedback having had opportunity to learn more about the topic and discuss ideas before feedback given.
- **Do it:** Your opinion matters.



FINAL ACKNOWLEDGMENTS

Participants were invited to acknowledge the work of each other:

- The people who have come to the debrief are the same people who were quite verbal throughout the jury process and online – these people were thanked for their leadership and contribution
- Louise was thanked for keeping us honest
- Paul was thanked for having the biggest impact online – the work that he did allowed others to not have to read everything
- Paul thanked others for being able to learn from the many different ways of thinking – this was as much the enjoyment of this
- Kristen – thanked those who contributed in smaller groups and less loudly, influenced others and built it up to the larger group



APPENDIX 4

YARRA VALLEY WATER CITIZENS' JURY COLLATED FEEDBACK



JOIN THE
CONVERSATION

Yarra Valley Water Citizens' Jury Collated Feedback

August 31

2017

As valued participants in our Citizens' Jury, members were asked to complete a survey to give their feedback on our engagement program. Their responses are highly valued and will influence the approach taken in future engagement activities.

1. What would you identify as the aim of the Citizens' Jury?

- To provide YVW with recommendations from representative of the community on prices/services that are fair for everyone
- To both understand and implement ideas of the customer's ideas, opinions and needs
- To come up with a price and service that was fair for everyone
- To fulfil the answers to the challenge of equality between service and price work as a whole not individually
- To have a fair and just billing system for all consumers
- To listen to the people (customers) what do they things and what do they want and to give them a chance to have a say for such important things
- To give the price submission a customer component – voice of the people
- Create a resource of factual evidence based community recommendations to support he YVW submission the essential services commission. To determine the pricing structure for the next 5 years
- Aim was to develop a set of recommendations to YVW so as to submit to the ESC
- Community input – a sense of direction. From the community – what is important NOW
- To work together to develop recommendations for YVW that represent the values and ideas of their customers
- To canvas the informed views of customers
- To get the view from a wide selection of varying community members to come together to make a decision
- Better communication and information of both the organisation and the customer/community
- To make pricing of water fair for everyone – individuals, communities, YVW
- To provide recommendations based on the information supplied for proposals in future pricing that is considered fair and equitable for all customer types in both long and short term future
- Finding a balance between price and service which is fair for everyone. The Jury spent considerable time exploring the definition of Fairness, as well as the broader definition of Price to include the intergenerational cost to the environment
- Help YVW find a balance between price and service which is fair for everyone
- The primary aim of the Citizens Jury was to make recommendations to the YVW Board, (on behalf of all YVW users) about what is valued and therefore, how YVW should use its budget. The Jury was presented with a wide range of sources, including an array of independent sources, thus ensuring a balanced, informed response
- To obtain a diverse voice of the authority's clients
- To find a balance between price and service which is fair for everyone, as decided by a representative sample group of YVW customers

2. How successfully do you think it achieved those aims?

1-10 (where 10 is of the highest quality).

8 (5 responses)

- With more time for deliberation I believe that the minority report issues could have been altered to be acceptable to greater than 80% of the jury
- The Jury did well in ensuring Fairness, in particular for those who are disadvantaged within our community. However the Jury did not fully capitalise on the potential to take bold steps which would have protected our scarce water resources for generations to come
- Relatively successful
- I would say that this objective was generally reached as we were well managed by Mosaic Lab. Everyone had the opportunity to have a fair say- (ie fair for all',) during this process

11 (9 responses)

- There is always room to improve when we forget this we will suffer as a people
- I was surprised at the way we all came together and the way we were helped to the outcome by Mosaic and YVW
- Never give a 10
- Jury made 10 recommendations – 8 were fully accepted and 2 partially
- Because no-body's prefect
- I never give a 10/10 – recommendations have been made heard and will be implemented to achieve the fair pricing aim
- Because nothing is ever perfect

9.5 (1 response)

- To not only be heard but to be taken seriously

10 (3 responses)

- Very well achieved
- The recommendations voiced many opinions and views. A great success

3. To what extent do you agree the content (information) provided to you was understandable?

13 x Strongly agree

- It was well presented not just in terms which all can understand but in a way that does not speak down to the audience
- Was clear and concise and written in plain English. The jury could choose how much they wanted to consume
- The information was given in a way it could be understood
- Being able to ask questions and have them answered off the cuff. It was rewarding to take part in
- Plain English, many graphics and charts. Very helpful, new things, etc
- It was in plain English and had support and opportunity to query any aspect of the data
- It was generally very clear and written in plain English. Staff were always available to clarify anything we were confused or uncertain about
- It was clear and understandable and detailed when needed
- Sometimes the pure economics was challenging (and a little dull☺) Water industry information was well explained. Data was well presented with figures/diagrams etc. that helped with understanding some of the more technical concepts
- The information provided was excellent and very informative
- I strongly agree that, generally the basic information booklet was easy to understand and logically and clearly set out. Though, there was so much information to get through- (a reflection of the complexity of our task), that it sometimes seemed overwhelming. The additional souces, ie Essential Services Commission information was

more complex, contained more jargon and was more technical. Many sources argued for their own particular interests and slant on the issues

- I chose “strongly agree” because all content was provided in Plain English, and where there inevitably was water “industry-speak” all references/terms were explained if any juror member indicated their confusion. Also, there was sufficient discussion of all material and info underpinning jury decisions

8 x Somewhat agree

- It was overwhelming at first but became a good reference source as the process continued
- You could have only used the handbook – all information presented was useful – even the futurist
- The information became more understandable as the jury process progressed
- It was a lot of information to take in for a short-term assignment
- Some was not due to our lack of familiarity of the details
- The information was presented in a professional and comprehensive manner, both through the Jury information pack and then reinforced through presentations by YVW personnel. The complexity of the issue, and wealth of information was however overwhelming at times
- Time constraints prevented the opportunity to read and digest all available information
- It was set out in a very good format and in lay-mans terms. However some additional clarifications around the inner workings/hard non-negotiable items may have been beneficial

4. To what extent do you agree the content (information) provided was broad enough in scope to allow you to identify the area’s most important to you?

16 x Strongly agree

- It was thorough and contained answers to all my questions
- The information was broad and covered most topics in a clear, concise manner. Information not included was easy to obtain from YVW and external sources presented at the get togethers
- The initial pack contained a world of information. The jury selection of experts also added to the information
- As further information was available
- We were able to have time to ask questions and digest information
- Detailed info in the booklet provided to us
- There was no limitation on the scope of information provided. Diversity and additional requests were encouraged
- I found the information broad enough but I found the inflexibility of the process sometimes restricted what could be considered
- The range of documents and speakers opened your mind to avenues not necessarily thought of
- However, ignorance is bliss. Perhaps we overlooked things due to not knowing anything about it. We may not be aware that we have missed something
- The content of the information covered a broad range of areas, enabling the jury to consider the impacts of the recommendations being considered so justify if it is truly fair and equitable
- The information provided went beyond expectations, and covered the full spectrum of issues associated with water & sewage use, delivery and charging
- I strongly agree that the information provided was broad enough for a ‘lay’ crowd. It seemed that all Jury members had access to more specific information if they so desired. Some jury seemed more informed than others as is the nature of members of a society and varying time limits and personal circumstances which they each confront
- The information presented gave a very broad brush of the workings of YVW
- I chose “strongly agree” because info provided dealt with many broad themes underlying water services (e.g. vulnerable customers, conservation) instead of just 1 or 2 narrow and rigid criteria centering only on “water” and “service” (e.g. pipes, tanks)

5 x Somewhat agree

- Reading through the information allowed me to identify and clarify areas
- Info was supplied by a broad range of people and views
- It appeared to cover all aspects of the business and allowed us to concentrate on the area’s most important

- A huge challenge without knowing all the answers we could look at. Did really well
- Would have been good to leverage learning from other parts of the world

5. To what extent do you agree that critical thinking and the process of working with others to find consensus impacted on a shift in your thinking?

9 x Strongly agree

- You can only discover new perspectives by engaging with thinking outside your own head. Striving for consensus in a respectful way improves our own internal culture of our thinking
- The structural explanation of critical thinking was very helpful
- I, by my training as a scientist always to think about things critically and also believe it is something that is far too rare within modern society
- I have attended many forums and feel the facilitators help so much plus the diversity made the jury able to discuss issues without bias
- Working with others for the first time, unforgettable experience and impressive
- Having a moderated space allowed for diverse perspectives to be heard and understood. It worked well
- This was the aspect of the process that I most enjoyed
- The fluidity of the process allowed for deliberation of the matters at hand, the loath, lament, love, live scale was great
- I was forced to listen to others. I needed to change my habits to do this but I did learn
- It became enjoyable to seek out what other thought and why

11x Somewhat agree

- People brought a new opinion to the table which allowed me to develop and challenge my point of view
- I personally enjoy listening to other opinions to see a different point of view
- I have a greater understanding of the water business and a greater understanding of what is important to others. This has brought the need to conserve water for our future much more into my thinking to everyday life
- Some jurors had pre-conceived ideas at first – you actually saw their reasoning change as the different information was presented
- Working with others to reach consensus was at times challenging, but persistence prevailed
- I found my thinking did shift once hearing others thoughts, however I don't believe that critical thinking had much impact on this, mainly getting to consensus
- The Jury process was comprehensive and at times challenging, which resulted in better recommendations overall. Through critical evaluation ideas were teased out to become more succinct
- The process of working with others to learn and test options was valuable and aided in my decision making
- I somewhat agree that when provided with compelling evidence that my thinking was changed, regardless of source. Also, some personalities seemed more erudite and articulate than others. This compelled a certain amount of attention. Though the Mosaic Lab staff helped to mitigate this effect
- It is always important to provide a critical and logical path to all decisions. It helped to ask questions of an opposing perspective to understand that person's logic
- I chose "somewhat agree" because listening to another jury member's passionate and well-researched ideas and reasoning often did demonstrably help to move along the discussion at the times it became side-tracked by issues outside of our purview. This very human element really helped me be strongly committed to finding solutions that everyone actively supports, or at least can live with

1 x Neither

- In terms of my thinking I kept an open mind and did change/adapt my point of view on further consideration of some concepts but those 'changes' were not guided/forced/leading on by any other person/YVW/Mosaic etc. My opinions were formed by my own thinking

6. Did the process sufficiently enable you to access additional information? Please explain the reason for your answer.

1-10 (where 10 is of the highest quality).

1 x rating of 7

- There were times I felt it was more about the process than the outcome. But I do understand that the timelines have been defined to meet the price submission

4 x rating of 8

- I didn't have a need for additional information
- By the speakers who came to speak
- In hindsight, maybe too much info
- For me the greatest drawback was working on two IT platforms which made ready availability of access a little more tricky as I am not really IT literate. Though, the primary drawback to reading was time

6 x rating of 9

- Information was very forthcoming and vast with almost every question having some form of answer
- The process was well designed and enabled us to have reading time online discussion and group chat. The reading room and use of Loomio was great as well
- Additional information was available through Loomio which I found useful. It would be extremely difficult for those who did not have access to the internet
- Any questions and requests for information were met. However we may not have been aware that we lacked knowledge about different topics
- The ability to select additional presenters provided a mix of perspectives, many independent of YVW
- I chose this rating because discussions with other jury members, whether face-to-face or online, or reading opinions in the jury online forum, helped me to be aware of helpful and useful topics and ideas on which to build my recommendations and ideas. Having speakers from YVW, and from outside, independent, non-stake-holder, sources, played a vitally important role in this

8 X 10

- Every speaker whether the ones we asked for or others gave the information we needed in an easy to understand format
- Additional information was made available on request with 3-4 days on the website
- The online information and requested info was never withheld, always forthcoming
- YVW was very open with providing all information requested by the jury
- Guest speakers, additional material. YVW never said no!
- YVW were very open and available to provide info on anything we requested – even if the data was sensitive
- Absolutely, information overload if anything – between the online forum, the info pack provided, the speakers both YVW selected and Jury selected and the ability to generally look online for additional relevant information was readily available also
- Every request or close enough to it was provided with explanations around why if it was not

7. What else would have been valuable?

- Only more time. Maybe more online discussion in between session via loomio
- An ability to influence the process to ensure time was being spent on the things most important to the jury
- A little longer question time with speakers.. start writing the recommendations 1/2 a day earlier
- A bit more engagement online to nut out detail, positions and recommendations
- A little more time
- Not sure
- Spend a little more time finalising the report before handing it over
- The weather being worse during the jury days

- I cannot think of anything at the moment
- A better understanding of the process ahead. This might have resulted in requests for other experts
- More talk in group times
- Nothing for me personally
- Spending some time as a group to work through the varying components of a typical bill would have helped to ensure a base level of understanding and a common language across the jurors
- Access to the experts on the panel (given the limited time/opportunity to ask questions & clarify) and resources from other parts of the world that have journeyed through these challenges
- I think that more contact time would have been useful
- A clear understanding early on about what can and cannot be negotiated as part of a standard stakeholder management process
- The entire process was accessible, friendly, professional, and inclusive! Well done, YVW!

8. How does your experience as a member of the Citizens' Jury differ from other market research you have been engaged in?

- This experience can't be compared to other market research
- I felt of value not just a number
- It provided much more information about the issues in question
- Because I was part of the process
- Jury enabled better appreciation of uses. It resulted in real learning and striving for improvements. Market research simply asks for our ready formed opinions
- It's actually engaging
- I actually wanted to make a difference and felt like I was heard
- The Citizens' Jury recommendations being adopted by YVW.... In other Market Research this is not always the case
- Far more intense! Far greater reward. Our recommendations were heard. We achieved goals
- It was not steered on to a certain pathway we were free to ask questions and study outcomes ourselves
- I felt valued and respected for my input. I felt it would be used/adopted
- More collaborative, group oriented. Great group of people, not just filling in a form or a survey
- I could make an informed contribution to the discussion and recommendations rather than basing my opinions on limited personal experience
- Much more engaging and have a greater understanding of the industry we have been providing info on
- This was more in-depth, the level of detail involved allowed the jury members to learn a lot about water that many didn't have any knowledge about. Most market research from my personal experience has been limited to surveys and short group interviews for an hour or so which limits what can be discussed. This process was 40 hours with online discussions in between it was far more detailed and varied than anything else I have ever done
- The access to information is the key differentiator – in other market research, the response is emotional and constrained by a limited understanding. As part of the Jury, we had time to expand our understanding and hence develop a more rational response
- The commitment (time/effort) to the Citizen Jury has been greater. The challenge was to get to a “good” level of understanding, of the topic, to be able to share and contribute in an informed way
- This was not a simple MR exercise. It was a multi-faceted, intense, complex view and analysis of the workings of a govt company and the water industry in general- a massive remit but so rewarding in so many ways. Reminded me of my Uni days
- Incredibly collaborative, and non-intrusive from YVW. Allowed the jury to formulate its own response rather than being guided
- Where the overwhelming view of the public is that our institutions are nothing short of an amoral racket, it was refreshing to see how keen and committed YVW is to being transparent, inclusive, and community-minded. It was impressive and empowering that the jury experience was structured to be as independent, non-judgemental, and inclusive, as possible

9. To what extent do you believe Yarra Valley Water responded appropriately to the matters that the jury revealed as important?

15 x Strongly believe

- By not only listening but by hearing our views and actually taking them on board
- It was reasonable that YVW would tweak some of the recommendations
- I strongly believe that YVW took this process very seriously
- All of the concerns were answered with some that evolved from the concerns that weren't covered by the community
- There was thought put in to the responses. Hearing the reason behind the modification meant YVW looked at our recommendations and then investigated. The changes we wanted would have been negatively received and impact customers had they not changed it
- YVW was honest in my opinion with responses to queries
- Such considered responses with real outcomes
- They responded to a draft with a detailed consideration which showed they were serious. They have provided a final response that has been endorsed by management and the board
- The board, staff of YVW are to be commended for their openness and commitment of talking about their sacred turf with a bunch of strangers bit hopefully friends by the end. I will miss my interaction with this group of wonderful people. I will especially miss Brett and Pat
- I am very pleased with the way YVW has approached the Jury's recommendations with respect and I am happy with their proposed response
- They have adopted all principles, we finally recommended the two that were changed were minor and still met the spirit of what we proposed
- I think the responses received were appropriate and very suitable to the recommendations made
- I strongly believe that YVW has responded appropriately and well to the Jury's recommendations. The board's positive reaction to these is a testament to the respect that they hold for the YVW Customer
- I chose "strongly believe" because YVW has taken the time to be as fully transparent as possible about its adoptions, minor variations, responses and commitments to our recommendations. That performance measures to monitor performance will be reported on is a strong indicator of YVW's good faith. Some may argue that self-monitoring isn't adequate, but you can't please everyone!

5 X Somewhat believe

- It's great that YVW actually listened to us
- YVW adopting 8 of the recommendation and partly accepting another 2
- I really thought we gave permission to spend more – R&D education etc, and hence increase prices to fund it. Surprised and happy that prices might see a real reduction VS CP in coming years
- Extremely pleased that effectively all recommendations have been adopted. The approach of listening to the 'why' behind each recommendation has resulted in a set of commitments which are true to the intent of the jury. I believe that YVW could have further considered the minority recommendations, and either implemented in part, or committed to further review within the current pricing period
- I am grateful that YVW has taken the opportunity to engage with its community and I believe that the Jury has recognised this and stepped up to the challenge. I was pleased that YVW has taken the water loss issue seriously since this will ensure needed buy-in from the wider community is secured. It's important that YVW promotes/educates the community of the saving they have secured

1 X Neither

- Personally, it felt like there was a lot of misguided steps around parts of the development that should not have been raised as part of this jury

If the aim of our engagement approach was to:

- *Provide customers with sufficient time, information and an appropriate process to empower them to participate in decision making*
- *Engage with customer on the matters that are of greatest importance to them*
- *Provide an appropriate forum to enable customers to influence the proposals that Yarra Valley Water makes to the Essential Service Commission*

10. How satisfied are you that the approach fulfilled these aims?

14 x Very Satisfied

- Best level of customer engagement I have seen by a long way
- By having a period of 3 months and several sessions allowed jury members to reflect on the proposals
- Time given able to discuss issues
- Brilliant – couldn't have asked for better, everything mentioned above is provided, customers are supported and empowered
- The Jury represented a diverse mix of YVW customer base, and had ample opportunity to access the information they felt was important. The Jury process was well facilitated to ensure appropriate time was allocated to reviewing and discussing the issues. The final recommendations reflected the Jury's collective view
- I am very satisfied that most aims were fulfilled. The board validated most of the Jury's recommendations

7x Satisfied

- With more time for deliberation on recommendations the minority report issues could also have potentially reached 80% agreement
- Just needed a bit more time. Fell down on the sufficient time proviso
- Feedback form YVW indicates they have heard our views. This will guide their submission to the ESC
- Sufficient time had to be balanced with outcomes needed

11. To better fulfil the aims outlined above, is there anything that you would recommend we do next time?

- It felt a little rushed at the end as we considered the feedback on pricing and finalised the recommendations
- Extend the whole process. Some of the final parts of the process were rushed
- Show the online engagement at the meet and greet so you don't face it cold on your own
- Start deliberation on final recommendations earlier. Inform jury members of the process and allow flexibility
- Keep supporting group processes
- Take Melbourne Water on the journey as well so these too can lead by example
- Just a little more time
- Include me! JP
- 6 x No
- Keep it the same – this was excellent
- Spend the first few hours establishing a base level understanding of the issues – at times it became clear that not everyone on the Jury was fully understanding some of the more complex issues being discussed
- There is a wealth of information the Jury has shared with only a small portion that made the recommendation list. My hope is that YVW use what it needs for the ESC submission but also take the opportunity to explore all the other suggestions to value them with an open mind. I recall a few situations where the dedicated/committed team from YVW were averse to looking at alternatives because they felt that this would not be in line with their customer expectations. From what we have seen through the Jury process there is opportunity to reshape YVW assumptions around its "customer expectations"
- I don't think that enough time was spent debriefing on Jury responses between contact time. This was generally at the beginning of each contact day. I would have liked more time to analyse other jury member's responses to the presented material
- Perhaps better define matters that are important to YVW and thus important to the customer
- Please continue to collaborate with New Democracy and Mosaic Lab! Their contribution to keeping the jury process running as independently and smoothly as possible was so valuable

12. Is there anything else you would like to say?

- Congratulations to YVW, MosaicLab, NewDemocracy. A very enjoyable and valuable experience
- Thanks to YVW for allowing my voice to be heard. It was a great experience that I as privileged to be a part of
- Thank you for this life changing experience
- Provide Victorian Water for refreshments not imported bottle stuff
- No except thank-you for making the customer the centre of your business
- It's been a real privilege participating and I have a new found respect for YVW
- Thank-you for a mostly pleasant experience and a chance to see how the water industry works
- I am very proud of being a part of this Jury
- Thank-you for allowing me to be a part of this process
- Thank-you for your commitment to and support of the Citizens Jury
- Bravery comes from leadership. Well done Sue and Pat for setting the tone
- Thank-you all for the opportunity/privilege to have participated in an inspiring and educational experience
- Full marks to YVW for taking this approach to customer feedback/research
- Great experience
- No
- The views of the Jury, which have been well interpreted by YVW to extract the intent behind the recommendations should form part of the guiding principles for the organisation beyond the ESC submission, and become part of the strategic mission that drives the direction and culture going forward
- As Sue mentioned, during the board response meeting, customer perception of the utilities industry is significantly low. <https://onestepoffthegrid.com.au/why-australians-hate-their-energy-utilities-more-than-most/> . YVW has invested in educating a group of over 30 potential supporter from the Jury. It would be a waste to ignore this investment to help YVW with other like opportunities. Liked this statement from the link "...requiring energy utilities to learn how to bring their business beyond the metre and inside the household"
- I am so impressed by the way in which YVW operates
- After many years of providing an iterative process of pricing, I felt like YVW are very capable of undertaking this process, and appears to the mood of its customers very well
- As above, I strongly believe that the experience was accessible, friendly, professional, and inclusive. Well done, YVW! Victoria is lucky to have you as a service provider

APPENDIX 5

SERVICE LEVELS

APPENDIX 5 - SERVICE LEVELS

Our proposed customer service targets for the 2018-19 to 2022-23 regulatory period have been set to maintain current service level performance based on a five-year average (where available).

We will reduce prices to customers in the following year by \$1.5 million for each target not achieved.

We will measure annual performance on a rolling 12-month cycle of 1 April to 31 March. The performance together with price changes will then be reported in the first quarter bill each year.

The following table shows the proposed service levels.

OUTCOME	MEASURE	2016-17 ACTUAL	5-YEAR AVERAGE (2012-17)	2018-19 TO 2022-23	
				PROPOSED TARGET	REMARKS
Safe drinking water	Compliance with safe drinking water standards	100%	n/a	100%	as per parameters reported in the Water Quality Annual Report
Reliable water and sewerage services	Number of customers who experience 3 or more unplanned water or sewerage service interruptions in 12 months	1.18%	0.96%	0.96%	ESC indicators (REW9+RES 5)/BED1
Timely response and restoration	% of customers whose service has been restored within 4 hours	91.2%	91.1%	91.1%	Household and business customer interruptions
Fair access and assistance for all	% of customers who believe that Yarra Valley Water helps customers experiencing difficulty paying for their water and sewerage services	89%	n/a	89%	customers with experiences of support services
Water availability and conservation	Total water usage (litres/ per person/ per day)	223	n/a	2018-19 - 221 2019-20 - 217 2020-21 - 213 2021-22 - 211 2022-23 - 210	Target reflects demand forecast Measure - ESC indicators (BED8/ BED5)
Modern flexible service	% of customers who are satisfied with their most recent customer interaction	85%	86%	86%	Tracking Research (weighted average)
Care for and protect the environment	% reduction in emissions (cumulative)	n/a	n/a	2018-19 - 5.8% 2019-20 - 16.1% 2020-21 - 32.8% 2021-22 - 47.1% 2022-23 - 53.4%	

Consistent with the requirements outlined in the Customer Service Code, we propose the following measures and targets (based on five-year average performance).

Reliable water and sewerage services

- average frequency of:
 - customer water supply interruptions per 1,000 customers (target 0.29)
 - customer sewerage interruptions per 1,000 customers (target 0.01)

Timely response and restoration

- Average time taken:
 - to attend priority 1 bursts and leaks (target 43.7 minutes)
 - to attend priority 2 bursts and leaks (target 87.9 minutes)
 - to attend priority 3 bursts and leaks (target 801.7 minutes)
 - to restore customers' water supply – planned (target 127.5 minutes)
 - to restore customers' water supply – unplanned (target 110.3 minutes)
 - to attend sewer spills and blockages (target 82.3 minutes)
 - to rectify a sewer blockage (target 242.6 minutes)
- % of spills contained within five hours (target 97.2%)

APPENDIX 6

PROPOSED REVENUE CAP FORMULA

We propose to maintain a revenue cap form of price control where customer prices will adjust on an annual basis to pass-back excess revenue or re-coup the revenue shortfall resulting from variances in customer numbers and demand. This mechanism ensures that customers only pay what is necessary to meet our revenue requirement.

We have simplified the revenue cap formula by removing some of the calculations and including them in the definitions (for example desalination costs).

The revenue cap formula calculates the revenue cap adjustment and a positive A_t means a return of excess revenue to customers. Note that the dollar values used in, and calculated by, the formula are in nominal terms.

$$A_t = \left((R_{t-1}^{for} - C_{t-1}^{for}) - (R_{t-1}^{adj} - C_{t-1}^{adj}) \right) + \left((R_{t-2}^{act} - C_{t-2}^{act}) - (R_{t-2}^{for} - C_{t-2}^{for}) \right) \times (1 + N_{t-1}) \times (1 + N_t)$$

where:

A	
R	is the revenue to be received by Yarra Valley Water and includes: <ul style="list-style-type: none"> • Water supply system charges • Water supply usage charges • Sewerage system charges • Sewage disposal charges • Trade waste charges • Trade waste volume and load charges • Recycled water system charges • Recycled water usage charges
C	is bulk charges to Yarra Valley Water and include adjustments for: <ul style="list-style-type: none"> • Melbourne Water's annual weighted average cost of capital update • changes in desalination contract costs • desalination water orders • purchase of water allocations • Melbourne Water's 2021 Determination
N	is the post-tax nominal regulatory rate of return which is adjusted annually
for	is the forecast value at April
adj act	is the value at the time of determination with revenue cap adjustments and the pass through of costs/benefits made outside of the revenue cap for: <ul style="list-style-type: none"> • annual regulatory rate of return update • change in environmental contribution • non-achievement of outcome targets • leakage reduction adjustment • bulk charges
act	is the actual values at June
t	is the regulatory year

APPENDIX 6 - PROPOSED REVENUE CAP FORMULA

Table 52 below details the values assumed in the submission and upon which a decision on the need for a revenue cap adjustment will be determined. Note that while additional customers that could be billed system charges under occupancy based charges are included in setting of prices, they will not be charged and thus not included in the tariff revenue from included revenue cap products.

Table 52: Determination values for revenue cap calculation 2018 – 2023 (\$ million January 2018)

	2018-19	2019-20	2020-21	2021-22	2022-23
Post-tax regulatory rate of return (real)	4.20%	4.20%	4.20%	4.20%	4.20%
Tariff revenue from revenue cap products	932.743	939.972	946.120	951.050	954.551
Bulk charges	502.674	500.329	488.521	488.879	489.236

APPENDIX 7

ADJUSTMENT TO PRICES

We propose price pass throughs for the following events:

- uncertain and unforeseen events (as per Clause 3 of our 2013 Determination),
- the pass-through of changed Melbourne Water prices in the fourth and fifth regulatory years. (Clause updated to be for the period from 1 July 2021)
- Desalination plant contract costs
- Desalination plant water order costs
- annual update of Melbourne Water's weighted average cost of capital (WACC)
- sale and purchase of water allocations
- annual update of regulatory rate of return
- non-achievement of service outcomes
- recovery of expenditure for the leakage reduction program
- savings in interest costs as a result of deferral of top 10 projects.

When calculating the price movement associated with cost/benefit pass throughs, the latest forecast demands will be used. If any of the events outlined in Tables 54 and 55 occur prices will be adjusted, in addition to any revenue cap adjustment.

CHANGES IN MELBOURNE WATERS CHARGES TO YARRA VALLEY WATER

Schedule 5 of the Melbourne Water Determination (June 2016) allows for the adjustment of Melbourne Water's fixed charges. Table 53 below shows how prices would be adjusted due to changes to Melbourne Water charges.

Table 53: Tariff impacts by pass through of Melbourne Water charges

Products adjustment is to be applied to	Desalination plant contract cost change	Desalination water order	Annual update of WACC
Water supply system charges	X		X
Water supply usage charges	X	X*	X
Sewerage system charges and sewage disposal charges			X
Trade Waste system charges and volume & load charges			X

X indicates the products to which changes in costs will be applied

*The per kilolitre charge will be calculated as the change in cost divided by the total forecast of billable water volume for that year.

CHANGES IN YARRA VALLEY WATER'S COSTS

In addition to changes in Melbourne Water charges, we have identified seven events if they occur, we are proposing to adjust charges to customers. Table 54 below shows what prices would be adjusted.

Table 54: Tariffs impacted by pass through mechanisms

Tariff the adjustment is to be applied to	Revenue cap adjustment	Annual update of regulatory rate of return	Environmental contribution	Sale and purchase of water allocations	Non-achievement of outcomes	Leakage reduction adjustment	Deferral of top 10 projects
Water supply system charges	X	X	X		X	X	X
Water supply usage charges	X	X	X	X	X	X	X
Sewerage system charges and sewage disposal charges	X	X	X		X		X
Trade Waste system charges and volume & load charges	X	X	X		X		X
Recycled water supply system charges and usage charges	X	X			X		X

X indicates the products to which changes in costs will be applied

APPENDIX 7 - ADJUSTMENT TO PRICES

Table 55 below details the values assumed for the six pass through events. Any change in these values will result in a change in price.

Table 55: Submission values for cost pass throughs 2018 - 2023

	2018-19	2019-20	2020-21	2021-22	2022-23
Post-tax regulatory rate of return (real)	4.20%	4.20%	4.20%	4.20%	4.20%
Environmental contribution (\$ million nominal)	42.855	42.855	42.855	42.855	42.855
Net revenue from sale of water allocations (\$ million real)	0.815	0.872	0.928	0.928	0.928
Cost of purchase of water allocations (\$ million real)	0.000	0.000	0.000	0.000	0.000
Number of outcome target not achieved	0	0	0	0	0
Volume of non-revenue water (megalitres)	15,913	15,893	15,969	16,042	16,118
Maximum leakage adjustment (megalitres)	2,500	2,500	2,500	2,500	2,500
Desalination water order (\$ million real)	0.000	0.000	0.000	0.000	0.000
Melbourne Water bulk charges (\$ million real)	502.674	500.329	488.521	488.879	489.236



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