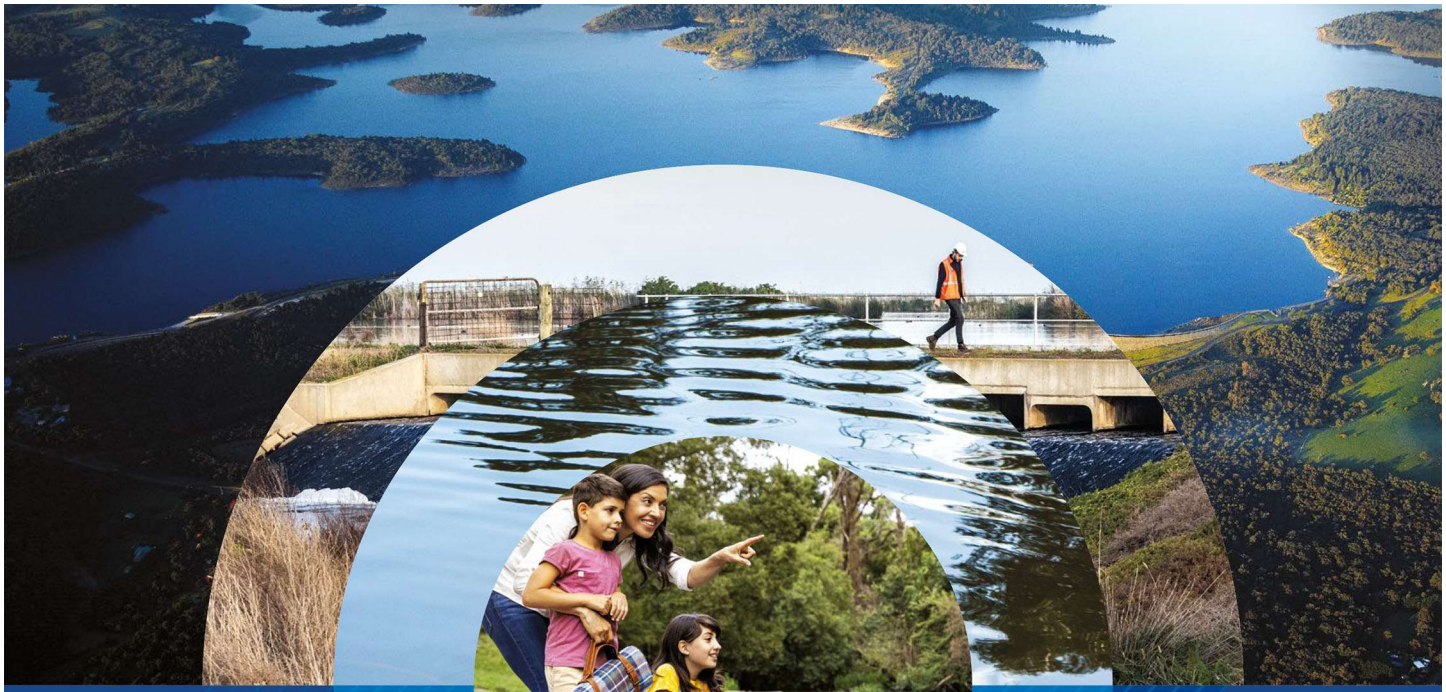


Melbourne Water

Price Submission 2021 – Response to ESC Draft Decision

4 May 2021

VICTORIA State Government

Melbourne Water is owned by the Victorian Government. We manage Melbourne's water supply catchments, remove and treat most of Melbourne's sewage, and manage rivers and creeks and major drainage systems throughout the Port Phillip and Westernport region.

Melbourne Water
Enhancing Life and Liveability

Aboriginal acknowledgement

Melbourne Water respectfully acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land and water on which all Australians rely. We pay our respects to Wurundjeri Woi wurrung, Bunurong and Wadawurrung, their Elders past, present and future, as Traditional Owners and the custodians of the land and water on which we rely and operate.

We acknowledge and respect the continued cultural, social, economic and spiritual connections of all Aboriginal Victorians. We also acknowledge the broader Aboriginal and Torres Strait Islander community and their connections with lands and waters, and recognise and value their inherent responsibility to care for and protect them for thousands of generations.

Melbourne Water acknowledges Aboriginal Victorians as Traditional Owners and, in the spirit of reconciliation, we remain committed to developing partnerships with Traditional Owners to ensure meaningful, ongoing contributions to the future of land and water management.

4 May 2021

Ms Kate Symons

Commissioner and Chairperson
Essential Services Commission
Level 8 / 570 Bourke Street
Melbourne Victoria 3000

Chairperson

On behalf of the Board of Directors of Melbourne Water, I submit our response to the Essential Services Commission's Draft Decision on Melbourne Water's Price Submission 2021.

Melbourne Water does not support the ESC's draft finding that our price submission did not adequately demonstrate customer value. Our price submission and this response provide evidence of our commitment to continuous improvement in the services we deliver. Despite the disruption and uncertainty caused by the pandemic and additional obligations imposed by the State we provide evidence that we continue to run an efficient business, deliver services valued by our customers, protect the environment, and contribute significantly to Melbourne's liveability. As we demonstrate, we deliver these outcomes while retaining a sharp focus on affordability.

Our efforts have been recognised beyond our industry and regulatory environment. Our excellence in customer engagement has been recognised with the IAP2 Core Values Australasian 'Organisation of the Year' Award in 2020. Reflecting our ongoing commitment to operational excellence, this year we also received the National Asset Management Council Award for Excellence in Social and Environmental Asset Management. Melbourne Water was therefore surprised by the draft decision and its criticism of how we engaged with our customers and its imposition of 'arbitrary' cuts to our asset investment program.

The Board and management of Melbourne Water were concerned to find our submission assessed against PREMO standards that had not previously been outlined by the ESC in either its original or additional guidance material (issued in November 2019 and August 2020). We believe that Melbourne Water's submission has been reviewed and penalised based on shifting regulatory goal posts.

In line with the ESC's invitation we have provided additional business cases to support the operational expenditure for waterways and drainage programs. The proposed reductions would put at risk the future health of Melbourne's waterways, our obligations and customer expectations.

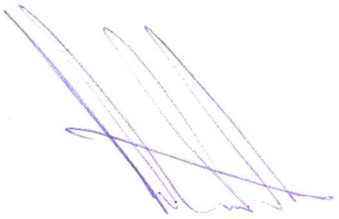
As this response demonstrates, Melbourne Water is responsibly and efficiently managing the uncertainties caused by the pandemic. We do this while remaining mindful of minimising the

financial impact on our customers. On this basis, the ESC's proposal to shorten the regulatory period to three years will do nothing more that impose unnecessary costs on Melbourne Water and its customers.

Having regard to these matters we request the ESC reassess the Draft Decision.

My staff and I can provide you with any addition information you require.

Regards,



Michael Wandmaker
Managing Director

Table of contents

Summary 7

1.0 How we delivered customer value 10

1.1 Bearing the risk of COVID-19 11

1.2 Offsetting cost pressures 11

2.0 Regulatory period 14

2.1 Melbourne Water response 14

3.0 PREMO Assessment 16

3.1 Engagement 19

3.1.1 Melbourne Water response 20

3.2 Outcomes 33

3.2.1 Melbourne Water Response 34

3.2.2 Guaranteed service levels 36

3.2.3 Hardship commitments 37

3.3 Risk 39

3.3.1 Melbourne Water response 39

3.4 Management 42

3.4.1 Melbourne Water response 43

4.0 Capitalisation of desalination plant security payments 46

4.1 Melbourne Water response 47

5.0 Demand 48

5.1 Melbourne Water response 48

5.1.1 Relevance of growth to submission 49

5.1.2 Revised forecasts 50

5.1.3 Alternative expenditure forecasts 68

6.0 Operating expenditure 79

6.1 Water and sewerage 79

6.1.1 Operating expenditure forecast adjustments 80

6.2 Waterways and drainage 82
6.2.1 Stormwater quality treatment systems 83
6.2.2 Large scale stormwater harvesting and associated stormwater quality treatment assets activities 84
6.2.3 Wetland condition 86
6.2.4 Flood preparedness 87
6.2.5 Flood mitigation 88
6.2.6 Community involvement in waterways 89
5.2.7 Operating expenditure forecast adjustments 90
6.3 State Budget impact on financial forecasts 91
6.4 Total operating expenditure forecast adjustments 92
6.5 Benchmark electricity allowance derivation 92
7.0 Capital expenditure 98
7.1 Water and sewerage 98
7.1.1 Winneke Treatment Plant – UV Disinfection 99
7.1.2 Western Treatment Plant 55E Activated Sludge Plant (ASP) 100
7.2 Waterways and drainage 102
7.3 Total capital expenditure forecast adjustments 102
8.0 Summary of revenue requirement adjustments 103
9.0 Rate of return – cost of debt 104
7.1 Melbourne Water response 105
10.0 Revised Tariffs 113
9.1 Desalination plant pumping 113
9.2 Sewerage Long Run Marginal Cost 113
10.3 Water and sewerage prices 114
10.4 Waterways and drainage prices 115
10.4.1 Direct services charges 116
10.4.2 Miscellaneous charges 117

Summary

As a customer focussed organisation, Melbourne Water developed our Price Submission 2021 over nearly two years, supported by a comprehensive deliberative engagement program tailored to our unique services and customer base.

Our 2021 Price Submission delivers six outcomes our customers told us they value:

1. Access to safe and reliable water and sewerage services
2. Melbourne's environment, rivers, creeks and bays are protected and Melbourne Water's greenhouse gas emissions are minimised
3. Melbourne remains liveable as it deals with the impacts of climate change and population growth
4. Melburnians are empowered to support the design and delivery of service outcomes
5. Easy, respectful, responsive and transparent customer service
6. Bills kept as low as possible.

These outcomes speak to the services our customers want now, and the work they would like us to do to ensure the liveability of Melbourne into the future. Our submission delivers these priorities, and reduces the impact on customer bills – a key priority for us.

Melbourne Water lodged its 2021 Price Submission with the Essential Services Commission (ESC) on 9 November 2020 and the ESC released its Draft Decision on 25 March 2021.

This report details Melbourne Water's response to the ESC Draft Decision.

We have reviewed the Draft Decision and are pleased it supports the majority of our proposed revenue requirement and some elements of our submission, including the tariff structure; price cap form of price control; and how we took into account the interests of low income and vulnerable customers and considered affordability concerns.

However, in reviewing the Draft Decision, we identified some key matters that we request the ESC reconsider which we believe are crucial for us to deliver on positive customer outcomes and our obligations as Melbourne's bulk provider of water and sewerage services and manager of waterways and drainage.

The matters we request the ESC reconsider are summarised below and the remainder of this report sets out the evidence in support of our position.

Customer value

Melbourne Water does not agree with the assertion in the Draft Decision that our submission does not adequately demonstrate customer value, or that we did not do enough for customers in respect of risks associated with the pandemic.

Despite the disruption and uncertainty caused by the pandemic and additional obligations imposed by the State we provide evidence that we continue to run an efficient business, deliver services valued by our customers, protect the environment, and contribute significantly to Melbourne's liveability. As we demonstrate, we deliver these outcomes while retaining a sharp focus on affordability.

Refer to section 1.0 for more detail.

Length of regulatory period

We do not agree with the proposed reduction to the length of the regulatory period from five years to three. Melbourne Water proposed a range of measures to address the uncertainty associated with the pandemic and we do not agree a shorter regulatory period delivers improved customer value.

Refer to section 2.0 for more detail.

PREMO assessment

We disagree with the ESC rating of our submission as 'Standard' under PREMO and the comparisons made with retail water corporations. We request the ESC reconsider our PREMO rating across all elements. It is Melbourne Water's view that our submission is consistent with an 'Advanced' rating when considered against the ESC PREMO assessment framework.

Refer to section 3.0 for more detail.

Demand forecasts

We have reviewed our forecasts in collaboration with the retail water corporations and with reference to the government's most recent population growth projections and other relevant demand drivers.

We have re-estimated our water and sewerage demand forecasts to be consistent with the Centre for Population Projections (CPP) forecasts but we propose to retain our original waterways and drainage forecasts.

Refer to section 5.0 for more detail.

Operating expenditure

We largely accept the adjustments proposed in the Draft Decision, with the exception of:

- $0.8 million removed from the water and sewerage baseline expenditure, which we request be reinstated.
- $21.2 million removed from the waterways and drainage controllable operating expenditure, which we request be reinstated.

Refer to section 6.0 for more detail.

Capital expenditure

We largely accept the adjustments proposed in the draft decision (including the arbitrary reduction of $50 million per year), with the exception of:

- Reduction to the allocation required for the Winneke Treatment Plant UV Disinfection Project, which we request be reinstated as per our Price Submission.
- Reduction to the allocation required for the Western Treatment Plant 55E Activated Sludge Plant Project, which we request be reinstated as per our Price Submission.

Refer to section 7.0 for more detail.

This report also provides Melbourne Water's response to other matters included in the ESC Draft Decision:

- Capitalisation of security payments for the Victorian Desalination Plant – we clarify our approach but have revised our proposal in accordance with the Draft Decision. Refer section 4.0.
- Guaranteed Service Levels (GSLs) – we submit our final proposal for GSLs, developed in consultation with the retail water corporations and addressed matters raised in the Draft Decision. Refer section 3.2.2.
- We have revised our individual tariffs to reflect our updated revenue requirement. Refer section 10.

Our Price Submission 2021, combined with this response to the ESC Draft Decision, will see positive outcomes for our customers, including improved services, lower prices and investment to meet the needs of a growing city, greater service security and resilience in the face of a changing climate and ageing infrastructure.

1.0 How we delivered customer value

Melbourne Water contests the ESC's draft finding that our Price Submission does not adequately demonstrate customer value.

Since our 2016 Price Submission, Melbourne Water has continued on our journey of customer price reductions. In 2016 our price submission resulted in a $15 decrease to the typical annual household water bill, further reduced by debt savings passed on since 2016. Our 2021 Price Submission proposes a further $5 reduction, while prioritising the outcomes our customers and community told us they value.

In a time of great uncertainty, Melbourne Water is seeking to make a difference for our customers, community and environment. We will make a difference through the ongoing provision of high quality and reliable essential services, while mitigating our impact on the cost of living and upholding our stewardship of the environment. It is critical that we get this balance correct and that we maximise the value we provide to our customers and the community.

Our price submission, which was developed during a 1 in 100-year global pandemic — the likes of which nobody in our industry or the regulatory community has experienced — was designed to get this balance right in highly unusual circumstances. Our customers and consumer advocacy groups told us to minimise any upward price pressure resulting from COVID-19. We heard this, agreed and responded. As Victoria's largest water utility Melbourne Water is determined to do our part for the community.

Delivering on our commitment to the community presents a range of challenges, many of which we do not control. As a bulk service provider, we have many non-negotiable regulatory obligations and compliance requirements that drive service delivery:

- We harvest, treat and supply the water Melburnians drink, and that Melbourne is famous for – drinking water supplies must be protected and treated to maintain water quality compliance standards and to ensure security of supply for Melbourne and interconnected systems.
- We manage and treat the wastewater Melburnians produce, discharging treated water to the ocean and Port Phillip Bay – treatment plants must be maintained to receive increasing wastewater flows, and treat wastewater to a standard that meets disposal compliance requirements and protects human health and the environment.
- We manage waterways and major drainage systems in the Port Phillip and Westernport region – providing integrated drainage and flood management services to build flood resilience and protect and enhance the health of our waterways consistent with our obligations under State policy, legislation and the expectations of the community.

This means that the bulk of our services are driven by strict compliance obligations that regulators adopt as a reflection of community service expectations. In other words, those

regulators are acting on behalf of the community in determining the standards we must meet. The community priority for Melbourne Water to deliver safe and reliable water and sewerage services reflects their expectation for us to deliver against our regulatory obligations.

The best way for us to deliver value for money in an environment of maintaining services to meet regulatory compliance, is the provision of affordable services. That's why our price submission focusses so strongly on affordability. This focus reflects the level of priority conveyed to us by our customers and the community during the development and finalisation of our price submission.

To do this, we adopted two explicit strategic objectives that:

- ensured COVID-19 had no uplift on our prices; and
- sought to offset cost pressures on our business to maintain services.

These objectives are discussed below and our proposed strategies deliver an outcome of near-flat or falling prices for customers and the community.

1.1 Bearing the risk of COVID-19

Whilst we acknowledge that COVID-19 has likely impacted growth forecasts in the short term, there is still much uncertainty as to the quantum of that impact.

Melbourne Water undertook detailed scenario analysis to understand the potential impacts of lower growth resulting from COVID-19 impacts (refer to Attachment 1 to our *Price Submission 2021*). The aggregate impact of lower growth forecasts was a net price increase for bulk water and sewerage and waterways and drainage services. We also considered different forms of price control to manage pandemic-related demand uncertainty (such as a revenue cap), however determined that customers' best interests were served by price stability and predictability.

The Board therefore resolved that Melbourne Water should use its financial capacity to absorb pandemic-related uncertainty on behalf of the community. This approach was consistent with the feedback we received from our customers and with the underlying premise of PREMO. It also meant the community would not be left to unfairly shoulder the risks related to uncertain growth forecasts (were growth forecasts not to fall as low). As a large commercial business, Melbourne Water has the capacity to protect our customers from these risks.

Our review of demand forecasts is discussed in detail in section 5.0.

1.2 Offsetting cost pressures

During the development of our price submission, early forecasts indicated that there were a number of cost pressures on our business. Recent past population growth has brought forward a number of projects from period 2026-31, to the 2021-26 regulatory period (e.g. Western Treatment Plant Primary Treatment Augmentation to increase capacity at the treatment plant). Similarly, there are a number of major asset renewals that need to be delivered (e.g. the

Hobsons Bay Main Yarra Crossing Duplication to support the reliability of Melbourne's sewer system). These projects are necessary to ensure continuity of service delivery and are driven by compliance and historical population growth.

Melbourne Water's asset investment strategy is not to build assets in anticipation, but rather 'just in time' - we look to optimise investment in renewal of existing assets to maximise their efficiency before we build new assets and our increase in capital spending is due to recent past population growth, as opposed to anticipated future population growth.

To offset these cost pressures, our Price Submission adopted a number of stretch commitments, which included:

- Additional capitalisation of desalination security payments (saving customers $217 million)
- Adopting an insurance growth rate of 10%, below global market forecasts of 40% and 23% in the Pacific region (saving customers $17.7 million)
- The exclusion of $500 million in capital projects (saving customers $85.8 million)
- Smoothing of Melbourne Water's capex profile to manage delivery uncertainty (saving customers $43.1 million)
- Adopting the ESC benchmark taxation calculation, rather than using estimated tax payable that is an option in the ESC Guidance Paper (saving customers $72 million).

The aggregate impact of these strategies was the removal of $515 million from the revenue requirement, at Melbourne Water's risk.

Our focus on delivering better customer value and Melbourne Water's commitment to placing customers at the heart of our decisions, was the thread that drove the planning, development and delivery of our submission:

- We engaged our customers and the community more than we ever have before. We placed our customers and community at the heart of the process via a deliberative multi-stage engagement program tailored to our unique customer base and range of services. We provided open and transparent access to our strategies as they were developing, and sought feedback on our proposals, and our Price Submission. We gave multiple opportunities to generate discussion, provide comment and influence elements of our submission. We listened and responded. Our engagement approach is detailed in section 3.1.

- We held ourselves to account, by:
  - Adopting outcomes and outputs prioritised and endorsed by our customers
  - Proposing Guaranteed Service Levels (GSLs), a first for a wholesale water business (Melbourne Water is the only bulk water business nationally to implement GSLs[1])

[1] None of the following bulk water businesses have a GSL scheme in place: Wholesale businesses similar to Melbourne Water - WaterNSW (NSW), SeqWater (QLD), Gladstone Area Water Board (QLD), Mount Isa Water Board (QLD); rural

  - Identifying a program to report back to our customers on our performance, including collaborating on how we respond to underperformance and/or changing customer preferences. We committed to this on an annual basis via fit for purpose customer forum(s) and public reporting on our website.

- We put in place a transparent internal and external multi-stage review process to ensure that we lodged our best offer to the ESC and maximised customer value. We appointed KPMG to undertake an independent assessment of our performance against the ESC PREMO framework, with an independent finding of 'Advanced' against all elements. The findings of this independent assessment can be made available to the ESC on request.

- We adopted strategies and made commitments that delivered flat or falling prices, whilst still delivering increased service levels, new obligations and investment in asset renewal.

We can confidently say that our customers and the community are better off under our proposed price submission.

water businesses that have responsibility for providing urban bulk water services: SunWater (QLD), Goulburn-Murray Water (VIC), Southern Rural Water (VIC).

2.0 Regulatory period

The ESC Draft Decision proposes to reduce the regulatory period from five to three years, largely due to the uncertainties associated with the pandemic. Relevant references from the Draft Decision are included in the highlight box below.

ESC Draft Decision references (pg 3)

"*We consider it is in the interest of customers if Melbourne Water has a three-year regulatory period.*"

"*…we found in many instances that Melbourne Water's price submission did not have adequate regard to the matters specified in clause 11 of the WIRO, or comply with our guidance.*"

"*A shorter regulatory period provides Melbourne Water with sufficient time to prepare a proposal with better outcomes for its customers for the following period, and Melbourne Water does not have to continue with our decision for five years.*"

"*We consider that a five-year regulatory period provides little flexibility for Melbourne Water to adjust its proposals for any significant effects arising out of the coronavirus pandemic.*"

2.1 Melbourne Water response

Melbourne Water requests a five year regulatory period be approved.

Melbourne Water does not consider that the ESC Draft Decision has demonstrated that a shortened regulatory period is the best response to pandemic relate3d uncertainty.

The Draft Decision supposes (without any form of quantitative analysis) that customers are better off with a shorter regulatory period. Melbourne Water contends a three year regulatory period may impose additional costs on customers that are unnecessary (e.g. costs associated with submission preparation - engagement, modelling, capex and opex processes, ESC fee, etc).

Interventions should only be implemented on the basis of benefits to customers outweighing costs[2]. The Draft Decision has not quantified the benefits that would be delivered by a three year regulatory period and yet it would impose significant additional costs on Melbourne Water that could be better managed through alternative mechanisms.

Options available to Melbourne Water:

[2] Clause 8(b) of the Water Industry Regulation Order 2014 (WIRO) requires the ESC have regard to section 8A of the ESC Act. Clause 1(e) in Section 8A of the ESC Act requires the ESC to have regard to the benefits and costs of regulation for consumer and regulated entities.

- The return of revenue to customers to avoid over recovery under a price cap. We set out in section 2.1 and S2.3.2 of our Price Submission how we would engage and consult with customers to determine the best way to respond to uncertain events.
- The proposed capital adjustment mechanism which we provided in our 23 December 2020 communication to the ESC, which is not acknowledged in the Draft Decision.

Options available to the ESC instead of a three year determination:

- Under the 'P' element of PREMO, the ESC can downgrade a business's PREMO rating during the regulatory period, or in the next regulatory period, where it is not delivering consistent with its commitments.
- Targeted reopening at three years – reopening limited to pre-defined elements of the submission under certain circumstances.
- A full reopening where threshold limits (based on materiality) are breached.

A three year regulatory period has impacts on the alignment between retail and wholesale reviews, such that Melbourne Water would be one year behind the metropolitan retail businesses. Considering the necessary timetable of activities, the retailers would need to be engaging with Melbourne Water while also finalising their price submissions. Given the likely volume of work necessary to participate, this may be particularly challenging. The ESC Draft Decision does not indicate whether there was any consultation with the retailers to test the perceived benefits of a revised alignment. There is also the added problem that a year after approving retail prices, the ESC would be confronted with having to reset wholesale prices – which would flow into retail prices just one year after those retail prices were approved.

The Draft Decision states a major reason for the shortened regulatory period is to address uncertainty. Our response:

- Accepts the ESC reduction in growth for Opex and Capex purposes from about 2% to 1%
- Adopts updated demand forecasts which are informed by experience of the pandemic.

These adjustments are detailed in the Demand section later in this response (refer section 5.0) and add weight to the case for reinstating a five year regulatory period. We note that the impact on customer bills of the revised revenue requirement is relatively immaterial.

3.0 PREMO Assessment

While not wanting to negatively impact on customers, Melbourne Water requests the ESC amend its PREMO assessment of our Price Submission. We contend our approach was in line with an 'Advanced' rating under the PREMO Framework.

There are two critical elements of the ESC Draft Decision that Melbourne Water disagrees with:

- The application of the PREMO assessment framework
- The PREMO ratings and associated supporting statements

Melbourne Water disagrees with the rating of our submission as 'Standard' under PREMO and the selective comparisons made with retail water corporations in reaching this conclusion. It is Melbourne Water's view that our submission is worthy of an 'Advanced' rating when considered against the ESC PREMO assessment framework as published in its Guidance Paper[3].

In the following sections we set out why we disagree with the 'Standard' rating for each PREMO element and seek that it be amended to 'Advanced'. We present evidence to validate the basis for our initial rating.

This matter is important to Melbourne Water because the outcomes and precedents established by the PREMO assessment process will inform how we prepare for our next price submission.

Application of PREMO Assessment Tool Guidelines

Melbourne Water acted in good faith in proposing an 'Advanced' submission under the PREMO framework and in compliance with the ESC's Guidance Paper. Likewise, the Board of Melbourne Water acted in good faith in applying the PREMO assessment framework when attesting to the standard of its price submission. Melbourne Water could not reasonably have anticipated how the ESC would alter its assessment standards when preparing its Draft Decision.

As documented in the ESC's Guidance Paper[4], the ESC reviewed the PREMO framework and assessment process to consider the nature of the services delivered by Melbourne Water, including its roles as Melbourne's supplier of bulk water and sewerage services. It stated that the PREMO framework and incentive mechanisms (that were established in the 2018 urban water price review) should apply to Melbourne Water, but with minor amendments. These amendments mostly impact the return on equity values in our PREMO matrix.

[3] Essential Services Commission, Melbourne Water's 2021 Water Price Review: Guidance Paper, 13 November 2019 (Attachment 5)
[4] Essential Services Commission, Melbourne Water's 2021 Water Price Review: Guidance Paper, 13 November 2019 (pg. 33)

Based on our reconciliation against the 2018 Water Price Review Guidance Paper, there are only minor amendments to the PREMO assessment tool guiding questions and examples. These include tailoring to reflect both end-use and retail customers, explicit consideration of desalination capitalisation under Management and the comparison of Melbourne Water's efficiency commitment to the industry average commitment under the 2018 price review.

While this was our first experience of PREMO we lifted the effort that went into the submission on the assumption that the ESC may lift the bar in terms of expectation based on the outcomes of the 2018 retailer and regional price reviews.

Within the Draft Decision, the ESC states its assessment considers the claims made by Melbourne Water against the PREMO Assessment Tool Guidelines.

Given the ESC is required to comply with the Assessment Tool (as detailed in Attachment 5 of the Guidance Paper), and the broader assessment framework detailed within its Guidance Paper, Melbourne Water contends there are a number of inconsistencies with how the ESC has applied the PREMO Assessment Framework that conflict with the Guidance Paper and its Additional Guidance, as follows:

- The Draft Decision does not provide a detailed assessment against the guiding questions contained within the Assessment Tool. Instead, the ESC has selectively focused on specific issues that support its downgrading. What this implies, is that there is a 'weighting' to issues of importance, that was not outlined in the Guidance Paper, the PREMO Assessment Tool, or the additional guidance (excluding the focus on treatment of desalination payments and considering of the impacts of coronavirus). Examples of ESC's selective focus include Melbourne Water's growth forecasts and their impacts on forecasts (page 78, 79), feedback from the retailers on Melbourne Water's engagement (page 80), the relatively small adjustments to Melbourne Water expenditure forecasts (pages 80-81) and lack of ambition in setting output targets (page 82). The ESC has not detailed, nor sought to explain, how it considered other elements that form part of the Assessment Tool.

- The Draft Decision has introduced prescriptive expectations regarding what is required to achieve certain PREMO ratings, which directly contradicts the Guidance Paper. For example, page 17 of the Guidance Paper states:

  "*We have not prescribed the manner in which Melbourne Water should engage with its customers.*"

  However in its PREMO assessment against Engagement, the ESC states:

  "*We consider that Melbourne Water adopted a more traditional approach to its engagement, which included engagement practices that did not fully support the level of collaboration, influence and deliberation of final proposals in its near final submission, that we would expect with an 'Advanced' submission.*"

  In effect, the ESC Draft Decision is imposing expectations regarding engagement practices that were not stated in its guidance and without taking into consideration the issues of importance raised by Melbourne Water's customers/end users, the level of

influence those stakeholders sought and/or whether these engagement activities (given the issues and priorities raised) were fit-for-purpose.

- The Draft Decision compares Melbourne Water's proposals to those made by the retail water corporations in their 2018 price review. Such comparisons were not foreshadowed in the Guidance (except for operating expenditure efficiency improvement). Whilst the Guidance did at times make reference to comparing Melbourne Water to 'industry average', the ESC failed to articulate how it appropriately took into account the differences between a wholesale water business against a retail-distribution business, or a vertically integrated regional water business.

- The ESC did not update its PREMO assessment framework in the additional Guidance circulated in August 2020, to account for the unfolding COVID-19 pandemic. Whilst it required Melbourne Water's supporting information (on each of the elements of the PREMO rating) to take into account where relevant the impact of the coronavirus (which we did), it did not update the PREMO Assessment Tool, nor state that Melbourne Water's response to the pandemic would materially impact its PREMO assessment. This left Melbourne Water to reasonably conclude that the assessment framework detailed in the Guidance Paper remained the relevant framework for assessing its submission. It was against this assessment framework that the Board undertook in good faith its attestation.

- The Draft Decision references selective examples of strategies adopted by some water corporations in the 2018 price review to support their 'Advanced' PREMO rating, without due consideration of all approaches proposed. This represents a 'cherry-picking' of examples, without due consideration of all comparative examples.

- There is a disconnect between the quantum of adjustments to Melbourne Water's proposals, and the PREMO ratings. While the Draft Decision is not proposing to approve Melbourne Water's expenditure forecasts, the proposed amendments are small, relative to the outcomes of other water businesses that achieved 'Advanced' in the 2018 price review. Melbourne Water contends the Draft Decision has inconsistently applied the PREMO framework across different businesses, without forewarning and without accounting for the differences between Melbourne Water and those businesses.

In the below sections, Melbourne Water expands upon the points made above as part of our response to each element of the PREMO assessment.

3.1 Engagement

Melbourne Water has summarised the views on our engagement approach presented in the ESC Draft Decision into the following four key areas.

- The ESC concluded Melbourne Water adopted a more traditional approach to engagement, which included engagement practices that did not fully support the level of collaboration, influence and deliberation expected of an 'Advanced' submission.
- The ESC expected to see stronger endorsement of engagement approach from stakeholders.
- The ESC concluded Melbourne Water relied too heavily on the results of a willingness to pay study to justify increased expenditure on waterways and drainage services.
- The ESC raised specific concerns with the Simultaneous Multi-Attribute Level Trade Off (SIMALTO) study into customer preferences and willingness to pay, undertaken as part of our engagement program.

Relevant references from the ESC Draft Decision are included in the highlight box below and the remainder of this section aims to provide greater clarity on the extent of Melbourne Water's engagement program, the level of endorsement received from stakeholders, and why we believe our approach meets an 'Advanced' rating.

ESC Draft Decision references:

Pg 6 – "*engagement practices provided limited opportunity for its more sophisticated stakeholders to influence the direction of the engagement at an early stage, or did not include opportunities to deliberate on complex issues at later stages for recommendation in its final price submission*".

Pg 6 – "*We note that Melbourne Water undertook more extensive engagement on specific issues but not on its whole list of proposals during its final engagement stages, within the context of its final price submission, to allow influence and 'close-off' stakeholders' issues*.

Pg 6 – "*For an 'Advanced' PREMO rating for engagement we would expect to see:*

- *Stronger endorsement of Melbourne Water's claim for effective collaboration…*
- *Evidence that all proposals that have a significant effect on services and prices are tested with stakeholders before they are submitted to us. For example, we found that stakeholders were not given sufficient information to provide feedback on Melbourne Water's proposed approach to capitalisation of desalination plant payments…*
- *Assurance that engagement methods were fit for purpose and outcomes of these methods were fully tested… Melbourne Water relied heavily on the findings of on the findings of a Simultaneous Multi-Attribute Level Trade-Off analysis (SIMALTO) study to justify increased expenditure on its waterways and drainage services. We reviewed the appropriateness of Melbourne Water's methodology and use of SIMALTO, and found that the supporting information in the process did not enable customers to engage meaningfully on their preferences. Melbourne Water also relied on the SIMALTO study findings in*

describing its customers' views but did not re-open the test results for interrogation before formulating its final recommendations."

Pg 79 – "*we consider that Melbourne Water adopted a more traditional approach to its engagement, which included engagement practices that did not fully support the level of collaboration, influence and deliberation of final proposals in its near final submission, that we would expect with an 'Advanced' submission*."

Pg 80 – "*we found evidence of stakeholders questioning the level of influence, including from Melbourne Water's Water and Sewerage Customer Council (which included the three metropolitan water retailers), which did not fully support the level of collaboration Melbourne Water described in its submission*."

Pg 80 – "*we would expect strong endorsement of its claims by engagement participants, particularly participants who are highly experienced in designing and implementing engagement programs under our PREMO framework, some of whom contributed to their businesses' own 'Advanced' PREMO rating in the 2018 water price review*."

3.1.1 Melbourne Water response

Melbourne Water contests the view that we adopted a more traditional approach to engagement, with engagement practices that did not fully support the level of collaboration, influence and deliberation expected of an 'Advanced' submission.

There are a number of issues raised in the Draft Decision, where it appears the extent of Melbourne Water's collaborative and tailored engagement program was not adequately considered. We wish to clarify the full extent of our program and how it was designed to respond to Melbourne Water's unique circumstances (different from the services and customers of the retail water businesses).

Since our last price submission in 2016, Melbourne Water has continued our journey to becoming a more customer-focused organisation: prioritising genuine two-way customer engagement and embedding customer insights into how we do business, to ensure better outcomes for our customers and community.

Over the past few years we have worked hard to embed our Next Generation Community Engagement model (NextGen) into the culture of our organisation and in 2020 we were proud to be awarded Australasian 'Organisation of the Year' by the International Association of Public Participation (IAP2), in recognition of our leading practice NextGen engagement model.

Our NextGen model was fundamental to the development of our engagement approach for the Price Submission. Our engagement program was further refined based on ESC guidance, and taking on board feedback provided from key customers (retail water corporations and waterways and drainage stakeholders).

Engagement program

We ran a three stage engagement program over twenty months to support our efforts to develop a customer-focussed submission.

The ESC Draft Decision states "*engagement practices provided limited opportunity for its more sophisticated stakeholders to influence the direction of the engagement at an early stage, or did not include opportunities to deliberate on complex issues at later stages for recommendation in its final price submission*." (pg 6)

Contrary to this finding and in accordance with both the ESC guidance and our NextGen engagement model, our engagement program started early to allow time for deep deliberative engagement and collaboration with our customers and community, providing early opportunities to influence our engagement approach and prioritise topics of interest, and providing opportunities to deliberate on complex issues throughout development of our price submission. This is contrary to the ESC view that we adopted a traditional engagement approach with minimal opportunity for stakeholder deliberation, collaboration and influence.

Our three stage engagement program is detailed in our *Price Submission 2021 Engagement Report*[5] (provided to the ESC in support of our submission in November 2020). In summary:

- **Stage One**: sought to understand what our customers and community value about our services and to establish focus areas for further engagement. We developed a co-designed vision and set of values to guide development of our submission and refined our engagement approach based on what we heard from our customers and community through this stage.
- **Stage Two**: focused on understanding customer and community preferences and performance priorities. We co-designed our customer outcomes with our primary customers (retailers and waterways and drainage customers), and began refining our investment program based on what we heard from our customers and community through this stage.
- **Stage Three**: sought to validate and prioritise customer outcomes and outputs and take a deep dive into review of our investment program with our two Customer Councils. We closed the loop on engagement with opportunities for stakeholders and the general public to participate in discussions, review our draft proposals and provide feedback. We concluded by undertaking an additional Community Deliberative Panel over 4 days in September 2021 to consider impacts of COVID-19. This final community deliberative forum provided resounding support for the acceptability of our proposed prices (for both waterways and drainage and water and sewerage services) and measures to ease the impacts on water bills.

[5] Link to PS21 Engagement Report: https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.mw-yoursay.files/1616/0510/7644/Melbourne-Water_Price-Submission-2021_Engagement-report.pdf

For ease of reference we have included Table 2 from our *Price Submission 2021 Engagement Report* in Appendix A. The table summarises the levels of engagement with stakeholders (using the IAP2 engagement spectrum) and the key deliberative forums and other engagement activities undertaken in each stage.

Customer and community deliberative forums

The ESC draft decision makes no reference to our deliberative engagement forums and instead concludes we "*adopted a more traditional approach to engagement…*" (pg 79). The review undertaken by Deloitte on behalf of the ESC documents our engagement program at a high level but provides no assessment. Instead the Deloitte report refers to consultation they undertook 'at officer level' with MW's three largest retail customers (YVW, SEW, CWW) and conclusions appear to be based on this feedback alone. Melbourne Water has not been privy to this feedback and so has no opportunity to respond directly to these claims.

Due to Melbourne Water's unique service offering, we have a unique customer base with a diversity of interests and opinions we have had to balance, as follows:

- The retail water corporations are our direct customers for our bulk water and sewerage services who in turn pass our costs on to the community (end-use customers).
- Our customers for our waterways and drainage services include Local Government, engaged community groups (e.g. Yarra Riverkeeper, Werribee Riverkeeper, Port Phillip Baykeeper), developers, direct service customers and the broader community.

Contrary to the ESC's findings of a traditional approach, we used a variety of fit-for-purpose engagement forums and methods to ensure our diverse customers and community were given suitable opportunities to deliberate on complex issues and influence our submission through its development over nearly two years.

Deliberative engagement forums included:

- Two dedicated Customer Councils to represent the interests of urban and regional water businesses as well as representatives of key stakeholders in our waterways and drainage services. These two forums were independently facilitated and worked collaboratively with us over 18 months to test strategic ideas, seek preferences and provide direction on key issues, opportunities and focus areas. They worked with us to help shape and refine our engagement activities and customer outcomes and our proposals for key service investment and regulatory matters.
  - The **Water and Sewerage Customer Council** (WSCC) was established to provide a dedicated customer forum of senior executives from the retail water corporations. Representatives from Yarra Valley Water (YVW), South East Water (SEW), City West Water (CWW), Western Water (WW), Barwon Water (BW) and South Gippsland Water (SGW) participated on the Council. They met seventeen times throughout our engagement program.

  - The **Waterways and Drainage Customer Council** (WDCC) was established to provide strategic advice on our waterways and drainage pricing proposals. Members included representatives from local government (Brimbank City Council, Wyndham City Council, Yarra Ranges Council, Maroondah City Council, City of Melbourne and Moorabool Shire Council), engaged community groups (Port Phillip EcoCentre, Werribee River Association, Yarra Riverkeepers Association), key stakeholders from the State Emergency Service, Victorian Planning Authority and the Urban Development Institute of Australia, one general community member and one direct services customer (waterway diverter). They met thirteen times throughout our engagement program.

- Representatives from the retail water businesses also participated in the following two technical forums:
  - **Engagement Advisory Panel** (EAP) comprised technical officers from each retail water business's engagement and communications areas to help shape our engagement approach and interpretation of engagement insights. The EAP met seven times over the course of our engagement program.
  - **Regulatory Managers Forum** (RMF) comprised technical officers from the regulatory areas of each retail water business to help shape Melbourne Water's position on complex regulatory matters. The RMF met four times through Stage 2 of our engagement program and recommendations from this forum were then presented to the WSCC

Throughout Stage 1 we collaborated with both Customer Councils to refine our engagement approach and agree on ways of working and the matters they wanted to focus on through the engagement program. Via this approach, the Councils themselves set the agenda for what we covered through the remainder of the program with them, and they were highly influential in the development of our overall engagement program with the broader community (also supported by input from the EAP).

Through Stage 2 we shared an extensive amount of information with both Councils on the matters of interest they had identified through Stage 1 and we co-designed our Customer Outcomes with them.

Through Stage 3 we worked through our investment program with both Customer Councils and provided them briefings and opportunities to review our draft proposals and draft price submission.

The details of our extensive deliberations with the Customer Councils and supporting forums are documented in our *Price Submission 2021 Engagement Report* and in the individual reports submitted by each Council at the conclusion of each stage of engagement.

We also worked closely with two community deliberative panels (representing end-use customers), as follows:

- We established a **Waterways and Drainage Community Deliberative Panel** made up of a representative sample of the broader population[6] who met over four days to review and deliberate on waterways and drainage issues and investments, including 'deep dives' on priority issues and testing of customer preferences and willingness to pay insights. The final two meetings were held during COVID-19 and impacts on proposed prices were discussed. The establishment of this Panel was aligned with the recommendations of the WDCC for our engagement program.
- We established a **Community Deliberative Panel** made up of a representative sample of the broader population[7] who deliberated over eight days to review, test and validate our proposed customer outcomes, outputs and targets (across both our water and sewerage and waterways and drainage services). This group was reconvened for an additional four days to test Melbourne Water's proposed prices and response to the impacts of the pandemic.

The Community Deliberative Panels were independently facilitated and recruited to ensure a representative sample of people to reflect the broader population. The details of our extensive deliberations with these forums are documented in our *Price Submission 2021 Engagement Report* and in individual reports provided by the independent facilitators of each forum.

The ESC Draft Decision states "*we note that Melbourne Water undertook more extensive engagement on specific issues but not on its whole list of proposals during its final engagement stages, within the context of its final price submission, to allow influence and 'close-off' stakeholders' issues.*" (pg 6). This finding misunderstands the purpose and activities undertaken as part of our final Stage 3 engagement, summarised below:

- Melbourne Water's draft proposals were provided for comment on our YourSay engagement website, over a three week period from 22 June – 13 July 2020. A total of twelve submissions were received in response, with broad support for our proposed Customer Outcomes; some strong views that more should be done for waterway health; a desire for greater investment in stormwater and recycled water, flood mitigation and community flood preparedness, education and capacity building, integrated water management (IWM) and urgent action on climate change; and generally supportive feedback on our overall engagement approach.[8]
- Melbourne Water held multiple sessions with the WSCC over January-March 2020 to deliberate on our capital and operating expenditure forecasts. Pre-reading materials were provided to detail key challenges, drivers, risks and assumptions and business cases for our top ten capital projects were shared along with a feedback template to facilitate

[6] Panel consisted of 40 participants who were a mix of randomly selected community members and existing stakeholders previously involved in engagement activities, refer: *Waterways & Drainage Community Deliberative Panel Engagement Findings Report, Max Hardy Consulting, May 2020*
[7] Panel consisted of 43 participants selected to provide a representative sample of the community, including age, gender, socio-economic status, property ownership an cultural and linguistic diversity, refer: *Price Submission 2021: Community Deliberative Forum – Customer Outcomes and Measuring Performance Final Report, WhereTo, May 2020* and *Deliberative Forum, Community check-in on COVID-19 proposals to ease bill impacts, WhereTo, Sept 2020*
[8] Refer *Price Submission 2021 Engagement Report* for more information

review. In response to the information shared, none of the members provided feedback. A series of final investment options were presented to the WSCC for feedback on 17 June 2020 and members were split on their preferences.

- Over a series of five meetings from April to July, the WSCC was briefed and deliberated on preliminary drafts of our Price Submission, assessing it against the WSCC expectations provided to Melbourne Water at the conclusion of Stage 2 (refer Appendix C).
- At the conclusion of Stage 3 the WSCC provided a final written response on the draft price submission where they acknowledged the "*significant effort to involve them in the process, representing an enormous improvement on past processes and establishing a platform for ongoing collaboration on important issues and strategies relevant to the water industry"* [9].
- Over a series of three meetings from May to June, the WDCC was briefed on key aspects of the Waterways and Drainage Investment Plan (WDIP) including draft proposals on waterways and drainage service levels and price, as well as a draft of our Price Submission. The final session on 3 June 2020 was an independently facilitated workshop for the WDCC to provide feedback on the draft price submission[10].
- At the conclusion of Stage 3, the Chair of the WDCC wrote to Melbourne Water, noting "*Melbourne Water developed a transparent and collaborative engagement program that included establishing a Customer Council that included representation from engaged and broader community and relevant customer and stakeholder segments*." [11]
- Briefings on our draft proposals were also provided to key stakeholders (State Government and consumer advocacy groups) to provide an opportunity for feedback, questions and discussion.

In addition to these extensive deliberative approaches, Melbourne Water implemented a range of awareness raising activities throughout our engagement program to ensure a broad cross section of the community was aware and invited to participate. This was done via presence at five community festivals across Melbourne and use of social media. We also developed and deployed a range of innovative digital assets – short animations to explain our services and a gamification tool 'DripTrip', in a concerted effort to capture a younger audience. We maintained an up-to-date presence on our YourSay online engagement hub, with opportunities to find information, ask questions and participate in various feedback stages, including the final 'close the loop' stage to review Melbourne Water's draft proposals.

Through our extensive and deliberative engagement approach, our customers and community had a significant influence over material aspects of our price submission. In summary, Melbourne Water:

[9] 2021 Draft Price Submission, Water and Sewerage Customer Council, Final Response, August 2020
[10] Refer *Price Submission 2021 Engagement Report* for more information.
[11] Letter to Melbourne Water from John Forrester, Chair Waterways and Drainage Customer Council, 14 May 2020

- Established a deliberative engagement program, tailored to our unique services and customer base, directly reflecting the demands of our customers, and refined consistent with feedback provided from key customers (retail water corporations and key waterways and drainage customers).
- Co-designed (with customers) a set of customer outcomes and outputs that were endorsed and prioritised by stakeholders and directly align with and support the retail water business's own customer outcomes (refer Appendix B).
- Developed and refined expenditure to deliver on customer and community insights and priorities and endorsed Customer Outcomes (as well as having regard to delivering on our commitments and obligations).
- Identified and finalised a set of Guaranteed Service Levels (GSLs) that directly align with, and support, retailer GSLs.
- Accepted all risk related to the impact of COVID-19, after receiving feedback from the retailers for Melbourne Water to 'minimise any upward price pressures arising from COVID-19'.
- Adopted a number of stretch commitments to offset any price increases resulting from cost pressures on the business to maintain services.
- Engaged with customers in the development of Melbourne Water's demand forecasts. The forecasts for water and wastewater are developed through a collaborative approach that relies heavily on the active participation and development by each of the retailers of demand forecasts for their respective customer basis. Melbourne Water notes that no other water businesses in Victoria has imbedded its customers (through demand forecasting) in its planning processes to the same degree as Melbourne Water.
- Committed to working with a Customer Forum/s over the price period (comprising representatives of household, business and retail water business segments) to agree an appropriate performance monitoring and reporting arrangement, as well as continuing to review strategically important issues, including tariffs.

Melbourne Water contests the way the ESC Draft Decision characterised the level of endorsement from stakeholders for our approach to engagement.

We disagree with the way the Draft Decision characterises our engagement with the retailers as it doesn't reflect the nature of our extensive deliberations with them over 18 months and in particular their level of involvement via their membership of the WSCC, EAP and RMF, described above.

The ESC Draft Decision states they expected to see "*stronger endorsement for Melbourne Water's claim for effective collaboration*." (pg 6) The supporting Deloitte report refers to consultation they undertook 'at officer level' with Melbourne Water's three largest retail customers (YVW, SEW, CWW) and conclusions appear to be based on this feedback alone. Melbourne Water has not been privy to this feedback and so has no opportunity to respond directly to these claims.

The Deloitte finding differs significantly from the formal response Melbourne Water received from the WSCC at the conclusion of our engagement with them:

> *"The Water and Sewerage Customer Council would like to thank Melbourne Water for the opportunity to provide feedback on the 2021-2026 Price Submission. We acknowledge the significant effort that Melbourne Water has made to involve us in this process.*
>
> *This represents an enormous improvement on past processes and establishes a platform for ongoing collaboration on important issues and strategies relevant to the water industry.*
>
> *We recognise the significant time and effort that such close engagement with customers takes and congratulate the price submission team on their commitment to the process."* [12]

At no stage during the preparation of the Price Submission, or since, have the retailers expressed to Melbourne Water a lack of confidence in our efforts to engage genuinely with them.

The retailers were highly influential in refining our engagement approach and in co-designing our Customer Outcomes. At the conclusion of the process we were able to demonstrate to the retailers how closely aligned our outcomes were with their own (refer Appendix B).

At the conclusion of Stage 2 the Council set fifteen expectations of our Price Submission which we sought to meet and demonstrated how we met them through iterative deliberations with the Council through Stage 3 of our engagement program (the table in Appendix C documents how we responded to the fifteen WSCC expectations).

We are also concerned the ESC has not considered the endorsement of our engagement approach from other key stakeholders; not just the retailers. We received strong endorsement of our collaborative engagement approach from the:

- Waterways and Drainage Customer Council
- Waterways and Drainage Deliberative Panel
- Customer Outcomes/COVID-19 Community Deliberative Panel
- Vision and Values Co-Design Workshop

This endorsement of our collaborative approach is evidenced by the below feedback:

> "*Melbourne Water developed a transparent and collaborative engagement program that included establishing a Customer Council that included representation from engaged and broader community and relevant customer and stakeholder segments*." [13] (Chair, Waterways and Drainage Customer Council)

[12] Water and Sewerage Customer Council, Final Response, Aug 2020
[13] Letter to Melbourne Water from John Forrester, Chair Waterways and Drainage Customer Council, 14 May 2020

> "*The engagement experience was 'informative', 'interesting', 'fantastic' and 'empowering'.*" [14] (participant in Waterways and Drainage Community Deliberative Panel)
>
> Words used describe how the 'Visions and Values' community panel members felt about the day during the conclusion of the workshop include: *"Collaborative, Impressive, Watery, Proud, Cooperative, Faith-in-process".*[15]
>
> *"As I did previously I have enjoyed myself again. I have enjoyed the collaborative nature of the forum and really appreciate being asked for my feedback. I enjoy other people's opinions and ideas. I think it is very worthwhile and think that a lot of organisations could take a leaf out of MW's book."* [16] (participant in Customer Outcomes/COVID-19 Community Deliberative Panel)

In addition, the ESC Draft Decision notes several submissions were received in support of Melbourne Water's engagement from members of the WDCC (Yarra Riverkeeper Association, Werribee Riverkeeper, Friends of Steeles Creek and an anonymous submitter).

Melbourne Water contests the view in the ESC Draft Decision that we relied too heavily on the results of a willingness to pay study to justify increased expenditure on waterways and drainage services.

Melbourne Water contends the ESC has misunderstood the way in which Melbourne Water used the SIMALTO customer preferences and willingness to pay study to inform decisions around waterways and drainage services. We wish to clarify how we used the results of the survey and that it was just one of a number of engagement inputs considered.

Engagement feedback was considered alongside Melbourne Water's investment requirements to meet our obligations and commitments set by legislation, compliance standards and government policy and strategies (these are outlined in section 6.2). In this way we could be confident our investments were aligned with customer and community priorities.

As outlined above, we delivered an extensive, holistic and rigorous engagement program in support of our price submission. We used insights from a comprehensive range of engagement activities to inform our decisions around service levels and subsequent prices. This multi-pronged approach was adopted because reliance on any single approach (whether SIMALTO or other) would come with the risk of not being fully reflective of all views and considerations.

With regard to waterways and drainage services we considered insights from the following engagement activities (illustrated in Figure 1 below):

- Waterways and Drainage Customer Council (met thirteen times over eighteen months, with the final stages held during the pandemic)

[14] Vision and Values Co-design Process, Melbourne water 2021 Price Submission, March 2019
[15] Vision and Values Co-Design Workshop, Melbourne Water 2021 Price Submission, March 2019
[16] Community check-in on COVID implications, Community Deliberative Panel Report, WhereTo, September 2020

- Waterways and Drainage Community Deliberative Panel (met over four separate days, one of which was held during the pandemic)
- Community Vision and Values Co-Design Workshop
- Customer focus groups (eight in total)
- Local Government workshop and submissions process (twenty-six Councils provided submissions)
- Customer preferences and willingness to pay quantitative survey (survey of 1,069 metro residential, 135 rural residential and 150 business customers)
- Customer Outcomes and 'COVID response' Community Deliberative Panel (deliberated over eight days during the pandemic, and were then reconvened for a further four days to consider our proposed prices and responses to the impacts of the pandemic)
- Final three week public consultation via our YourSay digital engagement platform (228 subscribers, twelve submissions received).

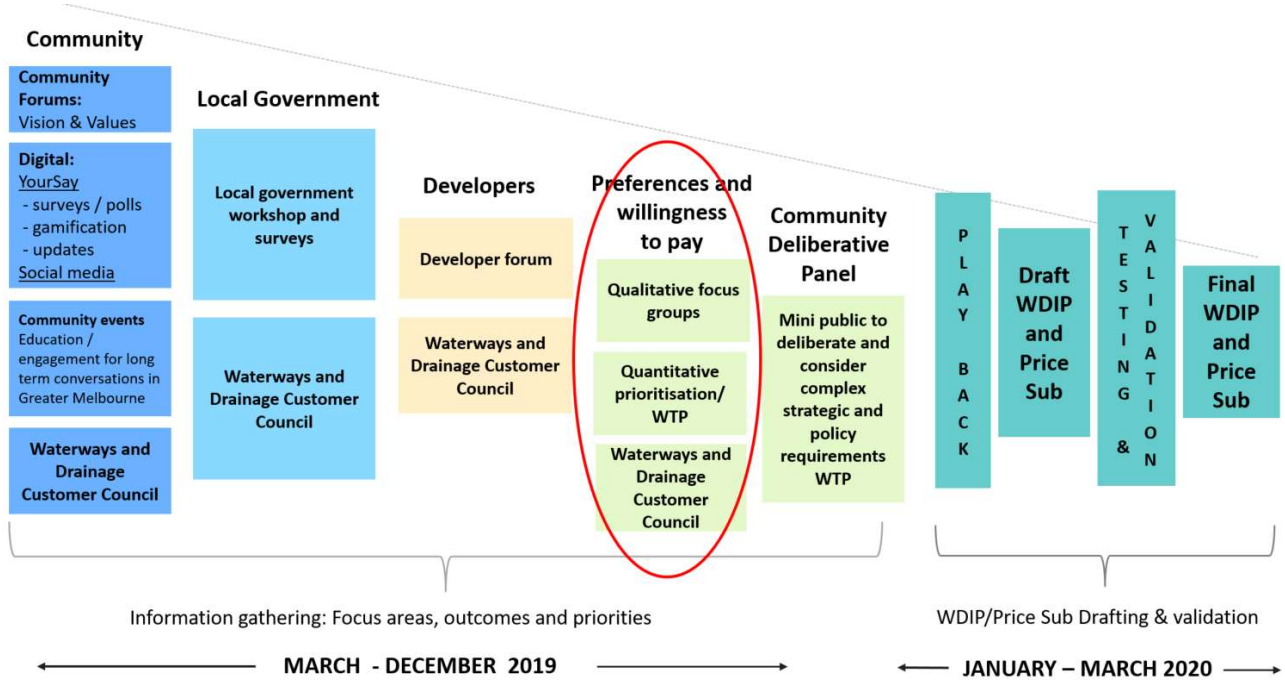


Figure 1. Waterways and drainage – sources of engagement insights

Across the entire engagement program, Melbourne Water's customers and community sent a clear message – that they wanted to see an uplift in waterways and drainage services and prevent a further decline in waterway health due to increasing pressures of climate change and urbanisation, and they were prepared to pay a higher price for this.

The ESC Draft Decision states "*The findings are interpreted by Melbourne Water as suggesting the majority of residential customers in the metropolitan area were willing to pay up to $8 more across the regulatory period for improvements in stormwater quality management and wetland condition flood protection, amongst other things…Melbourne Water has used this study to justify its proposal for increasing the waterways and drainage charge to recover an additional $43.5 million investment in waterways and drainage services.*" (pg 7).

The Draft Decision incorrectly assumes that we relied exclusively on the increase in willingness to pay of $8 from the SIMALTO study to justify the proposed increase in expenditure. Whilst the SIMALTO indicated an $8 willingness to pay (and other engagement insights also supported an increase), Melbourne Water opted for a marginal increase to the price for this service ($1 per year) to balance the cost with customers' clear appetite for investment in these areas. Melbourne Water certainly did not take the $8 increase as literally and as precisely as would be suggested in ESC Draft Decision.

To help demonstrate the range of insights we heard across our numerous engagement activities, Appendix D provides a collation of these insights against the waterways and drainage investment areas where we propose an increase, clearly illustrating the service level increases are supported by more than just the willingness to pay survey.

As noted above, alongside customer and community insights, our investment decisions are driven by our obligations under legislation, State policy, risk management and our own strategy commitments (further detailed in section 6.2 below). We also note that the development of our strategies is underpinned by separate comprehensive and tailored engagement approaches suited to the level of interest and influence of relevant customers and community. Of relevance to our waterways and drainage services, our Healthy Waterways Strategy followed a highly collaborative co-design engagement process with community and government stakeholders.

To deliver against our commitments and obligations, and to respond to what we heard through engagement required Melbourne Water to carefully balance a range of views in our decision making as well as applying prudency and efficiency principles and a focus on affordability.

Melbourne Water does not support the specific concerns raised with the Simultaneous Multi-Attribute Level Trade Off (SIMALTO) study.

The Draft Decision raises a number of concerns with the SIMALTO study used by Melbourne Water to gain insights into customer preferences and willingness to pay for waterways and drainage services.

We are confident in our methodology – we engaged the services of a highly experienced and reputable research firm (Newgate), via a competitive tendering process. Newgate developed and implemented a real world model (as opposed to a theoretical academic model) which was suited to the nature of the complex customer preferences and willingness to pay research we were undertaking. It is worth pointing out that two of the three tenders recommended SIMALTO as the most appropriate tool given the nature and complexity of our services (as opposed to simple choice decisions on products or services with features that consumers tend to be familiar with such as choice of t-shirt or choice of mobile phone).

Our approach was consistent with industry guidelines and met the principles for a robust willingness to pay study as outlined in the Water Services Association of Australia (WSAA) guidelines (*Willingness to Pay – Principles for a Robust Study, August 2019*)[17].

We are confident in the findings of the study and we are confident in how we applied those findings, balanced alongside insights from a range of other engagement activities across our unique customer and community base (outlined above).

The feedback in the ESC Draft Decision includes concerns about a lack of transparency (a "*black box*") and bias associated with the SIMALTO study.

We are disappointed in these findings as the consultant who undertook this work (Newgate) provided comprehensive responses addressing these matters in response to ESC questions, which we submitted in February 2021 (refer Appendix E) along with unlocked access to the spreadsheet model (contrary to the statement in the Draft Decision that the spreadsheet was locked). Melbourne Water continues to welcome the opportunity to transparently discuss the methodology applied, and resolve any concerns with the approach.

With regard to concerns around bias, a range of methods were used as part of the study to test and verify customers' preferences and willingness to pay. These are detailed in Newgate's responses to the ESC questions submitted in February 2021 (refer Appendix E).

While Melbourne Water acknowledges that the SIMALTO trade-off exercise asked customers to make some difficult decisions, the feedback from survey participants indicated that they appreciated the opportunity and understood its importance, as illustrated in these example comments from the follow-up survey[18]:

> "*The survey was thorough and was nicely planned to make you think highly of a set few items and then broaden out to think about others, forcing you to rethink your earlier choices. I actually enjoyed this. It made my choices feel more thought out and important*."
>
> "*It was a bit daunting at first but was a very useful exercise and really made me think about what was really important to me. I hope that the responses to this survey helps to inform Melbourne Water of the priorities of the Melbourne people*."
>
> "*I found the survey really interesting and have been thinking about how much parkland is polluted in Melbourne and needs cleaning up. I hope the government give you more funding because the work you are doing is really important and I wouldn't like to see animals suffer or go extinct because of what people have done. I had no idea how polluted the waterways are and I wish there was funding for an ad campaign to show Melburnians how they can help*."

[17] https://www.wsaa.asn.au/publication/willingness-pay-studies-%E2%80%93-principles-and-guidance
[18] Waterways and Drainage Charge: Willingness to Pay Final Report, Newgate, February 2020

In addition to controls for bias implemented by Newgate as part of the study, Melbourne Water considered the results alongside a range of other sources of customer and community insights from our broader engagement program, as outlined above.

The SIMALTO tool was used as part of Melbourne Water's 2016 Price Submission which was accepted by the ESC. The 2021 design was the same as in 2016, with even more information provided to participants about the process and its real-world implications, as well as about the waterways and drainage services themselves, and current best practice techniques were used in the analysis.

Melbourne Water had no reason to expect the ESC Draft Decision to take such a critical position of the SIMALTO tool this time around and we contend that it was entirely reasonable and appropriate for Melbourne Water to have used the SIMALTO tool in the way we did as part of our 2021 Price Submission.

3.2 Outcomes

Melbourne Water has concerns with the following issues raised in the assessment of our Customer Outcomes:

- The view that we have not challenged ourselves enough to deliver significant improvement to customers
- Comparison with retail water company targets and performance reporting
- Our approach to Guaranteed Service Levels

Relevant references from the ESC Draft Decision are included in the highlight box below and the remainder of this section addresses the three issues listed above.

ESC Draft Decision references:

Pg 11 – "*We note one of Melbourne Water's proposed targets under its outcome 'bills are kept as low as possible' is to identify more than $0.5 million per year in operating expenditure efficiencies. However, since Melbourne Water's controllable operating expenditure is around $400 million per year, $0.5 million accounts for a relatively small amount (about 0.1 per cent). Therefore, we do not consider Melbourne Water has adequately challenged itself in this area to provide significant improvements in customer value that reflect an 'Advanced' PREMO rating.*

Pg 12 – "*For an 'Advanced' rating we expect corporations to:*

- *demonstrate they have challenged themselves to deliver significant improvement in customer value in areas customers value most*
- *show accountability to customers and outline a plan to address lower customer value where they have fallen short on their commitments. Barwon Water and Yarra Valley Water did this by committing to compensate customers for unmet outcomes*."

Pg 12 – "*Guaranteed service levels provide greater accountability to customers, but we do not consider this demonstrates greater accountability beyond what the water industry is already doing. Rather Melbourne Water will catch up to industry standards by adopting guaranteed service levels*."

Pg 13 – "*For an 'Advanced' PREMO rating for outcomes, we would expect to see a guaranteed service level list that is the product of recommendations, or which are independently set by customers. (See 'Advanced' ratings by East Gippsland Water, GWMWater, Barwon Water*)."

Pg 82 – "*most of the proposed targets do not represent an improvement in service level across the regulatory period*."

Pg 82 – "*Melbourne Water's proposed outcomes reporting process is consistent with our expectations for a 'Standard' rating, but does not demonstrate how its reporting will be well ahead of other water corporations and deserving of the proposed 'Advanced' rating*."

3.2.1 Melbourne Water Response

Melbourne Water contests the assertion we have not challenged ourselves enough to deliver significant improvement to customers and the associated comparison with retail water company targets and performance reporting.

In a time of great uncertainty, Melbourne Water is seeking to make a difference for our customers, community and environment. We will make a difference through the ongoing provision of high quality and reliable essential services, while mitigating our impact on the cost of living and upholding our stewardship of the environment. It is critical that we get this balance correct and that we maximise the value we provide to our customers and the community. We have outlined our commitment to customer value in section 1.0.

Our Customer Outcomes were co-designed with our two Customer Councils. They were further validated and prioritised by our Community Deliberative Forum who met over eight days to review our proposed Customer Outcomes, outputs and targets[19]. The process to develop our Customer Outcomes is detailed in our *PS21 Engagement Report* referenced previously.

A high level of support for our proposed Customer Outcomes, outputs and targets was provided via the Community Deliberative Forum, as recognised in the ESC Draft Decision. We were also able to demonstrate close alignment between our Outcomes and the retailers own outcomes, as they had requested of us (refer Appendix B). In this way, our outcomes support the retailer's delivery of their own outcomes, which we believe represents considerable value for both our customers and the community.

The Draft Decision asserts that Melbourne Water has not adequately challenged itself to deliver significant improvement, however this is not premised on feedback provided by customers. It is therefore unclear why Melbourne Water would be expected to set higher targets and more challenging threshold limits, when this was not requested by customers. Such targets would impose additional costs to deliver a service level that is higher than what customers want, resulting in a loss of customer value.

It is also important to note that the Draft Decision does not consider the form of outcomes and supporting performance targets that a water business with a retail function can establish, as compared with what is required of a wholesale business, who is largely delivering services to meet regulatory requirements.

The Draft Decision notes that Melbourne Water has 'only' proposed improvement on 8 (out of 18) targets (44%). We note that of the remaining 10 targets, many of these are designed to achieve Melbourne Water's explicit regulatory requirements.

[19] Price Submission 2021, Community Deliberative Forum – Customer Outcomes and Measuring Performance, Final Report, WhereTo, May 2020

We have undertaken a comparison with other retail businesses that achieved an 'Advanced' or higher PREMO rating in the 2018 price review and note the following; Melbourne Water clearly compares favourably on this measure:

Water Business	PREMO rating for Outcomes	No of performance targets proposed for improvement	Percentage
Melbourne Water	ESC Draft Decision: Standard	8 out of 18	44%
Barwon Water	Advanced	10 out of 29	34.5%
City West Water	Advanced	4 out of 30	13%
Coliban Water	Advanced	6 out of 27	22.2%
Goulburn Valley Water	Leading	9 out of 23	39.1%
North East Water	Advanced	1 out of 21	4.8%
Yarra Valley Water	Advanced	0 out of 17	0%

Only two businesses proposed improvements in targeted performance on more measures than Melbourne Water (Central Highlands Water and South East Water).

The Draft Decision is critical of Melbourne Water for not outlining a plan to address underperformance where it has fallen short of commitments (noting that both Barwon Water and Yarra Valley Water committed to price adjustment mechanisms). This comment does not consider the following three matters:

- The other eight businesses that achieved Advanced or higher, did not offer a price adjustment mechanism for dealing with underperformance.
- Melbourne Water is introducing a GSL scheme, which demonstrates an approach to compensating customers for underperformance that is market leading for a wholesale water business and a significant step forward for Melbourne Water.
- Melbourne Water has committed to working with customers over an appropriate response to underperformance, including consideration of the circumstances under which it would be appropriate for Melbourne Water to make repayments to customers (refer p. 16 of our *2021 Price Submission*).

The Draft Decision asserts that Melbourne Water's performance reporting approach is not well ahead of other water corporations, which we do not agree with. We have committed to present annually (through a customer forum/s, comprising representatives of household, business and retail water business segments) performance against outcomes and to collaborate on responses to any performance issues or changing customer priorities. We also propose to report publicly through our website and social media. Melbourne Water's approach is broadly consistent with the performance monitoring and reporting frameworks implemented by the retailers that were considered Advanced or higher, although we note the greater diversity in

our customer base which will necessitate a more nuanced approach to collaborative engagement forums.

3.2.2 Guaranteed service levels

Melbourne Water's price submission proposed the introduction of Guaranteed Service Levels (GSLs) which will make Melbourne Water the first Australian wholesale water business to implement GSLs.

Negotiation of individually tailored GSLs for metropolitan retailers have now been finalised for approval in the Final ESC Decision (circulated separately).

All GSLs share the following common principles:

- Alignment to end customer outcomes and retailer GSLs
- As much as possible consistent across the retailers
- GSLs are as simple as possible to measure and administer and not dependent on new processes or systems
- Deviation from this relates to slightly different rebate values and trigger thresholds
- Any payment to end use customers as a result of MW breaching a GSL would be made by the retailer to their customer, with the retailer reimbursed by Melbourne Water
- An exception related to payments being compensated for heightened call centre costs for retailers for unplanned events and minimum notice periods for planned events not met
- MW recognises that from time to time there are infrequent but significant events which would require additional consideration, including provision for bespoke reimbursement for such major incidents.

It is intended that operational application of the GSLs will be reviewed annually by our respective Operational Representatives to ensure that they continue to meet our joint business and customer outcome objectives.

The nature of the GSLs and their intent will also be worked through with the retail water businesses in the lead up to their 2023 price submission to further evolve the GSLs in line with customer expectations.

This is expected to influence Melbourne Water's GSLs post the 2023 retailer price submission and Melbourne Water's next price submission.

The Draft Decision asserts that the creation and implementation of a GSL Scheme brings Melbourne Water up to industry standard. We believe comparing Melbourne Water to other retail water businesses in this way is inappropriate, due to the direct end-use customer relationship they have, and the nature of their customer services. A more appropriate comparison would be with other wholesale water businesses across Australia and Melbourne Water will be the only wholesale water business to have in place a GSL scheme, which demonstrates we are leading the industry for businesses of our type.

Further, the Draft Decision states that GSLs should be the product of recommendations from customers. The GSL framework Melbourne Water proposed in our 2021 Price Submission and our subsequent final approach (circulated separately) was originally suggested by the retail water businesses (our direct customers), developed in consultation with them and designed to reflect the retailers' GSL schemes which are based on consultation with their customers. This clearly demonstrates that Melbourne Water's GSLs are effectively the product of direct customer and end-use customer recommendations, consistent with the view of the ESC.

3.2.3 Hardship commitments

The ESC Draft Decision requests Melbourne Water outline how we have assisted business customers:

"*The coronavirus pandemic may have materially affected some small to large businesses in Melbourne. For example, some businesses may not have been operating fully for long periods of time but may have been required to pay the waterways and drainage charge. In response to our draft decision, we request Melbourne Water outline how it assisted these customers, who may have had difficulty paying for its waterways and drainage services."* (pg 67).

We submit the following overview of the work Melbourne Water has undertaken so far on supporting customers in financial vulnerability.

In December 2020, Melbourne Water actively began engaging with the three metro water retailers to gain better understanding of their financial vulnerability (Hardship) programs and any new support measures developed in response to the pandemic.

These engagements identified the following key challenges currently faced by the retail water businesses:

- Unexpected vulnerability across professionals in what were previously viewed as secure industries who have been suddenly without, or with drastically reduced income, e.g. airline pilots, lawyers, accountants, small business operators, chiropractors and other allied health professionals.
- Vulnerable customers experiencing family violence, poor mental and physical health.
- A series of support principles set out by the National Cabinet in April 2020 meant a cease of traditional debt recovery activities such as restrictions/disconnections, sale of debt, credit default and any other debt collection proceedings.
- An uptake in customers needing support, once temporary government welfare measures are withdrawn.
- Increases in customer call centre costs due to additional staff recruited in FY 2020/21 to manage the increased demand.

Due to the points noted above the retailers are not anticipating returning to any debt recovery activities during FY2020/21 and early parts of FY2021/22. We have also identified that each retailer currently has their own policies and methods of managing aged debts specifically for customers in hardship programs.

Melbourne Water is currently meeting Yarra Valley Water on a weekly basis to explore various ways we can support their hardship program. We are also using this as a way to help us outline what support can look like for other retailers, with whom we have also been engaging regularly on this matter. It should be noted that discussions for supporting customers in financial vulnerability have not been classified as either business or individual; support considerations have been approached as applying to all customers and tailored to each case.

Melbourne Water's *Billings & Collections Guidance Manual* has been updated to acknowledge the retailer's hardship policy to ensure Melbourne Water's practices are aligned with our retail counterparts. The Billings and Collection contracts with the retailers were renewed during FY2021 (Yarra Valley Water still under negotiation at time of writing). The customer support options that we are exploring with Yarra Valley Water will be incorporated as part of those negotiations. This may include additional financial support to assist with expanded retailer responses to customers (e.g additional customer service staff, debt forgiveness) and options for billing/collection processes for customers experiencing financial vulnerability and moving away from a 'one size fits all' approach. Melbourne Water will continue its engagement with the remaining retailers to ensure that we understand the impacts being experienced by customers and remain open to ongoing discussions to support their financial vulnerability programs. No specific support requests have been received from South East Water and City West Water to date.

3.3 Risk

Melbourne Water has concerns with the following issues raised in the Draft Decision PREMO assessment of Risk:

- The view we did not adequately address the uncertainty associated with our large expenditure program.
- The view we did not adequately address uncertainty arising from the coronavirus pandemic.

Relevant references from the ESC Draft Decision are included in the highlight box below and the remainder of this section addresses the two issues summarised above.

ESC Draft Decision references:

Pg 78 – "*Melbourne Water's price submission lists a number of matters in support of its 'Advanced' rating which we consider are good practice of any water corporation, and therefore consistent with a 'Standard' rated corporation*"

Pg 78 – "*Melbourne Water's submission states it has completed a robust consideration of coronavirus pandemic related risks. We would have expected the significant increase in uncertainty arising from the pandemic to be reflected in the price submission, especially in the form of revised demand forecasts, and adjustments to growth-related capital expenditure, but both remained unchanged*."

Pg 78 – "*we do not consider Melbourne Water's submission adequately addresses the uncertainty associated with its very large expenditure program*.

Pg 79 – "*On demand forecasting, we note that Melbourne Water proposed to accept the risk on behalf of customers if actual population growth is lower than its proposed growth of 1.9 per cent per year. We sought additional information from Melbourne Water when the Victorian Government released revised demand forecast estimates of around one per cent per year, and Melbourne Water responded that it may not be able to fully absorb the impact on its revenue requirement arising out of a lower population growth and demand. We do not consider that this response is consistent with that of an 'Advanced' corporation, where well-balanced and cost-reflective expenditure forecasts should readily adapt for changed input conditions*."

3.3.1 Melbourne Water response

Melbourne Water has considered and accounted for uncertainty when planning our proposed capital program.

The Draft Decision does not sufficiently acknowledge major efforts by Melbourne Water to address uncertainty associated principally with our capital expenditure program.

Our submission explicitly addresses capital delivery risk by smoothing the profile to shift expenditure to later years, in the process saving customers $43.1 million (over the 5 year

period). The Draft Decision does not appear to accept or acknowledge this initiative as an important step in addressing uncertainty. The Draft Decision regulatory template includes our capital smoothing nonetheless.

The Draft Decision raises concerns with our use of a depreciation over-ride facility in the regulatory model to give effect to the adjustment. **We did in fact seek advice in writing from the ESC on 13 August 2020 on how to address this issue.** It was our understanding based on verbal advice at a subsequent meeting with the Commission on 19 August 2020 that the ESC stated that we use the over-ride facility.

The ESC Draft Decision accepts Deloitte's advice to address uncertainty by reducing capital expenditure by an arbitrary $50 million per year. The revenue saving to customers is about the same as for the capital smoothing approach. We made it clear in the Deloitte review process that applying both processes amounted to a double up. However, the Draft Decision includes both. We request that the ESC remove capital smoothing from the template for the Final Decision.

In our response to address uncertainty associated with our capital expenditure (23 December 2020) we proposed that if we are unable to deliver capital expenditure during the 2021 price period and it exceeds a $100 million threshold over and above capital smoothing, then the associated revenue could be returned to customers by pricing below the price cap over the remainder of the regulatory period. The ESC did not seek to engage us on this additional risk management measure and the Draft Decision is silent in regard to it. Melbourne Water is still willing to consider this approach.

Melbourne Water contests the view that we did not adequately address uncertainty arising from the coronavirus pandemic.

Melbourne Water was acutely aware of and actively managing the unfolding COVID-19 pandemic, and in the latter stages of development of our price submission we revisited our demand growth forecasts and undertook additional engagement activities to understand our customer and community views on strategies to manage the impacts of the pandemic.

The unfolding COVID-19 pandemic created significant uncertainty regarding growth forecasts, capital markets, capital delivery and operating costs. The overall balance of this uncertainty could have impacted Melbourne Water's price submission in a number of ways:

- Lower growth forecasts than pre-pandemic expectations, which (all else being equal) would lower revenue.
- Lower operating costs (i.e. energy, chemicals, materials etc.) as connections growth reduces, which is directly reflected through the growth allowance in the ESC's preferred base-step-trend approach to operating expenditure forecasting.
- The deferral or adjustment of capital projects/programs to account for lower future growth.

Our modelling identified that the revenue shortfall would exceed the cost savings achieved through adopting a lower growth forecast (e.g. consistent with the DTF forecasts used to underpin last year's budget and the Centre for Population Projections forecasts). What this would have meant (all else being equal) is higher prices, a small increase for bulk water services but a material increase for Waterways and Drainage customers.

Melbourne Water was motivated to maintain a pre-pandemic growth forecast because:

- There remained a significant level of uncertainty regarding the likelihood of these forecasts eventuating. While they may be more recent, they were developed during an unfolding pandemic, which was shifting on a weekly basis. Melbourne Water did not have confidence that these forecasts were indeed the 'best estimate' (as opposed to the 'latest estimate').
- The overall impact of adopting lower forecasts was a higher price than originally forecast, which effectively shifted the risk of uncertainty regarding growth forecasts onto Melbourne Water's customers and the community.

We engaged members of the WSCC to understand their preferences in terms of appropriate management responses to adjusting growth forecasts in light of COVID-19 impacts, and the revenue and cost risks that adjusted forecasts resulted in. The retailers were of the view that Melbourne Water should seek to minimise any upward price pressures where possible. Their preference was for Melbourne Water to accept higher revenue risk, rather than pass that risk on to Customers via revised demand forecasts and higher prices[20].

In keeping with Melbourne Water's underlying objectives to minimise bill impacts, we determined that we had the capacity to manage this risk on behalf of customers. As such, we maintained pre-pandemic growth forecasts and adopted strategies that ensured prices were not higher because of the pandemic. This included maintaining a price cap, as opposed to a revenue cap, which would have shifted risk onto customers.

Melbourne Water recognises that we were not clear enough in the way we explained the impact of lower growth forecasts on our revenue requirements (in our letter of 23 December 2020). Given the importance that the ESC is placing on this statement (one of the reasons for downgrading Melbourne Water's risk rating), the ESC should have sought clarification from Melbourne Water on the underlying implications. Section 5.0 provides further detail on our approach to demand.

[20] 2021 Draft Price Submission, Water and Sewerage Customer Council, Final Response, Aug 2020 (pg. 12)

3.4 Management

Melbourne Water has concerns with the following issues raised in the assessment of our Management approach:

- Perceived inconsistencies in our submission
- A perceived over-reliance on willingness to pay study
- The view that we should have been aware of the significant capital uplift for the period 2021-26
- The view that our capital expenditure program lacked a rigorous challenge process
- The view that our operating efficiency factor is not 'Advanced'.

Relevant references from the ESC Draft Decision are included in the highlight box below and the remainder of this section addresses the issues summarised above.

Pg 80 – "*We and our consultant Deloitte found a number of inconsistencies between the written submission and financial model, adding to the complexity of our assessment – examples include energy consumption forecasts (Section 5.1.4) and the approach to desalination capitalisation (Section 6.4)*."

Pg 80 – "*We also saw inconsistencies in forecasting assumptions, in particular with regards to demand where the customer growth claims in the operating expenditure section did not align with other sections of the submission*."

Pg 80 – (Melbourne Water's) "*original proposed efficiency gain was partly tied to unnecessary operating expenditure in the initial growth allowance proposed by Melbourne Water, rather than true cost savings introduced through efficient management decisions. We consider the real efficiency factor is therefore more consistent with a 'Standard' rating.*"

Pg 81 – "*Melbourne Water proposed an additional $43.5 million operating expenditure for its waterways and drainage service, and justified much of this on a single customer 'willingness to pay study'. We consider willingness to pay studies should inform rather than replace robust expenditure forecasts, and should sit alongside engagement approaches that verify the willingness to pay. For an 'Advanced' management rating, we would expect to see a strong standalone justification, including business cases, demonstrating the prudency and efficiency of the additional expenditure, as part of Melbourne Water's price submission. In addition, we would expect an 'Advanced' business to rely on more than a single study to support its proposals for significant increases in expenditure."*

Pg 81 – "*In support of its 'Advanced' rating, Melbourne Water also stated it had deferred $498 million in additional capital projects that could have been included on prudency grounds. Given the already very large increase in capital expenditure forecast, we would have expected a very rigorous internal challenge to the investment program, and see this as a solid 'Standard' approach to preparing an acceptable capital expenditure forecast*."

Pg 81 – "*Melbourne Water's proposed capital expenditure forecast for the 2021–2026 regulatory period is significantly higher than the outlook for that period at its 2016 price review. Melbourne Water claimed the increased spend was largely justified by urgent capacity increase requirements driven by higher than expected customer growth during the current period. While we don't doubt the capacity increases are in fact required, with*

timing dependent on the revised growth forecast, we would have expected such major investment needs to be on the forward planning horizon."

3.4.1 Melbourne Water response

Melbourne water has not been afforded the opportunity to respond to claimed inconsistencies in our submission.

While the Draft Decision attaches weight to inconsistencies in our submission, it does not set out an evaluation of the materiality of the inconsistencies uncovered, how they informed their 'Standard' PREMO rating of Management and therefore how Melbourne Water can respond.

This approach appears to be inconsistent with the ESC assessment of retailer submissions in the 2018 review where examples of immaterial errors or inconsistencies did not affect PREMO rating[21]. Some of these businesses were provided with the opportunity to make corrections during the ESC review process and achieve Advanced/Leading PREMO outcomes.

It appears that the ESC has not done the same in its review of Melbourne Water's submission.

Melbourne Water contends the ESC Draft Decision incorrectly assumes an over-reliance on a willingness to pay study.

There appears to be a misunderstanding of the way in which Melbourne Water used the SIMALTO customer preferences and willingness to pay study to inform decisions around waterways and drainage services.

As detailed in our response in section 3.1 above, we delivered an extensive, holistic and rigorous engagement program in support of our price submission and we used insights from a comprehensive range of engagement activities to help to validate our decisions around service levels and subsequent prices.

Engagement feedback was considered alongside Melbourne Water's investment requirements to meet our obligations and commitments set by legislation, compliance standards and government policy and strategies (these are outlined in section 4.1). In this way we could be confident our investments were also aligned with customer and community priorities.

[21] For example: South East Water, North East Water, Goulburn Valley Water

Melbourne Water contests the view that we should have been aware of the significant capital uplift for the period 2021-26.

Long term capital forecasting is inherently challenging, based on expected population growth translated to demand and on how our assets perform over time. Our submission and responses to consultants' queries sets out the difficulties in forecasting demand and translating this to prudent and efficient timing of capacity augmentation. This is further detailed in section 5.0.

In addition, sometimes our assets perform better than expected allowing capital to be deferred (e.g. ETP primary tank augmentation) and other times, our assets do not perform as well as expected (e.g. WTP primary treatment capacity augmentation), resulting in changes in timing of significant capital projects between submission periods.

The Deloitte Access Economics report conducted for the ESC acknowledges these challenges for sewage demand forecasting.

We consider that the circumstances which transpired in the 2016 period are not a valid basis for judging the rigour of forecasts five years later and do not appear to be consistent with the ESC PREMO Assessment Framework. Melbourne Water's planning for the 2021 price review should be assessed separately on its merits considering updated forecasting methodologies we have adopted (refer to section 5.0 for more detail).

Melbourne Water contests the view that our expenditure program lacked a rigorous challenge process.

We are unclear on how the ESC arrived at the above conclusion given that the submission sets out our rigorous capital evaluation process (refer section S6.2 of our Price Submission).

The ESC and its consultants endorsed our top 15 capital projects as prudent and efficient with only minor adjustments.

We understand the proposed $50 million per annum reduction to the overall capex program reflects deliverability uncertainty and perceived impacts of lower growth associated with COVID-19 rather than concerns about rigour.

Our retail water business customers endorsed deferral of $498 million in capital expenditure based on an assessment of Melbourne Water's ability to deliver on outcomes valued by customers at a lower level of capital investment, at our risk.

Melbourne Water contests the view that our opex efficiency factor is not 'Advanced'

Melbourne Water committed to a 2 per cent efficiency commitment, or when considering growth as an offsetting factor, a 0.05 per cent net efficiency factor. This approach is consistent with the regulatory base step trend methodology and compares favourably to a number of businesses that achieved Advanced or higher rating (for Management) in the 2018 price review, summarised as:

- South East Water proposed a productivity improvement of 2.3% vs a customer growth rate of 2.3%, or a net efficiency of 0.0%. SEW achieved 'Advanced' and was fast-tracked;
- City West Water proposed a productivity improvement of 2.0% vs a customer growth rate of 2.6%, or a net efficiency of -0.6%. CWW achieved 'Advanced'.
- Coliban Water proposed a productivity improvement of 1.5% vs a customer growth rate of 1.7%, or a net efficiency of -0.2%. CW achieved 'Advanced'.

It appears that the assessment in the ESC Draft Decision is introducing growth into the assessment which is a separate component of the submission. Refer to section 5.0 for our revised growth assumptions.

4.0 Capitalisation of desalination plant security payments

Melbourne Water took an ambitious approach to the capitalisation of desalination plant security payments in response to the ESC 2019 Guidance Document.

The guidance issued in November 2019 outlined the ESC expectations about desalination plant security payments as follows:

"*Melbourne Water's approach to capitalisation of desalination security payments will be a key input to our assessment of its PREMO rating. Due to the size of Melbourne Water's desalination security payments, their treatment for pricing purposes can have a relatively large impact on the ability to address customer affordability, which was a key issue raised by customers during the 2018 water price review for water retail businesses. We note that the amounts capitalised by Melbourne Water so far (since 2016) appear to be well below the implied capital expenditure components of its annual desalination security payments*." (p.29)

Within the ESC PREMO Assessment Tool, the only reference to the capitalisation of desalination payments is under the guiding question "*Melbourne Water provided evidence that there is senior level, including Board level, ownership and commitment to its submission and its outcomes?*", and details the following examples:

- Standard – Melbourne Water continues to capitalise its desalination costs at the current level
- Advanced - Melbourne Water proposes to increase the amount of desalination costs it capitalises
- Leading - Melbourne Water proposes a new approach to managing desalination costs that reflects better long-term value for Victorian consumers.

Further guidance was provided to Melbourne Water in August 2020, stating that the ESC expects "*Melbourne Water's supporting information on each of the elements of its PREMO rating will take into account where relevant the impact of the coronavirus*."

Our interpretation of the ESC's Guidance was to significantly increase the amount of desal payments to be capitalised to address customer affordability issues.

Despite the open-ended nature of its guidance and the clear messages about the impact of security payments on customer affordability, the draft decision does not support Melbourne Water's approach to capitalisation.

Melbourne Water believes that our level of capitalisation better promotes the objectives of the Water Industry Regulatory Order 2014 (WIRO) and supporting legislative regime, and in particular will realise inter-generational equity and efficient price signalling objectives through the smoothing of costs:

- The current cohort of contract era customers will ultimately pay an equitable share of the desalination plant
- Efficient pricing signals will generally apply over the life of the plant

4.1 Melbourne Water response

Notwithstanding the above, Melbourne Water has accepted the ESC Draft Decision on capitalisation of security payments for the desalination plant.

5.0 Demand

Significant elements of the ESC's Draft Decision hinge on its treatment of our demand forecasts, their relationship with overall population forecasts and their (perceived) importance to our operating and capital expenditure forecasts.

A high level summary of the feedback from the ESC includes the view that Melbourne Water:

- has not adequately accounted for the impact of the coronavirus pandemic in its demand forecasts, and that as a result it has:
  - overstated its capital expenditure forecasts (inclusive of land development customer contributions revenue and capital expenditure)
  - overstated its operating forecasts
  - adopted an inappropriate growth factor under the ESC's controllable opex adjustment methodology
  - adopted long run marginal cost (LRMC) and short run marginal cost (SRMC) estimates that are built on overstated cost forecasts.

Further the ESC appears to disregard Melbourne Water's worked examples and commitment in our submission to absorbing the revenue risk associated with actual demand growth being lower than forecast (and used to underpin prices).

5.1 Melbourne Water response

In response to the Draft Decision we:

- Accept the ESC's position that we have not adequately accounted for the impact of COVID-19 in our water and sewerage related demand forecasts
- Have re-estimated our water and sewerage demand forecasts to be consistent with CPP population forecasts.
- In re-estimating demand we have sought updated forecasts from each of our retail water customers, and adopted a scenario based approach to identify the appropriate forecast.
- The exception to this is our waterways and drainage forecasts. Waterways and drainage demand is a function of new dwellings. We note that the CPP population forecasts are not consistent with observable development outcomes over the course of the pandemic. As such, we propose to retain our original waterways and drainage forecasts.

The ESC's treatment of demand is not in the interests of customers. The following response seeks to:

- Reiterate and where possible improve clarity around the role that population growth plays in the development of prudent and efficient expenditure estimates.
- Demonstrate (and adopt) demand forecasts that reflect a robust, sensible consideration of more recent information around population growth and actual volumes sold/treated – noting that each of our services is subject to different non-population growth influences and that these are generally more significant in the near term than forecast population growth.

- Address the impact of revised relevant demand forecasts on opex, capex and estimates of LRMC.
- Address the treatment of regulatory constructs around growth and efficiency and highlight their deficiencies in an abnormal environment (i.e. the pandemic).
- Address the impact of revised relevant demand forecasts on customer contributions.
- Address methodological suggestions relating to the derivation of sewage forecasts.
- Reiterate, clarify and re-quantify the risk that Melbourne Water proposed to absorb in its submission.

5.1.1 Relevance of growth to submission

This section seeks to reiterate and where possible improve clarity around the role that growth plays in the development of prudent and efficient expenditure estimates.

For clarity, given the clear differences in the nature of each service and the manner in which demand forecasts are used Melbourne Water rejects the notion that it is inappropriate to use different assumptions for each service.

Relevant business uses

In Section S5 of the Price Submission Supplement we make it clear that:

> *"Demand forecasts are central to Melbourne Water's ability to deliver on its customer promise. They inform our forecasts of prudent expenditure and help establish the levels at which our tariffs are set."*

We also make it clear that it is the number of properties and the volumes supplied / treated area that are relevant to our estimate of prudent levels of expenditure over time.

Our capital and operating expenditure forecasts for each of our three major service areas are all underpinned by the number of people and households (connections / billable properties) currently in Melbourne (along with assumptions about per person or per household), as well as forecast changes over the regulatory period for relevant input parameters.

Demand forecasts also indirectly (via long term capital and operating expenditure forecasts) impact the estimates of LRMC used in the setting of sewerage service tariffs.

Relevant regulatory uses

In Section S6.2.1 of the Price Submission Supplement we also acknowledge that estimates of "growth" are relevant to the regulatory "growth" factor that the ESC requires we adopt, in conjunction with an "efficiency" factor in order to set an adjusted forecast of baseline year expenditure across the regulatory period.

5.1.2 Revised forecasts

These revised forecasts have been prepared at the request of the ESC. In reluctantly accepting the ESC's Draft Decision recommendations we note that this rebalances risk associated with the pandemic away from Melbourne Water and toward customers.

Population

We note that Table 8.1 of the ESC's Draft Decision appears to relate to Victoria level population forecasts, rather than Greater Melbourne. The analysis that follows compares VIF2019 forecasts for the Greater Melbourne region to more recent, publically available forecasts by the Centre for Population. It also sets out how we applied differences in forecast growth from a (near) common 2018-19 base. It is critical to note that these are population forecasts, not household/property forecasts and as such the link between these forecasts and our expenditure and tariffs is indirect.

Table 1 compares estimates of population from the VIF2019 and Centre for Population Projections (CPP), 2020 data series. It shows that from a (near) common base in 2018-19 year-on-year percentage growth values vary, particularly in the near term, for each series.

The CPP projections formed the basis for alternative demand scenarios we considered in developing our response to the ESC Draft Decision. These are outlined in greater detail under each service, however typically included:

- *Top down scenario* – these scenarios adjusted the growth inherent in PS21 forecasts using the top down scenario adjustment factors shown in **Table 1**.
- *Extended downturn scenario* – these scenarios adjusted the growth inherent in PS21 forecasts using the top down scenario adjustment factors shown in **Table 1**. This scenario assumed a second 0.03% growth in year-on-year population in 2021-22, with subsequent years resuming the CPP year-on-year trend.

Table 1 Population forecasts relevant to the development of PS21 demands

				PS21					PS26				
	2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
VIF2019	*5,078,670*	5,193,281	5,306,133	5,416,527	5,525,539	5,632,346	5,737,980	5,843,344	5,948,633	6,053,656	6,158,498	6,263,062	6,367,317
CAGR								***2.09%***	*From 2018-19 to 2025-26*				
CPP2020	*5,078,200*	5,169,900	5,171,700	5,191,100	5,254,200	5,360,000	5,468,900	5,580,300	5,693,900	5,809,900	5,927,700	6,045,800	6,164,400
		1.81%	0.03%	0.38%	1.22%	2.01%	2.03%	2.04%	2.04%	2.04%	2.03%	1.99%	1.96%
CAGR								**1.09%**	*From 2018-19 to 2025-26*				
Diff	-470	*-23,381*	*-134,433*	*-225,427*	*-271,339*	*-272,346*	*-269,080*	*-263,044*	-254733	*-243,756*	*-230,798*	*-217,262*	*-202,917*
Top down scenario adjustment factor													
VIF2019	5,078,670		4.5%	6.7%	8.8%	10.9%	13.0%	15.1%	*% increase in population from 2018-19 base*				
CPP2020	5,078,200		1.8%	2.2%	3.5%	5.5%	7.7%	9.9%	*% increase in population from 2018-19 base*				
			41.1%	33.4%	39.4%	50.9%	59.3%	65.7%	*CPP2020 growth as a proportion of VIF2019 growth*				
Extended downturn scenario *For modelling purposes we also considered a population growth scenario adopting CPOP yoy changes with an additional year of 0.03% growth from 2020-21 to 2021-22*													
CPP2020	Assumed	1.81%	0.03%	0.03%	0.38%	1.22%	2.01%	2.03%	2.04%	2.04%	2.04%	2.03%	1.99%
	Calculated	5,169,900	5,171,700	5,173,501	5,192,907	5,256,029	5,361,866	5,470,804	5,582,243	5,695,882	5,811,923	5,929,764	6,047,905
		1.81%	1.84%	1.88%	2.26%	3.50%	5.59%	7.73%	9.93%	12.16%	14.45%	16.77%	19.10%
			41.1%	28.2%	25.7%	32.1%	43.0%	51.3%					
			Effectively 3 years of 0 growth										

Waterways and Drainage

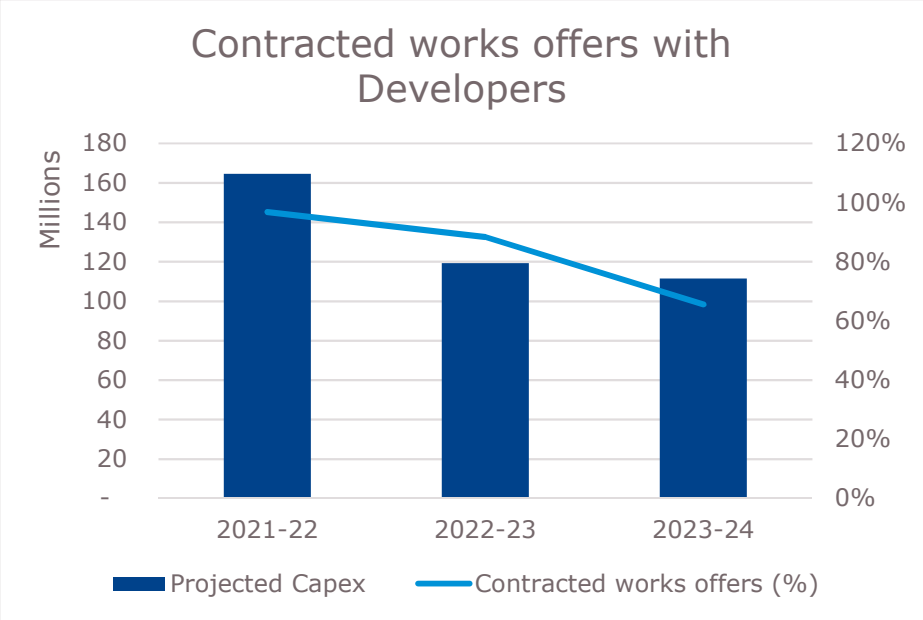
It is intuitive that growth in the number of households within the Greater Melbourne region should be proportional to the growth in the population. In reality the relationship is complicated by a number of factors including:

- "Latent" demand – insights from the land development industry provided to us for the purposes of forecasting land development capex and customer contributions suggest there is a two to three year "lag" in demand for new properties. Data shows that migrants typically rent for a period of two to three years before purchasing a new dwelling.
  - Greenfield land development activity in Melbourne has held up strongly during the pandemic. This is due to development activity being driven by pre-pandemic migration.
  - This phenomenon is intuitively influenced by the market state (supply surplus / deficit), prevailing rental conditions and buyer confidence that they will be able to maintain employment and afford mortgage repayments.
  - Evidence supporting this is presented in the below.
- Policy settings aimed at stimulating / supporting development activity.

Household / property count growth – Waterways and Drainage

Analysis of our land development and customer contributions data to hand supports the view that there is strong demand already in the pipeline for the first three years of the regulatory period.

Drainage infrastructure works offer contracts with developers



Land development activity is the key determinant of our developer funded growth flood protection and stormwater water quality treatment infrastructure capital expenditure and associated asset drainage rate funded maintenance programs.

On the basis of the insights we have received from the development industry and the evidence presented in the table above above we propose to retain our original PS21 land development revenue and expenditure forecasts. Evidence to support retention of the forecasts consists of:

- Forward contracts developers are entering into with Melbourne Water involving commitments to pay contributions and construct infrastructure in new subdivisions across Melbourne driven by their expectation of future lot sales.
- Our Development Services Scheme model responds directly to land developers' requests to enter into contracts. Melbourne Water has signed contracts for 2021-22 to the full value of our November 2020 Submission expenditure and revenue forecasts. The 2022-23 year is close to being fully subscribed and a majority of 2023-24 is also subscribed.

Our Waterways and Drainage charge is levied on households / properties, meaning forecasts for these are important for tariff setting in particular. We discuss the link between household forecasts and expenditure in later sections.

In order to finalise a household level forecast that adequately takes into account the contradictory population level forecasts (CPP) and household level forecasts (development industry) we considered a number of scenarios and evaluated them against the ESC's guidance that forecasts represent "*the best available estimates derived from an appropriate forecasting methodology*". We note that the guidance also expects Melbourne Water to consider a range of supply and demand scenarios in developing our submission.

Table 2 Household / property number forecasts

Scenario	Description	Evaluation
Base case	Forecasts presented in PS21, with growth rates tailored using local area insights provided by BIS Oxford Economics.	Underpinned by VIF2019 data series. Does not adjust for downturn in population. Melbourne Water does not accept the ESC's assertion that this places risk on customers.
Scenario 1	Top down adjustment factor – CPP	Does not reflect reality. Customer numbers in 2020-21 are already higher than the value derived using the adjustment factor. Suitably modifying subsequent growth becomes problematic.
Scenario 2	Top down adjustment factor – extended downturn	As above. Does not reflect reality. Customer numbers in 2020-21 are already higher than the value derived using the adjustment factor. Suitably modifying subsequent growth becomes problematic.
Scenario 3	Industry insights – based on industry insights around pipeline	Reflect best available information from industry.

Scenario	Description	Evaluation
	growth this scenario simply lags the year-on-year growth implied by CPP by three years. Pandemic impacts first become apparent in 2023-24.	Has minimal impact on waterways and drainage pricing. Melbourne Water retains the risk in revenue terms that actual property numbers do not grow at the rate forecasted for years one to three of the regulatory period. ***Series adopted in ESC Financial Template and for tariff setting purposes.***

Note that the values used here are adjusted further in the development of prices, with a 50% factor applied assuming that not all new customers are billed in the year in which they are gazetted as new properties.

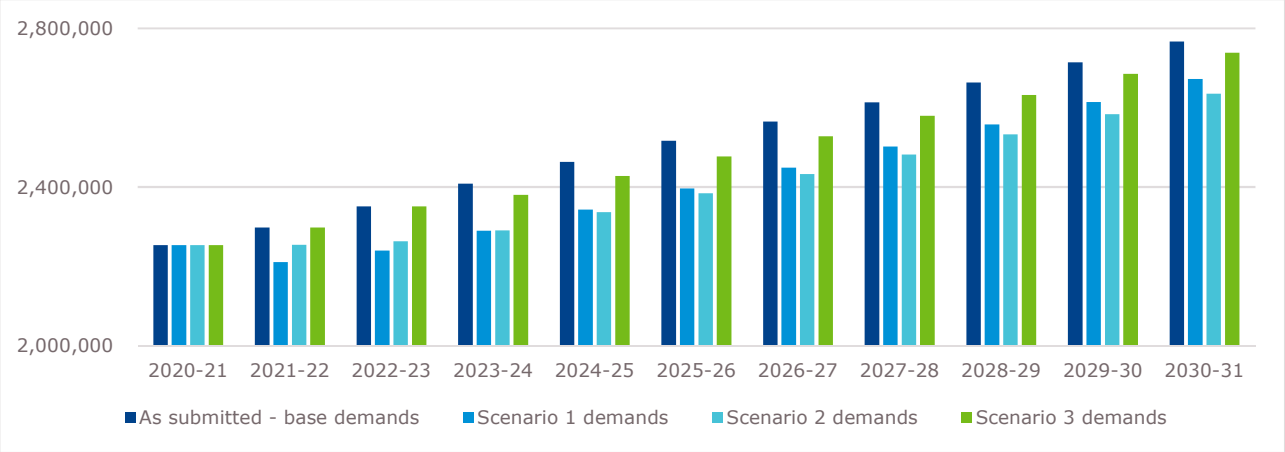


Figure 1 Waterways and drainage customer number scenarios

Table 3 Waterways and drainage customer numbers for base and preferred scenario

			PS21					PS26				
	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
	Actual	Actual										
Base												
Residential	1,947,344	1,978,958	2,018,447	2,066,355	2,117,720	2,167,030	2,214,615	2,257,011	2,300,218	2,344,253	2,389,130	2,434,867
Non-residential	158,619	161,564	164,374	167,126	169,886	172,743	175,703	178,786	182,209	185,697	189,252	192,875
Rural	111,042	112,845	115,096	117,828	120,757	123,569	126,282	128,700	131,164	133,675	136,234	138,842
Scenario 3												
Residential		1,978,958	2,018,447	2,066,355	2,091,472	2,133,586	2,176,935	2,221,278	2,266,498	2,312,672	2,359,564	2,406,574
Non-residential		161,564	164,374	167,126	169,158	172,564	176,070	179,656	183,314	187,048	190,841	194,643
Rural		112,845	115,096	117,828	119,261	121,662	124,134	126,662	129,241	131,874	134,548	137,228
Pricing impact ($ per household per year) (△) of Scenario 3 v Base *(based on unadjusted revenue requirement)*												
Residential			$0.00	$0.00	$0.68	$1.53	$1.81					
Non-residential			$0.00	$0.00	$0.31	$0.40	-$0.08					
Rural			$0.00	$0.00	$0.37	$0.84	$0.99					

Water consumption

Melbourne Water is proposing demand forecasts for water consumption that reflect the CPP population growth forecast. These forecasts have been subject to scenario analysis in order to account for uncertainty regarding the potential impacts of COVID-19.

In order to finalise a water supplied forecast that takes into account the lower population level forecasts issued by CPP in December 2020 we considered a number of scenarios and evaluated them against the ESC's guidance that forecasts represent "*the best available estimates derived from an appropriate forecasting methodology*". We note that the guidance also expects Melbourne Water to consider a range of supply and demand scenarios in developing our submission.

Our three largest retail water company customers provided a consolidated update to volumetric water forecasts in early April 2021. The following is taken from an email transmitting their revised forecasts:

- *We note there was and remains considerable uncertainty around demand forecasts due to the uncertainty around the level of internal migration, the timing of international borders re-opening, the speed at which Australians are vaccinated and more generally economic recovery. We understand that expectations around the speed of post-COVID recovery have greatly impacted recent population projections including MacroPlan, Deloitte, Centre of Population Projections etc and over time these have become less and less optimistic. Recent discussions with MacroPlan suggest their current best guess would be closer to the Centre of Population Projections (CPP). We are planning to engage MacroPlan to refresh dwelling and population forecasts at SA1 scale.*

- *As requested, we have completed a sensitivity analysis on our previously provided demand forecasts through adopting Centre of Population Projections (CPP) populations.*

- *Specifically we have used year-on-year increases in % terms starting from each of our estimated 2019-20 populations.*

Population projections for Melbourne (yoy changes)										
2020-21	*2021-22*	*2022-23*	*2023-24*	*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*	*2029-30*	*2030-31*
0.03%	*0.38%*	*1.22%*	*2.01%*	*2.03%*	*2.04%*	*2.04%*	*2.04%*	*2.03%*	*1.99%*	*1.96%*

- *We note that CPP only includes population numbers and not dwelling forecasts.*

- *We have not altered dwelling forecasts from MacroPlan for the purposes of this analysis, noting that growth in customer numbers continues to be strong but may slow in coming years with a lack of net overseas migration, alternatively household sizes may continue to fall and rental vacancy rates rise with favourable lending conditions for home buyers and increased household savings for house deposits.*

- *We note that CPP at a city scale do not take localised impacts into account which means we have introduced further uncertainty on specific demands for each retailer due to different makeup of greenfield and infill development etc (for example, CPP growth rate is higher than MacroPlan for YVW's service area from 2023-24 onwards).*

- *We have rebaselined 2020-21 demands to 9 months of actuals and 3 month forecast with a considerable reduction due to colder and wetter than assumed average weather and coronavirus-related restrictions compared to previously provided forecasts which were baselined to 2019-20 actuals.*

- *We note that our demands assume average weather conditions from the last 4 years and that demands have historically varied in the order of +/- 5% for weather conditions so the level of uncertainty in demands should be assumed to be at least +/- 5%.*

- *We note that our revised demands based on the sensitivity analysis fall within the +/- 5% typical uncertainty band therefore we would not consider this a material change.*

Scenarios considered in determining best estimates for adoption in response to the ESC's Draft Decision are set out in **Table 4**.

Table 4 Volume of water supplied (ML) scenarios

Scenario	Description	Evaluation
Base case	Forecasts presented in PS21 with data provided by the retail water companies using end use models and underpinned by VIF2019 growth to small area level.	Underpinned by VIF2019 data series. Does not adjust for downturn in population. Melbourne Water does not accept the ESC's assertion that this places risk on customers.
Scenario 1	Top down adjustment factor – CPP	Able to re-base (conceptually) growth to the 2018-19 year which is common to VIF2019 and CPP2020. Overly simplistic treatment of growth. Results in a data series that is lower than the base case, but not below the 5% margin the retail water companies identify as a threshold for materiality.
Scenario 2	Retail water company provided demands	Rebases the forecast to 2020-21 year, which the retailers note has been wetter than expected over the first 9 months, resulting in a downward revision to earlier forecast. Modelling changes to the base case did not extend to changes in dwelling projections. Application of annualised percentage changes is likely to be overly distorted by the impact of the wet year in 2020-21, rather than underlying demand. Evident in the rapid "catch-up" to CPP scenario 1 forecasts in the second five years of the series. Results in a data series that is lower than the base case and Scenario 1, but not below the 5% margin the retail water companies identify as a threshold for materiality.
Scenario 3	Minimum by retailer by year This scenario adopts the lowest value forecast by scenario 1 and scenario 2 by retailer by year.	Able to re-base (conceptually) growth to the 2018-19 year which is common to VIF2019 and CPP2020. Able to incorporate retail level insights. Provides the greatest overall adjustment to demand forecasts and is consistent with both CPP and retailer insights. Overall remains above the 5% margin (lower threshold) the retail water companies identify as a threshold for materiality. ***Series adopted in ESC Financial Template and for tariff setting purposes.***

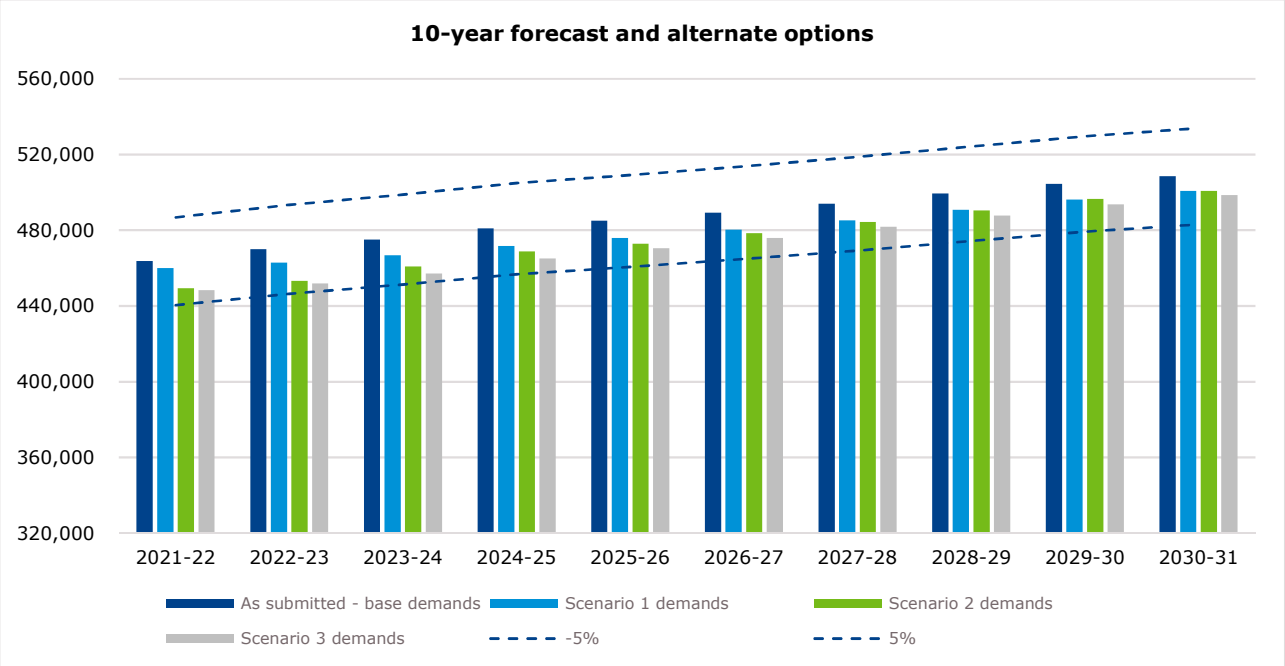


Figure 2 Volume of water supplied (ML) scenario forecasts

Table 5 Water supplied (ML) forecasts for base and preferred scenario

All values in ML unless otherwise shown			PS21					PS26				
	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
	Actual	*Forecast*										
Base												
City West Water	115,133	115,074	115,725	116,476	117,431	118,165	118,817	120,205	121,538	122,722	124,084	125,368
South East Water	161,032	162,813	164,028	165,743	167,291	168,927	170,800	172,593	174,391	176,163	177,708	177,961
Yarra Valley Water	165,500	166,000	167,000	168,500	169,500	170,000	171,000	172,000	173,000	174,500	176,000	177,500
Western Water	13,628	13,540	14,367	16,890	18,153	20,176	20,001	19,068	19,588	20,108	20,578	21,172
Barwon Water	10,600	2,500	1,100	1,000	1,300	2,200	2,700	3,600	3,500	3,600	3,700	3,900
South Gippsland Water	800	800	800	800	800	800	1,000	1,200	1,400	1,600	1,800	2,000
Westernport Water	600	600	600	600	600	600	600	600	600	600	600	600
Total	**467,293**	**461,328**	**463,619**	**470,009**	**475,075**	**480,868**	**484,918**	**489,266**	**494,018**	**499,293**	**504,470**	**508,501**
Scenario 3												
City West Water			113,034	113,519	114,640	115,835	116,474	117,741	119,041	120,355	121,665	122,808
South East Water			161,373	162,101	163,242	165,811	167,795	169,511	171,312	173,153	174,843	175,462
Yarra Valley Water			158,069	159,390	160,987	162,758	164,567	166,401	168,410	170,284	172,247	174,125
Western Water			13,309	14,398	15,514	17,162	17,521	17,230	17,889	18,545	19,151	19,854
Barwon Water			1,100	1,000	1,300	2,062	2,412	3,092	3,091	3,229	3,364	3,580
South Gippsland Water			800	800	800	800	1,000	1,200	1,400	1,600	1,800	2,000
Westernport Water			600	600	600	600	600	600	600	600	600	600
Total			**448,285**	**451,807**	**457,083**	**465,028**	**470,369**	**475,775**	**481,743**	**487,766**	**493,669**	**498,429**
Overall difference			-15,334	-18,202	-17,992	-15,840	-14,549	-13,491	-12,275	-11,527	-10,801	-10,072
Overall difference		(%)	-3.3%	-3.9%	-3.8%	-3.3%	-3.0%	-2.8%	-2.5%	-2.3%	-2.1%	-2.0%

Sewage volumes and loads

We are proposing revised demand forecasts for sewage volumes and loads that reflect the CPP population growth forecasts (Scenario Two below) except Cat A loads which are based on industry advice.

In order to finalise a household level forecast that adequately takes into account the contradictory population level forecasts (CPP) and household level forecasts (development industry) we considered a number of scenarios and evaluated them against the ESC's guidance that forecasts represent "*the best available estimates derived from an appropriate forecasting methodology*". We note that the guidance also expects Melbourne Water to consider a range of supply and demand scenarios in developing our submission.

The analysis below relates to total treatment and transfer flows and Cat A (top) flows and loads only. The discussions on capital and operating expenditure below address material drivers for our expenditure forecasts.

Table 6 Volume and load of sewage treated scenarios

Scenario	Description	Evaluation
Base case	Forecasts presented in PS21, with growth rates tailored using local area insights provided by BIS Oxford Economics.	Underpinned by VIF2019 data series. Does not adjust for downturn in population. Melbourne Water does not accept the ESC's assertion that this places risk on customers.
Scenario 1	Top down adjustment factor – CPP	Able to re-base (conceptually) growth to the 2018-19 year which is common to VIF2019 and CPP2020. Overly simplistic treatment of growth. Results in a data series that is lower than the base case, but not below the 5% margin the retail water companies identify as a threshold for materiality.
Scenario 2	Top down adjustment factor – extended downturn	Able to re-base (conceptually) growth to the 2018-19 year which is common to VIF2019 and CPP2020. Overly simplistic treatment of growth. Results in a data series that is lower than the base case, but not below the 5% margin the retail water companies identify as a threshold for materiality. ***Series adopted in ESC Financial Template and for tariff setting purposes.*** *Note that Cat A customer flow and loads have been adopted separately for pricing purposes only.*
Scenario 3	Updated bottom-up model adjusted for 2019-20 actuals and CPP forecasts (inclusive of Cat A Top revisions) Adjusted the baseline (5-year weighted average to 2019-20 of actual flows and loads) and retailer data (2019-20 actuals), with updated growth rate assumptions.	Reflects most up to data dataset – both CPP2020 population level forecasts and measured volumes and loads for 2019-20. Results in a forecast that is considerably higher than the original PS21 estimate as a result of the rebasing to 2019-20. Remains within +5% of original estimates.

Scenario	Description	Evaluation
	Employment rates have been used for all Category B tradewaste where available from the Australian Government Labour Market Information Portal. Retailers comments are that all Category A (group) tradewaste has not been affected by coronavirus. Cat A (top) revisions provided by retailers.	
Scenario 4	Updated bottom-up model adjusted for 2018-19 actuals and CPP forecasts (exclusive of Cat A Top revisions) Used the same baseline (5-year weighted average to 2018-19 of actual flows and loads) and retailer data (18-19 actuals), with updated growth rate assumptions. Employment rates used for all Category B tradewaste where available from the Australian Government Labour Market Information Portal. Retailers comments are that all Category A (group) tradewaste has not been affected by coronavirus.	Population figures adjusted to be in-line with CPP2020 projections. Volumes and loads do not reflect latest 2019-20 data. Second highest forecast series.
Cat A loads	Forecasts for Cat A customers were provided by retail water companies	Reflect best available information from industry. ***Series adopted in ESC Financial Template and for tariff setting purposes.***

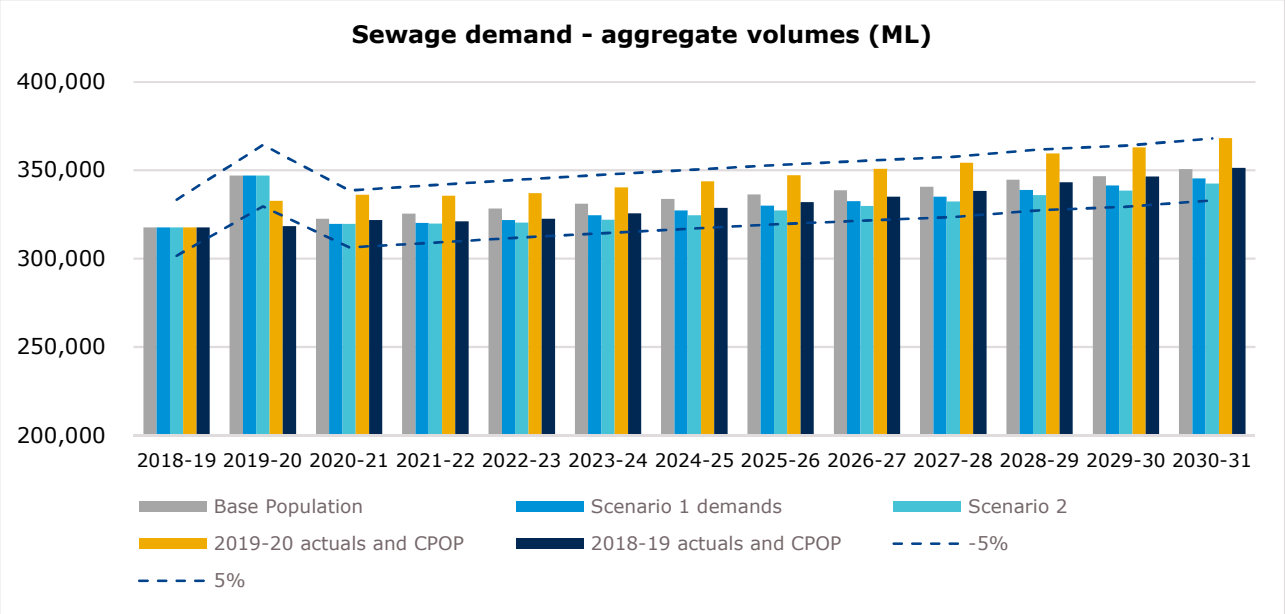


Figure 3 Volume of sewage treated (ML) scenario forecasts

Table 7 Sewage treated / transferred (ML) forecasts for base and preferred scenario

All values in ML unless otherwise shown			PS21					PS26				
	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
	Actual	*Forecast*										
Base												
Eastern system												
South East Water	94,135	81,095	81,619	82,120	82,598	83,056	83,489	83,963	84,425	85,346	85,789	86,700
Yarra Valley Water	51,142	47,773	48,052	48,325	48,592	48,853	49,107	49,373	49,633	50,159	50,409	50,931
Western system												
City West Water	88,635	89,235	90,391	91,466	92,519	93,519	94,511	95,652	96,765	98,374	99,449	101,033
South East Water	25,059	26,674	26,906	27,131	27,347	27,556	27,757	27,944	28,126	28,465	28,640	28,977
Yarra Valley Water	88,033	77,762	78,481	79,319	80,037	80,757	81,476	81,636	81,771	82,302	82,389	82,879
Total	347,005	322,537	325,449	328,361	331,092	333,741	336,339	338,569	340,720	344,646	346,675	350,519
Scenario 2												
Eastern system												
South East Water		82,476	82,926	83,101	83,170	83,275	83,465	83,743	84,064	84,735	85,129	85,893
Yarra Valley Water		45,863	45,523	45,503	45,834	46,390	46,880	47,336	47,763	48,355	48,757	49,347
Western system												
City West Water		87,164	87,037	87,194	87,903	89,075	90,233	91,475	92,718	94,318	95,591	97,244
South East Water		26,561	26,601	26,648	26,760	26,944	27,136	27,329	27,523	27,829	28,034	28,360
Yarra Valley Water		77,537	77,691	77,878	78,234	78,833	79,483	79,846	80,162	80,725	80,982	81,518
Total		319,600	319,778	320,325	321,900	324,517	327,198	329,729	332,230	335,963	338,493	342,362
Overall difference			-5,671	-8,037	-9,192	-9,224	-9,143	-8,839	-8,490	-8,684	-8,183	-8,158
Overall difference		(%)	-1.74%	-2.45%	-2.78%	-2.76%	-2.72%	-2.61%	-2.49%	-2.52%	-2.36%	-2.33%

Table 8 Treatable load (Cat A) parameter forecasts (tonnes) – original plus revised – Eastern Treatment Plant

All values in tonnes unless otherwise shown			PS21					PS26				
			2021-22	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
South East Water	BOD	*Original*	8,176	8,176	8,176	8,176	8,176	8,176	8,176	8,176	8,176	8,176
South East Water	BOD	*Revised*	9,259	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772	7,772
South East Water	TSS	*Original*	3,178	3,178	3,178	3,178	3,178	3,178	3,178	3,178	3,178	3,178
South East Water	TSS	*Revised*	3,243	3,182	3,182	3,182	3,182	3,182	3,182	3,182	3,182	3,182
South East Water	TKN	*Original*	396	396	396	396	396	396	396	396	396	396
South East Water	TKN	*Revised*	503	411	411	411	411	411	411	411	411	411
Yarra Valley Water	BOD	*Original*	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496	1,496
Yarra Valley Water	BOD	*Revised*	991	991	991	991	991	991	991	991	991	991
Yarra Valley Water	TSS	*Original*	582	582	582	582	582	582	582	582	582	582
Yarra Valley Water	TSS	*Revised*	512	512	512	512	512	512	512	512	512	512
Yarra Valley Water	TKN	*Original*	34	34	34	34	34	34	34	34	34	34
Yarra Valley Water	TKN	*Revised*	25	25	25	25	25	25	25	25	25	25

Table 9 Treatable load (Cat A) parameter forecasts (tonnes) – original plus revised – Western Treatment Plant

All values in tonnes unless otherwise shown			PS21					PS26				
			2021-22	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
City West Water	BOD	*Original*	11,642	11,637	11,672	11,650	11,656	11,672	11,675	11,679	11,679	11,679
	BOD	*Revised*	10,617	10,692	10,768	10,845	10,922	10,999	11,076	11,153	11,230	11,230
	TSS	*Original*	3,426	3,434	3,424	3,409	3,412	3,405	3,399	3,397	3,397	3,397
	TSS	*Revised*	3,266	3,286	3,314	3,341	3,376	3,411	3,445	3,480	3,515	3,515
	TKN	*Original*	996	1,013	1,008	1,001	1,007	1,010	1,011	1,011	1,011	1011
	TKN	*Revised*	929	937	945	953	962	970	979	987	996	996
	iTDS	*Original*	27,731	27,750	27,621	27,628	27,645	27,659	27,637	27,624	27,624	27624
	iTDS	*Revised*	30,195	28,632	27,865	27,098	27,127	27,156	27,185	27,214	27,243	27243
South East Water	BOD	*Original*	1,421	1,421	1,421	1,421	1,421	1,421	1,421	1,421	1,421	1,421
	BOD	*Revised*	1,383	1,383	1,383	1,383	1,383	1,383	1,383	1,383	1,383	1,383
	TSS	*Original*	183	183	183	183	183	183	183	183	183	183
	TSS	*Revised*	236	236	236	236	236	236	236	236	236	236
	TKN	*Original*	48	48	48	48	48	48	48	48	48	48
	TKN	*Revised*	48	48	48	48	48	48	48	48	48	48
	iTDS	*Original*	227	227	227	227	227	227	227	227	227	227
	iTDS	*Revised*	188	188	188	188	188	188	188	188	188	188
Yarra Valley Water	BOD	*Original*	9,370	9,598	9,598	9,598	9,598	9,598	9,598	9,598	9,598	9598
	BOD	*Revised*	9,025	9,160	9,160	9,160	9,160	9,160	9,160	9,160	9,160	9,160
	TSS	*Original*	3,601	3,606	3,606	3,606	3,606	3,606	3,606	3,606	3,606	3606
	TSS	*Revised*	3,576	3,581	3,581	3,581	3,581	3,581	3,581	3,581	3,581	3,581
	TKN	*Original*	267	269	269	269	269	269	269	269	269	269
	TKN	*Revised*	309	311	311	311	311	311	311	311	311	311
	iTDS	*Original*	7,538	7,766	7,766	7,766	7,766	7,766	7,766	7,766	7,766	7766
	iTDS	*Revised*	6,624	6,791	6,791	6,791	6,791	6,791	6,791	6,791	6,791	6,791

Forecasting method

In the development of scenarios three and four we have sought to address other methodological matters raised in the Draft Decision. **Table 10** provides a response to a number of these.

Table 10 Addressing other demand matters

ESC Determination Request	How we have addressed
Coronavirus impacts to growth rates (residential)	Centre of Population Projection forecast has been incorporated into the VIFSA dataset. The population as a whole now reflects the CPP starting point in 19/20 and adopts that forecast growth rate until 30/31 (this is where the CPP forecast ends), at which point the previous VIFSA growth rates are used until 69/70. Allocation at the SCAP level have had the transient population adjusted so that it only takes effect in 20/21 (i.e. there is a population shift back towards WTP starting in that year) to account for working from home practices.
Coronavirus impacts to growth rates (Category A Top)	Refer to Scenario 3 and 4 notes above.
Coronavirus impacts to growth rates (Category A Group & Category B)	Employment projections are used for Cat B only. For data beyond 24/25 (this is when the employment projections end) the population rate from 24/25 to 69/70 are used due to absence of any other information. Cat A Group has been left at 0% due to comments from retailers saying that they haven't seen any impacts from coronavirus and don't expect to in this category (i.e. previous expectations are believed to be representative)
BOD Growth Rates ESC infer that BOD trends may continue to decline	While the BOD growth rate is adjusted the forecast still shows a positive growth rate overall vs historic negative growth. *Refer discussion on BOD below.*
SS Growth Rates for balancing item (WTP)	ESC raised issues around the balancing item and commented about the appropriateness of using population to scale when that population forecast is in question. Population forecast has now been adjusted to an ESC suggested alternative
Total SS Growth Rate at ETP for non-res between SEW and YVW	This reflects information provided by the retailers; there is no reason why two different catchments should have the same non-residential profile (see also row below).
Non-Res SS Growth Rates at WTP for YVW and SEW	The non-residential customer base for each Retailer is different and therefore differences in associated sewage load growth is fully expected. To expand, the Category A customers for each retailer are different and unique, and the discharge loads for each customer (particularly Category A (Top) are unique and different including different distributions of the treatable parameters. Similarly each retailer has a different and unique customer base for Category B with different mixes of industry types. In summary, the observation that the retailers have different relative growth rates for different aspects of the sewage load forecast is demonstration of the granularity that has been built into the forecast which takes into account these real differences.

As we outlined in our original submission our sewage forecasting methodology is a collaborative exercise in continuous improvement. Given the paucity of measured data across the retail network we remain confident that the approach we have adopted for PS21 is fit for purpose and fairly apportions costs between retail water company customers.

The treatable load parameters referred to above have been used for pricing and cost allocation across multiple regulatory periods. They do not, however reflect our latest insights around treatment plant loads.

The primacy of chemical oxygen demand (and flow)

Historical loads recorded at the treatment plants do indicate reductions or negative growth in some treatable loads including Biological Oxygen Demand (BOD), particularly at the WTP, that cannot be explained by changes in the catchment.

It should also be noted that while BOD loads appear to have declined, Chemical Oxygen Demand (COD) loads have increased over the same time period (refer charts below). BOD and COD are both measures of organic load with BOD being a subset of COD.

COD is considered to be a superior indicator of treatment plant loading and capacity as discussed in the WTP PTCA business case (Section 4, Figures 3 and 4) and evidenced by a current project which is investigating the introduction of COD as a treatable parameter either alongside or in place of BOD. This work will include investigation to understand the causes in the sewage catchment of the increasing COD:BOD ratio, whether this is expected to continue, and the implications for future COD forecasting.

While some individual process units may reference actual performance against BOD, Total Kjeldahl Nitrogen (TKN) or Total Suspended Solids (TSS) measures, both our capex and opex forecasts are primarily driven by current and forecast volumetric and COD loads.

Recent measures (at the treatment plant) and forecast COD loads are presented below on **Figure 4** and **Figure 5**. Note that we only commenced measurement of COD loads at ETP in 2015-16. Over time we anticipate that COD would be introduced (either as an addition to, or replacement of) BOD as a measure of organic load in the treatable parameter suite we use for pricing purposes.

Note that the 2020-21 values presented represent 9 months of actuals and 3 months forecast.

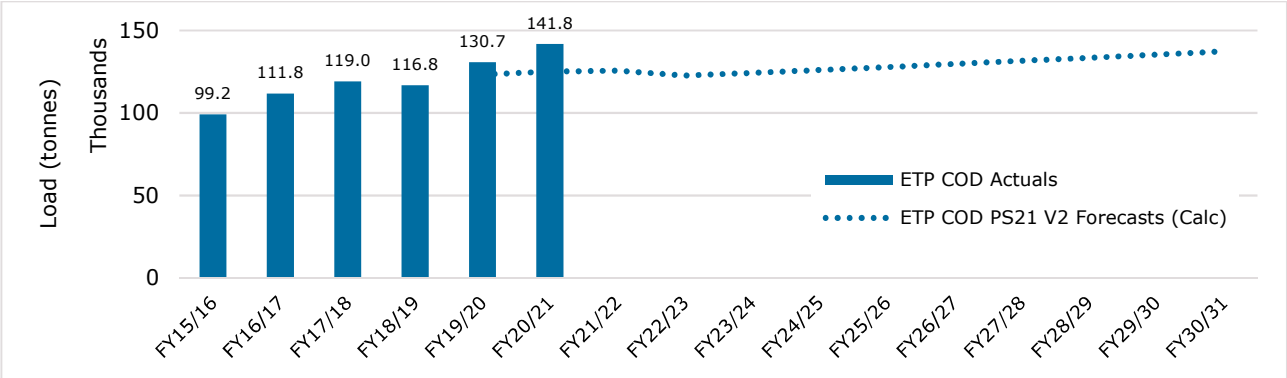


Figure 4 ETP COD Loads – Actual and forecast

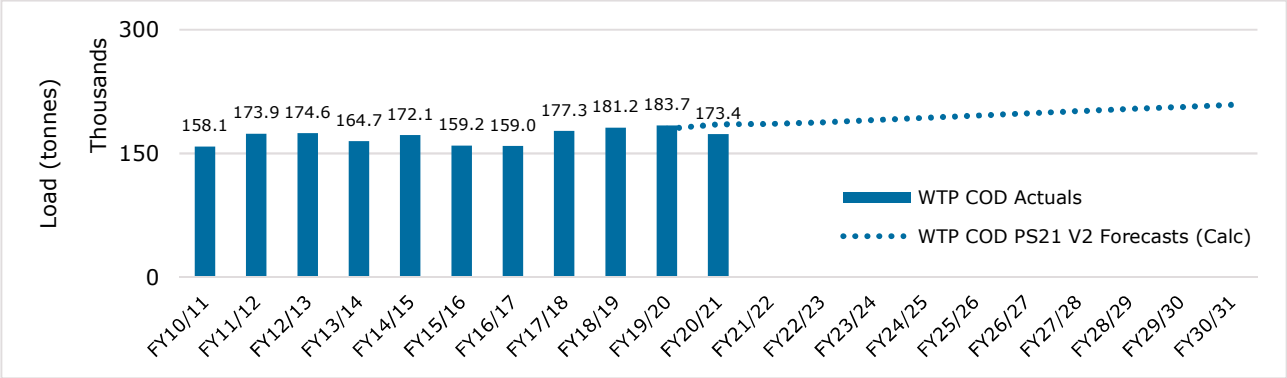


Figure 5 WTP COD Loads – Actual and forecast

5.1.3 Alternative expenditure forecasts

Operating expenditure

Expectations for a reasonable rate of improvement in cost efficiency

In its Draft Decision the ESC focuses a great deal of its narrative on the growth factor we applied for the purposes of the ESC's base year growth and efficiency regulatory construct.

We note that both Deloitte and the ESC incorrecty assume we have adopted population based forecasts as our growth factor. Table 52, Section S6.2.1 clearly sets out the use of growth in the number of households as the relevant growth factor.

The ESC's guidance material sets out simple criteria for its assessment of forecast operating expenditure (ESC, pp21):

> *"We consider that a prudent and efficient operating expenditure forecast has the following characteristics:*
>
> - *Baseline year expenditure is reflective of efficient operating costs and is used as a basis to forecast expenditure*

- *Forecasts operating expenditure incorporates expectations for a reasonable rate of improvement in cost efficiency*
- *Expenditure requirements above the baseline year (adjusted for growth and efficiency improvements) are fully explained and justified."*

Regulatory "growth" factor chosen remains a reasonable proxy

As stated in our original submission we are an asset intensive business, with an opening RAB balance of $11.3 billion in 2020-21 (ESC Draft Decision pp51). As such a considerable amount of our operating and capital expenditure is focused on operating and maintaining existing assets (and new assets that are added to the various services) to ensure that we are able to continue to prudently and efficiently deliver our services.

Figure 6 and **Figure 7** show the strong correlation between the size of our asset base and both population and customers (residential and non-residential properties). **Figure 8** and **Figure 9** then show that there is also a strong correlation between opex and the size of our RAB. As the RAB grows so does our opex requirement. The strength of the correlation is distorted at a whole of business level by the unusual treatment of the Victorian Desalination Plant in the period up to 2016, however from 2017 to 2020 the relationship is clearly strong. When water is removed (from both opex and capex) the relationship is able to be shown back to 2010.

These charts, combined with the insights from our land development partners, attest to the appropriateness of our household / customer derived growth factor for regulatory purposes. That is:

- A regulatory growth factor of 1.95 percent aligned with VIF2019 forecasts of household growth is an appropriate factor for Melbourne Water to adopt.
- Our capital program will grow over the five years at the rate forecast (with minor variations as a result of the Draft Decision).
- Actual growth in the number of customers (new properties) is expected to be in line with forecast and the adopted regulatory growth factor for at least the first three years of the period, with significant uncertainty around actual impacts of the COVID-19 pandemic in the final two years.

We note also that the criteria the ESC's guidance paper sets out is clearly focused on a reasonable rate of improvement in cost efficiency. We contend that the only rate of improvement in cost efficiency that matters is the net improvement rate. This is what matters ultimately to customer prices. Melbourne Water committed to a 0.05 per cent net efficiency factor. This compares favourably to a number of businesses that achieved Advanced or higher rating (for Management) in the 2018 price review:

- South East Water proposed a productivity improvement of 2.3% vs a customer growth rate of 2.3%, or a net efficiency of 0.0%[22]. SEW achieved a rating of 'Advanced' and was fast-tracked.
- City West Water proposed a productivity improvement of 2.0% vs a customer growth rate of 2.6%, or a net efficiency of -0.6%[23]. CWW achieved 'Advanced'.
- Coliban Water proposed a productivity improvement of 1.5% vs a customer growth rate of 1.7%, or a net efficiency of -0.2%[24]. CW achieved 'Advanced'.
- North East Water proposed a productivity improvement of 1.2% vs a customer growth rate of 1.2%, or a net efficiency of 0.0%[25]. NEW achieved 'Advanced'.

We also contend that it is not appropriate for a regulator to choose which 'efficiencies' are appropriate or suitable for adoption by a business. Over time productivity improvements will come from a number of sources, including economies of scale, substitution for alternative products, or offsetting revenue. How a business meets its targets is for the business to decide. We strongly reject the notion that delivering efficiencies through solar benefits should reflect negatively in any way on the management of the business or its achievement against the ESC's criterion.

[22] Essential Services Commission 2018, South East Water draft decision: 2018 Water Price Review, 7 December, p.11
[23] Essential Services Commission 2018, City West Water draft decision: 2018 Water Price Review, 28 March, p. 12
[24] Essential Services Commission 2018, Coliban Water draft decision: 2018 Water Price Review, 28 March, p. 13
[25] Essential Services Commission 2018, North East Water draft decision: 2018 Water Price Review, 28 March, p. 15

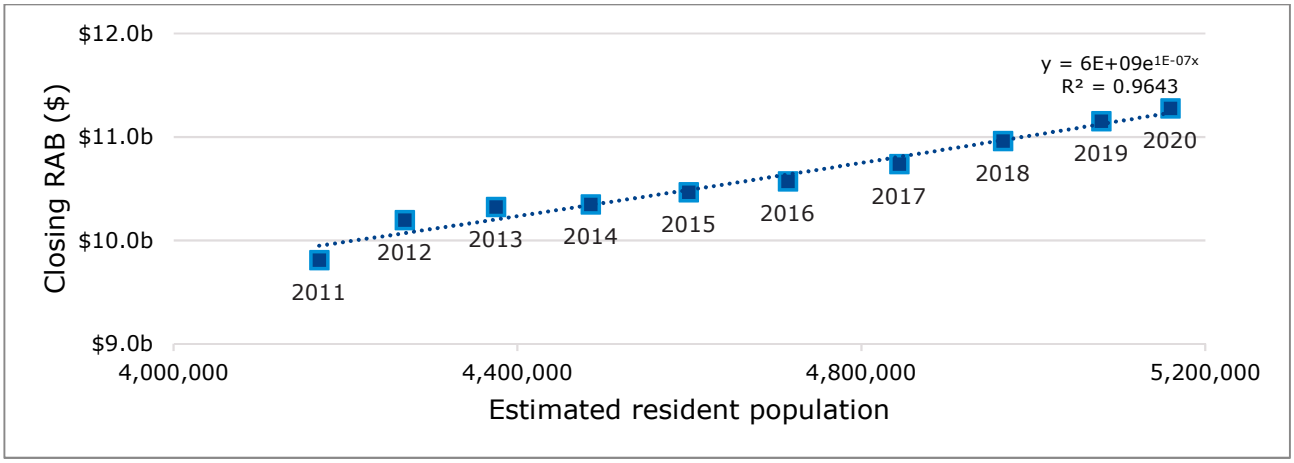


Figure 6 $ RAB (closing balance) per person

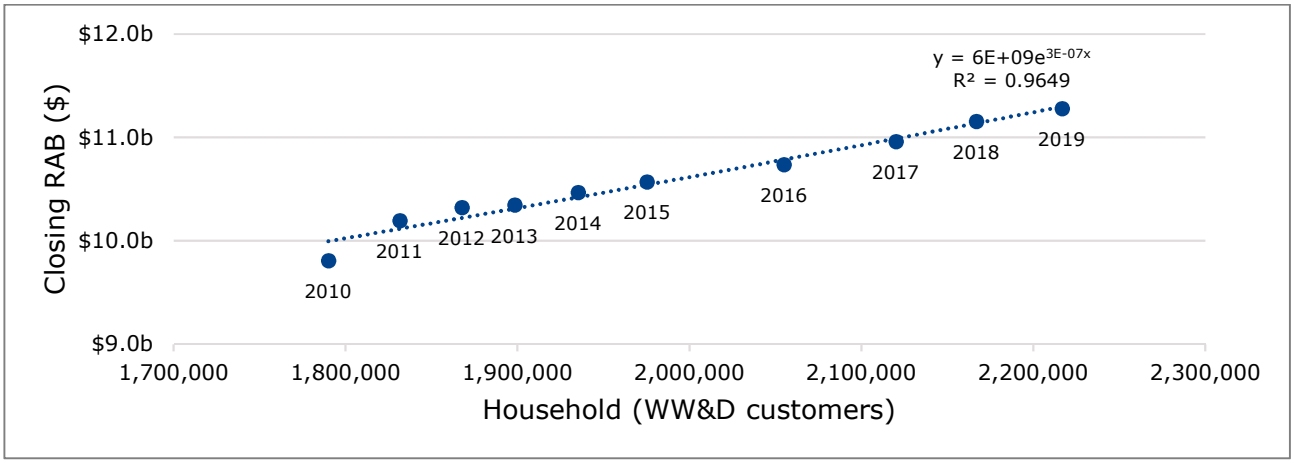


Figure 7 $ RAB (closing balance) per customer (WW&D customers)

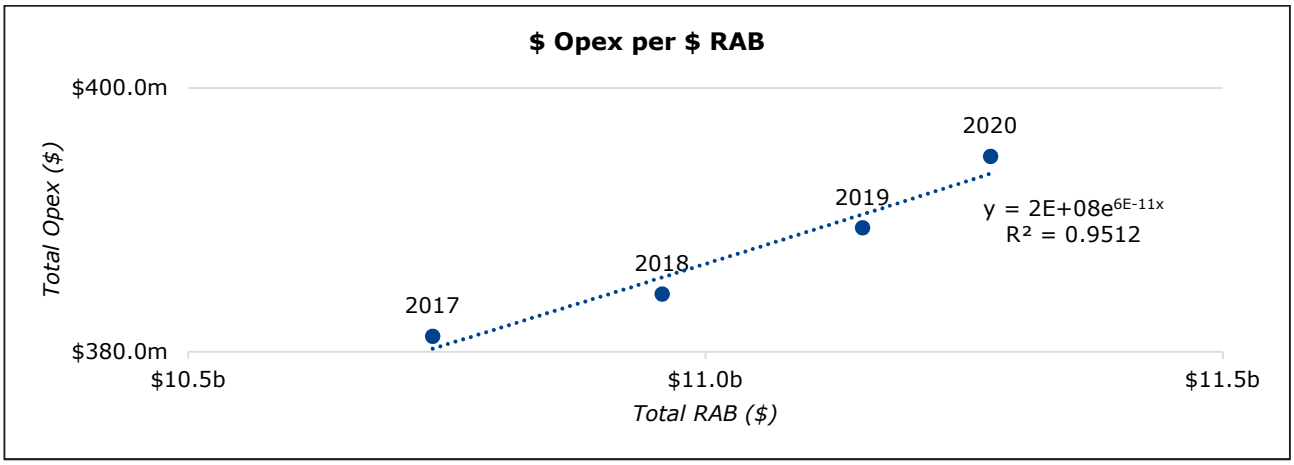


Figure 8 Relationship between total opex and size of asset base

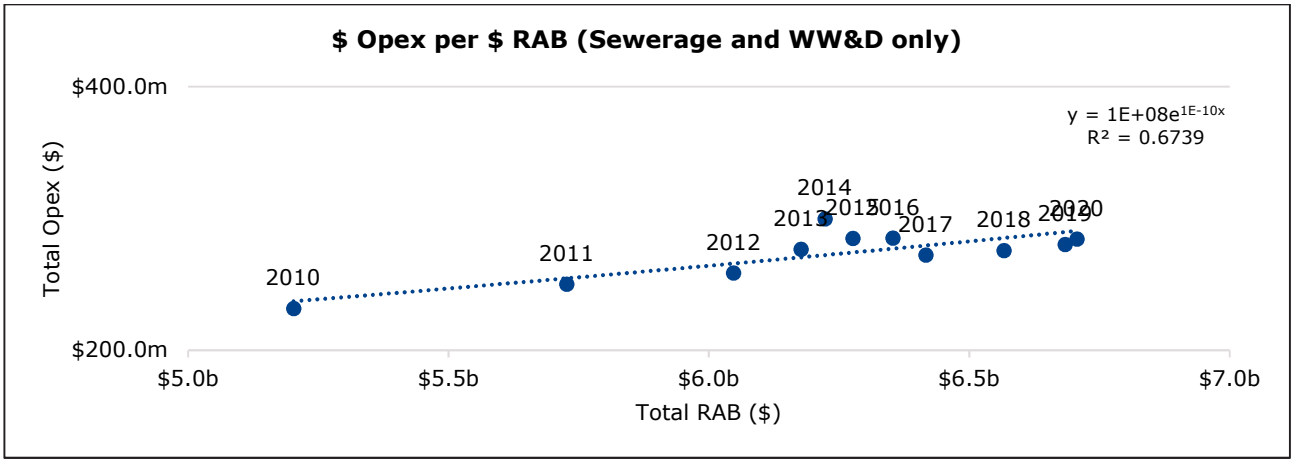


Figure 9 $ RAB (closing balance) per customer (WW&D customers)

Operating expenditure – proposed adjustments for revised demand

Operating expenditure adjustments proposed as a result of our adoption of revised demand forecasts are limited to energy, which is benchmarked and treated outside the baseline-growth-efficiency framework. In accepting the ESC's proposed adjustments to our growth and efficiency factors we acknowledge that this adjustment already includes a downward adjustment of chemicals spend.

In order to calculate a revised energy forecast we adopted a similar approach to that applied for our capital expenditure adjustments. Key assumptions include:

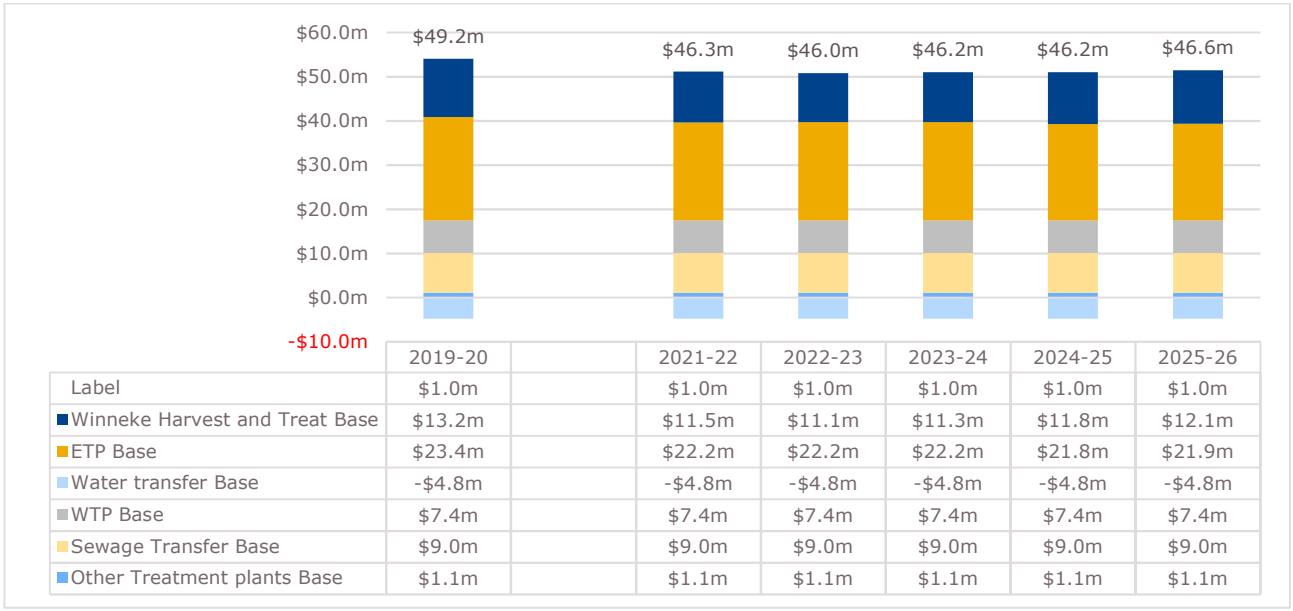
- Energy forecasts are built at contract rates at the level of water transfer (inclusive of hydroelectricity revenue), Winneke harvest and treatment, and other treatment plants for water, and sewage transfer, WTP and ETP for sewerage. A small "other" category covers a small number of drainage pump stations which are flood event based and facilities including Melbourne Water's head office at 990 La Trobe Street, Docklands.
- Each area builds budgets differently but each was asked to identify base expenditure, capital expenditure related impacts and adjustments for growth in demand.
- Energy adjustments are not applicable to the waterways and drainage service.
- Base and capital driven energy expenditure is unaffected by changes to demand forecasts (with the exception of capital growth projects such as Cement Creek where additional opex energy is deferred in line with the deferral of the project).

Figure 10, **Figure 11** and **Figure 12** show the breakdown of "base year escalation", capital project derived additions to the base year, and growth derived additions to the base year respectively.

- **Figure 10** shows that base year expenditure of $49.2 million has been reduced by nearly $3m at the start of the regulatory period with only minor changes across the five years largely driven by the Winneke harvest and treatment and ETP base. Note that hydroelectric benefits are included here as part of the base.

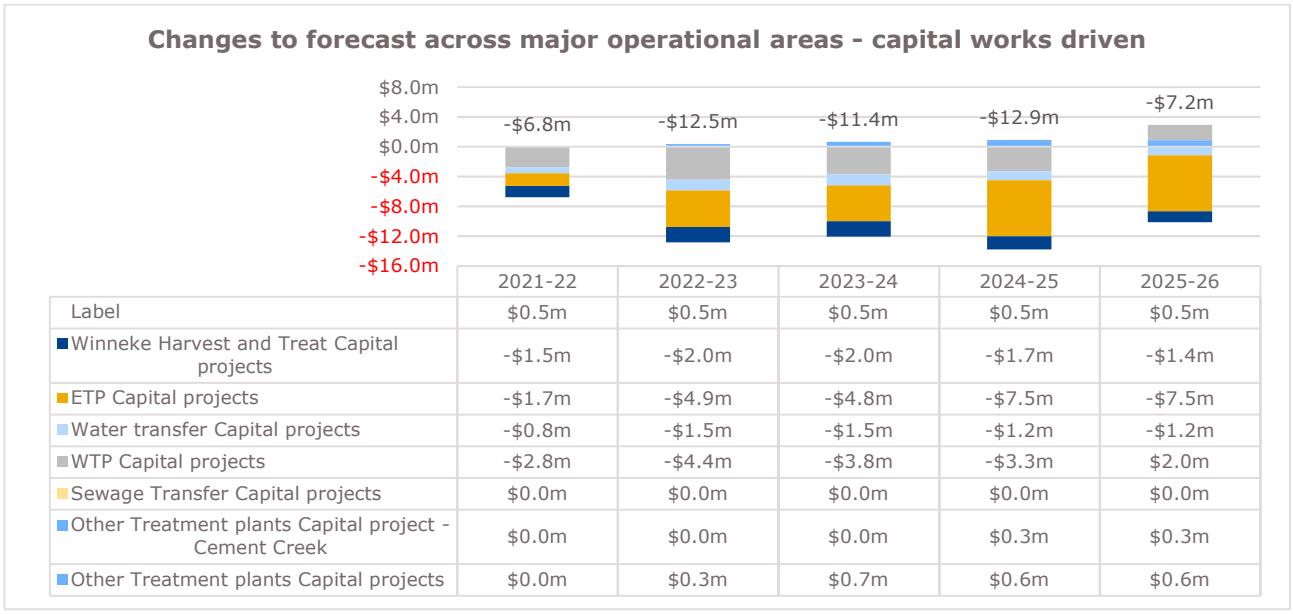
- **Figure 11** shows that on average the capital projects being delivered across the PS21 period reduce energy (contract) expenditure by $10.2 million per annum. This includes energy saved when process units are offline for upgrade, reductions associated with solar, and other energy generating projects and additional costs where new process units consume energy.
- **Figure 12** shows that water transfer growth (inclusive of hydroelectric revenue) is negative across each year of the period shown. Growth driven costs that could be adjusted for a slowdown in demand are assumed to be limited to the ETP and other treatment plants. For the other treatment plants category operational decisions associated with the annual operating plan are at least as significant as forecast increases in demand. We have not, however, in the time available, attempted to isolate these impacts.

Note that the "label" rows shown in the data tables at the bottom of each chart are arbitrary values to support the labelling of aggregate expenditure at the top of each bar.



	2019-20	2021-22	2022-23	2023-24	2024-25	2025-26
Label	$1.0m	$1.0m	$1.0m	$1.0m	$1.0m	$1.0m
Winneke Harvest and Treat Base	$13.2m	$11.5m	$11.1m	$11.3m	$11.8m	$12.1m
ETP Base	$23.4m	$22.2m	$22.2m	$22.2m	$21.8m	$21.9m
Water transfer Base	-$4.8m	-$4.8m	-$4.8m	-$4.8m	-$4.8m	-$4.8m
WTP Base	$7.4m	$7.4m	$7.4m	$7.4m	$7.4m	$7.4m
Sewage Transfer Base	$9.0m	$9.0m	$9.0m	$9.0m	$9.0m	$9.0m
Other Treatment plants Base	$1.1m	$1.1m	$1.1m	$1.1m	$1.1m	$1.1m

Figure 10 Changes to baseline forecast across major operational areas



	2021-22	2022-23	2023-24	2024-25	2025-26
Label	$0.5m	$0.5m	$0.5m	$0.5m	$0.5m
Winneke Harvest and Treat Capital projects	-$1.5m	-$2.0m	-$2.0m	-$1.7m	-$1.4m
ETP Capital projects	-$1.7m	-$4.9m	-$4.8m	-$7.5m	-$7.5m
Water transfer Capital projects	-$0.8m	-$1.5m	-$1.5m	-$1.2m	-$1.2m
WTP Capital projects	-$2.8m	-$4.4m	-$3.8m	-$3.3m	$2.0m
Sewage Transfer Capital projects	$0.0m	$0.0m	$0.0m	$0.0m	$0.0m
Other Treatment plants Capital project - Cement Creek	$0.0m	$0.0m	$0.0m	$0.3m	$0.3m
Other Treatment plants Capital projects	$0.0m	$0.3m	$0.7m	$0.6m	$0.6m

Figure 11 Changes to forecast across major operational areas - capital works driven

Label	2021-22	2022-23	2023-24	2024-25	2025-26
Winneke Harvest and Treat Growth	$0.0m	$0.0m	$0.0m	$0.0m	$0.0m
ETP Growth	$0.5m	$0.8m	$1.2m	$1.5m	$1.9m
Water transfer Growth	-$1.2m	-$2.2m	-$1.2m	-$1.4m	-$1.6m
WTP Growth	$0.0m	$0.0m	$0.0m	$0.0m	$0.0m
Sewage Transfer Growth	$0.0m	$0.0m	$0.0m	$0.0m	$0.0m
Other Treatment plants Growth	$0.6m	$0.6m	$0.6m	$0.6m	$0.6m

Figure 12 Changes to forecast across major operational areas - growth driven

Table 11 Growth based energy cost adjustment derivation

	2021-22	2022-23	2023-24	2024-25	2025-26
Conversion factor (contract to benchmark price)	0.69	0.75	0.69	0.71	0.68
Adjustment for revised adopted growth profiles					
Eastern treatment plant	$0.49m	$0.85m	$1.19m	$1.53m	$1.86m
Other treatment plants	$0.58m	$0.60m	$0.60m	$0.61m	$0.62m
Total (at contract rate price)	$1.08m	$1.44m	$1.80m	$2.14m	$2.48m
Revised growth cost profile	$0.00m	$0.00m	$1.12m	$1.08m	$1.44m
Adjustment required to profile	-$1.08m	-$1.44m	-$0.67m	-$1.06m	-$1.03m
Adjustment to benchmark price *These values copied to ESC template*	-$0.74m	-$1.08m	-$0.47m	-$0.75m	-$0.70m
Adjustment for revised growth capex profiles – Cement Creek Diversion Project					
Growth driven uplift within PS21 profile				$0.27m	$0.27m
Adjustment to benchmark price *These values copied to ESC template*				-$0.19m	-$0.19m

Our proposed adjustment to energy is based upon an assumed three year 'hiatus" in demand growth, aligned with the adopted water and sewage demand forecasts. For simplicity we have simply shifted the uplift in expenditure attributable to "growth" out by three years. Note that the estimated uplift for 2020-21 is derived from a mixture of actual and forecast data.

Capital expenditure

Having adopted the revised demand forecasts presented above we have conducted a further review of our capital program. The outcome of our review is summarised in two parts:

Projects and allocations for Years 1-5	No change to forecast growth related expenditure. We reiterate our response provided in Attachment 1 of the Price Submission. We note that in adopting the ESC's Draft Decision capital adjustments some adjustment has been made to growth projects such as the Cement Creek Diversion. We also note that the two sewerage projects with a growth assessed as being clearly prudent by Deloitte account for well over half of our total PS21 capex with a growth driver. Making further cuts to our growth program on the basis of residual COVID-19 uncertainty significantly increases the risk of service degradation below acceptable limits and/or the need for more costly interventions in response to asset failure.
Projects and allocations for Years 6-10	For both our water and sewerage programs we recognise that the COVID-19 pandemic is likely to reduce the level of underlying demand in the form of less people in Melbourne. In line with the adopted demands we have adjusted our capital profile for growth projects not substantially underway during PS21 by shifting them out by three years. This reflects the CPP extended scenario of population growth (two years of 0.03% followed by a 0.38%). We will revisit appropriate timing for these projects at the time of our next submission and note that each capital business case is developed on a "just-in-time" basis reflecting service needs at the time. Forward views on demand do not have a significant impact on timing, rather they are used in developing an appropriately sized medium to long term solution to the identified need. Waterways and drainage growth capex is entirely tied to land development activity and cannot be considered in isolation to the customer contributions revenue we receive that effectively funds this expenditure. We consider that based on information available at this time any decline in land development capex would be matched by a corresponding decline in customer contributions revenue. We will revisit (and revise) these forecasts at the time of our next submission.

Table 12 Revised capital profiles of growth projects by service (Years 6-10)

All values in $ millions		PS21					PS26				
		2021-22	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**	**2030-31**
Water											
Officer North … Service Reservoir	*PS21*				$0.05	$0.40	$12.65	$7.08			
	Revised						$0.05	$0.40	$12.65	$7.08	
Bunyip River Diversion Works	*PS21*						$0.08	$0.20	$0.31	$8.65	$10.07
	Revised									$0.08	$0.20
Yan Yean Reservoir upgrade spillway	*PS21*						$17.37				
	Revised									$17.37	
Cranbourne 2nd tank and improvement works	*PS21*						$1.93	$6.67			
	Revised									$1.93	$6.67
Sewerage											
ETP Digester Auxiliary Systems Upgrade	*PS21*		$0.99	$3.56	$11.41	$14.25	$3.58				
	Revised	*No revision made – substantially complete during PS21*									
ETP Sludge Drying Capacity Augmentation	*PS21*	$0.17	$0.23	$0.30	$1.74	$13.22	$44.36	$39.33	$5.07		
	Revised									$44.36	$39.33
WTP 25W New Nutrient Reduction Plant	*PS21*						$0.52	$1.93	$8.17	$65.84	$70.89
	Revised									$0.52	$1.93
ETP primary tank augmentation	*PS21*						$2.39	$11.38	$22.20	$10.83	$0.00
	Revised									$2.39	$11.38
ETP aeration tank works - augmentation	*PS21*									$0.40	$10.05
	Revised										

These values have been translated into capital adjustments in the ESC's financial template.

6.0 Operating expenditure

Melbourne Water largely accepts the adjustments made to operating expenditure forecasts in the ESC Draft Decision, with the following exceptions which are comprehensively discussed throughout this section of the document:

- removal of $0.8 million water and sewerage baseline expenditure with reference to the *Biosolids Reuse Innovation Project* one-off accounting item
- removal of $21.2 million in waterways and drainage operating expenditure forecast uplift

The revised operating expenditure forecast comprising Melbourne Water's response has been explained as follows.

6.1 Water and sewerage

The ESC Draft Decision adopts the recommendations of the expenditure review undertaken by Deloitte Access Economics[26]. Melbourne Water requests the ESC reconsider one of the baseline year adjustments summarised below.

Melbourne Water is seeking the ESC reinstate the $0.8 million removed from baseline expenditure, which represents a misunderstanding on the part of Deloitte when undertaking historical trend analysis as part of their prudency and efficiency testing of the 2019-20 base year. This one-off accounting item (related to the historical *Biosolids Reuse Innovation Project)* has no bearing on 2019-20 base year expenditure.

ESC Draft Decision

The Draft Decision supports the Deloitte recommendation to remove $0.8 million from the baseline operating expenditure in relation to an historical *Biosolids Reuse Innovation Project* transaction, contending that: *"… the Biosolids Reuse Innovation Project ($0.8m) which appears to be a one-off accounting item. Given this is not an ongoing expenditure likely to be incurred in the future, we recommend a reduction of $0.8m to the base year".*

Melbourne Water response

On February 1, 2021 Deloitte sent Melbourne Water the following information request:

"In 2019-20, there was a 7.3% increase in external services opex (based on table 62 of the submission). Can you please explain what was behind this increase, noting that there was also significant in-sourcing of external contractor work going on at the same time?"

[26] Expenditure review – Melbourne Water 2021 Price Submission, Final Report for the Essential Services Commission – Public, Deloitte Access Economics, 23 February 2021

One specific component of Melbourne Water's response explained that 2018-19 external services expenditure was artificially reduced by $0.8 million due to an erroneous accounting item that was reported as a 2017-18 end financial year accrual, and was consequentially reversed in the following financial year to correct the error. If the erroneous accounting item did not occur in 2017-18, the 2018-19 expenditure would have been reported $0.8m higher (as presented in the table below) and thus reducing the 7.3% increase in 2019-20 for which Deloitte were seeking explanation.

External Services historical trend analysis ($ million 2020-21)

Historical trend analysis	2017-18	2018-19	2019-20	*Var*	*Var%*
External Services cost category - *as per financial reporting*	49.0	47.7	51.2	*3.5*	*7.3%*
Biosolids Reuse Innovation Project – *erroneous 2017-18 accrual transaction*	0.8	-0.8	-	-	-
Adjusted External Services cost category – *reversing erroneous transaction and correcting trend line*	48.2	48.5	51.2	*2.7*	*5.6%*

Deloitte appear to have misunderstood this historical accounting item assuming it to have been contributing to 2019-20 baseline expenditure, and given it does not relate to ongoing expenditure, have therefore proposed a corresponding baseline adjustment to reduce the water and sewerage operating expenditure forecasts by $0.8 million per year.

However the *Biosolids Reuse Innovation Project* accounting item is entirely related to historical expenditure, impacting the 2017-18 and 2018-19 financial years only, and has no impact on the 2019-20 baseline expenditure or any future operating expenditure forecasts. The historical accounting item was disclosed to Deloitte only to explain an anomaly in the historical trend line for the external services cost category, in order to assist with their expenditure review. Therefore, Melbourne Water considers this additional baseline adjustment recommended by Deloitte to be inappropriate, and is seeking reinstatement of $0.8m baseline expenditure from the ESC.

6.1.1 Operating expenditure forecast adjustments

A summary of the revised water and sewerage operating expenditure forecast comprising Melbourne Water's response has been provided as follows, complete with a comparison to the ESC Draft Decision.

ESC Draft Decision

The Draft Decision comprised the following adjustments to water and sewerage operating expenditure forecasts:

Adjustments to operating expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Reduction of $0.8m for external services related to the Biosolids Reuse Innovation Project.	-0.80	-0.80	-0.80	-0.80	-0.80	-4.00
Removal of the increase of $0.63m for the adjustment to reflect MW's final water and sewerage statutory accounts.	-0.63	-0.63	-0.63	-0.63	-0.63	-3.15
Removal of the increase of $0.52m for various small variations to base year for water and sewerage services.	-0.52	-0.52	-0.52	-0.52	-0.52	-2.60
Increase of net growth efficiency improvement rate to -0.20% (from -0.05% proposed).	-0.3	-0.61	-0.91	-1.21	-1.51	-4.54
Total controllable costs adjustment	**-2.3**	**-2.6**	**-2.9**	**-3.2**	**-3.5**	**-14.3**
Desalination plant security payments – 'shortfall' from 2012-2021.	37.12	37.12	37.12	37.12	37.12	185.62
Desalination plant security payments – revised VDP operating costs.	-2.59	-2.54	-2.52	-2.57	-2.58	-12.80
Total desalination plant security payments	***34.5***	***34.6***	***34.6***	***34.6***	***34.5***	***172.8***
Licence fees – ESC.	0.22	0.22	0.61	0.22	0.22	1.50
Licence fees – DH.	0.02	0.02	0.02	0.02	0.02	0.10
Licence fees – EPA.	0.03	0.04	0.04	0.05	0.05	0.20
Total licence fees	***0.3***	***0.3***	***0.7***	***0.3***	***0.3***	***1.8***
Total non-controllable costs adjustment	**34.8**	**34.9**	**35.3**	**34.8**	**34.8**	**174.6**
Total operating expenditure adjustments	**32.6**	**32.3**	**32.4**	**31.7**	**31.4**	**160.3**

Note: numbers have been rounded

Melbourne Water response

Melbourne Water's response comprises the following adjustments to water and sewerage operating expenditure forecasts:

Adjustments to operating expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Removal of the increase of $0.63m for the adjustment to reflect MW's final water and sewerage statutory accounts.	-0.63	-0.63	-0.63	-0.63	-0.63	-3.15
Removal of the increase of $0.52m for various small variations to base year for water and sewerage services.	-0.52	-0.52	-0.52	-0.52	-0.52	-2.6
Increase of net growth efficiency improvement rate to -0.20% (from -0.05% proposed).	-0.3	-0.61	-0.91	-1.21	-1.51	-4.54

Energy cost adjustment for revised adopted growth profiles – benchmarked price.[27]	-0.74	-1.08	-0.47	-0.75	-0.70	-3.73
Energy cost adjustment for revised capex profiles – Cement Creek Diversion Project – benchmarked price.[28]	-	-	-	-0.19	-0.19	-0.38
Energy cost adjustment for revised network costs – benchmarked price.[29]	0.31	-0.08	-0.06	-0.49	-0.62	-0.94
Total controllable costs adjustment	**-1.9**	**-2.9**	**-2.6**	**-3.8**	**-4.2**	**-15.3**
Desalination plant security payments – 'shortfall' from 2012-2021.	37.12	37.12	37.12	37.12	37.12	185.62
Desalination plant security payments – revised VDP operating costs.	-2.59	-2.54	-2.52	-2.57	-2.58	-12.80
Total desalination plant security payments	***34.5***	***34.6***	***34.6***	***34.6***	***34.5***	***172.8***
Licence fees – ESC.	0.22	0.22	0.61	0.22	0.22	1.50
Licence fees – DH.	0.02	0.02	0.02	0.02	0.02	0.10
Licence fees – EPA.	0.03	0.04	0.04	0.05	0.05	0.20
Total licence fees	***0.3***	***0.3***	***0.7***	***0.3***	***0.3***	***1.8***
Total non-controllable costs adjustment	**34.8**	**34.9**	**35.3**	**34.8**	**34.8**	**174.6**
Total operating expenditure adjustments	**32.9**	**31.9**	**32.7**	**31.1**	**30.7**	**159.3**

Note: numbers have been rounded

6.2 Waterways and drainage

The ESC Draft Decision adopts the recommendations of the expenditure review undertaken by Deloitte Access Economics[30].

Melbourne Water requests the ESC reconsider some project cost allocations. These are summarised below with revised businesses cases submitted under separate cover to provide detailed justification.

> Melbourne Water seeks the reinstatement of $21.2 million of the $22 million removed from controllable operating expenditure, to deliver critical customer outcomes.

The ESC Draft Decision proposes to remove *"$22.0 million, or an average of $4.4 million per year, from the additional $43.5 million controllable operating expenditure proposed by Melbourne Water."* The ESC specifically noted – *"Melbourne Water can respond to our draft*

[27] Refer to *Section 5.1.3* of this document for Melbourne Water's response
[28] Refer to *Section 5.1.3* of this document for Melbourne Water's response.

[29] Refer to *Section 6.5* of this document for Melbourne Water's response.
[30] Expenditure review – Melbourne Water 2021 Price Submission, Final Report for the Essential Services Commission – Public, Deloitte Access Economics, 23 February 2021

decision and provide additional business cases in support of the expenditure ($22.0 million) we did not accept." (pg.30 of Draft Decision)

Melbourne Water has reviewed our waterways and drainage expenditure and requests a number of these programs be reinstated. Revised business cases, addressing obligations, drivers and efficiency are submitted under separate cover for:

- Totex investments in largescale stormwater harvesting and associated stormwater quality treatment assets activities, including three underpinning capital business cases for: Sunbury, Upper Merri Creek and regional schemes
- Opex Business Cases for: Stormwater Quality Treatment Systems, Wetland Condition, Flood Preparedness, Flood Mitigation and Community Involvement in Waterways.

The below section provides an overview of the ESC Draft Decision and associated Deloitte recommendations for each of these programs and provides a summary of Melbourne Water's response. The individual business cases should be referred to for further information on the obligations, drivers and benefits of each program.

With regard to the view in the ESC Draft Decision that Melbourne Water placed undue emphasis on the results of a willingness to pay study to justify waterways and drainage investment, we refer to the above section 3.1.1 which details our response.

Melbourne Water accepts the removal of $0.5 million litter program expenditure. Litter is a significant concern for community, however, as per the Deloitte finding, Melbourne Water will incorporate this in our baseline expenditure.

6.2.1 Stormwater quality treatment systems

The ESC Draft Decision removes $1.5 million opex funding for an average of nine new wetlands[31] per annum from land development works requiring maintenance to comply with State Environmental Protection Policy obligations. This decision is based on the Deloitte finding that the new wetlands and land area handed over by developers (based on historical levels) is part of business as usual activities and should be adequately captured in the growth-efficiency baseline opex. Deloitte also noted that Melbourne Water expects developer contributions will decline from 2018-19 levels and therefore assuming a continuation of historical levels of developer contributions may overstate required opex for new wetlands.

Melbourne Water response

Melbourne Water notes that the ESC and Deloitte accept that Melbourne Water, under State Environmental Protection Policy, is obligated to maintain these new stormwater quality

[31] Wetlands is a general term applied to many water bodies. To avoid confusion with natural wetlands and other waterbodies the preference is to refer to stormwater quality treatment assets.

treatment assets. The $1.2 million is required to meet the significant year on year growth in stormwater quality treatment assets transferred to Melbourne Water for management.

In considering the ESC Draft Decision, Melbourne Water reviewed the forward land development capital program which indicated over the 5-year period a total of 45 new stormwater quality treatment assets have been designed and scheduled for construction. These will be transferred to Melbourne Water for management. A further 43 assets are planned but not scheduled and timing of transfer to Melbourne Water will be subject to development rates. Taking a risk sharing approach, the proposed expenditure is based only on those assets which are designed and scheduled for construction – 45 in total or 9 per year over the 5-year period. This represents an average annual growth of 4.1% over the period – significantly above a growth adjusted baseline.

We have also reviewed our annual maintenance spend for these assets. Maintenance costs can range from $4,137 per system per year up to $19,522. Melbourne Water proposes a rate based on an average cost from 2019-20 actuals.

These revised estimates result in a total expenditure of $1.2 million ($real21-22) over the five year period, above baseline opex. This represents a reduction of $0.3 million from that proposed in the 2021 Price Submission.

The business case (provided under separate cover) should be referred to for further information on the obligations, drivers and benefits of the program.

6.2.2 Large scale stormwater harvesting and associated stormwater quality treatment assets activities

The ESC Draft Decision removes the operational expenditure required to:

- Support the stormwater harvesting capital program ($4.5 million)
- Carry out further analysis and investigation work and the associated FTE ($3.5 million)
- Fund research, informing policy and monitoring programs to understand effectiveness ($3.5 million)

This outcome appears to support the Deloitte recommendation to remove the $98 million capital expenditure related to Melbourne Water's proposed stormwater harvesting program. The implication is that the $98 million of stormwater capital is part of the ESC decision for an average reduction of $50 million per annum to Melbourne Water's capital program. The decision is based on the Deloitte report, which noted "*we have recommended removal of a number of capital investment items associated with the waterways and drainage increased customer service levels (see section 3.4.2), approximately $98 million over RP5. We consider these capex reductions should be included as part of the broader $50m per annum reduction to the capital program*." (see discussion in Table 3.14 on pgs. 35-36 and pgs 103-104 of the Deloitte report). Deloitte raised concerns about the prudency of stormwater harvesting projects and considered insufficient justification was presented, beyond willingness to pay.

The consequence of the removal of the large scale stormwater operational expenditure means the associated capital expenditure cannot progress.

Melbourne Water response

The expenditure proposed is required to meet our legislative and regulatory obligations under the Water Act 1989, the Environment Protection Act 2017 / Environment Protection Act 1970, and contained within the Statement of Obligation (2015), with respect to:

- waterway management
- environmental protection
- maintaining social and economic uses of valued urban waterways.

An overarching summary and the three business cases relevant to this program ($49 million for the Upper Merri Creek scheme, $24 million for the Sunbury scheme, and $25 million for specified regional schemes) have been updated to more clearly articulate the program drivers and reflect these specific obligations (provided under separate cover).

The works proposed are of critical importance to prevent a decline in the health of waterways that would result from maintaining the current level of investment (i.e. business-as-usual). In addition to broader studies on the impact of stormwater on waterways (Uttigauer,2016; Walsh & Kunapo, 2009; Wenger, et al., 2009), detailed studies have been completed by Melbourne University (Chee et al, 2020, Healthy Waterways Strategy 2008) which have identified that under a business-as-usual approach for Melbourne's waterways impacted by urban growth, there will be broad and irreversible loss of waterway values such as birds, fish, frogs, macroinvertebrates, platypus, amenity, community connection and recreation if appropriate stormwater management is not undertaken.

Of specific note is that no action in the Sunbury region is likely to result in extinction of platypus within the Jacksons and Emu Creeks, and potentially the entire Maribyrnong River catchment. Platypus are now officially a threatened species and listed as 'vulnerable' in Victoria under Flora and Fauna Guarantee Act 1988 (Vic).

Evidence that supports the basis for these impacts can be found in the three business cases under this program. This includes information on the supporting research carried out by Melbourne University and the loss of values relevant to the specific waterways.

To determine the appropriate level of investment required to maintain waterway health, Melbourne Water:

- Identified waterways that required remediation – used waterway specific data and specialised models to identify those waterways where further investment was necessary to prevent a decline (Chee et al, 2020, Healthy Waterways Strategy 2008).
- Prioritised waterways that delivered the best value for money outcome – these same models were used to compare the impact on future waterway health from undertaking

different waterway management actions, including relative costs, to identify 'priority areas' for stormwater management across Melbourne (Chee et al, 2020, Healthy Waterways Strategy 2008).

- Identified how much stormwater needed to be captured/harvested to avoid the degradation of waterway health – the best available science indicates that maintaining the current flow regime, and hence waterway condition, equates to around 4.4 ML/y harvested and 1.1 ML/y infiltrated respectively for every hectare of development or approximately 70-90% of the stormwater generated (Duncan et al, 2014).
- Identified the waterways that require immediate action – of the identified 'priority areas', investment over the 2021-26 period is where there is evidence of rapid and expanding urban development (as shown in the Sunbury and Upper Merri Creek business cases), and via a prioritisation process that screened potential interventions and capital works programs.
- Defined and assessed a suite of robust and comparable options – for Sunbury and Upper Merri Creek, while a range of options were considered, given the large volume of stormwater that must be harvested to prevent waterway decline direct investment in centralised infrastructure is the preferred. For the regional business case, investment options included different asset types (ie; aquifer recharge vs collection and reuse from wetlands) and different scales (lot scale, streetscape and neighbourhood scale). The analysis undertaken were bespoke for the spatial location and intervention was fit for purpose. Analysis and investigation was performed by experienced consultants.
- Completed robust cost estimates, based on modelling and engineering design completed by an appropriately experienced independent consultant, and engineering cost estimates for each of these projects (E2DesignLab, 2018; Stantec, 2021; GHD, 2021; and Alluvium 2020).

Melbourne Water has prepared an overview of the total expenditure (Totex) required to deliver acceptable stormwater service levels and the associated business cases for Sunbury, Upper Merri Creek and Regional Stormwater Harvesting, addressing Deloitte's concerns regarding prudency and efficiency. This is provided under separate cover, along with the associated business cases.

6.2.3 Wetland condition

The Draft Decision supports the Deloitte recommendation to remove $1.5 million opex funding for managing twenty priority natural wetlands. Deloitte recommended removal of the funding based on the limited details regarding the benefits of this expenditure, noting it is difficult to quantify benefits for projects of this nature.

Melbourne Water response

The $1.5 million expenditure is required to comply with our legislative and statutory obligation to protect waterway health under the Water Act 1989. The definition of waterways includes

natural wetlands, which are also unique and often culturally significant features in our landscape.

The region's natural wetlands are being irreparably damaged and lost due to urban development and a changing climate. The increased expenditure is required to halt the degradation and the loss of twenty priority natural wetlands.

The expenditure funds natural wetland management activities to sustain and where necessary improve environmental condition and support environmental values. It provides for works including revegetation, fencing, and controlling pest plants and animals.

The business case (provided under separate cover) should be referred to for further information on the obligations, drivers and benefits of the program.

6.2.4 Flood preparedness

The Draft Decision supports the Deloitte recommendation to remove $1.5 million opex funding for improving flood preparedness. Deloitte recommended removal of the funding based on insufficient information to justify the program and limited information regarding the net benefits of the program.

Melbourne Water response

The $1.5 million expenditure is required to comply with our legislative and statutory obligation to *'develop and implement plans and to take any action necessary to minimise flooding and flood damage'* under the Water Act 1989 and to participate in flood response and recovery under the Emergency Management Act 2013.

An estimated 200,000 properties across the Port Phillip and Westernport catchments are at risk of flooding and this is predicted to increase by 125% by 2100, due to urban infill development (increases the impervious surface area) and increased storm intensity and frequency[32]. The annual average cost of flooding (referred to as annual average damages or AAD) is assessed at $735 million[33].

The investment is required to reduce flood risks and costs to communities who live in flood hot spots affected by flash flooding. There are no easy infrastructure solutions in these hot spot areas and when communities are educated and prepared for flooding, they are safer and experience less flood damage.

The expenditure funds enhanced community education, warnings and collaboration of emergency agencies to improve flood preparedness. The benefits include a reduction in

[32] Melbourne Water's Flood Management Strategy – Port Phillip and Westernport, 2021
[33] Melbourne's Flood Risk Assessment of Average Annual Damage, Jacobs Group, October 2020

economic damages from flood, but more importantly the prepared community is a safer and more resilient when flood occurs.

The business case (provided under separate cover) should be referred to for further information on the obligations, drivers and benefits of the program.

6.2.5 Flood mitigation

The Draft Decision supports the Deloitte recommendation to remove $3.5 million opex funding for flood mitigation. Deloitte recommended removal of the funds, due to a lack of detail on the benefits of the program and questions about the prudency of the expenditure to be spread across the whole customer base, to support a small number of private properties.

Melbourne Water response

The $3.5 million is required to comply with our legislative and statutory obligation to '*develop and implement plans and to take any action necessary to minimise flooding and flood damage*' under the Water Act 1989 and to participate in flood response and recovery under the Emergency Management Act 2013. It is centred around keeping people, properties and communities safe.

As noted above, an estimated 200,000 properties across the Port Phillip and Westernport catchments are at risk of flooding and this is predicted to increase by 125% by 2100 due to urban infill development (increases the impervious surface area) and increased storm intensity and frequency[34]. The annual average cost of flooding (referred to as annual average damages or AAD) is assessed at $735 million[35].

The Deloitte finding focuses on one element of the expenditure – flood resilient homes. The expenditure is to fund two program improvements under the refreshed Melbourne Water Flood Strategy:

- 'Program Innovation' seeks to supplement the existing suite of mitigation works (such as pipes and retarding basins) with new solutions.
- 'Delivery Innovation' responds to a need to develop more tailored solutions that respond to local (or 'place-based') needs and to do so much earlier in the development of a project.

These programs address the increasing challenge of implementing prudent and efficient flood risk reduction solutions, that are also supported by the community, in an increasingly congested and flood prone urban context, and enable Melbourne Water to deliver on its

[34] Melbourne Water's Flood Management Strategy – Port Phillip and Westernport, 2021
[35] Melbourne's Flood Risk Assessment of Average Annual Damage, Jacobs Group, October 2020

function to minimise flooding and flood damage in areas where traditional infrastructure solutions are difficult.

Melbourne Water also notes that the additional operational expenditure sought ($3.5 million) is offset by a reduction in capital expenditure of $38 million between our 2016 and 2021 Price Submissions. The change in funding mechanism reflects a program that is optimised for effective service delivery against total expenditure.

The business case (provided under separate cover) should be referred to for further information on the obligations, drivers and benefits of the program.

6.2.6 Community involvement in waterways

The Draft Decision supports the Deloitte recommendation to remove $2 million opex funding to support increased community involvement in the management, protection and enjoyment of waterways. Deloitte recommended removal of the funding based on based on limited justification beyond customer preferences from the willingness to pay study.

Melbourne Water response

The $2 million is required to comply with our legislative and statutory obligation under the Water Act 1989 to protect waterway condition (Part 10) and must consider both Aboriginal cultural values and uses of waterways as well as the social and recreational uses and values of waterways (S92 (2A)).

Melbourne Water also has commitments under State government policy and strategies (Water for Victoria, Victorian Waterway Health Strategy, Victorians Volunteering for Nature, Victoria's Biodiversity Plan and Yarra Strategic Plan) and to the community (through the co-developed Healthy Waterways Strategy) for increased community engagement and involvement in waterway management. Community access and enjoyment of waterways was a fundamental and enhanced element of the most recent Healthy Waterways Strategy.

Through the research and engagement undertaken in support of the Waterways and Drainage Investment Plan (WDIP), the community consistently supported an increase in investment in community involvement – seen not just through the Customer Preferences and Willingness to Pay Study, but also through qualitative feedback from focus groups and the Waterways and Drainage Customer Council (outlined in section 3.1.1).

Melbourne Water analysis shows significant cost-benefit from supporting community involvement through programs like Citizen Science and community volunteering over direct investment, to achieve improved waterway outcomes in areas such as managing litter, water quality, habitat and threatened species monitoring, and a range of other waterway management activities.

It is Melbourne Water's experience that greater community involvement with nature results in lower future management and maintenance costs because these spaces are better cared for

(e.g. less littering, vandalism). This experience is increasingly supported by an emerging body of academic literature (Ivonchyk 2019). Academic literature also supports individual and community behaviour change as well as public health benefits of greater interactions with natural environments which this allocation would drive. (Frontier Economics 2019, Duerden & Witt 2010; Boyes & Stanisstreet 2012; Gould et. al. 2019).

The investment is required to improve and implement new community education and engagement programs and activities that are targeted at improving waterway health and the communities' enjoyment of those waterways.

The business case (provided under separate cover) should be referred to for further information on the obligations, drivers and benefits of the program and details of references cited.

5.2.7 Operating expenditure forecast adjustments

A summary of the revised waterways and drainage operating expenditure forecast comprising Melbourne Water's response has been provided as follows, complete with a comparison to the ESC Draft Decision.

ESC Draft Decision

The Draft Decision comprised the following adjustments to waterways and drainage operating expenditure forecasts:

Adjustments to operating expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Removal of the increase of $0.31m for the adjustment to reflect MW's final waterways and drainage statutory accounts.	-0.31	-0.31	-0.31	-0.31	-0.31	-1.55
Removal of the increase of $0.17m for the deferral of the *Sites of Biodiversity Significance (SoBS) program*.	-0.17	-0.17	-0.17	-0.17	-0.17	-0.85
Reduction of $22.0m uplift in waterways and drainage operating expenditure.[36]	-4.40	-4.40	-4.40	-4.40	-4.40	-22.00
Increase of net growth efficiency improvement rate to -0.20% (from -0.05% proposed).	-0.21	-0.42	-0.63	-0.84	-1.05	-3.15
Total controllable costs adjustment	**-5.1**	**-5.3**	**-5.5**	**-5.7**	**-5.9**	**-27.6**
Environmental contribution.	0.023	0.026	0.031	0.014	0.019	0.113
Licence fees – ESC.	0.11	0.11	0.30	0.11	0.11	0.74
Total non-controllable costs adjustment	**0.1**	**0.1**	**0.3**	**0.1**	**0.1**	**0.8**
Total operating expenditure adjustments	**-5.0**	**-5.2**	**-5.2**	**-5.6**	**-5.8**	**-26.7**

Note: numbers have been rounded

[36] Refer to *Section 6.2* of this document for Melbourne Water's response

Melbourne Water response

Melbourne Water's response comprises the following adjustments to waterways and drainage operating expenditure forecasts:

Adjustments to operating expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Removal of the increase of $0.31m for the adjustment to reflect MW's final waterways and drainage statutory accounts.	-0.31	-0.31	-0.31	-0.31	-0.31	-1.55
Removal of the increase of $0.17m for the deferral of the *Sites of Biodiversity Significance (SoBS) program*.	-0.17	-0.17	-0.17	-0.17	-0.17	-0.85
Reduction of $0.5m uplift in waterways and drainage operating expenditure for managing litter and pollution.[37]	-0.10	-0.10	-0.10	-0.10	-0.10	-0.50
Reduction of $0.3m uplift in waterways and drainage operating expenditure for stormwater quality treatment system.[38]	-0.06	-0.06	-0.06	-0.06	-0.06	-0.30
Increase of net growth efficiency improvement rate to -0.20% (from -0.05% proposed).	-0.21	-0.42	-0.63	-0.84	-1.05	-3.15
Total controllable costs adjustment	**-0.9**	**-1.1**	**-1.3**	**-1.5**	**-1.7**	**-6.4**
Environmental contribution.	0.023	0.026	0.031	0.014	0.019	0.113
Licence fees – ESC.	0.11	0.11	0.30	0.11	0.11	0.74
Total non-controllable costs adjustment	**0.1**	**0.1**	**0.3**	**0.1**	**0.1**	**0.9**
Total operating expenditure adjustments	**-0.7**	**-0.9**	**-0.9**	**-1.4**	**-1.6**	**-5.5**

Note: numbers have been rounded

6.3 State Budget impact on financial forecasts

Melbourne Water has considered all applicable changes arising from the State Budget.

An information request was received from the ESC on November 26, 2020 asking for advice surrounding the impact of the 2020-21 State Budget release on the Melbourne Water proposal. As per our response, population growth forecasts released by the Department of Treasury and Finance provided the key area of consideration, due to uncertainty driven by the possible ongoing impacts of COVID-19.

In terms of the development of the 2021-22 State Budget, at this point in time there are no known changes that are certain to impact the Melbourne Water proposal at this point in time. The only change that has the *potential* to impact financial forecasts during the regulatory period is the recent decision by the Victorian Government to integrate the Port Philip and Westernport Catchment Authority (PPWCMA) into Melbourne Water, commencing at the start

[37] Refer to Section 6.2 of this document for Melbourne Water's response

[38] Refer to Section 6.2 of this document for Melbourne Water's response.

of 2022. Funding arrangements for the PPWCMA activity are yet to be determined, and the necessary legislation will not pass in time for the ESC Final Decision therefore no related changes to the Melbourne Water proposal are currently possible.

6.4 Total operating expenditure forecast adjustments

The following table summarises the overall adjustments made to operating expenditure forecasts to reflect Melbourne Water's response to the ESC Draft Decision. These adjustments have been translated to the revised ESC financial template accompanying this document.

Adjustments to operating expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Proposed – operating expenditure	**911.2**	**901.3**	**890.5**	**880.2**	**871.2**	**4,454.4**
Water and sewerage	-1.9	-2.9	-2.6	-3.8	-4.2	-15.3
Waterways and drainage	-0.8	-1	-1.2	-1.4	-1.6	-6.1
Total controllable costs adjustments	**-2.7**	**-3.9**	**-3.8**	**-5.2**	**-5.8**	**-21.4**
Desalination plant security payments	34.5	34.6	34.6	34.6	34.5	172.8
Licence fees (ESC, DH and EPA)	0.383	0.389	0.97	0.4	0.4	2.542
Environmental contribution	0.023	0.026	0.031	0.014	0.019	0.113
Total non-controllable costs adjustments	**34.9**	**35.0**	**35.6**	**35.0**	**35.0**	**175.5**
Melbourne Water's response – operating expenditure	**943.4**	**932.4**	**922.3**	**909.9**	**900.4**	**4,608.5**

Note: numbers have been rounded

6.5 Benchmark electricity allowance derivation

In its Draft Decision, the ESC (pp31) requests further information in response to three areas:

1. Appropriate treatment (exclusion) of uncertain energy consumption associated with pumping of desalination plant water orders.

   "… we note that it (the forecast) includes consumption that will be served by new Melbourne Water-owned generation assets. Based on information provided to Deloitte, it also appears that the financial model provided by Melbourne Water has not removed consumption related to pumping … from a desalination plant water order … . We expect Melbourne Water to provide further detail of any adjustments required to align the financial model and price submission in its response to our draft decision."

   We are not aware of any further adjustments that are required to align the financial model and pricing submission.

2. Improved clarity around electricity costs customers are being asked to fund

   "Forecast consumption offsets from new renewable generation and its interaction with the overall efficiency improvement rate – Melbourne Water has not specifically identified the efficiencies from new renewable generation in its price submission, as required in our guidance. Melbourne Water has instead included these savings within its proposed overall efficiency allowance. This approach has made it difficult to determine the expenditure Melbourne Water is seeking to recover from customers … ."

The adjusted Table 54 below has been revised to remove pass-through based desalination plant related impacts on network energy consumption (and generation).

Adjusted Table 13 Benchmark electricity allowance derivation

Numbers may not add due to rounding		2021-22	2022-23	2023-24	2024-25	2025-26
Total electricity consumption	*MWh*	225,775	221,738	235,675	242,552	261,980
Electricity Exported to Grid	*MWh*	60,853	93,430	74,976	82,509	67,744
Avoided purchase (new) (*self-generation and automation*)	*MWh*	17,069	33,287	35,660	52,201	52,804
(A) Network charges and other	*$*	$14.6m	$17.1m	$14.6m	$16.1m	$16.6m
Contract electricity price	*$/MWh*	$174.8	$175.2	$175.2	$175.2	$175.2
(B) Contract electricity	*$*	$39.5m	$38.8m	$41.3m	$42.5m	$45.9m
Electricity feed-in price	*$/MWh*	$173.2	$173.7	$173.7	$173.8	$173.8
(C) Electricity feed-in income	*$*	$10.5m	$16.2m	$13.0m	$14.3m	$11.8m
(D) Forecast electricity purchase costs (gross) = A + B - C	***$***	**$43.5m**	**$39.7m**	**$42.8m**	**$44.3m**	**$50.7m**
		$221.0 million in aggregate				
Wholesale electricity price	*$/MWh*	$72.6	$72.6	$72.6	$72.6	$72.6
Margin (20%)	*$/MWh*	$14.5	$14.5	$14.5	$14.5	$14.5
Benchmark electricity price	*$/MWh*	$87.1	$87.1	$87.1	$87.1	$87.1
(E) Benchmark electricity	*$*	$19.7m	$19.3m	$20.5m	$21.1m	$22.8m
Benchmark electricity feed-in price	*$/MWh*	$72.6	$72.6	$72.6	$72.6	$72.6
(F) Benchmark electricity feed-in income	*$*	$4.4m	$6.8m	$5.4m	$6.0m	$4.9m
(G) Benchmark electricity allowance = A + E - F	***$***	**$29.8m**	**$29.6m**	**$29.7m**	**$31.3m**	**$34.5m**
		$154.8 million in aggregate				
Back out upward adjustment provided to Deloitte during review phase to demonstrate alignment with original submission.		*($1.5m)*	*($1.5m)*	*($1.5m)*	*($1.5m)*	*($1.5m)*
		$28.3m	$28.1m	$28.1m	$29.8m	$33.0m
		$147.3 million in aggregate				
(H) Avoided electricity purchase costs (at contract rates)	*$*	-$3.3m	-$6.2m	-$6.6m	-$9.5m	-$9.6m
		$35.2 million in aggregate (at contract rates)				
(I) Forecast electricity costs (net) = D – H	***$***	**$40.2m**	**$33.5m**	**$36.2m**	**$34.8m**	**$41.1m**
		$185.8 million in aggregate				
(J) What customers will pay = (G) + (H) (prior to AER adjustment)	*$*	**$26.6m**	**$23.4m**	**$23.0m**	**$21.8m**	**$24.9m**
		$119.6 million in aggregate				
AER adjustment	*$*	*($1.2m)*	*($1.6m)*	*($1.6m)*	*($2.0m)*	*($2.1m)*
(K) What customers will pay Post AER Adjustment	*$*	**$25.4m**	**$21.8m**	**$21.5m**	**$19.8m**	**$22.7m**
		$111.2 million in aggregate				

- Both the total electricity consumed (adjusted down) and the electricity exported (adjusted up) have been changed. This is reflected in revised costs (A), (B) and (C) – discussed further at point three below.
- This has the impact of revising downward the estimate (E) and estimate (F) is higher.
- Estimate (D) is unchanged and the net effect at (G) is an upward revision of $1.5 million per annum.
- Avoided electricity purchase costs (cumulatively $35.2 million at contract rates) have been subtracted to Melbourne Water's non-electricity opex ($1,990.0 million) to reduce it to $1,954.8 million. Self-generated energy and reduced consumption through automation is a key efficiency being delivered during PS21 and appropriately sits within the growth-efficiency factor adjustments to the efficient base year.
- **Figure 13** and **Figure 14** below have been developed solely to provide a visual demonstration of how we have combined non-energy opex, energy negative costs (e.g. solar benefits) and our estimate of benchmark energy without asking customers to pay more than they should. Note that in order to best align with our original ESC template submission the energy costs shown have not been adjusted for the changes outlined above. Rather they align with the $147.3 million in aggregate shown under (G) above.
- **Figure 13** shows the breakdown of our complete operating cost using five year aggregates across the regulatory period. Due to the benchmarking of energy costs only the $2,352.2 million desal contract costs align with the ESC template we submitted with PS21. Our price submission seeks 100 percent of the $1,990.0 million opex (less 0603) building block.
- **Figure 14** shows the values we submitted in November 2020. The opex value of $1,954.8 million (opex_FO_summary tab of the ESC's financial template) is the aggregate of the $1,990.0 million (opex less 0603) and $35.2 million (opex 0603 negative costs) shown on **Figure 13**.
- The relationship between the three elements of the management account build of 0603 electricity is apparent on these charts and adjusted Table 54.

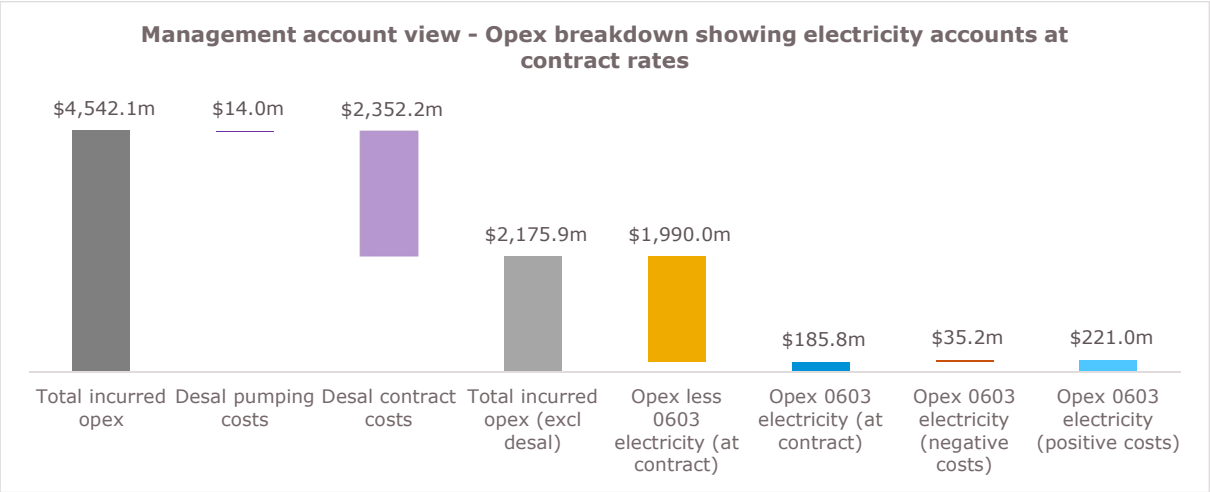


Figure 13 Management account breakdown of opex

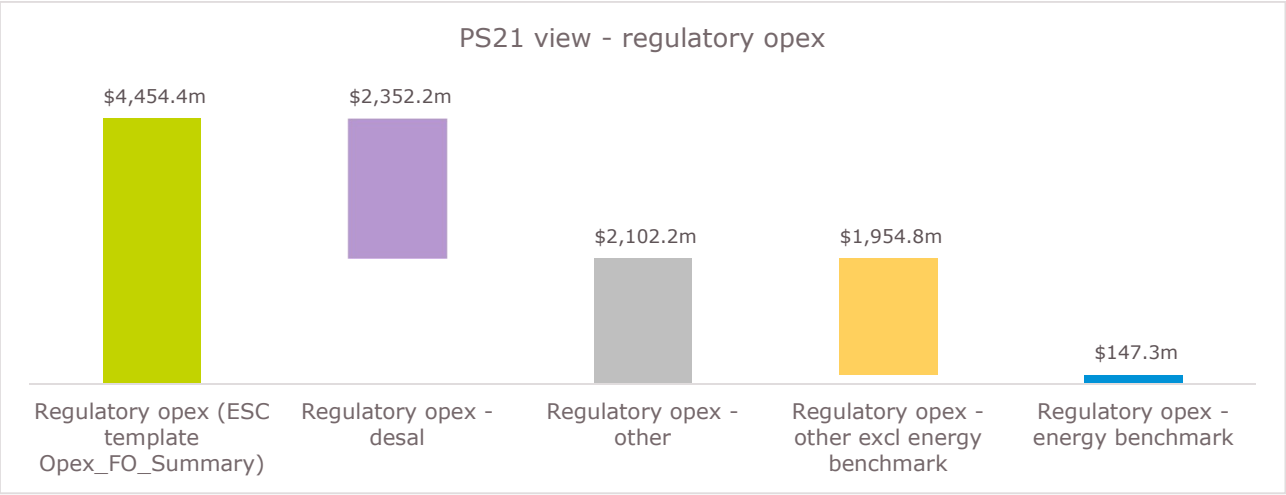


Figure 14 PS21 Regulatory view of opex

3. Benchmark costs – appropriate adjustments to the network cost building block

"We note that Deloitte's expenditure review includes an additional $7.5 million based on revised energy cost forecasts. We have not included this revision as Melbourne Water has not submitted this revision to the commission. We seek any updates to energy costs, along with detailed explanation and justification, in response to our draft decision." (footnote on pp25 of the ESC's Draft Decision)

"Deloitte identified that Melbourne Water has not proposed to pass on the likely fall in electricity network tariffs during the 2021-2026 regulatory period."

Melbourne Water has included two line items of adjustments relating to the network cost building block of our electricity benchmark cost estimate (these reference Table 54 of the Price Submission 2021 Supplement. These two adjustments seek to:

a) Formalise an upward revision of our network costs by $7.5 million (across five years) that Melbourne Water identified in response to a request for information issued by Deloitte. This is the net annual effect of an adjustment to base year consumption

values that has no impact on the total cost accrued in the base year, but changes the balance between network and consumption costs. The net effect, once the benchmarking methodology is applied is an upward revision in the benchmark cost. For completeness network costs increase $2.8 million per annum, while the contract electricity and feed-in income reduce by circa $1.3 million per annum – both these values compare to the original Table 54 values.

b) Formalise a downward revision of our network costs by $8.5 million (across five years). This reflects our acceptance of Deloitte's estimate of the impact of revised proposals by the five Victorian distribution networks that were submitted on 3 December 2020 to the AER – *after* our Price Submission was lodged.

Workings associated with the upward revision of $7.5m are provided separately in an excel worksheet (minor wording changes have been made since the version we sent to Deloitte). The rationale behind the adjustment includes:

- In reviewing the consumption data that supported Table 54 in the Price Submission document, we have noted that our water supply consumption data (kWh) and export data (kWh) was not adjusted for additional consumption and hydro production foregone associated with pumping of desalinated water.
- All costs associated with pumping of desalinated water were excluded from our price submission. It is therefore appropriate that consumption data associate with these costs is also excluded.
- Failure to appropriately treat the consumption data led to an erroneous difference between consumption costs (including desalination related costs) and total costs.
- The result was an over-estimate of the consumption building block of the benchmark cost estimate and an under-estimate of the network costs building block.

Further detail (and workings) are provided in the excel workbook provided separately. These workings and the rationale were accepted by Deloitte, but we note that we did not make explicit our intention to adjust our forecast to reflect this. We make that intention clear here.

In relation to the second (downward) revision we accept the logic and workings behind Deloitte's proposed revision.

7.0 Capital expenditure

Melbourne Water largely accepts the adjustments made to capital expenditure forecasts in the ESC Draft Decision, with the following exceptions:

- removal of $8.5 million capital expenditure forecast relating to the top 15 major projects, *Winneke Treatment Plant UV Disinfection System*
- removal of $12.0 million capital expenditure forecast relating to the top 15 major projects, *WTP 55E ASP Upgrade*

Given the ESC did not provide specific guidance for adopting the remainder of program adjustment, Melbourne Water has adopted the top-down methodology to apply the reduction proportionately to the size of the capital program for each service over the five years.

In the original submission, Melbourne Water proposed smoothing of the capital expenditure profile for pricing purposes to accept some delivery risk associated with years one and two. This was achieved using the Depreciation override (New assets) section of the ESC financial template, to produce a $42.9 million reduction to the revenue requirement for the regulatory period. Melbourne Water has opted to remove the capital smoothing adjustments from the ESC financial template as part of our response to the Draft Decision, in recognition of the duplication with the proposed ESC forecast reduction addressing uncertainty being adopted.

7.1 Water and sewerage

The ESC Draft Decision adopts the recommendations of the expenditure review undertaken by Deloitte Access Economics[39].

The Draft Decision comprised the following adjustments to water and sewerage gross capital expenditure forecasts:

Adjustments to capital expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Top 15 major projects – *Maribyrnong Main Sewer Augmentation*.	-2.92	-9.78	-0.67	-	-	-13.37
Top 15 major projects – *WTP Gas Plant Renewal*.	-2.42	0.01	-2.18	-8.62	0.32	-12.89
Top 15 major projects – *WTP 55E ASP Upgrade*.[40]	-	-12.00	-	-	-	-12.00
Top 15 major projects – *Winneke Treatment Plant UV Disinfection System*.[41]	-0.28	-5.38	-2.87	-	-	-8.53
Top 15 major projects – *Cement Creek Diversion Works*.	-0.35	-1.70	-25.22	1.70	25.57	-

[39] Expenditure review – Melbourne Water 2021 Price Submission, Final Report for the Essential Services Commission – Public, Deloitte Access Economics, 23 February 2021
[40] Refer to *Section 7.1.2* of this document for Melbourne Water's response.
[41] Refer to *Section 7.1.1* of this document for Melbourne Water's response.

Total top 15 major projects	**-5.97**	**-28.85**	**-30.94**	**-6.92**	**25.89**	**-46.79**
Remainder of program.	-50.58	-48.12	-40.90	-38.13	-32.54	-210.26
Desalination plant security payments – 'shortfall' from 2012-2021.[42]	-37.12	-37.12	-37.12	-37.12	-37.12	-185.62
Total capital expenditure adjustment	**-93.7**	**-114.1**	**-109.0**	**-82.2**	**-43.8**	**-442.7**

Note: numbers have been rounded

Melbourne Water requests the ESC reconsider some adjustments made to the Top 15 major projects. These are summarised below.

7.1.1 Winneke Treatment Plant – UV Disinfection

Melbourne Water seeks the approval of $43.1 million capital allocation for the Winneke Treatment Plant – UV Disinfection project (reduced to $34.6 million in the ESC Draft Decision)

The Deloitte report recommends the cost increase requested for the Winneke Treatment Plant – UV Disinfection project between 2016 and 2021 was not sufficiently explained and the project be reduced to $34.6 million, in alignment with Melbourne Water's 2016 Price Submission (refer pg 70-72 of Deloitte report).

The price allowance requested by Melbourne Water in our 2021 Price Submission is no longer current. Since submitting, Melbourne Water has completed the Functional Design & Investigation Works and confirmed the project delivery strategy. In March 2021, Melbourne Water's Board approved the project Functional Business Case (FBC) with a revised cost increase.

Much of the project's complexity relates to site conditions, constraints, and integrating the new UV Disinfection system into the existing treatment plant. The scope and risk associated with this work was not clear in 2016 and at the time of submitting our 2021 Price Submission, because the required investigation and design development had not been undertaken at that time.

The key items that have led to the increased costs between 2016 and the FBC include:

- Additional early design and investigation required to confirm project scope and risks
- Additional detailed design associated with a larger project scope
- Larger, deeper excavations in rock that is harder than previously anticipated
- Additional works associated with modifying existing systems including lime dosing, fluoride dosing, service water and control systems
- Duplication of the High Voltage power supply to achieve required plant reliability

[42] Refer to *Section 4.0* of this document for Melbourne Water's response.

- Additional large diameter pipework to reduce the impact on Melbourne's water supply system due to an extended Winneke outage during cut-over to the new UV System
- Cost escalation
- Increased construction costs due to changed market conditions in Victoria (high demand for contractors)
- Additional risk allowance to appropriately cover the anticipated risks

Having completed the required design and investigation to better understand the project scope and risks, Melbourne Water asserts the $43.1 million requested in our 2021 Price Submission should be approved. In order to meet the full funding requirements for this project Melbourne Water will seek to find efficiencies in this project and others, and prioritise its overall program of capital works.

7.1.2 Western Treatment Plant 55E Activated Sludge Plant (ASP)

Melbourne Water seeks the approval of $211.4 million capital allocation for the WTP 55E ASP project (reduced by $12 million in the ESC Draft Decision)

The Deloitte report recommends the capital allocation for the WTP 55E ASP project be reduced by $12 million (pg 80-83) based on the initial capital cost presented in Melbourne Water's 2016 Price Submission, a comparison with the recently completed 160S Nitrogen Removal Plant (NRP), and an expectation that it is reasonable to expect further efficiencies can be found through the procurement process to bring the costs more in line with the actual delivery costs of the 160S NRP project.

The final 160S NRP capex ($152 million Nominal = $161 million Real 20/21) cannot be directly compared to the forecast upgraded 55E ASP capex ($222.2 million Nominal = $214.4 million Real 20/21) due to the different functional requirements for the two projects, including higher nitrogen loads, tighter effluent quality requirements and diurnal influent variations:

- Although the plants are similar in flow throughput (140 ML/d for 160S NRP, vs 150 ML/d for 55E ASP), the upgraded 55E ASP will (a) treat a ~25% higher nitrogen load, and (b) meet the tighter effluent quality requirements (e.g. annual mean total nitrogen concentration of <10mg/L for the upgraded 55E ASP rather than <20mg/L for 160S NRP) needed to meet the total nitrogen load to Port Phillip Bay target set out in the revised Port Phillip Bay Environmental Management Plan.
- The upgraded 55E ASP will also provide essential additional functionality to cater for diurnal influent variations (vs 160S NRP being a fixed-flow plant), and to draw influent from, and return effluent to, both the 25W and 55E lagoon systems (vs 160S NRP connecting only to 55E). This functionality is needed to balance flows and loads across the entire WTP treatment system which is critical to managing covered anaerobic lagoon performance, lagoon levels and their impact on assets (e.g. anaerobic lagoon covers),

maximise flow through and capacity of the whole treatment process, manage overall treatment process performance, and minimise recycled water treatment requirements.

Melbourne Water's CAPEX estimate for the upgraded 55E ASP is:

- Underpinned by a detailed Functional Design and estimate prepared by designers Aurecon with quantity surveying input from Donald Cant Watts Corke.
- Reduced to account for anticipated savings from Value Engineering.
- Risk-adjusted using Melbourne Water's RANE model.

The rigour of our cost estimates are acknowledged by Deloitte (s4.6.1.7) - "*Detailed cost estimates have been provided which appear to include reasonable allowances for design, construction and commissioning phases*."

Melbourne Water response

Melbourne Water's response comprises the following adjustments to water and sewerage gross capital expenditure forecasts:

Adjustments to capital expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Top 15 major projects – *Maribyrnong Main Sewer Augmentation*.	-2.92	-9.78	-0.67	-	-	-13.37
Top 15 major projects – *WTP Gas Plant Renewal*.	-2.42	0.01	-2.18	-8.62	0.32	-12.89
Top 15 major projects – *Cement Creek Diversion Works*.	-0.35	-1.70	-25.22	1.70	25.57	-
Total top 15 major projects	**-5.69**	**-11.47**	**-28.07**	**-6.92**	**25.89**	**-26.26**
Remainder of program.	-50.58	-48.12	-40.90	-38.13	-32.54	-210.26
Desalination plant security payments – 'shortfall' from 2012-2021.[43]	-37.12	-37.12	-37.12	-37.12	-37.12	-185.62
Total capital expenditure adjustment	**-93.4**	**-96.7**	**-106.1**	**-82.2**	**-43.8**	**-422.1**

Note: numbers have been rounded

[43] Refer to *Section 4.0* of this document for Melbourne Water's response.

7.2 Waterways and drainage

The ESC Draft Decision adopts the recommendations of the expenditure review undertaken by Deloitte Access Economics[44].

The Draft Decision comprised the following adjustments to waterways and drainage capital expenditure forecasts:

Adjustments to capital expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Top 15 major projects – *Regan Street Retarding Basin*.	-7.09	6.99	0.10	-	-	-
Remainder of program.	-8.07	-5.85	-7.56	-7.64	-10.60	-39.73
Total capital expenditure adjustment	**-15.2**	**1.1**	**-7.5**	**-7.6**	**-10.6**	**-39.7**

Note: numbers have been rounded

Melbourne Water response

Melbourne Water accepts all adjustments made to waterways and drainage capital expenditure forecasts in the ESC Draft Decision.

7.3 Total capital expenditure forecast adjustments

The following table summarises the overall adjustments made to capital expenditure forecasts to reflect Melbourne Water's response to the ESC Draft Decision. These adjustments have been translated to the revised ESC financial template accompanying this document.

Adjustments to capital expenditure ($ million 2020-21)

	2021-22	2022-23	2023-24	2024-25	2025-26	5-year Total
Proposed – gross capital expenditure	**819.4**	**960**	**718.5**	**687.4**	**516.9**	**3,702.2**
Desalination plant security payments	-37.1	-37.1	-37.1	-37.1	-37.1	-185.6
Top 15 major projects	-12.8	-4.5	-28.0	-6.9	25.9	-26.3
Remainder of program	-58.7	-54.0	-48.5	-45.8	-43.1	-250.0
Melbourne Water's response – gross capital expenditure	**710.8**	**864.4**	**604.9**	**597.6**	**462.6**	**3,240.3**

Note: numbers have been rounded

[44] Expenditure review – Melbourne Water 2021 Price Submission, Final Report for the Essential Services Commission – Public, Deloitte Access Economics, 23 February 2021

8.0 Summary of revenue requirement adjustments

Throughout this document we have identified areas of the Draft Decision where we accept reductions to the regulatory revenue requirement, as well as proposing some increases.

Reductions include:

-
- Reductions to our operating costs as proposed by Deloitte Access Economics and accepted by the ESC, other than for the programs and projects identified above
- Reductions to our capital as proposed by Deloitte Access Economics and accepted by the ESC, other than for the programs and projects identified in sections 6.0 and 7.0.

We also do not agree with the ESC's modelling of the inflation forecast.

Increases are associated with:

- Our case to re-instate the PREMO rating from Standard to Advanced
- Re-instatement of key expenditures contained in our price submission. This includes critical work programs to address waterway health, as well as capital projects for the purposes of maintaining safe, high quality drinking water (Winneke UV) and ongoing reliable sewage treatment (WTP 55E ASP).
- Some minor adjustments to operating costs.

Given that the sum of these adjustments results in an uplift in the total revenue requirement relative to the Draft Decision, Melbourne Water proposes to:

- Forgo the recovery of any additional revenue over and above the Draft Decision, but
- Seek for the Determination to set the revenue requirement in accordance with our proposed adjustments so that our capital and operating budgets appropriately reflect the expenditure necessary to deliver and maintain services associated the waterways and drainage program, and water and sewerage program as identified in sections 6.0 and 7.0 above.

As noted earlier in the submission, it has been and still is, our objective to maintain affordability, at a time of great uncertainty. It is for this reason that Melbourne Water is prepared to set prices in accordance with a revenue allowance that is below the determined revenue requirement. As such, we propose to price below maximum prices.

9.0 Rate of return – cost of debt

Melbourne Water proposes a recognised and consistent method for the calculation of forecast inflation in response to updated advice in the ESC Draft Decision

In its initial 2019 Guidance Document the ESC proposed to deflate the nominal cost of debt allowance to a real allowance by using a rate of 2.3%. The ESC had not published its methodology for calculating the forecast inflation rate and this rate was clearly much higher than historical indexation, central bank and Government forecasts as well as market driven forecasts from economists and commercial banks. During the preparation of our Price Submission we commissioned Incenta to prepare a report to assess the various options and the preferred approach for converting a nominal cost of debt allowance to a real cost of debt allowance that would provide sufficient revenue to cover our interest payments.

Incenta delivered this report for inclusion in our initial Price Submission. We decided however to withhold the report once the ESC significantly adjusted its forecast inflation rate from 2.3% to 1.7% in July 2020. Whilst this was still slightly higher than the Incenta proposal of 1.6% the value was more in line with expectations.

Subsequently in the Draft Decision the ESC states:

> "*Melbourne Water will need to update its revenue requirement and prices to reflect our April 2021 updates to estimates for the cost of debt. Our forecast inflation for Melbourne Water's price model was 1.7 per cent. We recalculated forecast inflation based on our current methodology and estimated an inflation rate closer to two per cent per year. Given this, we will review our current forecast inflation of 1.7 per cent for the final decision, after the release of March quarter CPI. We may update the forecast inflation in the final decision price model from 1.7 per cent, based on the latest available data.*"

On 30 April the ESC advised that it had 'estimated a forecast inflation of ***2.17 per cent*** based on the midpoint of 'Reserve Bank of Australia (RBA) geometric' and 'bond breakeven' inflation rates to reflect the latest economic outlook'.

The ESC's advice has revived concern that there may be insufficient revenue to cover the cost of debt.

This is a significant change to the initial inflation forecast of 1.7% and not in line with our expectation of a fall in the inflation rate based on current cost of finance and inflation outcomes. On 28 April 2021 the Australian Bureau of Statistics (ABS) announced the March quarter CPI at 1.11% year on year.

7.1 Melbourne Water response

ESC guidance and changing approaches to measuring inflation

The ESC's approach to inflation forecasting has not been consistent and has changed regularly.

The ESC guidance from November 2019 stated that *'the model will include a forecast inflation rate (based on the Victorian Department of Treasury and Finance (DTF) inflation forecasts)'*.

The latest DTF inflation forecasts from the 2020-21 budget update are in the table below and result in a geometric average inflation of 1.5% pa.

Melbourne consumer price index
2019-20 Budget Update

	Historical data†		Forecasts (% growth in year-average, rounded to nearest 0.25 percentage point)
	Level (index)	Growth (%)	2020-21 Budget
2019-20	116.6	1.7	
2020-21			0.75
2021-22			1.50
2022-23			1.75
2023-24			2.00

Sources: Australian Bureau of Statistics; Department of Treasury and Finance.

† ABS - Consumer Price Index, Australia. Year average.

In the Draft Determination the ESC changed its approach to forecast inflation to align to that of the Australian Energy Regulator (AER) guidance stating:

> *"In our financial model, we use an estimate for forecast inflation, which is an input for the Fisher equation to convert nominal cost of debt to real cost of debt. We had estimated the forecast inflation at 1.7 per cent for Melbourne Water's price submission model. This was the same estimate we had adopted in our 2020 Water Price Review, which was based on the midpoint of 'RBA geometric' (similar to AER's approach) and 'bond breakeven' inflation rates. As noted earlier in this decision, we recalculated our inflation estimate using our current approach and estimated inflation at around two per cent per year. Given this, we may revise this estimate in our final decision after the release of the RBA's end of March 2021 quarter data."*

The ESC provided its inflation forecast model that determines the 1.7% inflation calculation to us on 26 April 2021 at our request. It is noted that in this model the ESC took a 50% weighting of the RBA Statement of Monetary Policy forecast for a period of 10 years and the 10 year Bond Breakeven Inflation rate averaged over a 40 day period.

RBA Statement of Monetary Policy. The ESC in using this dataset did not use the most up to date information available at the time.

The ESC used the RBA forecast issued on the 6 February 2020 of 1.75% in year 1 and 2% in year 2 before reverting to 2.5% for 8 years resulting in an average 2.37%.

The ESC model did not contain data for the most up to date forecast of inflation issued 7 May 2020 which had a forecast of 0.25% in year 1 and 2% in year 2 which resulted in a forecast inflation of 2.15%.

Bond Breakeven Inflation Rate – The ESC model contained 'RBA daily government bond data - Table F16' (https://www.rba.gov.au/statistics/tables/xls/f16.xls) to calculate the Bond Breakeven Inflation Rate. There is historical data available in the table available until 8 May 2020.

The ESC took an average of a 40 day period in determining its Bond Breakeven Inflation Rate and used the 40 days from 5 February 2020 to 31 March 2020 which resulted in a forecast of 1.00% pa.

Had the ESC used the most up to date information available the Bond Breakeven Inflation Rate would have been 0.62% pa.

If the ESC used the most up to date information the CPI forecast would have been lower at 1.5%. It is not known why the ESC decided against using the latest forecasts available at that time.

The ESC have also stated in the Draft Determination that they will align to the approach taken by the AER.

The AER do not use the approach proposed by the ESC and have changed their approach effective immediately based on the release of a report issued in December 2020. This is contained further in the section below.

We propose a methodology that links the forecasting of inflation to the length of the regulatory period. The methodology builds on recent work by the AER moving in this direction and is further developed by Incenta. The methodology can flexibly apply to a 3 or 5 year regulatory period. A variation of the methodology (Bond Breakeven Inflation Rate) is briefly considered but not is proposed.

Our proposal is developed in the following sections.

AER December 2020 Review and Inflation Outlook Period

The AER in December 2020 issued the findings of a comprehensive review undertaken for the treatment of inflation in their regulatory framework[45]. They specifically looked at the issue of

[45] https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/review-of-treatment-of-inflation-2020

forecasting inflation for the purpose of calculating an appropriate real rate of return, which is for the same purpose we are proposing.

The findings of the AER in its review stated in its final position on page 6:

> "*Our current approach to estimate expected inflation uses a 10 year average of the Reserve Bank of Australia's (RBA) headline rate forecasts for 1 and 2 years ahead, and the mid-point of the RBA's target band—2.5 per cent—for years 3 to 10. The period of 10 years matches the term of the rate of return. This approach has worked well in the past, but the current period has highlighted that adjustments are required to improve its performance in periods of economic instability or sustained periods of low or high inflation.*
>
> Consistent with our draft position, we consider that our current approach is improved by:
>
> - *Shortening the target inflation horizon from ten years to a term that matches the regulatory period (typically five years).*
> - *Applying a linear glide-path from the RBA's forecasts of inflation for years 1 and 2 to the mid-point of the inflation target band (2.5 per cent) in year 5*."

The AER has concluded that the RBA's forecast for inflation should be used for the period of available information with a glide path to the RBA's target inflation range at year 5.

The AER has also stated that the time period for forecasting inflation should be the term that matches the regulatory period.

The AER sought advice and input from two renowned experts for their review which were provided by Deloitte Access Economics and Dr Martin Lally which support this approach as well as receiving significant stakeholder consultation to arrive at their conclusion.

The AER's shortening of the term of the regulatory period acknowledges that service providers are subject to actual asset indexation over the term of the regulatory period and that aligning the inflation rate to the period avoids the mismatch the service providers experience due to asset indexation.

The AER discuss the mismatch problem in detail on page 35 in their report. This mismatch arises due to the service providers receiving a nominal return to cover the actual cost of debt to finance the debt component of the RAB. This nominal cost of debt includes an inflation allowance therefore to avoid double counting of inflation through the indexation of the RAB and the return on capital, inflation is effectively stripped out of the return on capital calculation and provided to the service provider as an annual update to inflation by adjusting the RAB.

The mismatch occurs when the timeframe in the forecast assumption period used to remove inflation from the nominal cost of debt is different to that of the annual update provided to the service provider through the indexation of the RAB over the regulatory period.

This is of particular concern in the current economic environment due to the large differential in inflation expectations over the short (3 years) to long term (10 years) resulting in a likely significant cash shortfall for Melbourne Water. With the March 2021 quarter inflation announced by the ABS returning 1.1% indexation, we will experience a shortfall of $76m on the indexation received in the 2021/22 financial year alone.

With a 3 year regulatory period proposed by the ESC inflation needs to be at least 2.7% at each of the March 2022 and March 2023 CPI announcements to make up this shortfall.

We cannot find any forecasts that support such a significant increase in inflation estimates.

Use of Bond Breakeven Inflation Rate

In section 7.3.1 of the Draft Decision the ESC states that the Commission will use the midpoint of the 'RBA geometric' and 'bond breakeven' inflation rates.

A June 2020 review on the regulatory treatment of inflation conducted by Deloitte Access Economics does not support this approach and argues that the bond breakeven inflation rate is affected by market distortions that limits its use in the regulatory context. From the AER review:

> *"Deloitte noted that the swaps and break-even bond inflation rate provided market-based measures, however their approaches were affected by the presence of material and time-varying distortions that limit their use in a regulatory context[46]. Similarly for surveys, Deloitte noted that although surveys rank high in their relative congruence with market expectations, their use is limited by their lack of transparency and replicability[47]. It attributed the RBA's superior forecasts in the short-term to the RBA possessing information that is not necessarily publicly available[48], with Deloitte noting that the RBA's forecasts of CPI are relatively accurate and have substantial explanatory power*."

Incenta Report

The Incenta report has proposed to use the RBA Statement of Monetary Policy as the basis for forecasting inflation expectations as the most reliable source for determining inflation. The RBA is less influenced by short term 'noise' in markets, does not have a liquidity premium

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[46] Deloitte Access Economics, Review of the regulatory treatment of inflation, June 2020, pp. 7-10

[47] Deloitte Access Economics, Review of the regulatory treatment of inflation, June 2020, pp. 7-10

[48] Deloitte Access Economics, Review of the regulatory treatment of inflation, June 2020, pp. 6-8; Dr Martin Lally (Capital Financial Consultants), Review of the AER's inflation forecasting methodology, July 2020, p. 3

included in its pricing and takes a very pragmatic and considered approach to updating its forecasts on a quarterly basis. The RBA also has responsibility for reporting actual inflation values. As such the RBA is well placed to reliably predict inflation expectations.

The RBA inflation forecast covers a period of 2.5 years. Incenta propose that the rate to revert to after this period should be the lower bound of the RBA target of 2-3% given the RBA have failed to achieve this target for the past 7 years and appears unlikely to do so going forward in the short to mid-term. The RBA also notes that the RBA do not target the midpoint of the 2-3% inflation band (Incenta report page 4).

Incenta determined that the rate to be used in the WACC calculation to deflate the nominal cost of debt allowance to a real cost of debt should be the geometric mean of the above data set to cover the pricing period.

This approach using:

- the March 2020 base indexation;
- the RBA Statement of Monetary policy forecast issued in February 2021; and then,
- the lower bound of the RBA target 2%,

results in a cost of debt deflator of 1.6% pa over a 5 year regulatory pricing period which is lower than the rate in the initial Price Submission. The RBA is due to release their next Statement on Monetary Policy and inflation forecasts on 7 May 2021.

The AER, Independent Pricing and Regulatory Tribunal (IPART) and the New Zealand Competition Commission all use the term of the regulatory period for forecasting inflation whilst the Queensland Competition Authority (QCA) has commenced a review in March 2021 that hints on changing their approach to forecast the inflation period to the regulatory period.

Proposal

We propose that inflation forecasts that are based on a geometric mean of the RBA's forecasts over the final price decision regulatory period be adopted.

- The inflation period needs to begin at March 2020 and utilise the actual inflation data for the first year with the RBA Statement of Monetary Policy forecast for the following 2 years of the regulatory period (3 year regulatory period) and an approach consistent with the Incenta report proposing the RBA reaching the lower bounds of their target at 2% for the remaining years of the regulatory period (5 year regulatory period) to ensure there is no mismatch with the indexation provided to us each year.

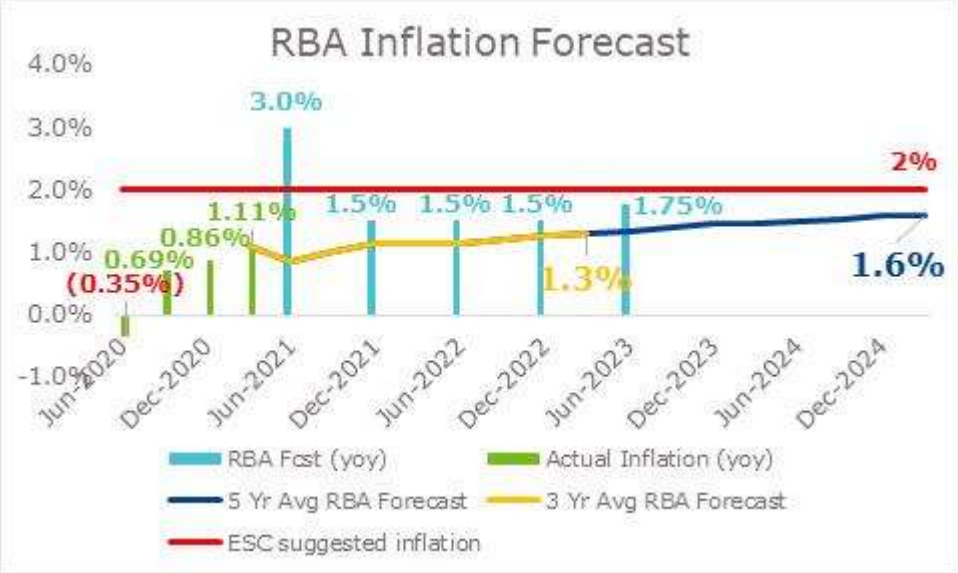
Shortened three years pricing period v five year pricing period proposal

While our response proposes re-instating a 5 year regulatory period, this section considers for illustrative purposes how the methodology would apply to a 3 and 5 year period.

Incenta have commented that the ESC's established approach to inflation forecasting is based on the length of the regulatory period. The ESC in its Draft Determination has shortened the pricing period from a five year to three year period citing an uncertainty regarding the impacts of the Coronavirus pandemic.

This change in period by the ESC therefore shortens the period at which inflation needs to be forecast. In order to calculate cost of debt we need forecasts for the three years of the regulatory period 2021-22 through to 2023-24. The forecasts for 2021-22 will be adjusted by the ESC at the final determination to reflect the latest available actual March 2021 year on year CPI outcome. The ESC will then approve forecasts for the remaining two years of the regulatory period. The latest RBA Statement on Monetary Policy (issued on 4 February 2021) has the following inflation expectations depicted by the blue bars on the below chart (RBA 2021 p 67) and supporting index data.

Chart - Forecast Inflation



The green bars are the actual year-on-year inflation outcomes for the relevant time periods with the blue bars the inflation forecast from the RBA. A return to 2% target band has then been assumed for the periods after the forecast period.

It should be noted that the inflation forecast for June 2021 at 3% is a temporary abnormality resulting from the Coronavirus pandemic. This figure is a rebound from the inflation decline of 1.9% in the June 2020 quarter due to government stimulus including free childcare arrangements and an oil glut affecting automotive fuels which were significant temporary items affecting the June 2020 period. The geometric mean starting at March 2020 will smooth out these volatile periods over the regulatory period which is shown with the orange line on the chart for the first three year period.

The line turns blue for the final two years to show the geometric mean over a four and five year regulatory period.

As can be seen by the RBA inflation expectations (blue bars) over the next 2.5 years at no point does the average inflation achieve a rate of 2% pa suggested by the ESC in the Draft Decision. By shortening the pricing determination period the lower inflation expectations have more prominence in the appropriate geometric mean calculation.

The orange line demonstrates the geometric mean across the time period which at the end of the three year pricing determination period has a geometric mean as determined by the RBA forecasts of 1.3%. This is significantly lower than the 2.17% advised by the ESC via email on 30 April. This equates to a shortfall of $214m over three years that we would not recover should a rate of 2.17% be applied to the forecast inflation rate and the RBA forecasts result in actual inflation outcomes (Table B).

As our prices are prepared in real 2021 $ the first index reference point for adjusting the inflation adjustment to future years is March 2020. On 28 April 2021 the RBA announced the first year of inflation at 1.11% leaving the remaining two years of the analysis to be provided by the RBA in its Statement of Monetary policy on 7 May 2021.

This is the approach adopted by the AER in 2020.

Table A - Inflation Index Values – Geometric Mean

Quarter End	Index value	Geometric Mean
Mar-2020	116.6	
Jun-2020	114.4	
Sep-2020	116.2	
Dec-2020	117.2	
Mar-2021	117.9	1.11%
Jun-2021	117.8	0.84%
Sep-2021	118.4	1.02%
Dec-2021	119.0	1.15%
Mar-2022	119.3	1.14%
Jun-2022	119.6	1.14%
Sep-2022	120.2	1.21%
Dec-2022	120.7	1.28%
Mar-2023	121.2	1.30%
Jun-2023	121.7	1.32%

Sep-2023	122.4	1.40%
Dec-2023	123.2	1.47%
Mar-2024	123.6	1.48%
Jun-2024	124.1	1.48%
Sep-2024	124.9	1.53%
Dec-2024	125.6	1.58%
Mar-2025	126.1	1.58%

Table B - Inflation parameters used in analysis

Draft Determination Mar 21							
Opening RAB - $ million		11,419.3	11,870.0	12,458.3	12,791.2	13,105.4	
Closing RAB - $million		11,870.0	12,458.3	12,791.2	13,105.4	13,262.0	
	Average Real RAB Draft Determination	11,644.7	12,164.2	12,624.8	12,948.3	13,183.7	
A) 2.17% Forecast Inflation & 2.17% Actual Inflation							
		2021/22	2022/23	2023/24	2024/25	2025/26	
	60% RAB funded by Debt $million	6,987	7,298	7,575	7,769	7,910	
2.17%	Real Return on Debt - %	2.7%	2.4%	2.3%	1.9%	1.7%	
	Real Revenue CoD - $m	191	178	171	147	135	823
	Annual Indexation of CoD - $m	4	8	11	13	15	52
2.17%	Annual RAB Indexation - $m	152	169	184	193	200	896
	Nominal Return on Debt received - $million	**347**	**355**	**366**	**353**	**350**	**1,771**
	Nominal Return Forecast %	5.0%	4.7%	4.5%	4.2%	4.0%	
B) 2.0% Forecast Inflation & Actual Inflation = RBA Expectations							
		2021/22	2022/23	2023/24	2024/25	2025/26	
	60% RAB funded by Debt $million	6,987	7,298	7,575	7,769	7,910	
2.17%	Real Return on Debt - %	2.7%	2.4%	2.3%	1.9%	1.7%	
	Real Revenue CoD - $m	191	178	171	147	135	823
	Annual Indexation of CoD - $m	2	4	7	9	11	33
RBA Fcst	Annual RAB Indexation - $m	78	90	132	169	176	645
	Nominal Return on Debt Received - $million	**271**	**272**	**310**	**325**	**323**	**1,501**
	Nominal Return Received %	3.9%	3.6%	3.9%	4.0%	3.8%	
	Annual Shortfall - $million	- 76	- 83	- 56	- 28	- 28	**- 270**
	Cumulative Cash Shortfall - $m	- 76	- 158	- 214	- 242	- 270	

10.0 Revised Tariffs

Melbourne Water's revised tariffs are provided in the following tables, and are reflective of the adjustments discussed in this section and throughout the document.

9.1 Desalination plant pumping

Hydro electric energy foregone

The ESC Draft Decision notes that Melbourne Water has not provided a clear and transparent mechanism to adjusting prices that is consistent with the WIRO, in respect of revenue foregone from hydro-electric generation at the Cardinia power plant.

Having considered the shortened regulatory period, the need to consider potential offsets and the complex scenario modelling involved, we have decided to withdraw this proposal and redevelop it for submission at the next price review based on operational data and experience gained in the interim.

Pass through pumping costs recovery mechanism

In respect of our proposed offset mechanism to recover actual pumping costs the ESC proposes consideration of alternative options to ensure that only actual costs are received given that a one year lag involves an element of cost estimation.

It is proposed that only actual costs incurred in year 0 be recovered in year one. The remaining forecast cost from year 0 would be the subject of a true up adjustment in year two. For simplicity time value adjustments would not apply.

9.2 Sewerage Long Run Marginal Cost

Melbourne Water calculates Long-Run Marginal Cost (LRMC) for the four treatable parameters (Flow, BOD, TSS, TKN) at the ETP and WTP, based on the timing and magnitude of capex and opex associated with Growth driven projects. Accordingly a change in the Demand forecast requires a change in the LRMCs.

A full update to LRMCs would have required updated flow and load forecasts to be prepared, then five capital augmentation plans (one baseline scenario, and four corresponding to perturbations in the four treatable parameters) and associated capex and opex forecasts developed for each treatment plant. This was not possible in the time available.

Accordingly, Melbourne Water conducted a simplified top-down analysis, in which growth was paused for three years, leading to a deferral of capex and opex associated with Growth projects. This scenario was selected based on the observation that Centre for Population Projection forecasts reach a given population level around three years later than the VIF forecasts which were the basis of the flow and load forecasts in the original submission.

The analysis shows a decrease in LRMCs for all treatable parameters, which is to be expected given the deferral of expenditure (refer "Change" column in the table below).

It is important to note that these updated LRMCS are based on a simplified top-down analysis, as this is all that could be done in the time available. Melbourne Water's LRMCs for the next Pricing Submission will be based on updated raw sewage flow and load forecasts and full consideration of the impact of demand perturbations on the timing of updated growth capex and opex.

Eastern Treatment Plant

Treatable	Unit	ETP			
		Original 2021PS	**Updated**	**Change**	**Change %**
Flow	2021$/ML	50.8	39.3	-11.5	-23%
BOD	2021$/t	318.9	247.7	-71.2	-22%
TSS	2021$/t	733.4	573.5	-159.9	-22%
TKN	2021$/t	95.5	70.2	-25.3	-26%

Western Treatment Plant

Treatable	Unit	WTP			
		Original 2021PS	**Updated**	**Change**	**Change %**
Flow	2021$/ML	74.1	59.9	-14.2	-19%
BOD	2021$/t	398.6	328.3	-70.2	-18%
TSS	2021$/t	670.9	537.8	-133.2	-20%
TKN	2021$/t	1,364.3	1,118.3	-246.0	-18%

10.3 Water and sewerage prices

Estimated tariffs for years 6-10 can be found in the ESC financial template accompanying this document.

	Approved 2020-21 price	2021-22	2022-23	2023-24	2024-25	2025-26
1.1 Bulk water headworks charges - Greater Yarra System – Thomson River						
($/per ML entitlement)	362.46	317.65	329.80	345.10	353.55	361.21
YoY % change		(12.4%)	3.8%	4.6%	2.4%	2.2%
1.2 Bulk water headworks charges - Victorian Desalination Plant						
($/per ML entitlement)	3445.17	3,517.43	3,465.49	3,383.86	3,277.32	3,189.52
YoY % change		2.1%	(1.5%)	(2.4%)	(3.1%)	(2.7%)
1.3 Victorian Desalination Plant Water Order charge						
($/per ML entitlement)	*actual cost*	*subject to advice*				
1.4 Bulk water headworks charges - North South Pipeline						
($/per ML entitlement)	490.89	467.83	464.86	462.30	460.38	458.82
YoY % change		(4.7%)	(0.6%)	(0.5%)	(0.4%)	(0.3%)
1.5 Bulk water usage charges -Transfer ($/per ML)						
($/per ML)	254.24	244.72	252.11	260.76	262.58	265.22
YoY % change		(3.7%)	3.0%	3.4%	0.7%	1.0%
1.6 Bulk water - Gippsland Water charge						
Headworks ($/per month)		3,329.78	3,457.18	3,617.60	3,706.16	3,786.43
YoY % change			3.8%	4.6%	2.4%	2.2%

	Approved 2020-21 price	2021-22	2022-23	2023-24	2024-25	2025-26
1.7 Bulk sewerage usage charge – Treatment ($/per ML)						
Western system	293.29	59.90	59.90	59.90	59.90	59.90
Eastern system	78.79	39.30	39.30	39.30	39.30	39.30
1.8 Bulk sewerage usage charge – Transfer ($/per ML)						
Western system	40.12	40.05	40.05	40.05	40.05	40.05
Eastern system	5.73	5.72	5.72	5.72	5.72	5.72
1.9 Bulk sewerage usage charge – Load ($/per tonne)						
BOD – western systen	195.20	328.30	328.30	328.30	328.30	328.30
BOD – eastern systen	367.65	247.70	247.70	247.70	247.70	247.70
SS – western system	113.40	537.80	537.80	537.80	537.80	537.80
SS – eastern system	603.68	573.50	573.50	573.50	573.50	573.50
TKN – western systen	269.58	1118.30	1118.30	1118.30	1118.30	1118.30
TKN – eastern system	210.34	70.20	70.20	70.20	70.20	70.20
ITDS – western syster	31.96	31.96	31.96	31.96	31.96	31.96
1.10 Bulk sewerage service charges ($/per month)						
City West Water	5,695,720.90	7,415,604.93	7,677,826.53	7,973,760.19	8,173,810.30	8,431,633.29
YoY % change		30.2%	3.5%	3.9%	2.5%	3.2%
South East Water	13,272,465.44	13,520,230.11	13,996,843.21	14,507,929.69	14,863,136.08	15,319,362.79
YoY % change		1.9%	3.5%	3.7%	2.4%	3.1%
Yarra Valley Water	11,367,598.70	12,861,681.68	13,287,409.40	13,781,933.48	14,122,546.59	14,561,710.72
YoY % change		13.1%	3.3%	3.7%	2.5%	3.1%

10.4 Waterways and drainage prices

Estimated tariffs for years 6-10 can be found in the ESC financial template accompanying this document.

	Approved	Regulatory period 2021-26				
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Residential ($ per annum)	104.32	104.42	104.51	104.61	104.71	104.80
Non-residential charges:						
Minimum fee ($ per annum)	156.72	156.87	157.01	157.16	157.30	157.45
Rate in $NAV (cents per annum)	0.445	0.417	0.370	0.310	0.245	0.180
Rural charge ($ per annum)	57.28	57.33	57.39	57.44	57.49	57.55

10.4.1 Direct services charges

Patterson Lakes – Quiet Lakes

The ESC Draft Decision proposes to approve Melbourne Water's Quiet Lakes bore water flushing tariff subject to Melbourne Water reviewing the cost build-up of the tariff, particularly the energy costs and consumption.

The Quiet Lakes pricing model has been updated to reflect anticipated electricity consumption using updated published energy retailer rates.

The charge to Quiet Lakes residents is now proposed to decrease from the originally proposed $188 per household to $127 per household per year.

The calculations are set out in Appendix F.

Charge element	Approved	Regulatory period 2021-26				
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Timber Jetty charge[1]	1,484.00	1,433.00	1,433.00	1,433.00	1,433.00	1,433.00
Concrete Jetty charge[1]	1,031.00	948.00	948.00	948.00	948.00	948.00
Jetty Annual Maintenance	135.56	135.56	135.56	135.56	135.56	135.56
Quiet Lakes Bore Flushing	118.00	127.00	127.00	127.00	127.00	127.00

Note 1: These charges are 'nominal' charges, meaning we do not apply CPI adjustments year-to-year. We have not applied forecast inflation to deflate them in real terms.

Koo Wee Rup Longwarry Flood Protection District

The ESC Draft Decision supports Melbourne Water's intention to pause the service and price increase in 2021-22 given the financial impact of coronavirus on this community.

Our intention to set a higher maximum price and charge below this at the current price level, at least for the first year, to be revisited in 2022-23 is also supported.

To provide transparency to customers the table below sets out the average prices per customer over the regulatory period.

Koo Wee Rup–Longwarry	2021-22	2022-23	2023-24	2024-25	2025-26
Maximum price (higher LOS)	$234.21	$235.92	$238.13	$241.63	$232.26
Price MW will charge until higher LOS is approved	$231.98	$231.26	$230.63	$230.21	$205.93

10.4.2 Miscellaneous charges

	Approved	Regulatory period 2021-26				
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
3.1 Miscellaneous services						
Flood level information						
Property information statements	4.99	4.81	4.81	4.81	4.81	4.81
Flood level certificates	41.71	45.77	45.77	45.77	45.77	45.77
Flood feasibility study (per half day)	839.55	839.55	839.55	839.55	839.55	839.55
Hydrological data						
Storm frequency analysis for selected storm events	143.92	150.93	150.93	150.93	150.93	150.93
Hydrological data ($per dataset – daily, hourly, 6 minute)	89.50	93.86	93.86	93.86	93.86	93.86
Other requests ($ per hour)	143.92	150.93	150.93	150.93	150.93	150.93
Construction, works & connections						
Application/connection fee	157.52	157.52	157.52	157.52	157.52	157.52
Inspection fee	433.95	433.95	433.95	433.95	433.95	433.95
Application fee for construction over or near Melbourne Water easements or assets	213.05	213.05	213.05	213.05	213.05	213.05
Fast Track Assessments	1,091.73	1,091.73	1,091.73	1,091.73	1,091.73	1,091.73
Water Supply Inspections (per hour)	136.44	136.44	136.44	136.44	136.44	136.44
Additional inspections ($308 for 1 inspection (includes 3 sub-inspections) or $134.44 per hour)	136.44	136.44	136.44	136.44	136.44	136.44
3.2 Waterway diversion charges – unregulated waterways						
Licence service fee – all licences types ($ per annum)	260.09	273.00	273.00	273.00	273.00	273.00
Power generation licences ($ per kilowatt)	23.36	24.52	24.52	24.52	24.52	24.52
Volume charges ($ per ML):						
– All-months licence	34.14	35.83	35.83	35.83	35.83	35.83
– On-stream winter–fill	17.19	18.04	18.04	18.04	18.04	18.04
– Off-stream winter–fill	17.19	18.04	18.04	18.04	18.04	18.04
– Licensed farm dam	17.19	18.04	18.04	18.04	18.04	18.04
– Non-consumptive	2.17	2.28	2.28	2.28	2.28	2.28
Works operating licences						
General ($ per annum)	58.66	61.57	61.57	61.57	61.57	61.57
Hazardous Dams ($ per annum)	99.30	104.23	104.23	104.23	104.23	104.23
3.3 Waterway diversion charges – regulated waterways						
Licence service fee – All licences ($ per annum)	260.09	273.00	273.00	273.00	273.00	273.00
Volume charges ($ per ML):						
- All months licence	71.44	74.98	74.98	74.98	74.98	74.98
- Off-stream winter fill	17.19	18.04	18.04	18.04	18.04	18.04
3.4 Stormwater harvesting charges						
Licence service fee	260.09	273.00	273.00	273.00	273.00	273.00

	Approved	Regulatory period 2021-26				
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Volume charge ($ per ML) – All-months licence	34.14	35.83	35.83	35.83	35.83	35.83
3.5 Application Fees						
Transfer – Sale of Land ($)	330.18	330.18	330.18	330.18	330.18	330.18
Amalgamation, subdivision (existing licences) ($)	432.66	432.66	432.66	432.66	432.66	432.66
Minor Amendment (e.g. add / remove parcel, party or existing entity to existing licence) ($)	125.23	125.23	125.23	125.23	125.23	125.23
Transfer – Downstream Trade ($)	728.74	728.74	728.74	728.74	728.74	728.74
Transfer – Upstream Trade ($)	1,076.05	1,076.05	1,076.05	1,076.05	1,076.05	1,076.05
Transfer – Repeat Trade Application ($)	159.39	159.39	159.39	159.39	159.39	159.39
New Licence – Stormwater ($)	1,081.72	1,081.72	1,081.72	1,081.72	1,081.72	1,081.72
New Licence – Non-consumptive / Power Generation ($)	728.74	728.74	728.74	728.74	728.74	728.74
Additional Charge Where Irrigation and Drainage Plan required ($)	284.63	284.63	284.63	284.63	284.63	284.63
Works Licence – Amendment (e.g. Pump replacement) ($)	387.13	387.13	387.13	387.13	387.13	387.13
New Works Construction Licence – Dam / Stormwater ($)	825.54	825.54	825.54	825.54	825.54	825.54
New Works Construction Licence – Pump Only ($)	649.01	649.01	649.01	649.01	649.01	649.01
Reissue – Failure to renew – D&S ($)	187.84	187.84	187.84	187.84	187.84	187.84
Reissue – Failure to renew (all licences) ($)	284.63	284.63	284.63	284.63	284.63	284.63
Reissue – Following Revocation ($)	1,503.03	1,503.03	1,503.03	1,503.03	1,503.03	1,503.03
Copy of Record ($)	56.91	56.91	56.91	56.91	56.91	56.91
D&S Dam Registration ($)	102.44	102.44	102.44	102.44	102.44	102.44
Application to Renew ($)	330.18	330.18	330.18	330.18	330.18	330.18
Land Information Statement ($)	113.83	113.83	113.83	113.83	113.83	113.83

Appendices

Appendices provided under separate cover.