



SA Water Regulatory Determination 2020

Draft Determination: Statement of reasons

March 2020

Request for submissions

The Essential Services Commission (**Commission**) invites written submissions on this paper by **15 April 2020**.

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Responses to this paper should be directed to: **SA Water Regulatory Determination 2020 – Draft Determination**

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Glossary of terms

ADP	Adelaide Desalination Plant
ADWG	Australian Drinking Water Guidelines
AER	Australian Energy Regulator
ANCOLD	Australian National Committee on Large Dams
ASX	Australian Securities Exchange
CAPM	Capital Asset Pricing Model
CARF	Consumer Advocacy and Research Fund
CBA	Cost Benefit Analysis
CEP	Consumer Experts Panel
CGS	Commonwealth Government Securities
CNC	Customer Negotiation Committee
Code	Water Retail Code – Major Retailers WRC-MR/02
Commission	Essential Services Commission, established under the <i>Essential Services Commission Act 2002</i>
CPI	Consumer Price Index
CRM	Customer Records Management system
CSO	Community Service Obligation
DEW	Department for Environment and Water
EIP	Environment Improvement Programs
EPA	Environment Protection Authority
ERA (WA)	Economic Regulation Authority Western Australia
ESC Act	<i>Essential Services Commission Act 2002</i>
ESCV	Essential Services Commission (Victoria)
EWOSA	Energy and Water Ombudsman SA
FFO	Funds from operations
FTE	Full time equivalent

GAP expansion	Glennelg to Adelaide Parklands recycled water network expansion
GIS	Geospatial information systems
GRN	South Australian Government Radio Network
GSL	Guaranteed Service Level
IAM	Institute of Asset Management
ICRC	Independent Competition and Regulatory Commission
IMF	International Monetary Fund
IPART	Independent Pricing and Regulatory Tribunal
IT	Information Technology
MFP	Multi-factor productivity
Minister	Minister for Environment and Water
NAIS	Northern Adelaide Irrigation Scheme
NPR	Bureau of Meteorology's National Performance Report
NPV	Net present value
NWI	National Water Initiative
Ofwat	The economic regulatory of the water sector in England and Wales
ORC	Optimised Replacement Cost
OTTER	Office of the Tasmanian Economic Regulator
PARMS	Pipeline Asset and Risk Management System
QCA	Queensland Competition Authority
RAB	Regulated Asset Base
RBA	Reserve Bank of Australia
RBP	SA Water's Regulatory Business Proposal titled 'Our Plan 2020'
RECs	Renewable Energy Certificates
SA Water	South Australian Water Corporation
SACES	South Australian Centre for Economic Studies
SACOSS	South Australian Council of Social Service

SAFRRA	South Australian Federation of Residents and Ratepayers Association Incorporated.
SAW RD13	SA Water Regulatory Determination 2013
SAW RD16	SA Water Regulatory Determination 2016
SAW RD20	SA Water Regulatory Determination 2020
RSEM	Strategic Element Measures
SMP	Statement of Monetary Policy
SOP	Standard Operating Procedure
SRMTMP	Safety, Reliability and Maintenance Technical Management Plan
Treasurer	Treasurer for the South Australian Government
WACC	Weighted average of the return of debt and equity
WEO	World Economic Outlook
WI Act	Water Industry Act 2012
WPI	Wages Price Index
WWTP	Waste Water Treatment Plan
ZCEF	Zero Cost Energy Future

1 Overview

This Draft Regulatory Determination proposes reductions to the total revenue that SA Water may recover during the four-year period commencing 1 July 2020, of 18 percent (\$547 million) and 13 percent (\$164 million) for drinking water and sewerage retail services respectively, as compared to the amounts determined for the current four-year period (2016-2020).

On the Commission's analysis, the revenue outcomes proposed would, if implemented, provide SA Water with sufficient revenue to fund efficient operations, finance prudent investments on a long-term basis and meet the health, safety, environmental and customer service standards that will apply to SA Water over the coming four years.

The Draft Determination is consistent with the expectation that SA Water should deliver drinking water and sewerage retail services at the quality and reliability levels that customers value for the lowest sustainable long-term cost to them. It passes through to customers the benefits of the lower financing costs that SA Water currently faces, while keeping capital and operating expenditure broadly in line with the amounts incurred in the current regulatory period.

Draft drinking water and sewerage retail service revenues, compared to 2016-20 revenues and SA Water's proposal for 2020-24 (Present value, \$Dec18 in millions)

	2016-20 Regulatory Determination	SA Water 2020-24 Proposal	2020-24 Draft Determination
Drinking water	3,035	3,047	2,488
Sewerage	1,269	1,323	1,105

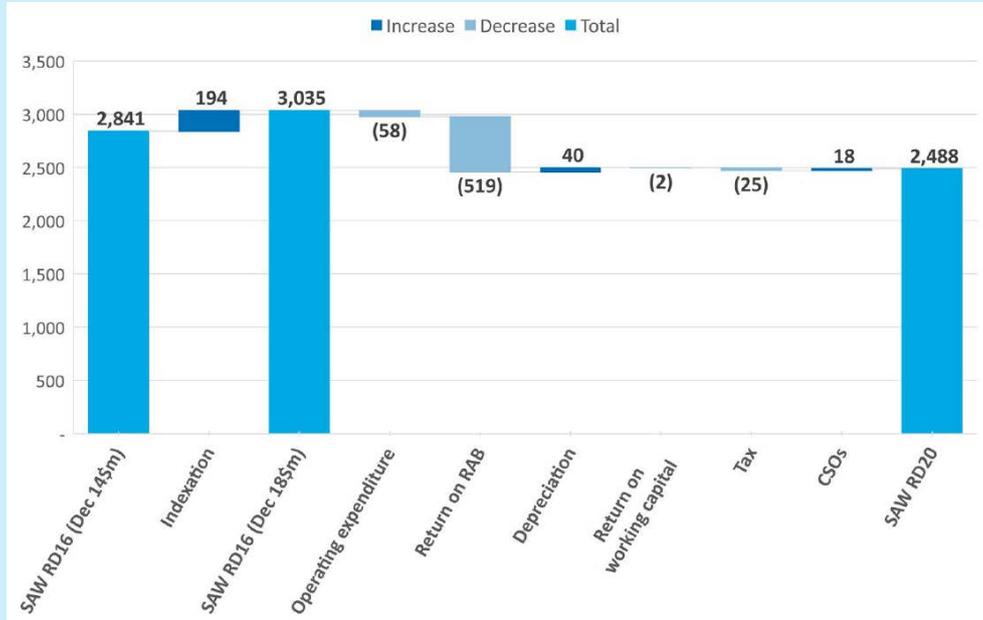
A key driver of the proposed revenue reductions is the current economic environment, in which debt and equity financing costs have fallen significantly over the past four years. Based on the most recent financial market information, the regulatory rate of return (post-tax, real) is expected to be 2.71 percent in 2020-21 as compared to 4.53 percent which applied in 2016-17. Given current uncertainty on the transition from the current low inflation environment, the Commission proposes to adopt a glide path to the long-term inflation target band (rather than the current one-year transition). It also proposes to update the rate of return prior to each year of the regulatory period, to reflect prevailing market conditions.

The Commission has reviewed the levels of capital and operating expenditure required for SA Water to run its operations efficiently over the next four years, allowing an increase of \$190 million in capital expenditure and a decrease of \$115 million in operating expenditure, as compared to current levels. Both stakeholder submissions and the Commission's own review have highlighted that some of SA Water's expenditure proposals – noting that in total SA Water is seeking an additional \$456 million in capital expenditure and \$121 million in operating expenditure over current levels – have not been justified by SA Water and are not consistent with customers' main priority that SA Water's prices are kept as low as possible while at least maintaining current levels of service.

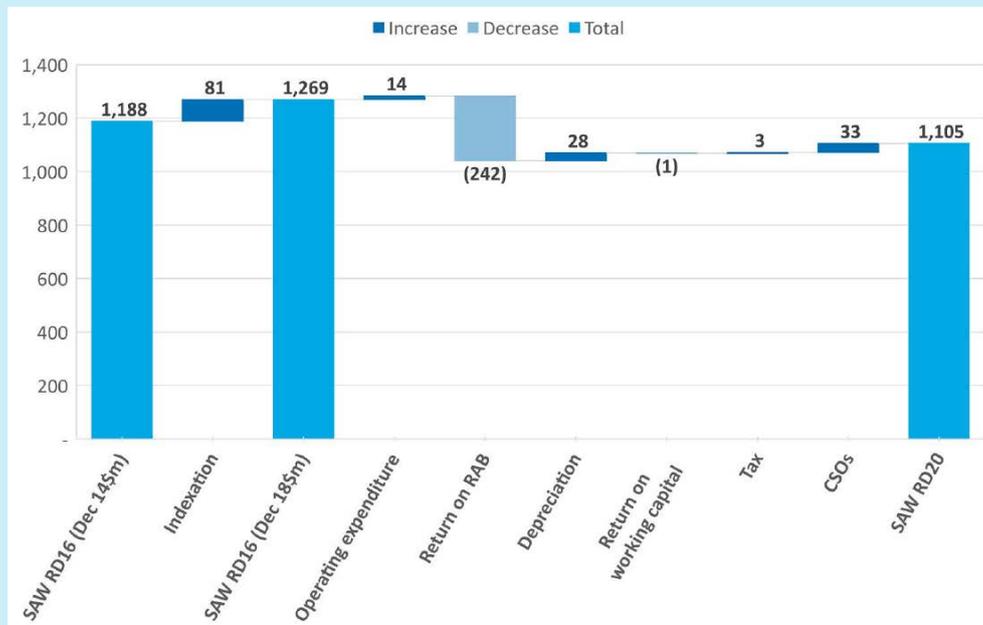
Importantly, the revenue reduction proposed in this Draft Determination is indicative, based on evidence and information available at this time, and may change for the Final Determination in light of submissions, new evidence and updated market information. The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water's drinking water regulated asset base and prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.

As can be seen in the following figures, the proposed reduction in drinking water revenues is greater than the reduction in sewerage revenues, mainly due to greater reductions in operating expenditure for drinking water services as compared to sewerage services.

Change in draft drinking water retail service revenues compared to 2016-2020 Determination
(Present value, \$Dec18 in millions)



Change in draft sewerage retail service revenues compared to 2016-2020 Determination
(Present value, \$Dec18 in millions)



The Draft Determination has been conducted in accordance with statutory requirements and has involved extensive customer and stakeholder engagement. Feedback has highlighted that SA Water is generally performing well in service delivery (albeit there are areas for focus and improvement) and has improved its customer engagement practices. The Commission acknowledges SA Water’s work in those areas over the past four years and has also indicated opportunities for future improvement by SA Water, particularly in relation to more transparent reporting on capital project outcomes and its longer-term asset management planning.

Submissions on this Draft Determination are welcomed by 15 April 2020. All submissions will be considered before a Final Determination is made in May 2020.

1.1 Proposed outcomes of this Draft Determination

Pursuant to the provisions of the *Water Industry Act 2012 (WI Act)* and the *Essential Services Commission Act 2002 (ESC Act)*, the Essential Services Commission (**Commission**) has made a Draft Determination in relation to the maximum revenue that the SA Water Corporation (**SA Water**) can recover from the provision of drinking water and sewerage retail services from 1 July 2020 to 30 June 2024.

Submissions on this Draft Determination are welcomed by 15 April 2020. All submissions will be considered before a Final Determination is made in May 2020.

The Draft Determination proposes a reduction in SA Water’s drinking water and sewerage retail service revenues of 18 percent (\$547 million) and 13 percent (\$164 million) respectively over the next four years, compared to the previous four years. Those revenues are approximately 18 percent and 16 percent below those proposed by SA Water in its Regulatory Business Proposal (**RBP**) for the four-year period from 1 July 2020. Table 1.1 summarises the proposed revenue caps, relative to those proposed in SA Water’s RBP and SA Water Regulatory Determination 2016 (**SAW RD16**).

Table 1.1: Draft drinking water and sewerage retail service revenues, compared to 2016-20 revenues and SA Water’s proposal for 2020-24 (Present value, \$Dec18 in millions)

	2016-20 Regulatory Determination	SA Water 2020-24 Proposal	2020-24 Draft Determination
Drinking water	3,035	3,047	2,488
Sewerage	1,269	1,323	1,105

The proposed revenue reductions may change as a result of further or new evidence or information arising from consultation on this Draft Determination. SA Water’s maximum revenues may also change under the Commission’s proposal to update the regulatory rate of return each year during the 2020-24 regulatory period, to reflect changes in prevailing market conditions.

1.2 The Commission sets maximum revenues, SA Water sets prices

Consistent with the legislative framework, the Commission has proposed draft revenue caps for drinking water and sewerage retail services, not prices; SA Water’s prices will continue to be set by SA Water in accordance with the South Australian Government pricing policies.

The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water’s drinking water regulated asset base (**RAB**) and prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.

1.3 Drivers of the proposed revenue reduction

The proposed revenue reduction is driven primarily by lower financing costs (the regulated rate of return). SA Water's regulated rate of return on assets was 4.53 percent (post-tax, real) in 2016-17 and is expected to fall to 2.71 percent (post-tax, real) in 2020-21. This reflects the current economic environment, where debt and equity financing costs have fallen significantly.

SA Water proposed a rate of return methodology that resulted in a 4.17 percent (post-tax, real) proposed return in 2020-21. The Draft Determination does not accept SA Water's proposed methodology, as it is subject to conceptual and measurement errors, including a focus on short-term measures. Estimating the real rate of return requires an estimate of long-term inflation expectations (10 years, to align with assumed 10-year bond term). The Commission proposes a 10-year average inflation expectation, calculated using the Reserve Bank of Australia's (RBA) inflation forecasts for two years, a linear glide path to the International Monetary Fund's (IMF) medium-term (five year) projection of consumer price inflation in Australia, and the mid-point of the RBA's inflation targeting band thereafter. This approach is a departure from the approach used in SAW RD16, which used RBA's one-year inflation forecast and the mid-point of the RBA's inflation target band thereafter. The proposed change reflects the current uncertainty about the speed in which inflation might return sustainably within the RBA's 2 to 3 percent target inflation range.

The Draft Determination also proposes to update the rate of return prior to each year of the regulatory period, to reflect prevailing market conditions.

In keeping with customers' clear messages throughout the review process about the need for prices to be kept as low as possible, stakeholders have consistently asked the Commission to carefully review SA Water's proposed capital and operating expenditure, to ensure that they are prudent and efficient.

Having considered SA Water's regulatory obligations over the next four years (including health, safety, environmental and customer service standards), the Commission has, on an overall basis, provided for an increase of \$190 million in capital expenditure and a decrease of \$115 million in operating expenditure, as compared to current levels (15 percent and 6 percent respectively).

There is a proposed reduction in operating expenditure for drinking water services and an increase for sewerage services. This is driven in part by the forecast reduction in electricity costs, which has a proportionately larger impact on drinking water retail service costs as electricity usage is more intensive for this service. In addition, the Draft Determination includes an increase in operating expenditure to support initiatives to improve the performance of the sewerage network, which further contributes to the different operating expenditure amounts for drinking water and sewerage services.

Those outcomes are, however, materially below the capital and operating expenditure amounts sought by SA Water in its RBP, by 15 percent and 12 percent respectively. Based on the evidence presented and available at this stage, the Commission is not satisfied that SA Water's proposed cost increases are justified. Stakeholders highlighted several projects that they thought required further scrutiny:

- ▶ They were not convinced that the extensive water quality improvement programs (proposing to move above current regulatory requirements) were necessary.
- ▶ They wanted to better understand SA Water's obligation to provide drinking water to remote communities, given the high costs of the solutions proposed.
- ▶ They were concerned that they had not been given the chance to understand and consider the ambitious Zero Cost Energy Future initiative and wanted the Commission to ensure that customers would be adequately shielded from any risks of the benefits of this program not being realised.

- ▶ They also asked the Commission to consider whether or not SA Water had set itself a sufficiently challenging operating expenditure efficiency target, noting that SA Water did not identify any major areas for improvement other than the efficiencies expected through the ZCEF initiative and smaller efficiencies from information technology (IT) initiatives.

The capital and operating expenditure outcomes reflect the Commission's views on prudent and efficient expenditure. The most material differences between the Draft Determination outcomes and those proposed by SA Water in its RBP include:

- ▶ removing certain capital projects to meet projected increased customer demand, where that increased demand is highly uncertain (\$56 million capital expenditure reduction proposed)
- ▶ rebalancing the proposed metropolitan water quality improvement program to span across two regulatory periods, rather than one period (\$41 million capital expenditure reduction proposed)
- ▶ removing projects to upgrade regional properties from non-drinking water to drinking water, on the basis that the South Australian Government is reviewing its policy of regional water supply which is likely to impact those projects (\$38 million capital expenditure reduction proposed)
- ▶ removing the proposed regional water quality improvement programs (proposing to move above current regulatory requirements) until further community consultation has occurred to better define the needs, scope and efficient costs of meeting the proposed outcomes (\$25 million capital expenditure reduction proposed)
- ▶ an expectation that operating expenditure efficiencies can be achieved, particularly in procurement, network operations and IT-led savings (\$81 million operating expenditure reduction proposed)
- ▶ a better understanding of the 'normal' efficient base year operating expenditure to remove one-off or irregular cost pressures (\$82 million operating expenditure reduction proposed), and
- ▶ an expectation that SA Water should manage anticipated new operating cost pressures by reprioritising existing budgets to absorb such costs (\$78 million operating expenditure reduction proposed).

The Draft Determination does not include a revenue allowance for SA Water's investments in solar and battery storage under its ZCEF initiative because it is not a retail service under the WI Act. SA Water announced the initiative as a means of delivering low and stable prices to its customers. However, information provided by SA Water demonstrates that the primary benefit of this initiative is to earn revenue by producing and selling electricity into the National Electricity Market, rather than offsetting SA Water's electricity purchases as a retail operating cost. This does not meet the definition of a retail service under the WI Act and so cannot be funded by SA Water's customers through the revenue caps set for drinking water and sewerage retail services. SA Water is free to pursue the initiative as a commercial venture, but its costs would not be recoverable from the revenue caps for drinking water and sewerage services.

1.4 Proposed changes to service standards and other consumer protections

The Draft Determination proposes 33 service standards that SA Water will be required to meet in SAW RD20. The current separate reliability standards for metropolitan Adelaide and regional areas will be maintained, so that SA Water maintains an appropriate focus on each and service performance remains transparent for customers around the State. New service standards are also proposed to address identified gaps in customer service and reliability that are important to customers.

The performance targets proposed for the standards will maintain SA Water's focus on service delivery in each area, with no diminution in service levels (as compared to current average levels of performance) and increases only where SA Water has demonstrated customer support and willingness to pay for particular improvements.

The proposed service standards include new standards that set targets for:

- ▶ customer satisfaction
- ▶ resolution of customer complaints on first contact
- ▶ timeliness of complaint resolution
- ▶ escalation of customer complaints to the Energy and Water Ombudsman SA (**EWOSA**), and
- ▶ frequency of water interruptions.

The Commission proposes to monitor and publicly report on underlying drinking water and sewerage network performance, working with other regulators (described below) to ensure that the networks are being operated and maintained in a way that promotes safe and reliable services in the long term.

The Draft Determination also proposes changes to certain obligations that it imposes on SA Water, including facilitating greater choice of communication channels between SA Water and customers and clearer information on customers' bills.

1.5 Extensive stakeholder engagement has informed the Draft Determination

The Draft Determination has benefited from far greater levels of community and stakeholder engagement than has been the case in the past, including stronger engagement with other regulators of SA Water (the Environment Protection Authority (**EPA**), SA Health, Office of the Technical Regulator, the Department for Environment and Water (**DEW**) and the Department of Human Services).

SA Water developed its RBP through multiple phases of stakeholder engagement. Its initial proposals were subject to a new process of customer challenge, through a Negotiation Forum involving SA Water, a Customer Negotiation Committee (**CNC**) and an Independent Probity Advisor. The Commission acknowledges the robustness of the work undertaken by the CNC and Independent Probity Advisor and is grateful for their contributions to this process. It will look to embed and build on that work in future regulatory periods.

The Commission thanks those parties, and all other stakeholders, that have provided valuable input into the determination process. All submissions and views have been considered in making this draft determination.

The Commission acknowledges that SA Water's engagement practices in developing the RBP represent an important and material improvement on past practices in this area. As explained below, the Commission will also explore ways to assist in both embedding and improving those practices over time, noting that there is always the capacity for improvement in both business and regulatory systems.

In that context, stakeholders have generally expressed a degree of concern in relation to the level of transparency and detail provided by SA Water at times throughout the process, including the content of its RBP. In the Commission's view, the process to date demonstrates that there is significant scope for SA Water to be more open and transparent with stakeholders on regulatory matters, and to genuinely take on board customer views and preferences at multiple stages of its business planning and delivery processes.

Stakeholders have generally supported the new determination process to date, although areas for improvement have already been identified, including that:

- ▶ the customer challenge process should occur over a longer period of time
- ▶ SA Water could consult earlier and more extensively with the community on the development of its new initiatives
- ▶ there may be opportunities to better integrate SA Water's plans with the plans of other industry participants, and
- ▶ greater transparency about SA Water's plans, including its long-term plans, would allow for more effective community engagement.

The Commission will commence a full review of the new process later in 2020 and will consider issues raised to date and any other issues that are raised by stakeholders, in considering the process for the next SA Water Regulatory Determination in 2024. It will also monitor and publicly report on the outcomes of this regulatory determination to ensure that SA Water is held to account in the delivery of its commitments to customers, as well as monitoring and seeking public transparency on SA Water's longer-term operational, capital and business planning.

Part A – Background and context

This part provides background and contextual information relevant to SA Water Regulatory Determination 2020 (**SAW RD20**). It summarises:

- ▶ the Commission’s role as economic regulator of SA Water
- ▶ the process for making SAW RD20
- ▶ the major outcomes achieved under independent economic regulation since 2013
- ▶ the policy framework within which SAW RD20 operates, and
- ▶ the legal requirements that apply to SAW RD20.

2 Introduction

To protect the long-term interests of consumers with respect to price, quality and reliability of SA Water's retail services, the intended outcomes from this regulatory determination are that SA Water:

- ▶ provides water and sewerage services at the lowest sustainable price for the quality and reliability levels valued by customers, and
- ▶ will have in place sound long-term asset management, operating and financing strategies, which support the provision of those services for current and future customers.

SA Water is a vertically integrated water and sewerage business, wholly owned by the South Australian Government.¹ SA Water provides drinking water and sewerage services to approximately 1.7 million South Australians.

The retail services² provided by SA Water are subject to economic regulation by the Commission under the ESC Act and the WI Act. The economic regulatory regime has two main elements:

- ▶ SA Water is licensed by the Commission under the WI Act to provide retail services, subject to conditions.³ While some matters are addressed through licence conditions alone, the Commission is able to make industry codes or rules that prescribe the rules of conduct and procedures that SA Water must follow in providing retail services.⁴ This relates in particular to the setting of service standards and the nature and scope of consumer protections that must be adhered to by SA Water.
- ▶ The Commission also has the discretion to make determinations relating to pricing for SA Water's retail services.⁵ Under the legislative settings of the regime, the Commission sets the maximum revenues that can be earned by SA Water for the provision of retail services (having regard to the service standard, consumer protection and other regulatory requirements), with SA Water being responsible for setting the specific prices that recover the relevant revenues.

The Commission's overall purpose and approach in regulating SA Water aims to encourage economically efficient behaviour that is in consumers' long-term interests.⁶ Of note, and as explained further below, SA Water also is regulated by other bodies in relation to matters such as health, quality safety and environmental obligations: the Commission works closely with those bodies but is not responsible for those other regulatory requirements or outcomes.

¹ The South Australian Water Corporation is established under the South Australian Water Corporation Act 1994. It is a public corporation subject to the Public Corporations Act 1993. Not all of the functions undertaken by SA Water are subject to regulation by the Commission. Further information about SA Water is provided at Appendix 1.

² Retail services are defined in section 4 of the WI Act. A retail service is:(a) the sale and supply of water to a person for use (and not for resale other than in prescribed circumstances (if any)) where the water is to be conveyed by a reticulated system; or (b) the sale and supply of sewerage services for the removal of sewage (even if the service is not actually used), but does not include any service, or any service of a class, excluded via regulations.

³ Refer Section 25(1) of the WI Act. SA Water's licence is available at <http://www.escosa.sa.gov.au/library/130102-WaterRetailLicence-SAWater.pdf>

⁴ Section 28 of the ESC Act.

⁵ Section 25 of the ESC Act and Section 35 of the WI Act.

⁶ Section 6 of the ESC Act.

Under the economic regulatory regime, the Commission brings the making of codes, rules and a pricing determination into a single regulatory determination process. The Commission has made and is seeking feedback on this draft regulatory determination which is proposed to apply for the period 1 July 2020 to 30 June 2024 (SA Water Regulatory Determination 2020 or **SAW RD20**) which includes:

- ▶ reviewing and amending the consumer protections contained in industry codes and rules
- ▶ reviewing and resetting the customer service and network reliability service standards with associated performance targets
- ▶ making three separate price determinations for drinking water retail services, sewerage retail services and other ('excluded') retail services, and
- ▶ reviewing and amending the compliance and performance monitoring and reporting framework.

The release of this draft determination commences the final stage of public consultation on SAW RD20, which will be the third SA Water regulatory determination made by the Commission.⁷ In making this regulatory determination, the Commission's primary objective is to protect the long-term interests of consumers with respect to the price, quality and reliability of essential services.

2.1 Why regulation of SA Water's retail services is required

As part of its regulatory functions under the WI Act and ESC Act, and to protect the long-term interests of SA Water's consumers, the Commission has decided to make pricing determinations and review the consumer protection regime that applies to the retail services provided by SA Water.⁸ The Commission is proposing that these consumer protections should continue to apply as:

- ▶ SA Water is a monopoly service provider of water and sewerage retail services to the majority of South Australians, and
- ▶ as a result, SA Water does not have the benefit of competition to drive economically efficient behaviour, such as providing service levels that are valued by customers and seeking cost efficiency in the provision of retail services.

Economic regulation can act to substitute for that lack of competition by providing drivers of efficiency, thereby ameliorating potential economic detriment to customers (the costs of which may be materially greater than the costs of regulation).

The specific manner in which the Commission proposes to regulate SA Water is discussed in Part B of this draft determination.

2.2 Process for making SA Water Regulatory Determination 2020

The SAWRD 20 process has had a very strong focus on providing simple and frequent opportunities for stakeholders to raise issues and comment on proposals, well in advance of the Commission making its final determination in May 2020. The stages of the process are summarised in Table 2.1 and discussed further below.

⁷ Information relating to the previous determinations, made in 2013 and 2016, is available on the Commission's website at <https://www.escosa.sa.gov.au/industry/water/retail-pricing/sa-water-regulatory-determinations>.

⁸ The Commission's powers to make codes, rules and price determinations to apply to SA Water is discussed in Chapter 2 of this report.

Table 2.1: Stages in the SAW RD20 review process

Date	SAW RD20 Milestone
Nov 2017	Release of draft framework and approach
Nov 2017-Jan 2018	Consultation on draft framework and approach
July 2018	Release of final Framework and Approach
Sep 2018	Commission appointed Customer Negotiation Committee, Independent Probity Advisor and established Consumer Experts Panel
Sep-Oct 2018	Meetings of the Consumer Experts Panel to discuss priorities
End-Oct 2018	Release of Guidance Papers 1 to 5 for comment
Dec 2018	Consumer Experts Panel produces Priorities Report
Jun 2019	Release of Guidance Papers 6 and 7 for comment
Feb 2019	SA Water prepared draft regulatory business plan for discussion with Customer Negotiating Committee
Feb-Jun 2019	Negotiation Forum held (Customer Negotiating Committee and SA Water, overseen by an independent Probity Advisor)
July 2019	Release of Guidance Paper 8 for comment
Oct 2019	Independent Chair of the Customer Negotiation Committee submitted report on negotiation process and outcomes
Oct 2019	Independent Probity Advisor submitted report on integrity of negotiation
Nov 2019	SA Water submitted Regulatory Business Proposal for 2020-2024
Nov-Dec 2019	Consultation on SA Water's proposed business plan and reports of the Independent Chair and Independent Probity Advisor
Dec 2019	Release of Guidance Paper 9 for comment
Feb 2020	Commission issues draft regulatory determination
Feb-Apr 2020	Consultation on draft regulatory determination
May 2020	Commission issues final regulatory determination
July 2020	Approved SA Water business plan takes effect

2.2.1 Framework and approach

Following a public consultation process, the Commission finalised a framework and approach for SAW RD20 in July 2018.⁹ The framework and approach established a new process that provided various forums for customers, customer representatives, regulators and other stakeholders to debate, discuss and understand the needs, preferences and priorities of SA Water's diverse customer base.

It established:

- ▶ A Negotiation Forum, which provided a process for testing SA Water's initial regulatory business plans prior to them being submitted to the Commission for review. The Negotiation Forum comprised:
 - a CNC, which was asked to elicit and represent the perspectives, preferences and priorities of SA Water's diverse customer base during that challenge process
 - senior representatives of SA Water, and
 - an Independent Probity Advisor, appointed to oversee the fairness of the challenge process.
- ▶ A Consumer Experts Panel (CEP), given effect as joint sittings of the Commission's and SA Water's consumer advisory groups. The Panel provided feedback and advice to the Commission during the review process and prepared a Priorities Report,¹⁰ which set out the key issues that the CEP expected SA Water to consider and respond to as it developed its RBP. It also provided guidance to the CNC on matters to be considered in the Negotiation Forum process. SA Water met with the CEP in July 2019 to discuss the issues raised in the Priorities Report, which it summarised in a public response.¹¹
- ▶ A Regulators Working Group, established to provide a forum for the various regulators of SA Water to coordinate their efforts for achieving positive outcomes for the South Australian community through their combined regulation of SA Water.¹² Those regulators include the Commission, the EPA, SA Health, the Technical Regulator, the DEW and Consumer and Business Services.

The governance arrangements outlining the roles for the various groups providing input into the Commission's decision-making process are illustrated in Figure 2.1. Further details about the arrangements are set out in the Framework and Approach paper.¹³

⁹ Commission, *SA Water Regulatory Determination 2020 – Framework and Approach*, July 2018, available at <https://www.escosa.sa.gov.au/projects-and-publications/projects/water/sa-water-regulatory-determination-2020-framework-and-approach>

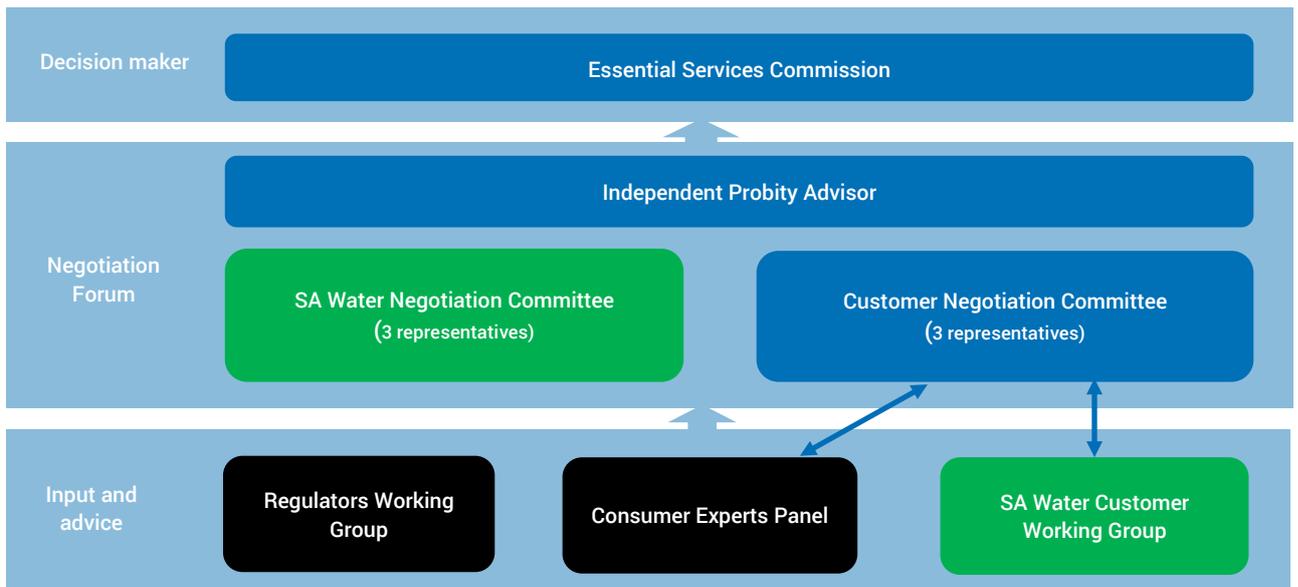
¹⁰ The *Priorities Report* is available at <https://www.escosa.sa.gov.au/ArticleDocuments/11294/20190107%20-Water-SAWRD20-ConsumersExpertsPanel-PrioritiesReport.pdf.aspx?Embed=Y>.

¹¹ SA Water's response to the Priorities Report is available at <https://www.escosa.sa.gov.au/ArticleDocuments/11294/20190805-Water-SAWRD20-ResponseToFeedback-PrioritiesReport.pdf.aspx?Embed=Y>.

¹² The *Regulators Working Group charter* is available at <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20190225-Water-SAWaterRD20-RWGGGroupCharterSigned.pdf.aspx?Embed=Y>.

¹³ Commission, *SA Water RD20 – Framework and Approach*.

Figure 2.1: SAW RD20 governance structure



2.2.2 Guidance Papers

Since November 2018, the Commission has released a suite of Guidance Papers, intended to inform all stakeholders of the Commission’s initial positions, principles, requirements, methodology or guidance on matters relevant to the determination. The Commission required SA Water to take into account the matters set out in the Guidance Papers when preparing its RBP.

Table 2.2 lists the Guidance Papers that have been released as part of SAW RD20.¹⁴

Table 2.2: SAW RD20 Guidance Papers

Guidance paper	Purpose
1. Overview of economic regulation of SA Water	This paper confirmed the process for SAW RD20 and informed stakeholders of opportunities to provide input into the determination.
2. Revenue regulation and pricing principles	This paper explained how SA Water’s drinking water and sewerage revenues will be determined, using a cost-based, building blocks, approach and informed by a negotiation process. It also explained how the Commission will regulate the prices of SA Water’s excluded services.
3. Service standards	This paper explained the Commission’s process for reviewing its principal consumer protection industry code: the Water Retail Code–Major Retailers, which includes customer service standards.

¹⁴ The Guidance Papers are available on the Commission’s website at <https://www.escosa.sa.gov.au/industry/water/retail-pricing/sa-water-regulatory-determination-2020/guidance-papers>.

Guidance paper	Purpose
4. Prudent and efficient expenditure	This paper explained the Commission's approach to reviewing SA Water's proposed expenditure to assess whether or not it is prudent and efficient, to feed into the calculation of the maximum drinking water and sewerage revenues. It provided context on the 'negotiable' and 'non-negotiable' elements of SA Water's costs, and provided an indication of some of the potential future cost drivers. It also provided guidance to SA Water on the minimum information that it should provide to the Negotiation Forum to allow it to assess whether proposed initiatives, programs and projects are prudent and efficient.
5. The cost of funding and using assets	This paper explained the Commission's methodology for determining the efficient cost of funding and using assets to provide drinking water and sewerage services, in particular the return on, and of, regulated assets.
6. Treatment of inflation in the regulatory rate of return	This paper provided further technical guidance related to Guidance Paper 5 – the cost of funding and using assets. In particular, it outlined approaches that could be used to estimate inflation, for the purpose of calculating the regulatory rate of return using a real, post-tax weighted average cost of capital.
7. The averaging period of the risk free rate	This paper presented research that examines different averaging periods that may be used for determining the risk-free rate as part of the regulatory rate of return for SAW RD20.
8. Treatment of capital expenditure - addressing uncertainty	This paper discussed the Commission's proposed treatment of uncertain costs or benefits in SA Water's capital expenditure plan for the 1 July 2020 to 30 June 2024 period.
9. Annual updates of the rate of return	This paper outlined a proposed methodology for updating the regulatory rate of return on an annual basis. In particular, it outlined the advantages and limitations of the proposal, provided guidance on how the proposed methodology intends to operate, and highlighted key questions for stakeholder consideration.

The Commission received four submissions from SA Water to Guidance Papers 1 to 9, including reports prepared by Frontier Economics and the South Australian Centre for Economics Studies (SACES), and has taken those submissions into account in making this draft determination.¹⁵ Those matters are discussed, where relevant, in Part B and Part C of this report.

2.2.3 Negotiation Forum

The Negotiation Forum held 20 meetings from February 2019 to June 2019, which allowed the CNC to consider and test the robustness of SA Water's draft plans for the next regulatory period how those might provide water and sewerage services at the lowest sustainable price for the quality and reliability levels valued by customers.

¹⁵ SA Water's submissions to the Guidance Papers are available on the Commission's website at <https://www.escosa.sa.gov.au/industry/water/retail-pricing/sa-water-regulatory-determination-2020/guidance-papers>

A key output from the Negotiation Forum was a report from the Independent Chair of the CNC, Mr John Hill.¹⁶ The report discusses the views of the Chair and Committee on SA Water's proposed major activities and expenditure, including areas where agreement between SA Water and the Committee was reached. This draft determination gives significant weight to those areas of agreement.

The Chair's report also contains observations and recommendations for customer engagement processes that may be used to inform future SA Water regulatory determinations.

The report is a critical input into this draft determination and the Commission thanks Mr Hill and other committee members, Mr Mark Henley and Ms Meg Clarke, for their important contributions to this process.

The Commission would also like to thank the Independent Probitry Advisor, Mr. Gaby Jaksa, for performing his important role in the Negotiation Forum and for preparing his report, which confirms the integrity and fairness of the customer challenge process.¹⁷

Finally, the Commission recognises and thanks SA Water for leading the Negotiation Forum and devoting considerable resources to the process.

2.2.4 SA Water's Regulatory Business Proposal

In November 2019, SA Water finalised and submitted its RBP, titled 'Our Plan 2020'.¹⁸ The RBP sets out SA Water's proposed customer service standards, revenues and indicative prices for drinking water and sewerage services for the next four years. In summary, the RBP proposes:

- ▶ drinking water revenues that are 2.2 percent lower than those in the current regulatory period, in real terms (excluding the impact of inflation)
- ▶ sewerage revenues that are 0.5 percent lower than those in the current regulatory period, in real terms
- ▶ capital expenditure forecasts that are 44 percent above those incorporated into SAW RD16 and 9 percent above the capital expenditure that SA Water expects to incur during the SAW RD16 regulatory period¹⁹
- ▶ operating expenditure forecasts that are 3 percent below those incorporated into SAW RD16²⁰, and
- ▶ nine new customer service standards, including standards relating to customer satisfaction and issue resolution.

The major initiatives proposed by SA Water in its RBP include:

- ▶ completing its \$379 million investment in solar generation and battery storage to provide an opportunity to earn revenue from the national electricity market and offset its electricity purchase costs at various sites

¹⁶ *Report of the Independent Chair of the Customer Negotiation Committee* is available at <https://www.escosa.sa.gov.au/ArticleDocuments/11296/20191112-Water-SAWRD20-CustomerNegotiationCommittee-IndependentChairReport.pdf.aspx?Embed=Y>.

¹⁷ *The report of the Independent Probitry Advisor* is available at <https://www.escosa.sa.gov.au/ArticleDocuments/11296/20191112-Water-SAWRD20-NegotiationForum-ProbitryReport-GabyJaksa.pdf.aspx?Embed=Y>.

¹⁸ SA Water, 'Our Plan 2020' (*Regulatory Business Plan*) is available on SA Water's website (www.sawater.com.au).

¹⁹ Further information about SA Water's capital expenditure forecasts is set out in Chapter 5 of this report.

²⁰ Further information about SA Water's operating expenditure forecasts is set out in Chapter 5 of this report

- ▶ investing \$186 million in water quality management programs, including water treatment plant improvements, providing drinking water to 340 customers in regional areas that receive non-drinking water and improving water aesthetics in certain regional towns
- ▶ investing \$175 million on major water pipelines, including upgrading the Morgan to Whyalla pipeline, and
- ▶ investing \$127 million on reticulated water mains, including expansions of its smart networks and pressure management initiatives.

2.2.5 Submissions to SA Water’s Regulatory Business Proposal

The Commission requested submissions from stakeholders on SA Water’s RBP. Nine submissions were received, from the following parties:²¹

- ▶ Business SA
- ▶ Conservation Council of SA
- ▶ Consumers SA
- ▶ EPA
- ▶ EWOSA
- ▶ The Technical Regulator
- ▶ Mr Richard Clark
- ▶ South Australian Council of Social Service (**SACOSS**), and
- ▶ South Australian Federation of Residents and Ratepayers Associations Inc (**SAFRRA**).

The report from the Chair of the CNC, while not a submission to SA Water’s published RBP, also comments extensively on SA Water’s proposals.²²

2.2.6 Major issues raised in submissions to SA Water’s Regulatory Business Proposal

Some of the key themes arising from submissions to SA Water’s RBP and the reports of the Chair of the CNC include:

- ▶ Many submissions commented on the lack of detail in SA Water’s RBP, which made it difficult for those stakeholders to understand and respond to SA Water’s specific proposals. Those submissions suggested that the RBP could be more transparent about the specific initiatives being proposed by SA Water and their justification.
- ▶ Notwithstanding that general concern, many submissions indicated support for some of SA Water’s key initiatives, including its proposal for expanding its renewable generation, expanding its smart networks and dam safety upgrades.

²¹ Submissions to SA Water’s RBP are available at <https://www.escosa.sa.gov.au/projects-and-publications/projects/water/sa-water-regulatory-determination-2020>

²² Report of the Independent Chair of the CNC.

- ▶ There was support for the enhanced customer engagement that SA Water conducted prior to developing its RBP and for the Negotiation Forum process. However, some submissions stated that the Negotiation Forum process should have started earlier, to provide more time for the challenge process to occur and that the Commission needs to consider the uneven bargaining power between SA Water and any consumer representative group. Some also commented that the results of SA Water's customer survey about willingness to pay for initiatives needs to be interpreted carefully.
- ▶ There may be benefit in the South Australian Government providing greater clarity about SA Water's role in influencing and delivering water policy. For example, the Conservation Council of SA and SACOSS commented on environmental policy and areas where SA Water's role could be made clearer. The report of the Chair of the CNC also commented on SA Water's proposed initiatives that may be better guided or achieved through government policy, such as those targeting economic development in regional South Australia.

2.2.7 Consideration of submissions and evidence

This draft determination represents the independent review and determinations of the Commission, informed by its consideration and review of SA Water's RBP and stakeholder submissions and reports.

The RBP comprises a series of documents and information, much of which is public but some of which is classified by SA Water as confidential due to commercial sensitivity. Much of the detailed analysis conducted by the Commission relies on that commercially sensitive information. While the Commission's information gathering powers are broad, and do not limit its ability to collect and consider confidential information, it has preserved the confidentiality of commercially sensitive information in outlining its reasons for this draft determination. It has sought to strike an appropriate balance between providing sufficient information to enable stakeholders to understand the basis of its draft positions, while ensuring that confidential information that could adversely affect SA Water's commercial or competitive position is not disclosed.

As noted above, this draft determination sets out the Commission's draft decisions, and the reasons for those draft decisions, on the following regulatory issues:

- ▶ the consumer protections contained in industry codes and rules
- ▶ the customer service and network reliability service standards with associated performance targets
- ▶ three separate price determinations: for drinking water retail services; sewerage retail services and other ('excluded') retail services, and
- ▶ the compliance and performance monitoring and reporting framework.

In reaching those draft decisions and reasons, the Commission has had regard to all relevant legislative factors and objectives, all of the materials provided to it by SA Water and the submissions, evidence and information provided by stakeholders throughout the review process (as described above).

In doing so, it has given consideration to and acknowledges all of the evidence, arguments and submissions relevant to the issues under consideration in this regulatory determination, and has given appropriate weight to those matters in the context of the principles and requirements set out in the ESC and WI Acts. While the Commission has not adopted all of the positions or arguments put or raised in that material, and has not directly referenced in this draft determination all of the material before it, the material has assisted it in considering each of the relevant issues under consideration and in understanding the competing viewpoints held.

Where appropriate, the Commission has, either by direct quotation or by reference to themes or arguments, mentioned certain evidence, arguments and submissions to explain the draft decisions that it has reached. However, the fact that certain evidence, argument or submission has not been referenced in this report does not mean that the Commission has not taken that argument or submission into account in its deliberations.

However, while this draft determination is informed by all representations received, it is not a judgment on those representations. Rather, it is the Commission's considered position on the economic regulation to be applied to SA Water over the next four-year regulatory period to achieve a robust outcome for South Australian consumers, having regard to the requirements of the legal framework.²³

2.2.8 Consultation on this draft determination

The Commission is consulting on this SAW RD20 draft determination, with written submissions due by **15 April 2020**.

The process for providing written submissions is set out on the inside of the front cover of this paper.

The Commission also will consult directly with key stakeholders during the consultation period, providing opportunities for all interested parties to ask questions about the draft determination (and related matters) and provide further evidence and information to inform the final determination.

All relevant submissions, evidence and information will be taken into account by the Commission in preparing that final determination, to be released in May 2020.

2.2.9 The final determination and next steps

Following the final determination, SA Water will set drinking water and sewerage prices in accordance with the final revenue caps. Those prices will apply from 1 July 2020.

As a part of that process, SA Water will be required to publish a final regulatory business plan, taking into account the requirements of the final determination. This will provide all stakeholders with a single document that sets out SA Water's planned service and price commitments to customers. It will provide a reference point for SA Water to report to its customers on its performance against those commitments, during the next regulatory period.

SA Water also will be required to publish longer-term asset management and related information that will assist the public in understanding its likely future expenditure profile, to provide transparency as to possible or indicative pricing trends over time. This will provide a sound basis for the assessment any proposed operating and expenditure plans in future regulatory determinations, allowing stakeholders to better understand a 'base case' and to test variances that might arise as compared to that base case. It also will provide SA Water with the opportunity to engage with stakeholders on those matters, which may provide greater insights on future customer demand and investment needs.

2.2.10 Determining the effectiveness of SAW RD20

Following completion of SAW RD20, the Commission will review the effectiveness of the determination. There are two aspects of SAW RD20 that the Commission will evaluate.

23 This model is different to the propose-respond methodology required under national energy regulation. Under that approach, a regulated entity is required to provide the Australian Energy Regulator with a proposal, which it must either accept if it is considered to be reasonable, or substitute with its own proposal if it is considered to be unreasonable.

First, the Commission will review the process for the determination in the second half of 2020. It will seek stakeholder feedback on key process matters, such as the effectiveness of the Commission's consultation processes and the negotiation process. The Commission will use stakeholder feedback to inform its thinking about possible process improvements that could be made for the following SA Water Regulatory Determination 2024 (**SAW RD24**).

Second, the Commission will evaluate whether or not SAW RD20 has delivered the intended outcomes for customers, on an ongoing basis during the 2020-2024 regulatory period. Reporting by SA Water of its performance in providing regulated services will be a critical input into that evaluation. The Commission intends to monitor major SA Water projects and programs, their costs and the outputs and outcomes received by customers. This will require a longer-term program of monitoring and reporting of outcomes by SA Water and its regulators, and the information coming out of those processes will be publicly and transparently reported.

The Commission also will make SA Water accountable for reporting its performance to customers. That program will help the Commission understand the effectiveness of its regulatory approach and guide the design of future SA Water regulatory determinations.

Further information about the Commission's proposed monitoring and reporting approach is discussed in Chapter 11.

3 Policy framework and legal requirements

The Commission has made this draft regulatory determination in accordance with its primary objective, which is to protect the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services.

It has also complied with the specific requirements under the ESC Act and WI Act that relate to the making of a price determination and Codes and Rules that are to apply to SA Water. This Chapter explains the statutory framework that applies to the making of this regulatory determination, and includes a general description of the elements of the statutory regime governing SA Water's operations that are relevant in the regulatory determination context.

3.1 How does this Draft Regulatory Determination meet the legal requirements?

This draft determination is consistent with the Commission's primary objective of protecting the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services as it:

- ▶ proposes service standards that are based on consumers' preferences, reflecting the service levels that customers are willing to pay for, and
- ▶ proposes drinking water and sewerage revenues to reflect the lowest sustainable cost of providing those services at the determined standards and in accordance with the obligations set by other regulators of SA Water.

The Commission has considered all relevant legislative objectives and factors in making this draft determination. This section summarises the legal and policy framework for SAW RD20, and sets out the key legal requirements and how the Commission has addressed them (detailed in Appendix 2).

It is important to set service standards that are in line with consumer preferences about the balance between price and service levels. If service standards were set below those that customers preferred and were willing to pay for, that would not provide the best outcome for customers as they could derive benefits from improved services that exceed the costs of providing them. The long-term interests of customers could be enhanced through improved service standards. If service standards were set above those that customers preferred and were willing to pay for, the benefits of the enhanced service levels would be outweighed by the costs of providing them. A key element of this draft determination is finding the right balance between service levels and costs, consistent with consumer preferences.

However, as noted in section 3.2 below, many aspects of SA Water's services are regulated by others and the Commission's role does not extend to determining the balance between those regulatory requirements and costs. This draft determination accepts the environmental, health, technical and social obligations that are imposed on SA Water by other regulators and seeks to determine the efficient cost of meeting those requirements.

Setting maximum revenues to recover the lowest sustainable cost of supplying drinking water and sewerage services allows SA Water sufficient revenue to efficiently deliver the services valued by customers, in the long term. The Commission is not seeking to deliver low prices in the short term at the expense of long-term service delivery. That would be inconsistent with the Commission's requirement to protect customers' long-term interests.²⁴ Nor is the Commission seeking to set revenues above the efficient cost of service delivery, as that would deliver excessive profits to SA Water and would be inconsistent with the long-term interests of consumers.

²⁴ See section 6(1) of the ESC Act.

3.2 SAW RD20 will operate within a broader policy framework

SA Water is a government-owned provider of water and sewerage services. Its primary role is to source, treat, distribute and sell drinking water and non-drinking water, and to remove, treat and dispose sewage from homes and businesses.²⁵ Those essential services are highly regulated, including service level and revenue regulation by the Commission (referred to generally as ‘economic regulation’, as compared to health, technical or environmental regulation as outlined below).

The Commission undertakes its role as economic regulator within a broader legislative and policy framework. A summary of the key entities involved in the regulation of SA Water is provided in Table 3.1.

Table 3.1: Entities involved in the regulation of the water industry

Entity	Overview of role within the water industry	Relevant legislation
Minister for Environment and Water	Administers the <i>Water Industry Act</i> , and is responsible for non-regulatory instruments (eg schemes) and appointing water industry entities.	<i>Water Industry Act 2012</i>
Treasurer	Sets licence fees for water industry entities, issues Ministerial directions and Pricing Orders ²⁶ .	<i>Water Industry Act 2012</i>
The Commission	Regulates customer service standards for the sale and supply of water and sewerage retail services. Establishes average customer service and reliability service standards for water and sewerage retail services and assesses the prudent and efficient costs for delivery of water and sewerage retail services. Regulator for the third party access regime.	<i>Essential Services Commission Act 2002</i> <i>Water Industry Act 2012</i>
Environment Protection Authority	Regulates the environmental impact of water businesses.	<i>Environmental Protection Act 1993</i>
Department for Environment and Water	Regulates State water resources, and other natural resource management matters.	<i>Natural Resources Management Act 2003</i>
SA Health	Regulates public health requirements for providing drinking water supplies.	<i>Safe Drinking Water Act 2011</i>
Technical Regulator	Regulates safety and technical matters.	<i>Water Industry Act 2012</i>
Consumer and Business Services	Responsible for administration of the Australian Consumer Law, covering consumer protection and fair trading, in South Australia. Regulates the relationship between landlords and tenants for the payment of rates and charges for water and sewerage services. Regulates the professional conduct of plumbing contractors.	<i>Competition and Consumer Act 2012</i> <i>Residential Tenancies Act 1995</i> <i>Plumbers, Gasfitters and Electricians Act 1995</i>

²⁵ Appendix 1 contains further information about SA Water and its functions.

²⁶ All Pricing Orders that have been issued under the WI Act are available at <https://www.treasury.sa.gov.au/economy-taxes-and-rebates/economic-regulation>.

Entity	Overview of role within the water industry	Relevant legislation
Department of Human Services	Develops customer hardship and concession policies.	<i>Water Industry Act 2012</i>
EWOSA	Handles complaints from customers of water retailers that have joined the scheme.	<i>Water Industry Act 2012</i> <i>Corporations Act 2001</i>

The South Australian Government develops and implements, through legislation, public policy in relation to public health, the environment, water supply and demand planning, technical standards, safety and social welfare, all of which have an impact on SA Water. The Commission and other regulators decide on matters assigned to them by the South Australian Government under that policy and legislative framework.

In that context, through its regulatory determinations the Commission determines the efficient expenditure required by SA Water to meet its regulatory obligations. It does not decide whether South Australian Government policies that impact on water and sewerage prices are appropriate or correct. Nor does the Commission make decisions about the governance of SA Water: that is a matter for SA Water and its owner, the South Australian Government.

Further, the Commission's role is limited to assessing the efficient costs of providing essential services; it does not extend to assessing an individual customer's capacity to pay for essential services. The South Australian Government makes decisions about social policy, including policies designed to assist customers to meet the costs of accessing essential services.

SA Water makes the day-to-day commercial decisions about the operations and investments required to deliver water and sewerage services that meet its regulatory obligations. SA Water is also responsible for setting the prices that apply to customers, although those prices must be set to recover revenues within the Commission's revenue determinations and/or comply with relevant pricing principles.²⁷

Consumer and industry advocates also have an important role to play in the economic regulation of SA Water, through understanding and representing or reflecting the views of their constituents in consultation and engagement processes. They may also advocate for changes where their constituents' interests are not being met (for example, in relation to the price/service offerings being provided by SA Water).

The Commission has established a Consumer Advisory Committee, comprising consumer representatives, which advises the Commission on its regulatory functions, including economic regulation of SA Water. As discussed in Chapter 1, the Commission has also established a CEP, comprising members of the Consumer Advisory Committee and SA Water's Customer Advisory Groups, to provide input and advice to this SAW RD20 process. Those consumer advocacy groups help the Commission to understand consumer experiences and expectations, and provide evidence to inform the Commission's SAW RD20 decision-making process.

²⁷ Discussion of the maximum revenues and pricing principles is set out in Chapter 3 of this report.

3.3 Functions and powers of the Commission

The regulatory functions of the Commission are set out in Section 5 of the ESC Act. Functions relevant to the economic regulation of SA Water include:

5 – Functions

The Commission has the following functions:

- (a) *to regulate prices and perform licensing and other functions under relevant industry regulation Acts;*
- (b) *to monitor and enforce compliance with and promote improvement in standards and conditions of service and supply under relevant industry regulation Acts;*
- (c) *to make, monitor the operation of, and review from time to time, codes and rules relating to the conduct or operations of a regulated industry or regulated entities.*

In performing these functions, the following objectives (including the Commission's primary objective when undertaking any function) inform and guide the Commission. They are set out in Section 6 of the ESC Act.

6 – Objectives

In performing the Commission's functions, the Commission must –

- (a) *have as its primary objective protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services; and*
- (b) *at the same time, have regard to the need to –*
 - (i) *promote competitive and fair market conduct; and*
 - (ii) *prevent misuse of monopoly or market power; and*
 - (iii) *facilitate entry into relevant markets; and*
 - (iv) *promote economic efficiency; and*
 - (v) *ensure consumers benefit from competition and efficiency; and*
 - (vi) *facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment; and*
 - (vii) *promote consistency in regulation with other jurisdictions.*

With regard to the Commission's principal statutory objective, three elements of service delivery are captured – price, quality and reliability – and these are to be interpreted in a context of economic efficiency. That is particularly so in light of the fact that Sections 6(b)(iv) and (v) of the ESC Act expressly refer to efficiency considerations.

3.3.1 The Commission's price determination powers

3.3.1.1 Under the ESC Act

Part 3 of the ESC Act sets out a legislative scheme governing the exercise of the Commission's price determination powers and functions.

Sections 25(1) and 25(2) have the combined effect of empowering the Commission to make price determinations where authorised to do so by a relevant industry regulation Act, which, in this case, is the WI Act.

Section 25(3) provides that a price determination may regulate prices, conditions relating to prices, or price fixing factors in any manner the Commission considers appropriate. Examples include:

- (a) fixing a price or the rate of increase, or decrease, in a price
- (b) fixing a maximum price, or maximum rate of increase, or minimum rate of decrease, in a maximum price
- (c) fixing an average price for specified goods or services, or an average rate of increase or decrease in an average price
- (d) specifying pricing policies or principles
- (e) specifying an amount determined by reference to a general price index, the cost of production, a rate of return on assets employed, or any other specified factor
- (f) specifying an amount determined by reference to quantity, location, period or other specified factor relevant to the supply of goods or services
- (g) fixing a maximum average revenue, or maximum rate of increase, or minimum rate of decrease in maximum average revenue, in relation to specified goods or services, or
- (h) monitoring the price levels of specified goods and services.

These examples are not exhaustive and the Commission may make a price determination to operate in a manner it considers appropriate, subject to any specific requirements of an industry regulation Act. In the case of the WI Act, certain requirements do exist, as discussed below.

As well as the general factors set out in Section 6 of the ESC Act, Section 25(4) specifies additional factors to which the Commission must have regard when exercising its price determination function. They include:

- (a) the particular circumstances of the regulated industry and the goods and services for which the determination is being made
- (b) the costs of making, producing or supplying the goods or services
- (c) the costs of complying with the laws or regulatory requirements
- (d) the return on assets in the regulated industry
- (e) any relevant interstate and international benchmarks for prices, costs and return on assets on comparable industries
- (f) the financial implications of the determination
- (g) any factors specified by a relevant industry regulation Act, or by regulation under the Act, and
- (h) any other factors that the Commission considers relevant.

Two further statutory imperatives arise under section 25(5) of the ESC Act in relation to price determinations. They are:

- (a) wherever possible, the costs of regulation do not exceed the benefits, and
- (b) the decision takes into account and clearly articulates any trade-off between costs and service standards.

Finally, section 25(6) provides that subsections 25(3), 25(4) and 25(5) have effect in relation to a regulated industry, subject to the provisions of the relevant industry regulation Act for that industry (in this case, the WI Act).

3.3.1.2 Under the WI Act

Section 17 of the WI Act declares that the water industry is a regulated industry for the purposes of the ESC Act. Accordingly, the Commission has a general power to regulate prices in the water and sewerage industries.

Specifically, in terms of the price regulation function, the WI Act provides that:

7 – Functions and powers of Commission

- (1) *The Commission has (in addition to the Commission's functions and powers under the Essential Services Commission Act 2002) –*

- (a) *the licensing, price regulation and other functions and powers conferred by this Act...*

The provisions of the WI Act that confer pricing powers on the Commission are set out in section 35. Consistent with the general discretionary powers under Part 3 of the ESC Act, the price determination power set out in section 35 of the WI Act is discretionary:

35 – Price regulation

- (1) *Subject to this section, the Commission may make a determination under the Essential Services Commission Act 2002 regulating prices, conditions relating to prices, and price fixing factors for retail services.*

A 'retail service' is defined in section 4 of the WI Act to include a service constituted by:

- (a) *the sale and supply of water to a person for use (and not for resale other than in prescribed circumstances (if any)) where the water is to be conveyed by a reticulated system; or*
- (b) *the sale and supply of sewerage services for the removal of sewage,*
(even if the service is not actually used) but does not include any service, or any service of a class, excluded from the ambit of this definition by the regulations.

Accordingly, any operations or services falling outside the scope of the above definition are not subject to price regulation by the Commission. For example, SA Water's water testing service provided through the Australian Water Quality Centre, is not a retail service and is not subject to price regulation under the WI Act. As is discussed in Chapter 5 of this report, SA Water's merchant electricity generation service, provided under the ZCEF initiative, is also not a retail service. In addition, section 5(2) of the WI Act states that services provided, or infrastructure held, by irrigation trusts (as defined in the *Irrigation Act 2009*), the Renmark Irrigation Trust or persons providing irrigation services designated by the Minister, are not subject to the provisions of the WI Act.

3.3.1.3 Pricing Orders

The price regulation provisions of the WI Act also include a framework for the Treasurer to issue Pricing Orders. Section 35(4) provides that the Treasurer may issue a Pricing Order that:

- (a) sets out any policies or other matters that the Commission must have regard to when making a determination
- (b) specifies various parameters, principles or factors that the Commission must adopt or apply in making a determination, and
- (c) relates to any other matter that the Treasurer considers to be appropriate in the circumstances.

Pursuant to section 35(3) of the WI Act, the Commission must comply with the requirements of any Pricing Order when making a determination.

Since the economic regulation of SA Water under the WI Act commenced in 2012, the Treasurer has issued six Pricing Orders pursuant to section 35 of that Act. Pursuant to section 35(5) of the WI Act, a Pricing Order cannot be revoked, and is, therefore, generally of cumulative effect, unless it expressly states that it has a finite application or it is varied by the Treasurer in order to cease its legal effect.

With the issue of the most recent Pricing Order on 28 October 2018, all previously issued Pricing Orders ceased to have effect (through a variation), noting that the requirements of this Pricing Order are very similar to those issued in previous years to apply to previous regulatory determinations made by the Commission.

The current Pricing Order for SAW RD20, which applies to the regulatory period 1 July 2020 to 30 June 2024,²⁸ requires the Commission to:

- (a) adopt or apply the NWI Pricing Principles (other than those for recovering the costs of water planning and management activities) to the extent they are relevant to the making of SAW RD20
- (b) adopt a four-year regulatory period (commencing 1 July 2020) using a revenue cap form of control
- (c) adopt separate total revenue cap controls for drinking water and sewerage services, but not apply revenue caps based on customer class or location
- (d) include a mechanism to adjust the total revenue cap if there is any over or under recovery of revenue due to variations between actual and forecast water consumption or sewerage connections (such mechanism to operate on the basis of efficient costs associated with variations in demand, and so as to promote a stable price path)
- (e) include an appropriate mechanism that allows for the adjustment of the total revenue cap where there is an event beyond the control of SA Water which has, or will, have a material impact of the cost of provision of a retail service (such mechanism to operate on the basis of efficient costs associated with the event, and so as to promote a stable price path)
- (f) allow SA Water to recover the efficient costs of assets acquired (or to be acquired) after 1 July 2016 which are required to support activities that SA Water is required to provide in accordance with a direction under Section 6 of the *Public Corporations Act 1993*
- (g) adopt specified NWI Pricing Principles

²⁸ The Pricing Order for SAW RD20 is available at https://www.treasury.sa.gov.au/_data/assets/pdf_file/0011/41123/Pricing-Order-for-the-Regulatory-Period-1-July-2020-to-30-June-2024.pdf.

- (h) in relation to costs relating to externalities (including water planning and management), allow SA Water to recover such costs as are attributable to and payable by SA Water in accordance with the law, including a direction under Section 6 of the *Public Corporations Act 1993*, and
- (i) allow SA Water to recover such costs (less any relevant contributions to such costs that it receives) that are attributable to activities that SA Water is required to provide in accordance with a direction under Section 6 of the *Public Corporations Act 1993*, and either specified in that direction, or, if not specified, determined by the Commission to be efficient.

The Pricing Order also sets out the following procedural matters:

- (a) the determination must be based on a 'building blocks' approach and must set out all assumptions, methods and values assigned to the various building block components
- (b) the determination must identify the assumptions on which it is based, including each of the following parameters:
 - (i) the RAB is to be rolled forward consistently with Principle 5 of the NWI Pricing Principles for the Recovery of Capital Expenditure
 - (ii) the rate of return of the RAB (which should be consistent with Principle 1 of the NWI Pricing Principles for the Recovery of Capital Expenditure)
 - (iii) any allowance for working capital (depreciated), including its method of calculation, and any adopted classifications of, or remaining life attributable to, the regulatory assets of which it is based
 - (iv) operating expenditure (which should include efficient operational, maintenance and administrative costs)
 - (v) the costs of externalities
 - (vi) any allowance for tax paid (which should be identified separately from the rate of return on the RAB where the weighted average cost of capital is calculated on a post-tax basis), and
- (c) the draft determination must identify any areas where the method of calculation of, or monetary value assigned to, any of the parameters set out in (b) above, is likely to change materially between the draft and final determination, including the cause and likely magnitude and direction of the variation.

3.3.2 Industry licences, codes and rules

The Commission has additional powers to issue licences to entities providing water and sewerage retail services and make industry codes or rules that apply to the conduct or operations of such entities, once licensed.

3.3.2.1 Under the ESC Act

Part 4 of the ESC Act provides the Commission with broad powers to make, vary and amend industry codes or rules. Industry codes prescribe the rules of conduct and procedures that must be followed by regulated entities providing essential services. The use of industry codes allows for a high degree of regulatory flexibility while maintaining appropriate scrutiny, accountability and transparency in the process of their development. Industry codes can cover any number of areas within a regulated industry, from consumer protection to technical matters.

Section 28(3) requires the Commission to consult with the relevant industry Minister, representative bodies and participants in the regulated industry prior to making, varying or revoking a code or rule. Further, section 28(8) requires that any codes or rules be periodically reviewed by the Commission to ensure they continue to be relevant and effective.

3.3.2.2 Under the WI Act

The WI Act requires the Commission to issue SA Water with a non-transferable perpetual licence, which it did on 1 January 2013.²⁹ Section 25(1) requires it to make a licence subject to various conditions. While some conditions must be imposed as stand-alone licence conditions, others must be prescribed in industry codes and rules made by the Commission under the ESC Act.³⁰

In issuing licences under section 25(1) of the WI Act, section 25(2) requires the Commission to have regard to the scale and nature of the operations of the water industry entity – determining the scale and nature after consultation with the entity or a person or body nominated by the entity.

In addition, and of relevance to the current review of the Water Retail Code – Major Retailers WRC-MR/02 (**Code**) as discussed in Chapter 4, section 25(5) of the WI Act requires the Commission, in making an industry code under section 25(1), to include provisions to assist customers who may be suffering specified types of hardship relevant to the supply of any services (such provisions to comply with any direction of the Minister). This provision operates in conjunction with section 37(1) of the WI Act, which requires the Minister to develop and publish a customer hardship policy in respect of residential customers of water industry entities. In summary, the Minister's hardship policy must set out:

- ▶ the processes that water industry entities must have in place to identify residential customers experiencing payment difficulties due to hardship, and
- ▶ the range of processes or programs that a water industry entity should use to assist hardship customers.

The Minister published the applicable hardship policy in February 2013. Section 37(3) of the WI Act requires a water industry entity to adopt the Minister's hardship policy and section 37(4) makes compliance with the policy a condition of a licence issued to a water industry entity by the Commission.

²⁹ SA Water's retail licence <http://www.escosa.sa.gov.au/library/130102-WaterRetailLicence-SAWater.pdf>.

³⁰ The Code has been made by the Commission pursuant to the requirements of section 25(1) of the WI Act.

Part B – Regulatory and consumer protection framework

This part describes the draft decisions regarding the Commission's regulatory and consumer protection framework as it applies to SA Water. This includes the proposed forms of price regulation to apply to SA Water's retail services, including the forms of revenue control to apply to drinking water and sewerage services. It also sets out the proposed consumer protection framework, established by the Code.^{31, 32}

The SAW RD20 process incorporates a review of the consumer protection framework. A revised Code will be established to apply for the 2020-2024 regulatory period. A draft revised Code, with amendments highlighted, is included as Schedule 2 to this draft determination.

The Commission is reviewing the consumer protection framework having regard to its primary objective, as set out in section 6 of the ESC Act: *'the protection of the long-term interests of South Australian consumers with respect to price, quality and reliability of essential services'*.³³

The review seeks to achieve this objective by determining whether or not the consumer protections in the Code remain appropriate and should be maintained, and if SA Water is providing retail services at the quality and reliability levels valued by customers.

To that end, the Commission has made a series of draft decisions that result in amendments to the Code. These are set out in two chapters: Chapter 5 sets out changes to the body of the Code, and Chapter 6 sets out changes to service standards that are required by clause 17 of the Code and contained in Schedule 1 of that Code.

³¹ The Code is an industry code made by the Commission under Part 4 of the ESC Act. SA Water is required to comply with the Code as a condition of its licence under the WI Act.

³² The Code applies to all major retailers, which are those with more than 50,000 connections. SA Water is currently the only major retailer operating in South Australia. However, the Code is also intended to apply to any future retailers that enter the market to compete for mass market customers.

³³ It has a further requirement under section 28(8) of the ESC Act to keep the contents and operation of codes under review to ensure their continued operation and effectiveness.

4 Forms of price regulation

Draft decision

The Commission's draft decision is that:

- ▶ SA Water's drinking water and sewerage retail services will be subject to separate four-year revenue caps, based on the forecast efficient costs of providing those services, that will be fixed subject to:
 - a mechanism that would enable the revenue caps to be adjusted in the subsequent regulatory period where an event beyond the control of SA Water has, or will have, a material impact on SA Water's costs of providing drinking water or sewerage retail services (a 'cost pass-through mechanism')
 - a mechanism that would adjust the revenue caps in the subsequent regulatory period to account for any material differences between forecast and actual drinking water and sewerage revenue earned, due to differences between forecast and actual drinking water sales and sewerage connections (a 'demand variation adjustment mechanism')
 - a mechanism that would reduce the revenue caps to reflect 10 percent of revenue earned by SA Water for the provision of non-regulated services that utilise drinking water or sewerage infrastructure (a 'shared infrastructure revenue adjustment mechanism')
 - a mechanism that would allow the revenue caps to be adjusted during the regulatory period to include prudent and efficient expenditure on predetermined projects that were not incorporated into the revenue caps due to timing or cost uncertainties, but where those uncertainties are resolved during the regulatory period (a 'contingent project mechanism')
 - a mechanism that would adjust the revenue caps each financial year to account for changes in specified parameters of the regulatory rate of return (an 'annual revenue update mechanism')
- ▶ The sale and supply of recycled water and 'excluded' retail services, which include the provision of connection services and trade waste services, will continue to be regulated under a pricing principles approach, applying relevant NWI Pricing Principles
- ▶ The Commission will continue to monitor SA Water's compliance with the pricing principles for recycled water and excluded services, as part of the Commission's general compliance framework. Since 2013, there has been only one formal customer dispute about the price of excluded services and there does not appear to be a need to continue to apply a separate Industry Rule (Water Industry Rule No. 1) prescribing the process for the resolution of any such disputes.

4.1 Introduction

As discussed in Chapter 3, the ESC Act *and* WI Act authorise the Commission to make price determinations in respect of SA Water's retail services.

Currently, the Commission regulates SA Water's retail services through two separate price determinations:

- ▶ Drinking water and sewerage retail services ('direct control' services) are regulated through a price determination that establishes separate revenue caps for each service. The revenue caps fix SA Water's revenues for four years subject to mechanisms that allow for the pass through of certain unforeseen costs and revenue changes due to variations in demand. This approach is consistent with the requirements of the Pricing Orders that apply to the current regulatory determination.³⁴
- ▶ Retail services that are not drinking water and sewerage retail services, such as the supply of recycled water, the provision of new connections and trade waste services, are regulated under a price determination that establishes principles that SA Water must take into account when setting prices for those services. Those principles are based on the NWI Pricing Principles, consistent with the requirements of the current Pricing Orders.

4.1.1 The different forms of price regulation reflect the nature of the retail services and their demand

Drinking water and sewerage services involve the provision of infrastructure that is shared between customers, such as reservoirs, treatment plants and pipelines. All customers pay the same price for those services, irrespective of location, under the South Australian Government's state-wide pricing policy.³⁵ The revenue caps for drinking water and sewerage services also apply on a state-wide basis.

Recycled water and excluded services are provided to specific customers who request those services. The costs of those services can be more easily attributed to the customers that benefit from the service than drinking water and sewerage services which are provided to consumer at large. The pricing principles approach provides SA Water with the flexibility to set prices for recycled water and excluded services based on the efficient cost of each service, based on a beneficiary-pays approach. In setting those prices, it is required to demonstrate that the prices comply with the relevant pricing principles.

Revenue from recycled water and excluded services is small relative to revenue from drinking water and sewerage services, comprising only approximately three percent of SA Water's total retail services revenue (around \$40 million per year).

While the price of recycled water is regulated under a pricing principles approach, the cost to SA Water of providing recycled water schemes (the costs of the relevant infrastructure) is recovered through direct control revenues, where SA Water can demonstrate that the particular scheme:

- ▶ is a prudent and efficient means of addressing environmental (sewage discharge) obligations and forms part of a least cost mix of diversified water sources needed to achieve required security of supply, or
- ▶ is driven by the need to trial new technologies, with the aim of achieving more efficient ways to deliver a secure supply of water.

³⁴ The Pricing Orders for SAW RD16 are available at <https://www.treasury.sa.gov.au/economy-taxes-and-rebates/economic-regulation>

³⁵ SA Water must apply state-wide pricing under a direction pursuant to section 6 of the Public Corporations Act 1993. The direction is available at https://governmentgazette.sa.gov.au/sites/default/files/public/documents/gazette/2015/July/2015_042.pdf (refer page 3365)

SA Water’s existing recycled water schemes primarily exist as the least-cost method of sewage disposal and their costs are therefore recovered through sewerage charges. However, to ensure that SA Water does not over-recover the costs of recycled water schemes, any revenues derived directly from the provision of recycled water must be offset against the costs of providing those schemes as recovered through sewerage revenues.

Table 4.1 lists the retail services that are provided by SA Water and provides examples of SA Water’s services that are not retail services and are therefore not regulated by the Commission.

Table 4.1: SA Water’s regulated and unregulated services

Regulated retail services		Unregulated services
Direct control	Recycled Water and other Excluded services	
<ul style="list-style-type: none"> ▶ Sale and supply of drinking water services ▶ Sale and supply of sewerage services 	<ul style="list-style-type: none"> ▶ Sale and supply of recycled water ▶ Standard and non-standard connection services (including developer services) ▶ Trade waste services ▶ Non-domestic hauled waste services ▶ Easement extinguishment and encumbrance services ▶ Hydrant and fire plug services ▶ Meter services ▶ Network analysis and audit services 	<ul style="list-style-type: none"> ▶ Laboratory services that are not retail services ▶ Project management services and consultancy services that are not retail services ▶ Water transportation services provided to third parties ▶ Operation and maintenance of the River Murray lock system and Salt Interception Schemes ▶ Soil and sand testing services ▶ Emergency functional services ▶ Metropolitan floodwaters drainage administration

4.1.2 Four-year revenue caps for drinking water and sewerage services

The current determination (SAW RD16) applies separate four-year revenue caps for drinking water and sewerage services. Those revenue caps apply in aggregate for the four-year period, rather than separate annual revenue caps.

That approach was adopted in SAW RD16 on the basis that it would:

- ▶ avoid the administrative costs of annual pricing compliance assessments, for which SA Water must submit prices to the Commission for checking against the annual revenue caps
- ▶ create greater opportunities for tariff reform, by allowing more flexibility for SA Water to rebalance its tariffs over the four-year period, and
- ▶ ensure that SA Water does not earn excessive revenues over the regulatory period, because revenues in the subsequent regulatory period would be adjusted for any over or under recovery of revenue during the SAW RD16 period.

The SAW RD16 revenue caps for drinking water and sewerage services were based on the forecast efficient costs of providing those services: operating expenditure, regulatory depreciation, return on working capital, return on assets and tax expense. This is the 'cost building blocks' approach to setting revenues.

4.1.2.1 Cost pass-through mechanism

As required under the Pricing Orders for SAW RD16, the current price determination includes a pass-through mechanism that allows maximum revenues to change if there is a change in legal obligation or an extraordinary event, which is exogenous, unavoidable, and materially impacts SA Water's costs of providing drinking water and sewerage services. The determination does not fix a materiality threshold for a pass-through event. Rather, SA Water can propose if an event is material, having regard to the specific circumstances of the event and its financial impact. Any approved pass-through amount (which could be positive or negative) would be passed through to revenues in the following regulatory period.

SA Water did not submit any cost pass-through applications in the current regulatory period.

4.1.2.2 Demand variation adjustment mechanism

The current determination includes a mechanism that allows for the drinking water and sewerage revenue caps to be adjusted to reflect any material difference between forecast and actual drinking water demand and sewerage connections during the SAW RD16 period. Consistent with the requirements of the Pricing Order, it operates on the basis of efficient costs associated with variance in demand. If a material difference in revenue is calculated, 50 percent of that difference is incorporated in the revenue caps to apply in the subsequent regulatory period (as a negative revenue adjustment if there has been over-recovery or positive revenue adjustment if there has been under-recovery). This effectively leads to an equal sharing of demand risk between SA Water and its customers.

The 50 percent sharing ratio provides a balance between the Pricing Order requirement to apply revenue caps (which would allocate demand risk to customers as revenues would be fixed, irrespective of changes in demand) and the Pricing Order requirement to include a mechanism that allows the total revenue cap to vary if there is any over or under recovery of revenue due to variations between actual and forecast water consumption or sewerage connections.

A minimum threshold of one percent of revenue applies under the current mechanism. Where there is a difference of less than one percent between actual and forecast revenue, the mechanism would not operate.

SA Water's RBP states that the one percent threshold is unlikely to be breached, which would not trigger a revenue adjustment under this mechanism.³⁶ The Commission will receive a final demand variation adjustment statement from SA Water prior to the final determination for SAW RD20, providing updated demand information. The Commission's final decision on any demand variation revenue adjustment to carry forward to the SAW RD20 period will take that information into account.

4.1.2.3 Shared infrastructure revenue adjustment mechanism

The current determination includes a mechanism that allows drinking water and sewerage revenues to be adjusted to reflect forecast revenue earned by SA Water for the provision of non-regulated services that utilise drinking water or sewerage regulated assets.

³⁶ SA Water, *RBP*, Appendix D, p. 9.

While drinking water and sewerage assets are funded through drinking water and sewerage revenues, SA Water is able to earn additional revenue where those assets can be utilised for other, unregulated, purposes. For example, SA Water uses regulated assets to provide wholesale water to customers in the Barossa Valley.

The mechanism allows SA Water's drinking water and sewerage customers to share the benefits of those commercial opportunities with SA Water. It deducts 10 percent of any such forecast non-regulated revenues from the relevant drinking water or sewerage revenue caps. Ten percent of revenue was determined as a reasonable estimate of the profit earned by SA Water from those services. SA Water has forecast revenue of approximately \$10 million per year in the SAW RD20 period, which results in a forecast deduction of approximately \$1 million per year under the adjustment mechanism. The adjustment impacts drinking water revenues only, as the relevant assets are for drinking water services.

4.1.3 Regulation of recycled water and excluded retail services

There are two elements to the Commission's current approach of regulating the price of SA Water's recycled water and excluded retail services:

- ▶ setting pricing principles that SA Water must apply when it sets prices for recycled water and excluded services, which is subject to compliance monitoring and reporting, and
- ▶ establishing a dispute resolution process in the event that a customer disputes a charge for recycled water or an excluded service.

4.1.3.1 Pricing requirements for recycled water

SA Water is currently required to publish a pricing schedule and an accompanying 'pricing policy statement', to demonstrate how it has applied the NWI Pricing Principles in determining its prices for recycled water. Further, it is required to provide, at the request of a customer, a copy of these documents. The Commission monitors those prices and can publish information on price changes and SA Water's compliance with the relevant NWI Pricing Principles.

The Commission's current approach to regulation of recycled water services recognises that:

- ▶ SA Water holds market power in the provision of recycled water services and ongoing price regulation is therefore appropriate.
- ▶ Recycled water is generally a substitute for drinking water, its price is constrained by drinking water prices, and this reduces the need for a heavier handed form of price regulation (such as direct price controls).
- ▶ The approach is consistent with the Pricing Orders, including the NWI Pricing Principles, which state that a light-handed form of regulation (included pricing principles) is preferable unless economic efficiency can be enhanced through a heavier-handed approach (see Information Box 4.1).
- ▶ SA Water has been required to publish its recycled water prices and demonstrate that those prices comply with the relevant NWI Pricing Principles. It has complied with those requirements since 2013 and the Commission has received no customer complaints about recycled water prices since that time.

Information Box 4.1: NWI Pricing Principles for Recycled Water and Stormwater Use³⁷

Principle 1: Flexible regulation

Light handed and flexible regulation (including use of pricing principles) is preferable, as it is generally more cost efficient than formal regulation. However, formal regulation (for example, establishing maximum prices and revenue caps to address problems arising from market power) should be employed where it will improve economic efficiency.

Principle 2: Cost allocation

When allocating costs, a beneficiary-pays approach – typically including direct user pay contributions – should be the starting point, with specific costs shared across beneficiaries based on the scheme’s drivers (and other characteristics of the recycled water/stormwater reuse scheme).

Principle 3: Water usage charge

Prices to contain a water usage (that is, volumetric) charge.

Principle 4: Substitutes

Regard to the price of substitutes (potable water and raw water) may be necessary when setting the upper bound of a price band.

Principle 5: Differential pricing

Pricing structures should be able to reflect differentiation in the quality or reliability of water supply.

Principle 6: Integrated water resource planning

Where appropriate, pricing should reflect the role of recycled water as part of an integrated water resource planning system.

Principle 7: Cost recovery

Prices should recover efficient, full direct costs – with system wide incremental costs (adjusted for avoided costs and externalities) as the lower limit, and the lesser of stand-alone costs and willingness to pay as the upper limit. Any full cost recovery gap should be recovered with reference to all beneficiaries of the avoided costs and externalities. Subsidies and Community Service Obligation (CSO) payments should be reviewed periodically and, where appropriate, reduced over time.

Note: Direct costs include any joint/common costs that a scheme imposes, as well as separable capital, operating and administrative costs. This definition of direct costs does not include externalities and avoided costs.

Principle 8: Transparency

Prices should be transparent, understandable to users and published to assist efficient choices.

Principle 9: Gradual approach

Prices should be appropriate for adopting a strategy of ‘gradualism’ to allow for consumer education and time for the community to adapt.

³⁷ *NWI Pricing Principles*, April 2010, p. 16, available at <http://www.environment.gov.au/water/publications/action/pubs/nwi-pricing-principles.pdf>.

Pricing requirements for excluded retail services

As noted above, SA Water provides certain retail services to individual customers, or a distinct class of customers, where they are the direct beneficiaries of those services. These 'excluded services' consist of:

- ▶ standard and non-standard connection services (including developer services³⁸)
- ▶ trade waste services
- ▶ non-domestic hauled waste services
- ▶ easement extinguishment and encumbrance services
- ▶ hydrant and fire plug services
- ▶ meter services, and
- ▶ network analysis and audit services.

The pricing principles that currently apply to excluded services are based on the relevant NWI Pricing Principles, as well as additional principles developed by the Commission (as set out in Information Box 4.2).

The Commission applied that approach for excluded services because:

- ▶ The approach is consistent with the Pricing Orders for SAW RD16, which require the application of the NWI Pricing Principles.
- ▶ SA Water had engaged closely with its customers of excluded services, particularly developers, about its proposed charges. Customers did not raise any concerns with the Commission following that review.
- ▶ The Commission received few queries from SA Water's customers over its charges for excluded services during the previous regulatory period. Where the Commission reviewed SA Water's compliance with the relevant pricing principles for excluded services, it concluded that SA Water had complied with the principles in each case.
- ▶ Despite there being no evidence of SA Water misusing market power, promoting transparency of excluded services charges was still important. The existing pricing principles require price transparency and facilitate customers' understanding of how the charges are calculated and applied.

Information Box 4.2: Pricing principles relevant to SA Water's excluded services

NWI Pricing Principles

Setting developer charges (Principles for Urban Water Tariffs: Principle 8)

Developer charges should reflect the investment in both new and existing assets required to serve a new development and have regard to the manner in which ongoing water usage and service availability charges are set.

Note: Where there are benefits beyond the boundary of the development, the developer charge should have regard to the share of capacity required to serve the development.

³⁸ Developer services are connection and related services provided by SA Water to property developers.

Capping developer charges (Principles for Urban Water Tariffs: Principle 9)

Developer charges should not exceed the costs of serving new developments, which includes investment in both new and existing assets required to serve a new development.

Revenue from developer charges (Principles for Urban Water Tariffs: Principle 10)

To avoid over recovery, revenue from developer charges should be offset against the total revenue requirement, either by excluding or deducting the contributed assets from the RAB, or by offsetting the revenue recovered using other mechanisms.

Cost recovery for new capital expenditure (Principles for Recovery of Capital Expenditure: Principle 1)

For new or replacement assets, charges will be set to achieve full cost recovery of capital expenditures (net of transparent deductions/offsets for contributed assets and developer charges and transparent CSOs) through either:

- ▶ a return of capital (depreciation of the RAB) and return on capital (generally calculated as rate of return on the depreciated RAB), or
- ▶ renewals annuity and a return on capital (calculated as a rate of return on an undepreciated asset base (Optimised Replacement Cost (ORC))).

Differential water charges (Principles for Urban Water Tariffs: Principle 7)

Water charges should be differentiated by the cost of servicing different customers (for example, on the basis of location and service standards) where there are benefits in doing so and where it can be shown that these benefits outweigh the costs of identifying differences and the equity advantages of alternatives.

Note: Differential pricing may be achieved by upfront contributions, including developer charges.

Commission's additional Pricing Principles

Principle 1: Where a service is provided for the sole benefit of the recipient, the beneficiary should pay the full efficient cost of the service, and other consumers should not be required to contribute to the cost of the service.

Principle 2: Where a service is provided to a distinct group of customers (for example, trade waste audits are provided to trade waste customers only), prices to a customer should reflect the incremental cost of supplying the service to that customer, and a reasonable allocation of the fixed costs of providing the service, where relevant.

Principle 3: Prices should reflect the efficient cost of the particular service provided, although in circumstances where the cost of implementing differentiated prices to different customers is likely to outweigh the benefits, non-differentiated prices can be implemented.

Principle 4: SA Water must be able to provide transparent information to customers on how the costs for these services have been calculated, or are to be applied, and must be able to support its position in the event of a dispute.

Industry Rule for resolution of disputes about recycled water and excluded service charges

As the Commission does not directly set prices of recycled water and excluded retail services, there is the potential for disputes over fees and charges across the full range of services (including developer charges) to occur from time to time. The Commission is the dispute resolution body in those cases.

In 2013, the Commission issued Water Industry Rule No. 1 - excluded retail services, pursuant to Part 4 of the ESC Act. This rule provides guidance to assist customers and SA Water on the process for resolving any such disputes, dealing with the following matters:

- ▶ what constitutes a dispute?
- ▶ the Commission's role if a dispute arises, which is to assess whether or not the relevant price accords with the pricing principles
- ▶ information that may be required from SA Water and complainants, and
- ▶ procedures for determination

4.2 What has SA Water proposed?

SA Water has proposed minor changes to the forms of price regulation to apply to direct control services, recycled water services and excluded retail services under SAW RD20.

SA Water has proposed a form of revenue control for drinking water and sewerage services that would fix maximum revenues for each service over four years, using the cost building blocks approach, subject to the following changes:

- ▶ There would be two separate drinking water revenue controls: one that applies to sales (usage) revenue, applying on a dollar per kL basis and another applying to the fixed revenues (from supply charges), applying on a dollar-per-customer basis. This approach would allow drinking water revenue to increase or decrease from that forecast, if growth in usage or customer numbers is different to that forecast. SA Water has acknowledged that this approach may not meet the requirements of the Pricing Order.³⁹
- ▶ A modified demand variation adjustment mechanism, that would allow demand variances and materiality assessments to be calculated with reference to water sales (usage) revenue only, rather than total revenue. Allowable revenues would be adjusted in the 2024-2028 regulatory period by applying a 50 percent sharing ratio to the sales revenue exceeding the one percent materiality threshold (net of costs). Any adjustment would be spread over the 2024-2028 regulatory period.

SA Water has also proposed the continuation of the shared infrastructure revenue adjustment mechanism, the cost pass-through mechanism, and a 'contingent projects' pass-through mechanism. A contingent projects pass-through mechanism would allow SA Water to adjust its revenue caps to accommodate the cost of projects that currently may or may not be required for the 2020-2024 period and/or their costs and benefits cannot be quantified at this point in time with confidence. If the requirement and efficient costs of those projects became known during the regulatory period, SA Water may submit project proposals to the Commission for review, rather than wait for them to be assessed as part of the ex-post capital expenditure review, at the end of the 2020-2024 period.

³⁹ SA Water, *RBP*, Appendix D, p. 10

SA Water's proposal responds to the Commission's guidance that it may be appropriate to include a contingent projects pass-through mechanism in SAW RD20, given uncertainties about certain projects.⁴⁰

SA Water has not proposed any changes to the pricing principles for recycled water and excluded retail services, nor to the process for resolving excluded services disputes.

4.3 Discussion

The Commission's draft decision is to continue setting separate four-year revenue caps for drinking water and sewerage services, subject to the operation of a demand variation adjustment mechanism, shared infrastructure revenue adjustment mechanism and cost pass-through mechanism. It also proposes to introduce two additional revenue control mechanisms: an 'annual revenue update' mechanism and a 'contingent projects' mechanism.

The Commission's draft decision is to continue to regulate the sale and supply of recycled water and excluded retail services under a pricing principles approach with any compliance monitoring and enforcement to be addressed through the Commission's general compliance framework, rather than a separate Water Industry Rule.

Those proposals are explained in the following sections.

4.3.1 Continuation of revenue caps for direct control services

The continuation of four-year revenue caps, to apply separately to drinking water and sewerage services is required under clause 5 of the Pricing Order, as discussed in Chapter 3.

The Pricing Order requires the revenue caps to be applied to total drinking water revenue and total sewerage revenue. SA Water's proposal to introduce two separate drinking water revenue caps applying to sales revenue and fixed revenue does not meet the requirements of the Pricing Order.

SA Water's proposal to apply the revenue caps on a per kL or per customer basis to allow revenues to change in line with growth in usage or customers is also inconsistent with the requirements of the Pricing Order. That approach would constitute an average revenue control rather than a total revenue control. The Pricing Order requires the determination of total revenues, subject to the operation of a demand variation adjustment mechanism, which explicitly addresses how any changes in demand and customer growth should be reflected in the total revenue caps. The Commission has therefore not adopted SA Water's proposal to accommodate customer growth impacts through an average revenue control.

While submissions did not comment directly on the form of revenue control, the Commission proposes to continue to apply total revenue controls with a demand variation adjustment mechanism, which meets the requirements of the Pricing Order. The proposed revenue caps would apply over the four-year regulatory period, rather than as annual revenue caps for each year of the period. This approach would continue to provide SA Water with greater flexibility to manage prices during the regulatory period, than would annual revenue caps.

4.3.1.1 Continuation of the cost building blocks approach

The Pricing Order for SAW RD20 requires revenue caps for drinking water and sewerage services to continue to be determined using the cost building blocks approach.⁴¹ This approach will add the forecast efficient operating expenditure, return on working capital, return on assets, regulatory

⁴⁰ Commission, *Guidance Paper 8*, available at <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20190715-SAWRD20-GuidancePaper8-TreatmentCapitalExpenditure.pdf.aspx?Embed=Y>

⁴¹ The Pricing Order for SAW RD20.

depreciation and tax expense to determine the total efficient costs of providing each service. It will deduct revenue that SA Water receives from other sources that contribute towards those costs, such as CSO payments, to ensure that SA Water does not over recover those efficient costs. Adjustments may also be made to reflect outcomes from the current regulatory period that flow through to the next regulatory period, such as any adjustments under the demand variation adjustment mechanism for SAW RD16.

Figure 4.1 shows the cost building blocks that are reflected in the revenue caps.

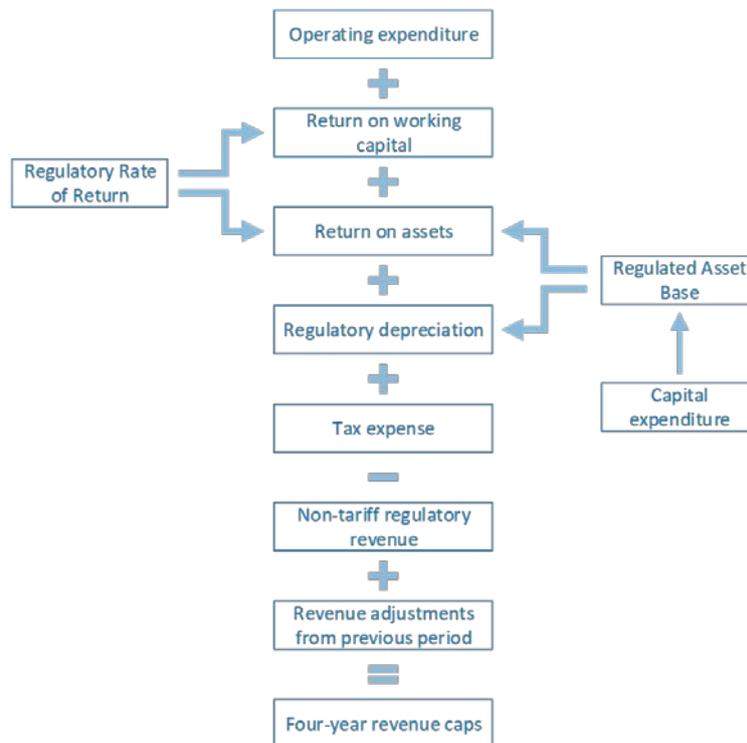
In determining the forecast efficient costs, the Commission excludes any costs associated with services that are not drinking water and sewerage services. In some cases, infrastructure may be used to provide regulated and unregulated services, and those infrastructure costs are apportioned between the services based on relevant cost drivers. SA Water’s cost allocation methodology is consistent with that applied in previous regulatory periods and its application was subject to an independent audit to ensure that cost allocations were correct in preparing its RBP for SAW RD20.

This Draft Determination proposes one major adjustment to the cost allocations proposed by SA Water. It removes all costs associated with the ZCEF program, which is a program for installing solar generation and battery storage at various SA Water sites.

Confidential information provided by SA Water shows that the primary benefit of that program is to earn revenue in the wholesale electricity market through exporting renewable energy, rather than generating electricity in order provide water and sewerage retail services (expected by SA Water to be only a secondary benefit). The Commission proposes to exclude all costs and forecast savings arising from ZCEF, as the focus of the program is the provision of commercial electricity services rather than supporting SA Water’s water retail services.

The Commission’s proposed expenditure adjustments to remove the ZCEF program are discussed in detail in Chapter 7.

Figure 4.1: cost building blocks of drinking water and sewerage services revenue



4.3.1.2 How the revenue cap approach incentivises efficiency

The Commission's proposed revenue cap approach is designed to incentivise efficient behaviour, by encouraging SA Water to incur lower expenditure than that reflected in the maximum revenue caps,⁴² while still achieving its statutory obligations. It aims to achieve that goal in three ways:

1. It sets maximum revenues with regard to the forecast costs that would be incurred by a prudent and efficient entity with the obligations of SA Water, not necessarily SA Water's actual expected costs.
2. It does not adjust those maximum revenues during the course of the regulatory period, subject to the cost pass-through mechanism, contingent project mechanism and annual updates of the rate of return. In general, changes to SA Water's costs relative to the efficient costs underpinning the maximum revenues are not passed through to revenues or prices during that period. This means that SA Water incurs the cost of any overspend and retains the benefit of any underspend relative to the expenditure benchmarks. If it incurs costs during a regulatory period below the forecast costs used to determine revenues, those lower costs will be reflected in revenues in the subsequent regulatory period. This allows customers to benefit from any underspend relative to the efficient expenditure benchmarks. Any costs incurred that are above the efficient amounts used to set revenues are only taken into account if the expenditure is prudent and efficient. Expenditure on an activity is considered by the Commission to be prudent where there is a clear need for that activity. The efficient cost is the lowest possible lifecycle cost of delivering a prudent activity.
3. The Commission monitors, reports and enforces compliance against service obligations to ensure that customer service levels are maintained at the required standards.

The incentive to incur only efficient costs is critical to the regulatory framework and is used by other economic regulators in regulating providers of monopoly services. It is designed to give regulated businesses the incentive to reveal their efficient costs – an incentive that does not exist in the absence of competition.

4.3.2 Demand variation adjustment mechanism

The Commission's draft decision is to continue the operation of the current demand variation adjustment mechanism, consistent with the requirements of the Pricing Order. Submissions did not comment directly on this mechanism.

SA Water's proposal for the mechanism to apply to drinking water sales (usage) revenue, rather than fixed revenue, is acceptable as it is consistent with the requirements of the Pricing Order, which requires the mechanism to address any '*material variation between forecast and actual rates of consumption*' (emphasis added).

This approach will require SA Water to develop a forecast of drinking water revenue that is based on its proposed prices to apply during the next regulatory period. Actual drinking water sales revenue will be compared to that forecast at the end of the next regulatory period to determine if the demand variation adjustment mechanism has been triggered. If, during the period, SA Water changes the balance between fixed and variable drinking water prices, which leads to a variation in sales revenue compared to that forecast, the Commission would exclude that price-driven change from the demand variation adjustment as it was not caused by a variation in demand.

⁴² A revenue cap sets the maximum amount of revenue a regulated firm is allowed to earn over an agreed period.

The sharing ratio of 50 percent under the current mechanism, subject to the operation of a 1 percent threshold, is also considered to be appropriate for SAW RD20, as it balances the requirement for a total revenue cap form of control with the requirement for demand variations to be reflected in revenues.

4.3.3 Shared infrastructure revenue adjustment mechanism

The Commission's draft decision is to accept SA Water's proposal to continue the shared infrastructure revenue adjustment mechanism, with the adjustment factor being calculated as 10 percent of non-regulated revenue. The mechanism provides an administratively simple way of ensuring that SA Water's drinking water and sewerage customers share in the benefits of any non-regulated revenues earned by SA Water from the utilisation of regulated assets.

The current approach involves calculating the adjustment factor at the commencement of the regulatory period, based on forecast non-regulated revenue. The Commission proposes a change to that approach, whereby any difference between actual non-regulated revenue earned from regulated assets and the forecast of that revenue would be determined at the end of the next regulatory period and reflected in the revenue caps to apply in the following regulatory period. This would ensure that the revenue adjustment ultimately reflects actual revenue, not forecast revenue.

The mechanism will not apply to the land or other regulated assets used as part of SA Water's ZCEF initiative. It would be impractical to measure the profit derived from those assets and the costs of administration would likely outweigh the benefits of including those profits.

4.3.4 Cost pass-through mechanism

The Commission proposes to apply a cost pass-through mechanism in the current form, as:

- ▶ it meets the requirements of the Pricing Order
- ▶ it is supported by SA Water in its RBP, and
- ▶ stakeholders have not raised any concerns about it in submissions.

SA Water has stated that it is seeking clarification of the precise value of the materiality threshold that would trigger a cost pass-through.⁴³ As noted earlier, the current determination does not define materiality in that way.

The Commission is concerned that a fixed materiality threshold may be inflexible and lead to inappropriate incentives for cost pass-through applications to be driven by the materiality threshold, rather than efficient costs. The current approach allows SA Water to consider materiality in the context of the relevant event.

This approach may, however, create uncertainty for SA Water as the decision on materiality would be taken on a case-by-case basis by the Commission, having regard to SA Water's, and other stakeholders', submissions.

To provide a balance between the desire for flexibility and certainty, the Commission proposes to set an indicative, non-binding, materiality threshold for cost pass-through events. It expects that a cost pass-through event should have an annual cost (revenue requirement impact) of more than \$10 million. While this amount is based on judgement, it represents approximately one percent of SA Water's annual direct control revenue. The Commission notes that a materiality threshold of one percent of annual revenue is also applied in the National Electricity Rules.

⁴³ SA Water, *RBP*, Appendix D, p.10.

SA Water could apply for a cost pass-through event that has an annual revenue impact of less than one percent, if it considered the event to be material in other aspects. In such cases, SA Water would bear the onus of establishing that the event is sufficiently significant to warrant exceptional treatment in addition to the ordinary pass-through event evidentiary requirements.

The Commission welcomes feedback from stakeholders on the trade-off between flexibility and certainty when defining materiality of cost pass-through events and the proposed indicative threshold.

4.3.5 Annual revenue update mechanism

The Commission's draft decision is to include a mechanism that would allow the total revenue caps to be varied each financial year to reflect changes in market-based parameters of the regulatory rate of return. This mechanism and the Commission's reasons for introducing it are discussed in Chapter 8 of this Draft Determination, as foreshadowed by the Commission in Guidance Paper 9: Annual updates of the rate of return.⁴⁴

4.3.6 Contingent projects mechanism

The Commission's draft decision is to include a 'contingent projects mechanism', which would allow drinking water and sewerage revenue caps to change to include prudent and efficient expenditure on predetermined projects that were not incorporated into the revenue caps due to timing or cost uncertainties, but where those uncertainties are resolved during the regulatory period.

SA Water's RBP supported the introduction of such a mechanism and it provided to the Commission an initial list of projects that may be captured under the mechanism, given their current uncertainty.

The report of the Chair of the CNC also supported the mechanism, insofar as it might apply to the ZCEF program.⁴⁵ The submission from SACOSS also supported certain projects being considered within the contingent projects mechanism.⁴⁶

The Commission proposed a contingent projects mechanism in Guidance Paper 8, although it raised it as a concept only, without any detail as to how the mechanism, if implemented, might operate.⁴⁷

SA Water provided a submission to that Guidance Paper, stating that *'the proposed approach, if effectively implemented, can provide benefit for customers in terms of incentivising efficient investment'*.⁴⁸

However, it sought clarification of various practical issues, such as:

- ▶ the role of stakeholder engagement in any application
- ▶ if it would incorporate operating expenditure
- ▶ how any revenue impacts could be smoothed for customers

⁴⁴ Commission, *Guidance Paper 9*, available at <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20191213-Water-SAWRD20-GuidancePaper9-AnnualResetsRateOfReturn.pdf.aspx?Embed=Y>.

⁴⁵ Report of the Independent Chair of the CNC, p. 47

⁴⁶ SACOSS, *submission to SA Water's RBP*, p. 21 and p. 34, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-SACOSS.pdf.aspx?Embed=Y>.

⁴⁷ Commission, *Guidance Paper 8*.

⁴⁸ SA Water, *submission to Guidance Paper 8*, November 2019, p.1 available at <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20191119-Water-SAWRD20-GuidancePaper8-Submission-SAWater.pdf.aspx?Embed=Y>

- ▶ the criteria for a trigger event, and
- ▶ how any new projects, not known at the commencement of the regulatory period, could be brought within the scope of the mechanism.

The proposed contingent projects mechanism addresses the matters raised by SA Water, in the following manner:

- ▶ It requires SA Water to consult with stakeholders on a contingent project, in the same way that the Commission would expect SA Water to engage with stakeholders on projects that it proposes in its RBP.
- ▶ It incorporates any impacts on operating expenditure arising from the project, either positive or negative.
- ▶ Any approved contingent projects would be incorporated into SA Water's regulated revenues from 1 July following its approval, as part of the annual revenue adjustment process to reflect updated rates of return.
- ▶ The list of contingent projects will be submitted by SA Water to the Commission prior to the commencement of the SAW RD20 period. An initial list has been provided by SA Water and may be updated by SA Water by 31 December 2020, for the Commission's approval. The list should provide information to describe the project, the nature of the uncertainty to be resolved and provide any background documentation to justify the project. If SA Water already has conducted stakeholder consultation about the project prior to the commencement of the next regulatory period, the Commission may take that into account at the time the trigger event occurs. However, SA Water may need to engage further with stakeholders if the trigger event happens well after 1 July 2020 to ensure that its proposal reflects current views.
- ▶ If any new projects arise during the next regulatory that are not included on the pre-determined list of contingent projects, SA Water would not be permitted to apply for that project to be included in revenues during the regulatory period and would need to include it in its regulatory proposals for the following regulatory period (which could then be assessed through the ex-post capital expenditure review). This is intended to incentivise SA Water to conduct robust long-term planning and provide certainty to customers.

The intent of the contingent project mechanism is to ensure that there is a process of consultation and regulatory review, once the probability of the project and its expected costs become known, but before investment is committed.

Allowing for revenue caps to reflect the efficient costs of a contingent project addresses the potential for SA Water to either delay appropriate investment where such investment has not been incorporated in the expenditure forecast underlying the revenue caps, or that, where it does invest, it has been subject to a robust consultation and regulatory review process prior to the investment.

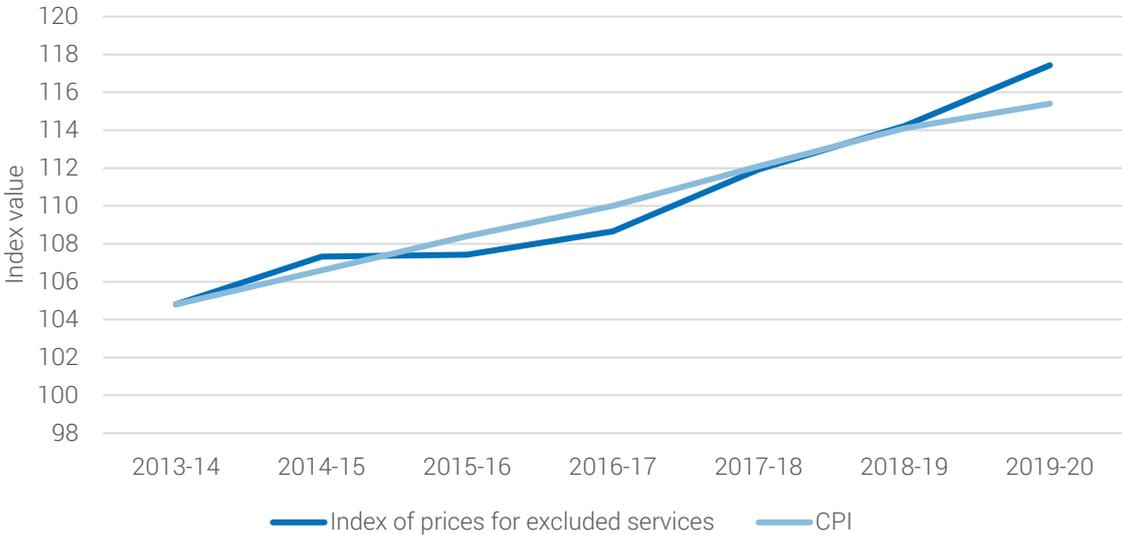
4.3.7 Pricing principles for recycled water and excluded retail services

The Commission proposes to continue to require SA Water to comply with the existing pricing principles for recycled water and excluded retail services. That approach meets the requirements of the Pricing Order for SAW RD20. The principles focus on ensuring that prices reflect efficient costs, which remains an appropriate objective and consistent with the protection of the long-term interests of customers of those services.

While the Commission has discretion to adopt a more prescriptive form of price regulation (for example, revenue caps), which could apply in addition to the pricing principles approach, there is no evidence to suggest that a more prescriptive approach is necessary.

The Commission has examined the trend in excluded service prices since the commencement of its first SA Water regulatory determination in 2013-14. As shown in Figure 4.2, those prices have, on average, moved in line with the Consumer Price Index (CPI).

Figure 4.2: Index of fees and charges for excluded services compared with CPI.



Historically, some excluded service prices were set by SA Water above their efficient costs and some were set below their efficient costs. During the SAW RD16 period, SA Water has continued to transition each price towards full efficient costs, consistent with the requirements of the current regulatory determination and the NWI Pricing Principles. The most significant increase in excluded service prices was the 30 percent increase in trade waste volume and load based prices over a three-year period from 2017 (discussed in section 4.3.7.1 below).

There is no evidence to suggest that SA Water is misusing market power in setting its excluded service prices and that a more direct price control is required. Since 2013, there has been only one formal dispute about an excluded service price and submissions have not argued for a different form of regulation. However, the Commission remains open to new evidence and submissions on this matter.

The Commission also proposes to cease Water Industry Rule No. 1 – Excluded Retail Services, which sets out the procedures and information requirements for resolving any formal disputes about excluded service prices. As that process would involve the Commission establishing whether or not SA Water has complied with the relevant pricing principles, the Commission’s general process for compliance monitoring and enforcement, under Water Industry Guideline 1 – Compliance Systems and Reporting, can be used to make any such decisions. This would remove the potential for inconsistency or confusion between the Industry Rule and the Commission’s general compliance framework.

Recycled water pricing should follow the NWI Pricing Principles for recycled water and stormwater use, which include provisions that beneficiaries of recycled water typically pay the costs but that, where appropriate, pricing should reflect the role of recycled water as part of an integrated water resource planning system.

4.3.7.1 Trade Waste Charges

During the SAW RD16 period, SA Water has continued to transition its excluded service prices towards full efficient costs, consistent with the requirements of the current regulatory determination and the NWI Pricing Principles. That process has involved reducing certain excluded service prices that were set above efficient costs and increasing those that were below efficient costs.

Business SA's submission to SA Water's RBP commented on the 30 percent increase in trade waste volume and load-based prices over a three year period and noted that:

...Business SA has been verbally advised by SA Water that trade-waste customers should expect no more than inflation related increases to the charges associated with treating trade waste. We recognise that trade-waste charges are only determined through adherence to pricing principles, but this assurance should be made explicit by SA Water and incorporated into ESCOSA's 2020-2024 revenue determination.⁴⁹

The Commission will require SA Water to continue to publish its excluded service prices and demonstrate their compliance with the pricing principles. It will review SA Water's proposed trade waste charges, having regard to the matter raised by Business SA.

⁴⁹ Business SA, *submission to SA Water's RBP*, January 2020, p. 8, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-BusinessSA.pdf.aspx?Embed=Y>

5 Water Retail Code – Major Retailers

Draft decision

The Commission has made a draft decision that the existing consumer protections contained in the Code remain appropriate for SAW RD20, subject to the following proposed variations:

- ▶ Replace references to 'tenants' with references to 'consumers' in order to improve consistency with the WI Act and the regulations under that Act.
- ▶ Allow bills, notices and other documents to be issued using each customer's preferred form of communication, with the default remaining hard copy documents sent to the supply address with no specific charge for that service.
- ▶ Allow information about planned interruptions to be provided using a wider range of communication modes (such as SMS, websites, internet apps, and social media), with no changes made to Code requirements about providing information about unplanned interruptions.
- ▶ Require bills, notices and other documents to be in a format that can be easily read and understood by customers, and to require bills, notices and other documents to be provided in alternative formats for customers with specific needs (for example, needs related to disability).
- ▶ Remove the obligation for SA Water to include a comparison of water usage with other similar customers on residential bills (noting that SA Water may still choose to provide appropriate comparative information).
- ▶ Allow meter readings taken by customers to be accepted as actual meter readings where SA Water considers they are accurate, further reducing uncertainty about potential future bill adjustments.
- ▶ Consistent with national energy market rules, reduce the time limitation on SA Water recovering any amount it undercharges (unless the customer is at fault) from 12 months to nine months.

Further, while the Commission has decided not to add specific provisions for customers experiencing family violence to the Code at this time, it strongly urges SA Water to consider how it responds to the needs of these customers, and to coordinate its response by adopting a family violence policy with a scope similar to that required of Victorian water businesses.

5.1 Introduction

5.1.1 Overview of the Code

The Code sets out the behavioural standards and minimum requirements that apply to SA Water for the sale and supply of retail services (water and sewerage) to customers and, in some instances, other consumers. Its obligations include the requirements for SA Water to:

- ▶ have a customer charter that sets out the respective rights and obligations of SA Water and its customers⁵⁰
- ▶ have a standard form customer sale contract, and have any amendments approved by the Commission⁵¹
- ▶ connect customers to its network in accordance with the terms of its connection and augmentation policies, as approved by the Commission
- ▶ minimise supply interruptions, provide information to customers on interruptions and use its best endeavours to meet customer service and network reliability service standards⁵²
- ▶ have enquiry, complaint and dispute resolution procedures that provide for escalation to an independent dispute resolution body⁵³
- ▶ meet minimum billing requirements to ensure that customers receive accurate billing information in a timely manner, and make provision to resolve billing errors, undercharging and overcharging
- ▶ meet minimum requirements around payment terms, methods and managing payment difficulties experienced by customers⁵⁴, and
- ▶ limit disconnections and restrictions for non-payment to specific circumstances, and fulfil certain obligations prior to restricting a customer.

SA Water is required to demonstrate to the Commission that it has adequate systems and processes in place to comply with the requirements of the Code, and to report any material breaches of its obligations as soon as practicable (and non-material breaches within designated timeframes).⁵⁵

The Commission's compliance framework focuses on ensuring that SA Water provides rectification or restitution to customers as a first priority, then identifies the root cause of any material breach of obligations and puts in place systems and processes to minimise future non-compliances. Enforcement action is reserved for ongoing, wilful and/or material non-compliance.⁵⁶

⁵⁰ SA Water, *Customer Charter*, February 2019, available at https://www.sawater.com.au/_data/assets/pdf_file/0005/6773/Customer-Charter.pdf.

⁵¹ SA Water, *Standard Customer Contract*, June 2018, available at https://www.sawater.com.au/_data/assets/pdf_file/0008/6776/Standard-Customer-Contract.pdf

⁵² Service and reliability standards are set out in Schedule 1 of the Code, available at <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-Retail%20Code-MajorRetailersWRC-MR02.pdf.aspx?Embed=Y>.

⁵³ The Energy and Water Ombudsman SA is SA Water's approved independent dispute resolution body.

⁵⁴ SA Water, *Hardship Policy for Residential Customers*, August 2018, available at https://www.sawater.com.au/_data/assets/pdf_file/0005/288977/hardshippolicy_0818.pdf

⁵⁵ Commission, *Water Industry Guideline No 1 – Compliance System and Reporting*, July 2016, available at <https://www.escosa.sa.gov.au/ArticleDocuments/952/20160706-Water-GuidelineNo1-ComplianceSystemsReporting-WG1-04.pdf.aspx?Embed=Y>.

⁵⁶ Commission, *Enforcement Policy*, September 2013, available at https://www.escosa.sa.gov.au/ArticleDocuments/580/130905-EnforcementPolicy_V2-5.pdf.aspx?Embed=Y.

5.1.2 Review process

The consumer protections contained in the body of the Code are being reviewed by the Commission as part of the SAW RD20 process.

SA Water's RBP does not propose any changes to the consumer protections set out in the Code. However, the review process has nevertheless involved wide-ranging stakeholder engagement and research by the Commission, including:

- ▶ a series of workshops with SA Water that focused on obligations regarding communications, billing and complaints, and payment difficulty and hardship
- ▶ consultation with members of the CEP, which was informed by a background briefing paper published by the Commission,⁵⁷ to which one formal submission was made: by SACOSS⁵⁸
- ▶ a review of developments in this area in other jurisdictions
- ▶ analysis of complaints data held by the Commission and case data held by the EWOSA, and
- ▶ consideration of the findings and recommendations of various regulatory, compliance and audit reports.⁵⁹

5.2 Discussion

The Commission has made a draft decision to effect Code amendments. These relate to seven main consumer protection matters, each of which is described in this section.

5.2.1 Replace references to 'tenants' with 'consumers'

The Commission has made a draft decision to replace references to 'tenants' in the Code with references to 'consumers', to improve consistency with the WI Act and regulations under that Act. This affects clause 2.3 (obligation to provide customer charter), clause 8.1 (concessions, rebates or grants), clause 18.11 (historical billing data), and clause 26 (prohibitions on water service flow restrictions).

The Code currently extends some provisions to 'tenants' because the WI Act definition of 'customer' is extended to include 'other consumers' in some prescribed circumstances (as detailed in Regulation 4 of the *Water Industry Regulations 2012*). These prescribed circumstances include dispute resolution, disconnections, and the industry ombudsman scheme.

Clarifying that Code provisions are for 'consumers' rather than 'tenants' will also help avoid ambiguity. For example, the term 'tenants' likely excludes long-term house sitters and potentially could exclude other unique arrangements where people are living at residential premises.

⁵⁷ Commission, *Consumer Experts Panel – background briefing*, June 2019, available at <https://www.escosa.sa.gov.au/ArticleDocuments/11294/20190805-Water-SAWRD20-BackgroundBriefing-ReviewWaterRetailCode-MajorRetailers-CEP.pdf.aspx?Embed=Y>.

⁵⁸ SACOSS, *submission on the CEP Background Briefing*, August 2019, available at <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20190902-Water-SAWRD20-WaterRetailCodeReviewSubmission-SACOSS.pdf.aspx?Embed=Y>.

⁵⁹ The Commission's routine regulatory reports, as well as audits including: Cardno, Audit of SA Water performance indicator data – report prepared for the Essential Services Commission of South Australia, April 2019 and SA Water, Internal audit report – connections management – performed by KPMG, June 2017.

In consultation on this Code review, several stakeholders have expressed the view that the current WI Act definition of 'customer', which is adopted by the Code, could usefully be extended to include other consumers, particularly tenants.⁶⁰ The Commission has documented these issues and, where relevant, referred them to the DEW, which is reviewing the WI Act.⁶¹

In the event that, as a result of the WI Act review, the definition of 'customer' is extended to include some or all other consumers, removing references to 'tenants' in the Code would still serve to improve consistency with the WI legislation.

5.2.2 Increase flexibility of communication

The way that SA Water communicates with its customers is changing. Its use of newer communication channels (such as SMS, mobile applications, websites, email and social media) has expanded since the Commission made the SAW RD16. SA Water uses new channels alongside more traditional channels (such as telephone), and uses some channels less than it did in the past (such as letter, radio, newspaper, and fax).

For this reason, as explained in more detail below, the Commission has made draft decisions to:

- ▶ increase flexibility in how bills, notices and other documents are sent, and
- ▶ increase flexibility in how information is provided about planned interruptions.

5.2.2.1 Flexibility in how bills, notices and other documents are sent

The Commission has made a draft decision to amend the Code so that bills, notices and other documents may be issued using each customer's preferred form of communication, provided that form is reasonable. This affects clause 4.1 (direct written communications) and clause 18.3 (billing address).

The Code requires SA Water to issue bills, notices and other documents to customers.⁶² Possibilities for how customers may receive these communications have expanded beyond paper bills, hand-delivered notices and email (which are provided for in the current Code), to include messages sent by SMS and mobile applications. Technology change is likely to present further options for telecommunication.

The draft Code amendment allows that customers can choose how they receive bills, notices and other documents. It includes a 'safety net' for those customers who cannot receive communications by email or SMS because they do not have internet access or have low levels of digital literacy, or simply choose not to receive communications by these means.

That 'safety net' is the provision that customers will continue to receive hard copies of bills, notices and other documents if they do not nominate an alternative and that those hard copies are to be provided at no charge (unless the Code otherwise provides for a reasonable cost to be charged).

⁶⁰ Including the SACOSS, as noted in its Submission on the CEP Background Briefing, as well as Uniting Communities and the Energy and Water Ombudsman of SA, as noted in SA CEP, SA Water Regulatory Determination 2020: Priorities Report, July 2019, available at <https://www.escosa.sa.gov.au/ArticleDocuments/11294/20190107%20-Water-SAWRD20-ConsumersExpertsPanel-PrioritiesReport.pdf.aspx?Embed=Y>.

⁶¹ Department for Environment and Water, *Review of the WI Act – discussion paper*, April 2019, available at <https://s3-ap-southeast-2.amazonaws.com/assets.yoursay.sa.gov.au/production/2019/04/19/20/45/24/f452bd5a-b547-4987-b3a6-cc9e4ad15321/2018%20Review%20of%20the%20Water%20Industry%20Act%20-%20Discussion%20Paper.pdf>.

⁶² In relation to tenanted properties, the customer is the land owner. Direct written communications required by the Code are with the customer as the land owner unless otherwise specified.

The amendment provides that the customer's preferred form of communication must be used, so long as it is reasonable. This means, for example, that a retailer should not accept a request to use a mode of communication that is prohibitively expensive.

Further, the amendment allows customers to nominate different methods of communication for different supply addresses. For example, to receive bills for their home via email, but to have bills for a rental property sent to a property manager.

The amended clauses require that billing information provided must be readily accessible so as to be useable for subsequent reference (for example, as a PDF document or reusable link). This is a requirement of the *Electronic Communications Act 2000* (South Australia).

5.2.2.2 Flexibility in providing information about planned interruptions

The Commission has made a draft decision to amend the Code to allow SA Water greater flexibility in how it provides planned interruption information. This affects clause 16.3.2 (information about interruptions). Provisions for providing unplanned interruption information will not change.

Clause 16.3.2 currently requires SA Water to provide four business days' notice of planned interruptions, both in writing and *'by radio or newspaper where it is not practicable to send a notice in writing due to the number of customers affected'*.

The amendments to clause 4.1 (direct written communications) discussed in section 5.2.2.1 mean that when SA Water must provide customers written notice of planned interruptions, it will be able to do so using each customer's preferred form of communication (where one has been advised).

The requirement that SA Water provides notice of planned interruptions *'by radio or newspaper where it is not practicable to send a notice in writing due to the number of customers affected'* (contained in part (b) of clause 16.3.2) will be replaced with *'in a manner likely to come to the attention of the public where it is not practicable to send a notice in writing due to the number of customers affected'*. This will allow for use of a range of communication forms, including but not limited to radio, newspaper, web, social media and broadcast SMS (where messages are sent to all customers in an area).

No changes will be made to provisions for providing information about unplanned interruptions. The Code (clause 16.3.1) currently requires SA Water to provide a 24-hour emergency telephone service to enable a customer to ascertain details and the expected duration of any interruption to supply and for the notification of emergencies and faults.

Stakeholders expect SA Water to make full use of all channels available to communicate with its customers when there is an unplanned interruption. There is evidence that SA Water is proactive in this regard: it is trialling use of broadcast SMS to advise customers affected by faults and already uses SMS to update customers who have reported a fault. Further, SA Water posts information about planned and unplanned interruptions online on its searchable map, and uses social media to relay information.

5.2.3 Improve accessibility of communication

The Commission has made a draft decision to amend the Code to introduce a general requirement that SA Water present bills, notices and other documents in a format that can easily be read and understood by customers.

Further, the Commission has made a draft decision to amend the Code to require that SA Water provide bills, notices and other documents in alternative formats (for example, Easy English,⁶³ talking bills or Braille) for customers with specific needs, such as needs related to disability or low levels of literacy.

⁶³ Easy English is a style of writing that uses simple language, focuses on key information, and is supported by images. It helps readers understand information.

These draft decisions affect clause 4.2.1 (accessible communication) and clause 18.7.3 (contents of bills).

This draft decision responds to concerns of SACOSS about the need for accessible communication with SA Water for all customers, including those with specific needs, particularly relating to disability.⁶⁴

These concerns are supported by recent research conducted by JFA Purple Orange and funded by the South Australian Government's Consumer Advocacy and Research Fund (CARF),⁶⁵ which found that many people living with disability have specific needs as water consumers, and made a series of recommendations about how those needs can be better met.

In 2018, SA Water established an initiative, called the Wider World Initiative, to understand the needs of this group, and it has developed 16 project proposals as a result. A list of these project proposals and estimated delivery times has been provided to the Commission.

Generally, where the Commission has evidence that SA Water is responding to the needs of its customers in a timely manner, it will not to introduce further Code obligations. The Wider World initiative is an example of a thoughtful and timely response to customer needs. In this instance, however, broadening the Code requirements for how SA Water provides bills, notices and other documents will support SA Water's work that it has indicated is already underway.

The Commission has considered requiring SA Water to provide a longer minimum notice period ahead of planned water interruptions for customers with particular water needs due to disability. This was a recommendation of recent CARF research.⁶⁶

Discussions with SA Water and disability advocacy group JFA Purple Orange have identified that further analysis of both the costs and practicalities of providing a longer notice period, and the type of notice needed, is needed to develop this recommendation into a proposal. Based on those discussions, the way customers are notified, the support they are offered around unplanned interruptions, as well as planned interruptions, seem to be as important as the length of the notice period.

As part of its Wider World Initiative, SA Water proposes to provide tailored notification and support to customers with particular water needs due to disability. It sees the first step in doing so as identifying customers with critical needs in its Customer Records Management (CRM) system. Upgrades to the CRM are needed for this purpose. This would enable the particular needs of customers to be recorded. At the same time, work is planned on scoping the costs and practicalities of delivering extra support.

The Commission agrees that identifying critical needs in the CRM is an important foundation for providing necessary support around interruptions. Further, the Commission's view is that SA Water should make it simple and easy for customers to nominate their needs. That is, for customers to be able to self-identify that they have critical water needs as the result of a disability. Medical documentation should not be required.

⁶⁴ As noted in by the SACOSS in the SA CEP, SA Water Regulatory Determination 2020: Priorities Report, and in its Submission on the CEP Background Briefing.

⁶⁵ JFA Purple Orange, *Water Consumers Research Project*, June 2017, available at https://www.purpleorange.org.au/application/files/6215/2809/3035/JFA_Purple_Orange_Water_Consumers_Research_Report_Final_Version.pdf, JFA Purple Orange, *Water Consumers Research Project 2 – High water needs of people living with disability and their families in South Australia*, August 2019, available at https://www.purpleorange.org.au/application/files/6215/6706/5119/Water-Consumers-Report_accessible.pdf.

⁶⁶ JFA Purple Orange, *Water Consumers Research Project 2 – High water needs of people living with disability and their families in South Australia*, p. 24.

SA Water should clearly identify this function in its business case for upgrading its CRM, and resubmit that business case, so its merits may be considered as part of SAW RD20 regulatory determination. If an acceptable business case is made, the Commission would expect that the critical needs of customers with disability would be able to be registered in the CRM by 2022, as indicated documentation of the Wider World initiative.

Further, the Commission expects that SA Water would develop a suitable program of notification and support to meet those needs. On that basis, the Commission has made the draft decision that, at this point in time, there is no need to make a Code requirement to establish a critical care register.

The Commission invites stakeholders to identify any Code provisions that present barriers to accessible communication, or opportunities for further strengthening existing provisions.

5.2.4 Remove comparison with other similar residential customers from bills

The Commission has made the draft decision to remove the requirement for SA Water to include, on residential bills, a comparison of water usage with other similar customers. This affects clause 18.8.1(b) (average daily usage).

SA Water redesigned its residential bills during 2019. A series of focus groups and a survey of 400 customers were used to inform the redesign. That research found that customers engage only briefly with bills, that many customers find the comparison data either too detailed and confusing or not sufficiently tailored, and what customers find most useful is the comparison with their own historical usage.

Based on that research, in October 2019 the Commission provided SA Water with approval to remove this comparison from redesigned residential bills that will be introduced during 2020, and to instead provide the comparison on its website to provide information for those customers that are interested in comparing their usage with the usage of similar customers (for example, to understand a large bill, or think about water efficiency).⁶⁷

SA Water has expressed interest in understanding whether its customers would use an interactive comparison tool. This could enable comparisons of customers in specific groups, such as customers with particular water use needs due to disability (the demand for this is supported by recent CARF research), and allow to additional information to be provided. The Commission supports SA Water investigating whether or not this is of value to customers.

5.2.5 Allow meter readings by customers to be accepted as actual reads

The Commission has made a draft decision to amend the Code to allow meter reads taken by customers to be accepted as actual reads, where SA Water considers them to be accurate. This affects clause 18.4 (basis for bills) and clause 18.5 (actual meter reads).

This change will allow customers to take and submit their own meter reads, though they will be under no obligation to do so. It will remain SA Water's responsibility to ensure regular meter reads occur.

SA Water will continue to have an obligation to use its best endeavours to ensure an actual read is taken every 12 months (as required under clause 18.5.2), although this obligation will be able to be fulfilled either by SA Water taking a reading or by SA Water accepting a read taken by a customer.

⁶⁷ Clause 18.8.3 allows that SA Water may issue a bill without comparisons if approval is provided in writing by the Commission.

These amendments will remove uncertainty about whether future bill adjustments will occur after a customer submits their own meter read. Currently, customers are invited to submit their own meter reads where SA Water cannot access a property to read a water meter. These reads become the basis of estimated bills. Until SA Water obtains access and takes its own meter reading there is uncertainty about whether there will be future bill adjustments.

These amendments offer the potential to reduce the costs of meter reads. For example, SA Water may decide to concentrate on having customers in low-density regional areas (where the cost of meter reading per customer is relatively high) submit their own meter reads. Further, the amendments introduce the possibility that actual readings could be taken by customer proxies, such as property conveyancers or property managers.

A related, although minor, matter of note is that SA Water continues to manage a small number of customers that do not allow access for meter reading over an extended period, which leads to inaccurate billing, and means that SA Water incurs the cost of attempts to arrange access.⁶⁸ These amendments may assist with further reducing that number.

The main risk associated with allowing actual meter reads to be taken by customers is they are taken inaccurately. Where this is the case, SA Water will not recover the correct amount from the customer. This may mean that a customer pays too much, or that costs remain with SA Water (and are ultimately borne by other water customers).

To manage this risk, the draft amendments to clause 18.4 include protections for customers and SA Water. They give SA Water:

- ▶ discretion over the form in which a customer reading may be provided (for example, as a photo, or a keyed-in reading)
- ▶ discretion over whether to accept a customer reading if it does not consider it reasonably accurate (for example, if the photo is not of that customer's meter, or the meter display is not clearly visible)
- ▶ responsibility to provide explanation to a customer within five business days if it has decided not to accept a reading
- ▶ responsibility to provide clear information and instructions for customers about how to take a meter reading, and
- ▶ responsibility to set out a process under its standard complaints and dispute resolution procedures to attempt to rectify a disputed meter reading taken by a customer.

SA Water considers it low risk that meter reads taken by customers may be inaccurate, as its practical experience is that the majority of reads submitted by customers (used as the basis for estimated bills) are in line with subsequent reads conducted by SA Water.

However, SA Water plans to mitigate the risk of inaccurate reads by:

- ▶ only accepting reads taken by customers in the form of photos
- ▶ only accepting reads that are consistent with previous consumption at the supply address, and
- ▶ obtaining a physical inspection of each meter at least every two years.

SA Water has undertaken to review these risk mitigation practices if it finds growth in the number of inaccurate customer reads.

⁶⁸ At July 2019, 429 customers had not allowed access for meter reading for more than two years. This number has fallen from 900 at the time of SAW RD16, and from 2,500 at the time of SAW RD13).

Obtaining a physical inspection of each meter at least every two years will allow SA Water to monitor the accuracy of customer meter reads, and assess if the overall number of inaccurate reads is acceptable. However, where it has already accepted a customer read, SA Water will not be able to adjust meter reads or bills on the basis of these physical inspections.

Currently, SA Water is able to recover undercharged amounts where a customer does not allow access to their property for meter reading, without limitation, after it ultimately takes a meter reading (as per clause 21.1). This will continue to be the case. However, following the change described in this section, if a customer that has not allowed access submits their own reading, which SA Water accepts, that actual read date would limit any future recovery of undercharged amounts.

5.2.6 Change the limit on recovering undercharged amounts from 12 months to nine months

Where SA Water makes an error or omission, and undercharges a customer as a result, it may only recover amounts undercharged in the 12 months before the error is discovered.

The Commission has made a draft decision to reduce the time limitation on SA Water recovering any amount it undercharges in these circumstances from 12 months to nine months. The relevant amendments are to clause 21.2 (undercharging) and clause 18.2 (failure to issue a bill).

This amendment was requested by the EWOSA during consultation for this review. EWOSA noted that customers may find it difficult to pay undercharged amounts when they are later recovered, and that a nine-month limitation is applied in the National Energy Retail Rules.⁶⁹

As there is no evidence to support either the nine or 12-month period, other than the experience and advice of EWOSA, the Commission seeks views from stakeholders on the reasonableness of its draft decision to reduce the time limitation to nine months.

In considering an appropriate timeframe, it is relevant to consider that EWOSA has advised the number of cases relating to undercharging it handles is small, and also that SA Water needs to be given a reasonable period to identify and remedy charging errors.

5.2.7 Issues where no amendments are proposed

5.2.7.1 Payment difficulty and hardship

Given that the South Australian Government is currently undertaking a review of the WI Act's payment difficulty and hardship provisions, and that the review may give rise to statutory amendments, the Commission will postpone its response to Code-related issues on those matters until that review is finalised.⁷⁰

⁶⁹ Australian Energy Market Commission, *National Energy Retail Rules* Version 19, Rule 30, available at <https://www.aemc.gov.au/sites/default/files/2019-12/NERR%20-%20v19%20-%20Part%202.pdf>.

⁷⁰ Consumer protections dealing with payment difficulty and customer hardship are provided through the Commission's hardship provisions under the Code, which are required under section 25(5) of the WI Act. Section 37 of the WI Act further requires SA Water to have a hardship policy in place which, if different to the Minister's Hardship Policy, is approved by the Commission. In approving SA Water's hardship policy, the Commission seeks advice from the Department of Human Services, which has social policy expertise and responsibility for development of the Minister's Hardship Policy.

Nevertheless, the Commission acknowledges the criticality to stakeholders of the Codes' payment difficulty and hardship provisions.⁷¹ A number of issues with those provisions have been raised and documented, including that:

- ▶ the extent of payment difficulty and financial hardship amongst SA Water customers is unclear, making the extent of the issue and effectiveness of current provisions hard to assess
- ▶ current payment difficulty and hardship provisions exclude residential tenants, and the ambiguity in the WI Act on this matter
- ▶ early assistance of the type the Code requires when a customer faces initial payment difficulty, may not be readily accessible, and
- ▶ access to higher levels of assistance provided in SA Water's hardship program may be improved.

The Commission has documented these issues, and, where relevant, referred them to the DEW, which is conducting the WI Act review.

5.2.7.2 Family violence

The Commission has considered whether to add specific provisions for customers experiencing family violence to the Code. Noting the lack of a specific legislative mandate to make explicit family violence provisions for customers, which does exist interstate, the Commission has decided not to pursue these improvements through changes to the Code at this time.

Under a specific legislative mandate, the Essential Services Commission of Victoria introduced family violence provisions into its Customer Service Codes for Urban and Rural Water Businesses in 2018.⁷² These are summarised in the Information Box 5.1.

Currently, SA Water has some practices that are consistent with the approach required in Victoria. For example, it recognises that family violence can be linked with financial hardship, and will refer relevant customers to family violence assistance services. It also has a policy of providing leave to employees affected by family violence.

However, SA Water does not have an overarching family violence strategy, or provide specific training on how to respond to, or assist in relation to family violence. It does not employ some of the specific mechanisms used interstate (such as 'safety flags' to identify accounts where extra care handling private details may be required). These would be valuable and important improvements, which could be coordinated by adopting a family violence policy with similar features to those employed in Victoria.

The Commission invites stakeholders to identify any Code provisions that present particular barriers to providing assistance to people experiencing family violence.

⁷¹ As noted by Consumers SA, EWOSA, SACOSS, and Uniting Communities in the SA CEP, SA Water Regulatory Determination 2020: Priorities Report, and in submissions to the Commission on SA Water's RBP from EWOSA, SAFRRA and Uniting Communities.

⁷² Essential Services Commission of Victoria, *Customer service code urban water businesses*, August 2018, clause 14, available at <https://www.esc.vic.gov.au/water/codes-and-guidelines/customer-service-codes>, Essential Services Commission of Victoria, *Customer service code rural water businesses*, August 2018, clause 11, available at <https://www.esc.vic.gov.au/water/codes-and-guidelines/customer-service-codes>.

Information Box 5.1: Requirements on family violence in the Victorian Customer Service Codes for Urban and Rural Water Businesses

The Codes require that each water business must have a family violence policy, and the minimum requirements of that policy. They also require that each water business communicate its approach to family violence.

Requirements of family violence policies

The Codes require that each water business has a policy that:

- ▶ Provides that staff have ongoing training to: identify customers affected by family violence; deal appropriately with customers affected by family violence; and, apply the family violence policy and related policies and procedures to customers affected by family violence.
- ▶ Identifies the support the water business will provide to staff affected by family violence, including any training, leave, external referrals and counselling available.
- ▶ Promotes customer safety by providing for the secure handling of information about those who are affected by family violence, including in a manner that maintains confidentiality.
- ▶ Specifies the approach to debt management and recovery where a customer is affected by family violence, including but not limited to: the recovery of debt from customers with joint accounts; and the circumstances in which debt will be suspended or waived.
- ▶ Recognises family violence as a potential cause of payment difficulties and as an eligibility criterion for access to the water business's hardship policy, and address what payment support will apply to customers affected by family violence.
- ▶ Provides for a process that avoids customers having to repeat disclosure of their family violence, and provides for continuity of service.
- ▶ Provides a means for referring customers who may be affected by family violence to specialist family violence services.

Communication requirements

The Codes require that each water business must:

- ▶ Publish on its website, and keep up to date, the assistance and referrals available to customers affected by family violence and how customers may access such assistance.
- ▶ Provide a copy of the family violence policy to a customer upon request.
- ▶ Provide for a periodic review mechanism of the policy and its associated procedures.

The Victorian Codes define family violence using the meaning given in the *Family Violence Protection Act (Victoria) 2008*.

5.2.8 Other proposed amendments

The Commission is proposing several other amendments to the Code, which are summarised in Table 5.1, and are highlighted in the draft revised Code included as Schedule 2 to this draft determination. They include:

- ▶ Revisions to improve consistency with other Acts. For example, clause 27.3.1 (c) has been amended so if a retailer arranges for disconnection, it must meet preconditions set out in the WI Act.
- ▶ Making requirements for a retailer to advise the Commission in writing of matters required by the Code. This is consistent with section 108(3) of the WI Act, which requires the determination must be in writing.
- ▶ Insertion of timeframes where none are currently specified. For example, clause 1.5.1 has been amended to introduce a defined time period of 10 business days for providing the standard customer contract.
- ▶ Clarifications to definitions. Notably, the best endeavours definition has been amended to add 'having regard to the nature, capacity, qualifications and responsibilities of the person owing the obligation'.
- ▶ Improved accessibility of life support equipment registration. Clause 9.1.1 has been amended to allow that consumers (not just customers) can notify SA Water that life support equipment is required, and to allow that a medical professional, carer or family member can provide medical confirmation.
- ▶ Changes to timeframes to reflect changes in Australia Post delivery times since the last Code review in 2016. These include:
 - revising the definition of date of receipt (to seven business days after the retailer sends a document, rather than four)
 - requiring a pay-by-date of not less than 14 business days after the date the retailer sends the bill (rather than 12, clause 18.9.1)
 - providing 10 business days for the reminder notice period (rather than five, clause 18.10.2)
 - requiring a pay-by-date of not less than 14 business days following a customer being informed of a bill review (previously no minimum stipulated, clause 20.3.1 (b)(iii)), and
 - requiring 10 business days following issue of a restriction warning notice before restriction (rather than five, clause 26.1.2).
- ▶ Removal of specific obligations on customers. For example, clause 29.4.1 has been amended to remove obligations for customers to overcome or minimise the effects of force majeure events; clause 9.2.1 has been amended to allow a retailer to 'request' rather than permit a retailer to 'require' notification when life support equipment is no longer required at the supply address.

Table 5.1: Summary of other proposed amendments to the Code

Clause and description of change	Discussion
<p>1.2 Scope</p> <p>1.2.1 – this clause has been amended to explain that the Code regulates provision of retail services to consumers in some specified circumstances.</p>	<p>This reflects the WI Act extension of obligations to consumers in some instances, that is, in relation to disconnections and dispute resolution processes.</p>
<p>1.3 Application</p> <p>1.3.1 (ii) – this clause has been amended so that the entity must be advised in writing that it must comply with the Code.</p>	<p>This is consistent with section 108(3) of the WI Act, which requires the determination must be in writing.</p>
<p>1.5 Obtaining a copy of this industry code or the standard contract</p> <p>1.5.1 – this clause has been amended to introduce a defined time period of 10 business days for providing the standard customer contract.</p>	<p>Currently no time period is defined, rendering the clause ineffective.</p>
<p>1.6 Other Acts, industry codes and guidelines</p> <p>1.6.1 (e) – this clause has been added, to note that the retailer’s obligations include those owed under the customer sales contract.</p>	<p>The purpose of clause 1.6.1 is to explain that this Code is not the limit of retailer’s obligations to consumers. This addition specifically point outs that retailers still have to comply with their obligations under contracts.</p>
<p>1.7 Interpretation</p> <p>1.7.1 (c) – this clause has been changed to reflect SA Water’s status as a statutory corporation.</p> <p>1.7.1 (e) – this clause has been extended to allow a full description of legal instruments.</p> <p>1.7.1 (g) – this clause has been amended to add ‘guardian(s)’ to the meaning of a reference of a person.</p>	<p>-</p>

Clause and description of change	Discussion
<p>1.8 Definitions</p> <p>The following definitions have been amended: consumer, date of receipt and retail service.</p>	-
<p>Consumer: this definition has been added and is as per the WI Act.</p>	As per the WI Act, this definition includes non-residential consumers.
<p>Date of receipt: this definition has been amended to extend to all obligations to provide information under the Code, to allow that a retailer may use subcontractors such as process servers, to make the date of receipt the next day if a retailer leaves a notice after 7pm (it is currently the same day regardless of the time), and to allow for a date of receipt seven business days (instead of the current two) after a retailer posts a notice, or four business days if the retailer uses express post.</p>	The extended periods for receipt when notices are sent by post reflect Australia Post's current standard delivery time of two to six days.
<p>Retail service: this definition has been revised to define a retail service as involving sale and supply, and excludes services as per the WI Act regulations.</p>	This revision is has been made to be consistent with the WI Act.
<p>2.3 Obligation to provide Customer Charter</p> <p>2.3.1(d) – this clause has been amended to require that a retailer must send a copy of its Customer Charter to a consumer (rather than the previous 'tenant brought within the definition of customer by regulations), if one is requested.</p>	The WI Act definition of customer extends to consumers for dispute resolution processes, disconnections and for the purposes of the Ombudsman Scheme. Therefore, obligations to provide a customer charter are connected with both dispute resolution processes and disconnections because a Customer Charter contains information about dispute resolution and disconnection.
<p>2.4 Charging for Customer Charter</p> <p>2.4.1 – this clause has been amended so that a retailer may charge for providing a second copy of a Customer Charter, rather than for a request to provide a second copy of a Customer Charter.</p>	The link to a 'request' has been removed as a customer may make a second request because a retailer did not provide the Customer Charter when first asked. The focus is now on the second 'provision' rather than the second 'request'.
<p>4.2 Accessible communications</p> <p>4.2.1(d) – this clause has been amended so as a retailer must provide a large print version of the Code to a customer unable to read normal sized print if requested, free of charge. Currently, a retailer is able to make a reasonable charge for a large print version of the Code.</p>	There is a cost in preparing and posting large print versions of documents. However, from an equal opportunity perspective, it is reasonable that customers who cannot read normal size print are provided with a large print document free of charge.

Clause and description of change	Discussion
<p>9.1 Registration of life support equipment</p> <p>9.1.1 – this clause has been amended to allow that consumers at residential premises, not just residential customers, can advise they require life support. It has also been amended to allow that a medical professional, carer or family member can provide medical confirmation.</p>	<p>Only allowing residential customers to provide this confirmation poses a risk. For example, landlords may not do this soon enough for tenants or tenants may be unwell and unable to do this themselves. Any consumer may require a carer, family member or medical professional to provide notification for them.</p>
<p>9.1.3 – this clause has been added, which requires that if a retailer is advised that a person requires life support equipment, it must comply with clause 9.1.1 pending receipt of appropriate medical confirmation.</p>	<p>This allows protection for the person requiring life support in the circumstance that arranging documentation cannot be done immediately.</p>
<p>9.2 Cessation of requirement for life support equipment</p> <p>9.2.1 – this clause has been amended to allow a retailer to ‘request’ rather than ‘require’ notification when life support equipment is no longer required at the supply address.</p>	<p>This removes a potentially binding obligation on customers.</p>
<p>10.1 Obligation to inform customers about hardship policy</p> <p>10.1.1 (b) – this clause has been amended to require that a retailer makes available, at its offices, copies of the current version of its hardship policy for customers to take free of charge.</p>	<p>As retailers have to send this policy to customers free of charge (as per 10.1.1 (d)), it is in both parties’ interest that the customer can get a copy at the office immediately and without postage expenses.</p>
<p>13.1 Continuation of a retail service</p> <p>13.1.2 (b) – this clause has been amended to prohibit a retailer from accepting any security deposit, refundable advance or any other form of security from a customer.</p>	<p>Currently, this clause prohibits a retailer from seeking or requiring a security deposit. The meaning of the term ‘seek’ is ambiguous but suggests that the retailer is actively pursuing this in order to provide the service. Prohibiting actually accepting any security deposit, refundable advance or any other form of security provides stronger prevention.</p>
<p>14.1.1 Customer connection policy</p> <p>14.1.1 – this clause has been amended to require that the current version of the connection policy is provided on a retailer’s website, and is made available free of charge.</p>	<p>This creates a continuous obligation and will require a retailer to update websites when there are changes.</p>

Clause and description of change	Discussion
<p>16.1 Minimising interruptions</p> <p>16.1.2 – this clause has been amended to change ‘unplanned interruptions to retail services caused by a burst, leak, blockage or spill’ to ‘unplanned interruptions to retail services’.</p>	<p>This change has the effect extending a retailer’s responsibility to all unplanned interruptions, not only those caused by a ‘burst, leak, blockage or spill’.</p>
<p>16.6 Powers under other Acts</p> <p>16.6.1 – this clause has been amended to update references to relevant Acts.</p>	<p>-</p>
<p>18.1 Frequency of bills</p> <p>18.1.3 – this clause has been added, to allow that a customer who has agreed to a modified billing cycle may revert back to a quarterly billing cycle by providing written notice to the retailer.</p>	<p>-</p>
<p>18.9 Pay-by date</p> <p>18.9.1 – this clause has been revised to require that the pay-by date must be not less than 14 business days after the date the retailer sends the bill, rather than 12 business days after the date the retailer sends the bill.</p>	<p>When a customer is receiving a bill by mail, it will take between two and six days to be received, providing limited time to pay the bill. Given increases in Australia Post delivery times, the minimum number of days between a retailer sending a bill and requiring payment has been increased.</p>
<p>18.7 Contents of bills</p> <p>18.7.3 – this clause has been added to require that bill contents are presented so as to be easily understood. This reiterates the requirement of clause 4.2.1.</p>	<p>This reiteration of clause 4.2.1 is intentional. It addresses bills specifically, and ensures there is no inconsistency between clauses.</p>
<p>18.10 Reminder notices</p> <p>18.10.2 – this clause has been modified so that: reminder notices must contain the words ‘urgent payment required’; allow ten business days for the reminder notice period, rather than five; include information regarding the consequences of non-payment and any fees or charges that may be imposed if payment is not made during the reminder notice period; and, include current contact details for the industry Ombudsman.</p>	<p>‘Urgent payment required’ must be included so it is clear to the customer. Five business days is insufficient, given changes to Australia Post delivery times.</p>

Clause and description of change	Discussion
<p>18.11 Historical billing data</p> <p>18.11.2 and 18.11.3 – these clauses have been amended to require a retailer send the information within ten business days, rather than provide information within ten business days.</p>	<p>The word ‘provide’ requires that the customer actually receive the data in ten business days. Due to postal delivery times this may not be possible.</p>
<p>18.11.4 – this clause has been amended to require a retailer to provide historical billing data in respect to a supply address which the consumer occupies, rather than resides.</p>	<p>The word ‘reside’ limits the application of this clause to consumers at residential addresses. The definition of consumer in section 4 of the WI Act and the extension of the definition of customer to include consumers in WI Regulation 4 (a)-(c) for disconnections, dispute resolution and ombudsman schemes does not limit this term to only residential consumers.</p>
<p>18.11.4 (b) – this clause has been amended to require a consumer has occupied the supply address for the whole of the period for which they are requesting historical billing data.</p>	<p>This prevents a consumer being provided with historical billing data that is not theirs.</p>
<p>19.1 Change in land use</p> <p>19.1.1 – this clause has been amended to clarify that where the land use at the customer’s supply address changes, the retailer may require the customer to transfer to a different tariff as part of its contractual terms. That is, not through authority of the Code.</p>	<p>Retailers need to be able to change tariffs when land use changes, but the Code cannot authorise this – it must be done through contractual terms.</p>
<p>20.3 Procedures following a review of a bill</p> <p>20.3.1 (b) (i) – this clause has been amended to require that a retailer issue a corrected bill, where it makes a correction, and 20.3.1 (b) (iii) – this clause has been amended to require a retailer to allow customers at least 14 business days to pay a bill after it has been reviewed.</p>	<p>This is to ensure that customers are provided with a corrected bill when it has been reviewed, and to allow an amount of time to make payment after a bill review is conducted that is consistent with the time allowed under clause 18.9.1</p>
<p>23.4 Payments in advance</p> <p>23.4.1 – this clause has been amended to prohibit a retailer charging a fee to accept payment in advance.</p>	<p>This is particularly important because customers experiencing financial problems may want to utilise this option.</p>

Clause and description of change	Discussion
<p>23.5 Long absence or illness</p> <p>23.5.1 – this clause has been amended to prohibit a retailer charging a fee to accept payment in advance, or arrange bill redirection, when a customer is unable to make a payment using standard arrangements due to a long absence or illness.</p>	<p>Again, this is particularly important because customers experiencing financial problems may want to utilise this option.</p>
<p>26.1 Restriction warning notices</p> <p>26.1.2 (d) – this clause has been amended to allow ten business days, rather than five business days, following issue of a restriction warning notice, before restriction may occur.</p>	<p>This is to allow that, if a notice is sent by post, a period of five days is not long enough to allow for the notice to be received, given changes to postal delivery times.</p>
<p>26.2 Prohibitions on water service flow restriction</p> <p>26.2.1 (d) – this clause has been amended to allow that a medical professional, carer or family member acting on behalf of a residential customer or consumer can advise a retailer that a person residing at an address is dependent on life support equipment.</p>	<p>This change allows for a person using life support equipment to have a suitable person advise SA Water on their behalf, recognising that because they are dependent on life support equipment they may be unable to do so.</p>
<p>27.3 Permitted disconnections</p> <p>27.3.1 (c) – this clause has been amended so, if a retailer arranges for disconnection where a customer has refused entry for meter reading or other duties, the retailer must ensure that all necessary conditions to authorise the disconnection under the Act or other relevant applicable regulatory instrument have been met.</p>	<p>This change reflects power to disconnect allowed by section 63 of the WI Act has a number of preconditions to authorise disconnection, and that a water entity must restore a connection in specified conditions.</p>
<p>28.1 Retailer and customer obligations</p> <p>28.1.1 (g) – this clause has been amended so as if a retailer arranges for reconnection or removal of a flow restriction, this is subject to any other legislative conditions for reconnection being met.</p>	<p>Under section 63 of the WI Act, reconnection or removal of flow restriction are contingent on it being physically safe for an entity to restore supply.</p>
<p>28.2 Waiver of reconnection fee for hardship customer</p> <p>28.2.1 – this clause has been amended to clarify that a retailer must not charge a restoration fee to a customer experiencing hardship, other than ‘in matters where the disconnection was permitted or authorised under State or Commonwealth legislation and the payment of a reconnection fee is authorised or is a requirement for reconnection’.</p>	<p>This removes a potential inconsistency with section 63 of the WI Act, as someone experiencing hardship could have had supply restricted for refusing access. Without this clarification, this clause applies where the customer is experiencing financial hardship, regardless of the reason for restriction.</p>

Clause and description of change	Discussion
<p>29.4 Obligation to overcome or minimise effects of force majeure events, and 29.5 Settlement of industrial disputes</p> <p>Clauses 29.4.1 and 29.5.1 – these clauses have been amended to remove obligations from customers to remove, overcome or minimise the effects of force majeure events, or settle an industrial dispute that constitutes a force majeure event.</p>	<p>The current obligation on customers is not appropriate because customers are not engaged in the conduct or operations of the water industry.</p>
<p>29.4 Obligation to overcome or minimise effects of force majeure events</p> <p>29.4.1 – this clause has been amended to reflect the revised definition of best endeavours.</p>	
<p>30.3 Obligation to provide customer information to appointed operator</p> <p>30.3.2 – this clause has been added so to allow that if an operator of last resort is appointed, and that operator requests customer records, these must be provided by the retailer in the format that the appointed operator reasonably requires.</p>	<p>This is to allow for the use of records. If, for example, records were provided in hard copy, they could not be reviewed in a reasonable period.</p>

6 Service standards and levels

Draft decision

The Commission's draft decision is that 33 service standards will apply in SAW RD20. The service standards will cover aspects of customer service, service reliability, responsiveness to service issues, service restoration timeliness and the timeliness of connections. In doing so, it proposes to retain the reliability standards that currently apply separately to the Adelaide metropolitan area and the regional area, rather than accepting SA Water's proposal to combine standards across those two areas.

SA Water has proposed, and the Commission has accepted, new customer service standards (to monitor customer satisfaction, first contact resolution, and complaint escalation to EWOSA) and new reliability standards (to monitor water network leakage and the interruptions experienced by the worst served customers).

The Commission is also proposing other new standards, relating to water network interruptions (frequency and duration), improvements to water quality (above the minimum service levels required by SA Health) and sewer overflows to the environment (above the requirements set by the EPA). SA Water's performance in those areas is important to customers and the proposed service standards would enable customer outcomes to be monitored and provide a reference point to assess the impact of SA Water's expenditure in those areas.

The performance targets proposed for all standards are set to achieve no diminution in service levels (as compared to current average levels of performance) and increases only where SA Water has demonstrated customer support and willingness to pay for particular improvements.

6.1 Introduction

6.1.1 Role of service standards

The Code sets out behavioural standards and minimum requirements to be complied with by SA Water in the sale and supply of retail services to its customers. Its obligations include a requirement to use its best endeavours to meet service standards.^{73,74} Code compliance is a condition of SA Water's retail licence.⁷⁵

Service standards describe what customers can expect from SA Water and are intended to reflect the quality and reliability levels valued by customers, now and in the long term. The standards, and the level they are set at, are one influence on the cost of service delivery and so are a crucial reference point in defining 'lowest sustainable prices'.

73 Best endeavours means to act in good faith and use all reasonable efforts, skill and resources.

74 Current service and reliability standards are set out in Schedule 1 of the current Code, available at <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-Retail%20Code-MajorRetailersWRC-MR02.pdf.aspx?Embed=Y>.

75 Clause 6.3 of SA Water's licence requires it to comply with applicable service standards determined by the Commission. SA Water's current and past applicable service standards and performance targets are available at <https://www.escosa.sa.gov.au/industry/water/codes-and-guidelines/service-standards>.

The Commission's expectation is that service standards should:

- ▶ cover the elements of service that matter to customers⁷⁶
- ▶ be understood through genuine and thorough customer engagement
- ▶ not duplicate other regulatory requirements (such as those relating to health, environmental protection, and safety and technical requirements), unless there is evidence that customers value a service level beyond those minimums, and
- ▶ reflect what customers are willing to pay for,⁷⁷ as consideration of the inherent trade-offs between prices and service levels (quality and reliability) is a central concern in establishing service standards.

In competitive markets, these trade-offs are resolved through competition between alternative providers. In the case of SA Water, a monopoly provider operating without competition in the relevant market, service levels need to be carefully considered and established by the Commission, through regulation. It is important for the Commission to consider whether customers are willing to pay for improvements to current service levels, or would prefer lower service levels in exchange for lower prices.

In Guidance Paper 3, the Commission set an expectation that SA Water should in its RBP propose a set of service standards to apply for SAW RD20, after testing those proposals with its customers and in the Negotiation Forum. This expectation was set because SA Water is best placed to understand the aspects of service that matter most to its customers, and service standards ultimately reflect SA Water's commitment to its customers.

6.1.2 SA Water's process

SA Water's process for developing a set of service standards is briefly described in Appendix I of its RBP. It has provided further information to the Commission about that process.

The process began by establishing the broad areas of service valued by customers. This was done by drawing on SA Water's ongoing program of customer research and engagement, and through specific engagement to inform SA Water's corporate strategy and establish the foundation for business planning to develop the RBP, which began in 2017. The process is described in Appendix 3 to Guidance Paper 3, and in the CNC report.⁷⁸ It resulted in identification of five key themes (and several less important themes): safe water, minimal interruptions, price and service stability, water security, and consistent high quality water.

Weaknesses with this foundational work were noted by both the CNC and Cardno. The CNC's view is that SA Water began the process of discerning what its customers value with the main outcomes predetermined. That is, that *'SA Water was seeking confirmation of the outcomes it had already decided were important, rather than ... eliciting what was important to customers, unprompted by preconceptions.'*⁷⁹ Cardno also critiqued the methodology used in this work, and found that the link between the customer engagement and the resulting corporate strategy was not clear in some instances. Cardno concluded *'that there is potential for this lack of clarity to impact on prudent decision making.'*⁸⁰

76 Commission, *Guidance Paper 3*, pp. 7-8, available at <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20181101-Water-SAWRD20-GuidancePaper3-ServiceStandards.pdf.aspx?Embed=Y>.

77 Commission, *Guidance Paper 3*, pp. 7-8.

78 Colmar Brunton, *SA Water: What's important to our customers*, June 2017, provided to the Commission.

79 Report of Independent Chair of the CNC, p. 33.

80 Cardno, *Evaluation of SA Water's asset management system*, March 2020, p. 14, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21462/20200304-Water-SAWRD20-EvaluationSAWaterAssetManagementSystem-Cardno.pdf.aspx?Embed=Y>.

Despite its findings of weaknesses in this foundation work, the CNC thought the key themes emerging from the process were nevertheless likely to be correct, being based on earlier research and SA Water's intuition of what its customers value.⁸¹

This work served to set the general direction for the customer-driven elements of SA Water's business planning, and influenced several of the Strategic Element Measures (SEM) in SA Water's internal corporate strategy (SEM reflect customers values as well as regulatory, technical, and corporate priorities). Guidance Paper 3 noted that SEM may be an appropriate basis for service standards.

SA Water conducted targeted research to design improvements to the service standards, including customer forums focusing on reliability and environmental protection, focus groups and a survey examining telephone responsiveness and customer satisfaction.⁸²

It also conducted research to examine customer support for a range of initiatives to improve services. This included a choice modelling study, which examined customer willingness to pay across 19 service areas⁸³, and a follow-up contingent valuation study, which checked customer willingness to pay for the costs of five initiatives to improve services. (These initiatives were: improvements to metropolitan water quality, improvements to regional water aesthetics, upgrade of non-potable supplies, expansion of the urban recycled water network, and, reduction of sewer overflows to the environment).

SA Water then considered the results of these two strands of research, together with performance results from its internal monitoring and reporting and the practices of interstate water businesses. It produced a draft set of service standards, which SA Water presented to its Customer Working Group in October 2018. This session generated constructive discussion, with participants discussing the proposed service standards in groups and voting on whether they should be adopted.

SA Water made some changes to the draft service standards following the Customer Working Group session, after which it presented the proposed service standards to the CNC in the Negotiation Forum.

Overall, the CNC:

'was impressed with the efforts made by SA Water to discover how it might improve the service provided to customers and, specifically, the pains taken to find ways to make improvements without adding to cost and so to price'.⁸⁴

The CNC's comments and suggestions about each proposed service standard are addressed throughout this Chapter.

6.1.3 SA Water's proposal and the Commission's response

The Commission's draft decision is that 33 service standards will apply in SAW RD20. The proposed service standards are summarised in Table 6.1, which also sets out if each service standard represents a change from the current framework, and relates it to SA Water's proposal. Each draft decision point is explained in detail from section 6.2 onwards.

81 Report of Independent Chair of the CNC, p. 33.

82 SA Water's RBP – Appendix C – Customer Engagement.

83 Commission, *Guidance Paper 3*, Appendix 5.

84 Report of Independent Chair of the CNC, p. 44.

Table 6.1: Summary of draft decision on service standards for SAW RD20

Draft decision	Change to current framework?	Same as SA Water's proposal?
Customer service		
<p>1. Customer satisfaction</p> <p>Customers who are satisfied with recent service experience. Target service level: > 93 percent.</p>	Yes, new service standard	Yes
<p>2. First contact resolution</p> <p>Customer telephone calls resolved at first point of contact. Target service level: > 85 percent.</p>	Yes, new service standard	Yes
<p>3. Telephone responsiveness</p> <p>Fault telephone calls answered within 50 seconds. Target service level:> 85 percent.</p>	Yes, applies only to fault calls, and target service level has been changed from 30 to 50 seconds.	Yes
<p>4. Complaint responsiveness</p> <p>Customer and community complaints responded to in 10 business days. Target service level: > 95 percent.</p>	Yes, applies to all complaints, not only written complaints, with a single target timeframe.	Yes
<p>5. Complaint escalation</p> <p>Customer and community complaints escalated to the Ombudsman following dissatisfaction with SA Water's complaint response. Target service level: < 15 percent.</p>	Yes, new service standard	Yes

Draft decision	Change to current framework?	Same as SA Water's proposal?
Reliability		
<p>6. Water network interruption frequency</p> <p>Number of unplanned interruptions (per 1,000 properties per year). Target level of service: < 153 interruptions per 1,000 properties.</p>	Yes, new service standard	No. Proposed by the Commission.
<p>7. Water network interruption duration</p> <p>Average duration of unplanned water supply interruptions (minutes), across all customers, over one year. Target level of service: < 212 minutes.</p>	Yes, new service standard.	No. Proposed by the Commission.
<p>8. Water service interruption frequency – worst served customers</p> <p>Customers experiencing three or more unplanned water service interruptions in a year. Target service level: < 3.718 per 1,000 customers.</p>	Yes, new service standard	No. SA Water proposed a target service level of 1750 customers per year by 2024.
<p>9. Water leakage performance</p> <p>Amount of water leakage (real losses) from infrastructure in litres per service connection per day. Target service level: < 80.5 litres.</p>	Yes, new service standard	No. SA Water proposed a measure of kilolitres per kilometre of water main per day.
<p>10. Internal sewer overflow frequency – worst served customers</p> <p>Customers experiencing more than one internal sewer overflow event in a five-year period (rolling average). Target service level: < 0.055 per 1,000 customers.</p>	Yes, new service standard	No. SA Water proposed a target service level of 29 customers.
<p>11. Internal sewer overflow frequency – overall incidence</p> <p>Number of internal sewer overflow events experienced by customers in one year. Target service level: < 0.360 overflows per 1,000 customers.</p>	Yes, new service standard	No. SA Water proposed a target service level of 190 overflows.
<p>12. Sewer overflows to the environment</p> <p>Number of environmental incidences caused by wastewater network overflows (five-year rolling average). Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20.</p>	Yes, new service standard	No. Proposed by the Commission to transparently report the outcomes achieved through SA Waters' proposed new investments in this area.

Draft decision	Change to current framework?	Same as SA Water's proposal?
Connections		
<p>13. Connection application responsiveness</p> <p>Network connection applications processed in the target timeframe of 15 business days. Target service level: > 95 percent.</p>	<p>Yes. The current target timeframe is 20 days.</p>	<p>Yes</p>
<p>14. Water network connection timeliness</p> <p>Water network connections constructed in target timeframes of 25 business days (standard connections) or 35 business days (non-standard connections). Target service level: > 95 percent.</p>	<p>No</p>	<p>Yes</p>
<p>15. Sewer network connection timeliness</p> <p>Sewer network connections constructed in target timeframe of 30 business days (standard connections) or 50 business days (non-standard sewer connections). Target service level: > 95 percent.</p>	<p>Yes. The current target service level is 90 percent. The draft decision is to change it to 95 percent because the actual service level has been better than 95 percent for the last three years.</p>	<p>No. SA Water had proposed to keep the current target service level of 90 percent.</p>
Response (attendance)		
<p>16. Water quality responsiveness – metropolitan Adelaide</p> <p>Water quality service requests assessed by field staff that have resolution or plan of action communicated with the customer in target timeframes. Target service level: > 97 percent.</p>	<p>Yes. Target service level has changed from 96 percent to 97 percent to reflect average performance from 2015-16 to 2018-19.</p>	<p>No. SA Water had proposed a single service standard covering both metropolitan Adelaide and regional areas.</p>
<p>17. Water quality responsiveness – regional areas</p> <p>Water quality service requests assessed by field staff that have resolution or plan of action communicated with the customer in target timeframes. Target service level: > 99 percent.</p>	<p>No. Current target service level remains the same at 99 percent.</p>	<p>No, as above.</p>

Draft decision	Change to current framework?	Same as SA Water's proposal?
<p>18. Water event responsiveness – high priority – metropolitan Adelaide</p> <p>Water network break and leak events with the greatest customer or community impact attended by field crews in target timeframes. Target service level: > 99 percent.</p>	<p>No. Current target service level remains the same at 99 percent.</p>	<p>No, as above.</p>
<p>19. Water event responsiveness – high priority – regional areas</p> <p>Water network break and leak events with the greatest customer or community impact attended by field crews in target timeframes. Target service level: > 99 percent.</p>	<p>No. Current target service level remains the same at 99 percent.</p>	<p>No, as above.</p>
<p>20. Water event responsiveness – low priority – metropolitan Adelaide</p> <p>Water break, leak and boundary events with low to medium customer or community impact attended by field crews in target timeframes to resolve an issue. Target service level: > 95 percent.</p>	<p>Yes. New service standard.</p>	<p>No, as above.</p>
<p>21. Water event responsiveness – low priority – regional areas</p> <p>Water break, leak and boundary events with low to medium customer or community impact attended by field crews in target timeframes to resolve an issue. Target service level: > 95 percent.</p>	<p>Yes. New service standard.</p>	<p>No, as above.</p>
<p>22. Sewer event responsiveness – metropolitan Adelaide</p> <p>Sewer events attended by field crews in target timeframes. Target level of service: > 99 percent</p>	<p>No. Current target service level remains the same at 99 percent.</p>	<p>No, as above.</p>
<p>23. Sewer event responsiveness – regional areas</p> <p>Sewer events attended by field crews in target timeframes. Target level of service: > 99 percent</p>	<p>No. Current target service level remains the same at 99 percent.</p>	<p>No, as above.</p>

Draft decision	Change to current framework?	Same as SA Water's proposal?
Restoration		
24. Water service restoration timeliness – metropolitan Adelaide Unplanned water service interruptions resolved in target timeframes. Target service level: > 99 percent.	No. Current target service level remains the same at 99 percent.	No, as above.
25. Water service restoration timeliness – regional areas Unplanned water service interruptions resolved in target timeframes. Target service level: > 99 percent.	No. Current target service level remains the same at 99 percent.	No, as above.
26. Sewerage service restoration timeliness – metropolitan Adelaide Sewerage service events restored in target timeframes. Target level of service: > 95 percent	No. Current target service level remains the same at 95 percent.	No, as above.
27. Sewerage service restoration timeliness – regional areas Sewerage service events restored in target timeframes. Target level of service: > 99 percent	No. Current target service level remains the same at 99 percent.	No, as above.
28. Sewer overflow clean-up timeliness – metropolitan Adelaide Sewer overflow clean-ups resolved in target timeframes. Target level of service: > 98 percent	No. Current target service level remains the same at 98 percent.	No, as above.
29. Sewer overflow clean-up timeliness – regional areas Sewer overflow clean-ups resolved in target timeframes. Target level of service: > 99 percent	No. Current target service level remains the same at 99 percent.	No, as above.

Draft decision	Change to current framework?	Same as SA Water's proposal?
Water aesthetics		
<p>30. Acceptable water aesthetics – metropolitan Adelaide</p> <p>Customers supplied with water with aesthetic parameters that meet Australian Drinking Water Guidelines (ADWG) aesthetic target range for 'acceptable'. Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20.</p>	New service standard.	No. Proposed by the Commission to transparently report on the outcomes achieved through the new investments in this area.
<p>31. Good water aesthetics – metropolitan Adelaide</p> <p>Customers supplied with water with aesthetic parameters inside SA Water's target range for 'good' aesthetics. Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20.</p>	New service standard.	No. Proposed by the Commission to transparently report on the outcomes achieved through the new investments in this area.
<p>32. Acceptable water aesthetics – regional areas</p> <p>Customers supplied with water with aesthetic parameters that meet the ADWG aesthetic target range for 'acceptable'. Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20.</p>	New service standard.	No. Proposed by the Commission to transparently report on the outcomes achieved through the new investments in this area.
<p>33. Good water aesthetics – regional areas</p> <p>Customers supplied with water with aesthetic parameters inside SA Water's target range for 'good' aesthetics. Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20.</p>	New service standard.	No. Proposed by the Commission to transparently report on the outcomes achieved through the new investments in this area.

Ultimately, SA Water proposed 19 service standards in its RBP (Appendix I). Nine of these are new. One current service standard has been removed by SA Water (trade waste application service standard) and other current service standards have been consolidated or refined.

The Commission has accepted SA Water's proposed 19 service standards, with some minor clarifications and amendments. SA Water has proposed, and the Commission has accepted, new customer service standards (to monitor customer satisfaction, first contact resolution, and complaint escalation to EWOSA) and new reliability standards (to monitor water network leakage and the interruptions experienced by the worst served customers). However, the Commission proposes to retain the currently separate Adelaide metropolitan and regional reliability standards, rather than accepting SA Water's proposal to combine these measures to state-wide standards, so that service performance remains more transparent for customers.

The Commission is also proposing seven further standards to address gaps in SA Water's proposal, relating to water network interruptions (frequency and duration), improvements to water quality (above the minimum service levels required by SA Health), and sewer overflows to the environment (above the requirements set by the EPA). Based on the results of SA Water's customer engagement, those performance areas are important to customers.⁸⁵ Introducing service standards in those areas would enable customer outcomes to be monitored and provide a reference point to assess the impact of SA Water's expenditure in those areas.

The performance targets proposed for the standards will maintain SA Water's focus on service delivery in both regional and metropolitan areas, with no diminution in service levels (as compared to current average levels of performance) and increases only where SA Water has demonstrated customer support and willingness to pay for particular improvements.

In making its draft decision, the Commission has considered SA Water's proposal, and the extent to which it is supported by SA Water's customer research and customer engagement. Commission staff attended many of the relevant engagement activities, and have been provided with supporting documentation, and the opportunity to raise queries about the process as it unfolded.

SA Water carefully designed and conducted the customer engagement process, and the activities in each stage. However, it did not clearly document the process of identifying which customer priorities to address using service standards, and the links with expenditure to improve services. For example, there is no documentation that explains how the initial stages of engagement led to identifying the 19 particular areas that were explored in choice modelling.

The study and its results combined areas where SA Water was considering changes to service standards with areas where SA Water was considering other discretionary expenditure. However, customer support for discretionary expenditure was not clearly linked to the service standard proposal. For example, the choice modelling study identified customer willingness to support management of water network leakage and separate standards for minor water network service issues, both of which have been incorporated in the service standard proposal. However, the study also identified customer willingness to support management of sewer overflows to the environment and improved water aesthetics, which have not been incorporated.

The Commission has also considered the comments of the CNC and the Regulators' Working Group, submissions from stakeholders, SA Water's historical performance, and, relevant national and international benchmarks.⁸⁶ The matters raised by stakeholders are discussed further below in respect of each proposal.

⁸⁵ SA Water, *RBP*, Appendix C

⁸⁶ Section 25(1)(b)(ii) of the WI Act requires the Commission to make a licence issued to a water industry entity subject to the condition that it complies with any Code provisions made by the Commission under Part 4 of the ESC Act, as in force from time to time, relating to any minimum standards of service that take into account relevant national benchmarks developed from time to time.

6.2 Discussion

The draft service standards for SAW RD20 are organised around five themes: customer service, reliability, connections, response, and restoration. This section discusses each in turn, beginning with some overarching matters.

6.2.1 Overarching matters

6.2.1.1 Scope of service standards

Service standards should reflect the aspects of service that matter most to customers, balancing those preferences against the costs of providing those service standards. Service standards can be set according to whether customers want service maintained, improved, or would accept a service reduction. Clarity on the target service level is a crucial starting point for any expenditure proposal. Reporting against achievement of those service standards provides transparency for customers, and holds SA Water accountable for its service commitments.

Three aspects of service that are important to SA Water customers, as demonstrated in its customer engagement process, are not included in the service standards proposed by SA Water. These are:

- ▶ overall incidence of water service interruptions
- ▶ water aesthetics, and
- ▶ sewer overflows to the environment.

The Commission's draft determination is to introduce service standards to address these gaps. The proposed service standards are based on the measures and targets included in SA Water's business plans. However, further refinement, as detailed in the following sections, will be needed to finalise the newly proposed service standards, to ensure that the final performance targets can reasonably be delivered within the prudent and efficient expenditure benchmarks set by the Commission (refer Chapter 7 for further discussion on each of the proposed investments).

Overall incidence of water network interruptions

Incidence of water network interruptions, and the impact of interruptions on individual customers, on traffic, and community infrastructure, is a priority for SA Water's customers.

Water network reliability was a strong theme in SA Water's customer engagement, one SA Water explored in detail in two symposiums in late 2017 that focused on service reliability. The importance of water network reliability to customers is also demonstrated in:

- ▶ The CNC report, which noted there is 'no standard relating to the absolute number of water mains failures. Given the public interest in this matter there would seem to be value in exploring possible measures which focus on failures within the control of SA Water and exclude those caused by things such as soil movement'.⁸⁷
- ▶ The EWOSA submission to the RBP, which noted:

'these breaks can have a significant detrimental impact on customers and we support approaches [by SA Water] to restore customers to where they were prior to the incident occurring'.⁸⁸

87 Report of Independent Chair of the CNC, p. 45.

88 Energy and Water Ombudsman SA, *submission to SA Water RBP*, December 2019, p. 4, <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-EWOSA.pdf.aspx?Embed=Y>

- ▶ The Uniting Communities submission to the RBP, which noted that reliable services as a customer priority is missing from the proposed service standards.⁸⁹
- ▶ the 2019 AMCL Water Main Management Independent Review, commissioned by SA Water, which found that SA Water's objectives:

'are not sufficiently driven by total community impact (for example, total customer minutes off supply and road users)', and recommended that 'more demanding measures focused on total community impact will deliver better outcomes to stakeholders'.⁹⁰

SA Water's proposal partly responds to these concerns about water network reliability by including the service standard 'water service interruption frequency – worst served customers', which relates to customers who experience three or more unplanned water service interruptions in a year. However, the proposal does not respond to concern about the overall number of interruptions, or the impact on customers outside of this 'worst-served' group.

Therefore, the Commission has made a draft decision to introduce two further service standards that address the overall incidence of water network interruptions. These are:

- ▶ number of unplanned interruptions (per 1,000 properties), and
- ▶ average duration of unplanned water supply interruptions (minutes).

Number of unplanned interruptions (per 1,000 properties) is a measure used in the Bureau of Meteorology's National Performance Reporting (NPR) reporting (indicator C17). Based on NPR data, in the four years to 30 June 2019, SA Water's average annual performance was 153 interruptions per 1,000 properties. This is the proposed target level of service.

Average duration of unplanned water supply interruptions (minutes) is a measure used in NPR reporting (indicator C15). Based on NPR data, in the four years to 30 June 2019, SA Water's average annual performance was 212 minutes. This is the proposed target level of service.

Water aesthetics

Water aesthetics are important to SA Water's customers, as demonstrated in its customer engagement process, but are not reflected in the service standards proposed by SA Water.

Therefore, the Commission is proposing to introduce the following water aesthetic service standards:

- ▶ customers supplied with water with aesthetic parameters that meet ADWG target values (two standards, one for metropolitan Adelaide and one for regional areas), and
- ▶ customers supplied with water with aesthetic parameters inside SA Water's target range for 'good' aesthetics (two standards, one for metropolitan Adelaide and one for regional areas).

The target levels of service will be expressed as the percentage of customers expected to be supplied with the higher quality water SA Water is planning to deliver through its investments. As the Commission is proposing some adjustments to SA Water's investments in this area, the final performance targets will be set based on further advice from SA Water, so that they match the expected outputs of the expenditure included in the SAW RD20 final determination.

89 Uniting Communities, *submission to SA Water RBP*, February 2020, p. 1, <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200205-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-UnitingCommunities.pdf.aspx?Embed=Y>

90 AMCL, *SA Water Water Main Management Independent Review*, August 2019, pp. 18, 30, available at <https://www.sawater.com.au/community-and-environment/our-water-and-sewerage-systems/our-networks/independent-review>.

Discussion

Customer support for improvements to water aesthetics was extensively explored in SA Water's customer engagement program. Two water aesthetics projects (metropolitan and regional) progressed to the second stage of its willingness to pay research, which found that a majority of customers would accept the cost of improvements.

SA Water used that finding to support expenditure proposals of \$124 million (for metropolitan Adelaide) and \$25 million (for regional areas). The level of expenditure included in this draft determination is \$81 million for metropolitan water aesthetic improvements, and for \$25 million capital expenditure on regional water aesthetic improvements to be listed as a contingent project, see Chapter 7).

These projects aim to improve water aesthetics to improve 'customer perceptions of the overall quality of water', one of SA Water's internal corporate SEM. SA Water intends to monitor the success of this program by measuring customer-reported satisfaction with perception of water quality, setting a target to improve its performance against this measure from the current 70 percent to 75 percent by 2024 and 80 percent by 2028.

However, because water aesthetics are subjective, SA Water has limited control over customer satisfaction with perception of overall quality of water. A further reference point is needed to assess the effectiveness of these expenditure proposals, and for transparency around whether improvements to water aesthetics included in SAW RD20 are being delivered.

SA Water has greater control over the scientifically-measurable properties that define water aesthetics, such as hardness, salinity, and turbidity. Guideline values for these physical and chemical properties are established in the ADWG. Based on the ADWG, SA Water has defined its own guideline values to define 'acceptable' and 'good' water aesthetics. SA Water uses these guideline values as the basis of two technical levels of service, which it pursues to try and affect the 'customer perception of overall quality of water' measure. Those technical levels of service are:

- ▶ the number of customers being supplied outside each aesthetics parameter measure 'good' quality range, and
- ▶ the number of customers being supplied outside each aesthetics parameter measure 'acceptable' quality range.

In its examination of SA Water's metropolitan water quality proposal, Cardno compared SA Water's 'acceptable' and 'good' values against ADWG values, noting that some values were higher than the ADWG.⁹¹ In particular, Cardno noted:

'Customer willingness to pay and risks identified in the Drinking Water Quality Management Plan provide justification for this program. However, we consider that SA Water should revisit its interpretation of the ADWG relating to aesthetic parameters and a scientific basis should be established for the pre and post position for investment at a scheme level. SA Water's intention to undertake focused customer surveys before and after the investment alongside water quality testing is a positive and important for documenting the benefits of this program'.⁹²

The Commission agrees that ADWG aesthetic values are a suitable reference point for measuring water aesthetics.

⁹¹ Cardno, p. C-34 to C-35.

⁹² Cardno, p. 87.

Further refinement

Further refinement will be required to finalise the proposed service standards as part of the SAW RD20 final determination. This will include:

- ▶ obtaining further details about SA Water's current method for processing performance data across numerous aesthetic parameters, and presenting a single measure of customers supplied with water that meets those parameters
- ▶ making adjustments to that method, based on expert advice in this area, if required
- ▶ obtaining historical performance data for each service standard (at a minimum, for the four years to 2018-19), and
- ▶ setting target levels of service, based on the expected outputs of the expenditure included in the SAW RD20 final determination.

Water aesthetics are important to SA Water's customers, as demonstrated in its customer engagement process, but are not reflected in the service standards proposed by SA Water.

Therefore, the Commission has made a draft decision to adopt water aesthetic service standards. These are:

- ▶ customers supplied with water with aesthetic parameters that meet ADWG target values (two standards, one for metropolitan Adelaide and one for regional areas), and
- ▶ customers supplied with water with aesthetic parameters inside SA Water's target range for 'good' aesthetics (two standards, one for metropolitan Adelaide and one for regional areas).

Target levels of service will be expressed as percentage of customers, and will be set based on further advice from SA Water so that they match the expected outputs of the expenditure included in the SAW RD20 final determination.

Sewer overflows to the environment

Customer support for reducing the number of sewer overflows to the environment was explored in SA Water's customer engagement, and was included in the second stage of SA Water's willingness to pay research. That research found that the majority of customers are willing to accept a \$31 million cost of reducing the number of sewer overflows to the environment from 83 to 60.

SA Water has reflected this result in its target for its technical level of service measure for environmental overflows (the number of environmental incidences caused by wastewater network overflows, measured as a five-year rolling average). That target is: fewer than 91 environmental overflows, a 20 percent improvement on current performance. SA Water proposes to achieve this target by expanding its sewer mains cleaning program, as discussed in Chapter 7.

A service standard on this matter would provide a reference point for that expenditure, and provide transparency around whether reductions to sewer overflows to the environment are being delivered.

Therefore, the Commission has made a draft decision to introduce a further service standard that addresses sewer overflows to the environment. The proposed standard is the number of environmental incidents caused by wastewater network overflows (five-year rolling average).

The target level of service within the standard will be fewer than a defined number of environmental overflows, and will be set based on further advice from SA Water so that it matches the expected outputs of the expenditure included in the SAW RD20 final determination. In this instance, it is considered appropriate to express this level of service as an absolute number (rather than per 1,000 customers, as discussed in section 6.2.1.3), as it relates to the overall network rather than the experience of customers.

Further refinement will be required to finalise the proposed service standards as part of the SAW RD20 final determination. This will include obtaining historical performance data from SA Water (at a minimum, for the four years to 2018-19).

Water pressure

A number of stakeholders represented on the CEP raised concerns about water pressure, and the Commission has considered whether a water pressure service standard could be usefully incorporated in the framework. Several other Australian jurisdictions (Victoria, New South Wales, Queensland, and Tasmania) have service standards related to either minimum flow rate or water pressure failures. However, in South Australia, water pressure is a matter addressed by the Technical Regulator. The Technical Regulator requires that SA Water meets, at a minimum, the Water Services Association of Australia standard regarding water pressure. For this reason, the Commission has decided not to require a service standard related to water pressure.

6.2.1.2 Maintaining service for regional customers

Currently, SA Water's service standards include six sets of service standards that apply separately to metropolitan Adelaide and regional customers. Those service standards are:

- ▶ response to water quality complaints
- ▶ attendance at water network breaks, leaks and bursts
- ▶ attendance at sewerage network overflows
- ▶ water network service restorations
- ▶ sewerage network service restorations, and
- ▶ sewerage network overflow clean-ups.

SA Water has proposed that the above service standards should have a consistent state-wide target, rather than continuing with the current approach of having separate performance targets for metropolitan Adelaide and regional customers.

In considering this issue, the Commission needs to balance the potential benefit of fewer service standards overall with the potential drawbacks from this approach.

The main benefit of this proposal is that it reduces the total number of service standards, which the Commission expected SA Water to consider in developing its proposal. Guidance Paper 3 stated that the service standards SA Water proposes should not be too numerous, in order to be understandable to customers. It is also consistent with the Commission's decision to combine service standards in order to achieve this outcome in SAW RD16, where the number of service standards was reduced from 66 down to 18.

However, Guidance Paper 3 also noted that combining service standards can mask matters of detail.⁹³ SA Water's proposal appears to raise three main issues in this regard that need further consideration.

93 Commission, *Guidance Paper 3*, p 5.

First, because of the smaller number of customers in regional areas (28 percent of drinking water customers and 12 percent of sewerage customers) regional performance will not be transparent if performance is measured as an average across the entire customer base.

Second, there is a financial incentive, at least theoretically, for SA Water to reduce levels of service where delivery costs are higher, which will generally be the case in regional areas. Combined service standards introduce a greater risk that degradations in service in regional areas could be offset by an improvement in metropolitan Adelaide, while allowing SA Water to still achieve the state-wide average service level performance target.

Third, there are currently three instances where metropolitan Adelaide customers and regional customers have different target service levels, with regional customers having slightly better service. These instances are:

- ▶ water quality responsiveness (current target timeframes: 96 percent metropolitan and 99 percent regional, proposed: 96 percent)
- ▶ sewerage service restoration timeliness (current target timeframes: 95 percent metropolitan and 99 percent regional, proposed 95 percent), and
- ▶ sewerage overflow clean-up timeliness (current target timeframes: 98 percent metropolitan and 99 percent regional, proposed 98 percent).

An average target service level (for combined service standards) would mean regional customers no longer have these slightly better, target service levels.

In consultation, SA Water presented a draft of its proposed service standards to its Customer Working Group. That group did not raise a concern with the proposal to combine the current services standards into a state-wide target. However, the focus of the discussion was on the importance of providing the same level of service to all customers, regardless of location. SA Water did not explain any of the potential drawbacks outlined above, and it is unclear whether the group understood that this is not currently the case, nor would this outcome be achieved through SA Water's proposal.

Given that the customer engagement process overall found '*strong support for changes that benefit regional South Australia*',⁹⁴ it is questionable that customers would support the combination of service standards had these risks been explained.

Therefore, while the Commission's preference remains to manage the overall number of service standards to assist customers with understanding what they can reasonably expect from SA Water, in this instance, the risks of doing so outweigh the benefits. Accordingly, the Commission's draft decision is to retain the separate service standards for metropolitan Adelaide and regional areas.

6.2.1.3 Expression

Some of SA Water's proposed service standards are expressed using absolute numbers. For example, the number of customers experiencing three or more unplanned water interruptions, the number of customers experiencing more than one internal sewer overflow in five years, and the number of internal sewer overflows experienced by customers in a year. This means that if SA Water's total number of customers change, it will affect performance results. To address this, the Commission has made a draft decision to generally express target service levels as incidence per 1,000 customers, rather than as an absolute number (unless otherwise stated).

94 SA Water, *RBP*, Appendix C, p. 17

6.2.1.4 Reporting thresholds

SA Water's service standards are of a 'best endeavours' nature. This means that if SA Water does not achieve a target service level, but can demonstrate that it applied its best endeavours in attempting to do so, it still satisfies the service standard. The process for demonstrating best endeavours varies depending on the extent a service level is not met.

When a service level target is set as the average of recent historical performance, performance in any individual year may be either a little worse than, or a little better than, that average. Minor short-term variation in performance does not necessarily mean that SA Water's effort to achieve best endeavours has changed.

This can be allowed for using a reporting threshold, where explanation of how SA Water has applied its best endeavours is only required if SA Water misses target service levels by a defined margin.

One way to establish a reporting threshold is to use the 75th percentile of year-to-year variation around mean performance, over the same time period used to establish the target service level (for SA Water, four years). This means that, on average, one in four annual performance values will be beyond the reporting threshold, and require explanation.⁹⁵

Reporting thresholds are practical where performance against the target service level can be variable, as with the proposed reliability service standards. It is less useful where performance is consistent, as with customer service, connections, responsiveness and restoration service standards.

Reliability performance can be variable because there are factors outside SA Water's control that can affect its performance, such as soil movement and climate, and because there can be a time lag between investment and out-turn performance. While reporting thresholds allow for this variation, it is still the Commission's expectation that SA Water understands and manages the impact of these factors.

The Commission has made a draft decision to introduce reporting thresholds for each reliability service standard performance target, set at the 75th percentile of recent performance, as shown in Table 6.2.

To illustrate how reporting thresholds are calculated, and how they apply, average water leakage in the last four years has been: 78 litres per customer connection per day (2018-19), 76 litres per customer connection per day (2017-18), 86 litres per customer connection per day (2016-17) and 82 litres per customer connection per day (2015-16).

Average performance is the mean of these values (80.5 litres per customer connection per day). This is the target service level. Performance at the 75th percentile is 83 litres per customer connection per day. This becomes the reporting threshold. A value (that is, out-turn performance) will be beyond the 75th percentile 25 percent of the time (that is, in one year out of every four). In the last four years, out-turn performance was beyond the performance threshold in one year, 2016-17.

95 The Commission will introduce this measure into its reliability service standard framework for SA Power Networks from 1 July 2020.

Table 6.2: Target levels of service and reporting thresholds for reliability service standards

Service standard and measure	Target service level	Reporting threshold
Water network interruption frequency Number of unplanned interruptions (per 1000 properties)	< 153 interruptions per 1,000 properties	162 interruptions per 1,000 properties
Water network interruption duration Average duration of unplanned water supply interruptions (minutes), across all customers, over one year	< 212 minutes	230 minutes
Water service interruption frequency – worst served customers Customers experiencing three or more unplanned water service interruptions in a year	< 3.718 per 1,000 customers per year	4.058 per 1,000 customers per year
Water leakage performance (Litres per service connection per day)	< 81	83
Internal sewer overflow incidence – worst served customers Customers experiencing more than one internal sewer overflow event in a five year period (rolling average)	< 0.055 per 1,000 customers	0.058 per 1,000 customers
Internal sewer overflow incidence Internal sewer overflow events experienced by customers in a year	< 0.360 overflows per 1,000 customers per year	0.400 overflows per 1,000 customers per year
Sewer overflows to the environment Number of environmental incidences caused by wastewater network overflows (five-year rolling average)	Target level of service: to be developed with SA Water to match expected outputs of final expenditure included in SAW RD20	To be established based on variation in historical performance.

6.2.2 Customer service

SA Water currently has two service standards in this area. They relate to telephone responsiveness (customer calls answered within 30 seconds) and complaint responsiveness (responsiveness to written complaints).

SA Water has proposed substantial changes to its customer service standards. These include three new service standards that focus on the quality of customer service: customer satisfaction, first contact resolution, and complaints handled in-house without escalation to EWOSA.

To introduce these three new 'customer service quality' service standards without increasing cost, SA Water has proposed reducing its telephone responsiveness service level. It has proposed that its telephone responsiveness service standard apply only to fault calls, not to general enquiry or other customer calls. Further, it has proposed changing the time customers may have to wait to have their fault call answered from 30 to 50 seconds.

The Commission has made a draft decision to accept the service standards as proposed by SA Water. The reasons for this draft decision are set out below.

6.2.2.1 Customer satisfaction

SA Water has proposed a 'customer satisfaction' service standard to capture the quality of its communication with customers, and the quality of its customer service systems. SA Water measures and reports on customer satisfaction quarterly. In quarter four of 2018-19, customer satisfaction was 94 percent.⁹⁶

SA Water's proposal responds to the Commission's guidance (in SAW RD16 and in Guidance Paper 3) that SA Water should consider how service standards could have an increased focus on customer satisfaction.⁹⁷ The Commission has made a draft decision to accept the proposal.

The central limitation of this proposed service standard is that customer satisfaction is a qualitative notion and can be difficult to measure. SA Water's proposal responds to this limitation. Underneath the aggregate customer satisfaction measure sits a number of sub-measures (that relate to different reasons for customer contact, channels of contact, and aspects of satisfaction). The methodology employs a robust sample size, a number of survey techniques and frequent surveying, which limits the extent to which methodology design affects results.

SA Water has proposed a target service level of 93 percent. This is approaching 100 percent, which raises the matter of whether it will need to be recalibrated if SA Water wants to pursue further improvements. However, detail in the supporting measures means that SA Water will be able to focus on areas of weaker performance, even if overall performance is very good.

Further, the target service level of 93 percent reflects performance over the last two years, noting that performance has improved from 81 percent at the end of 2016-17. The Commission's usual approach to setting target service levels is to use the average of recent historical performance. However, as SA Water has made substantial changes to improve its customer satisfaction, and proposes maintaining those improvements at no additional cost, it would be unreasonable to set a target service level that reflects 2016-17 performance. The Commission considers 93 percent is an acceptable service level.

There is the potential for SA Water to improve its methodology over time to, for example, align with similar methodologies employed in the utilities sector. If SA Water seeks to change its methodology, care will need to be taken to recalibrate historical performance data. Furthermore, any changes should be undertaken in an open and transparent manner, including customer and stakeholder engagement processes.

6.2.2.2 First contact resolution

SA Water has proposed a 'first contact resolution' service standard, with a target service level of 85 percent of customer calls being resolved at the 'first point of contact' (that is, during the first telephone call). The Commission has made a draft decision to accept the proposal.

96 Customer satisfaction relates satisfaction with experience in asking a question, reporting a fault, or applying for a new connection, as reported to SA Water by customers.

97 Commission, *SA Water Regulatory Determination 2016*, June 2016, section 4.4.4, available at <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>, Commission, Guidance Paper 3, p. 11.

SA Water has proposed this service standard based on findings of customer engagement, namely that customers want to speak with front line staff who are capable of resolving their query without referring them to a different person, and without the customer needing to contact SA Water again. Currently, around 25 percent of calls to SA Water are customers calling to follow up on queries that have already been raised.

To resolve issues on first contact, call centre operators need to spend more time on each call. SA Water reviewed calls to its contact centre made in April 2018, and found that 24 percent of 'repeat' calls could have been avoided had the operator taken more time on the first contact. (Further requirements are additional training and authorisation for call centre operators).

SA Water has proposed a service level of 85 percent for 'first contact resolution'. It has not yet provided the Commission with historical data to establish the current level of service. Based on SA Water's review of calls in April 2018 (described in its business case), 73 percent of calls were resolved on first contact (as 27 percent were repeat callers).

An 85 percent target level of service represents a step-change in customer service. SA Water expects there will be no net impact on workload to deliver this change: staff will need to spend more time on each call, but there will be fewer calls. However, more staff would be required at peak times to ensure SA Water continues to meet its telephone responsiveness service standard of answering calls within 30 seconds. SA Water has proposed amendment of this standard, so that 'first contact resolution' has no net cost impact. This is discussed further in section 6.2.2.3.

The Commission is willing to accept this level of service, noting that in the audit of calls during April 2018, 73 percent were resolved on first contact, and that there was scope for improvement if operators were allowed more time. However, the Commission will seek regular reporting and updates from SA Water on its progress, and review this target level of service if that is required to keep call centre costs at current levels.

6.2.2.3 Telephone responsiveness

The current SA Water telephone responsiveness service standard is that it will respond to 85 percent of all customer telephone calls within 30 seconds.⁹⁸ SA Water consistently meets this target service level.

SA Water has proposed relacing its telephone responsiveness service level by: first, limiting application of the standard to fault calls only (there would be no responsiveness standard for general enquiry or other customer calls); and second, changing the target service level from 30 seconds to 50 seconds.

SA Water has not provided details of the cost savings of this proposal to the Commission. It estimates that they would allow it to introduce its preferred service level for 'first contact resolution' (see section 6.2.2.2).

This proposal is supported by SA Water's customer research which examined how long customers expect to wait to have different types of calls answered.⁹⁹ That research found both residential and business customers would expect to wait up to five minutes to have general enquires answered, and one minute for a response to an urgent fault call. The research recommended answering general enquiries from residential customers within three minutes, from business customers within two minutes, and fault enquiries within one minute.

98 The Commission's Water Industry Guideline No. 2 defines telephone call as a call made to any number identified in the customer enquiries and complaints procedure. SA Water's Customer Enquiry, Complaint and Dispute Resolution Process: identifies numbers for general enquiries, service faults and emergencies, major projects, connection enquiries, the Australian Water Quality Centre, and Dial Before You Dig.

99 Research based on 608 interviews with residential customers and 401 interviews with business customers in June 2018.

SA Water presented findings of this research, and its proposal to extend average waiting times, to its Customer Working Group in October 2018. The Customer Working Group supported a focus on 'first point of contact' resolution of issues, and agreed that waiting times could be longer to allow SA Water to provide that service.¹⁰⁰ The CNC, which was supportive of SA Water's overall service standard proposal, also noted this research and SA Water's response to it.¹⁰¹

The second part of SA Water's proposal, to extend waiting times for fault calls to 50 seconds, is a modest change that is supported by evidence from customer research and customer engagement.

The first part, to remove the telephone responsiveness service standard from other customer calls, carries a risk that waiting times may increase to unacceptable levels. SA Water plans to mitigate this risk by monitoring call answering times, and managing them to maintain customer satisfaction levels (measured by the new service standard). To an extent, it is also mitigated by the new complaint escalation service standard and revised complaint responsiveness service standard (discussed below).

The Commission will manage this risk by requiring regular reporting and updates from SA Water on call waiting times, and the benefit it allows (that is, the impact on 'first contact resolution'). On that basis, the Commission has made a draft decision to accept SA Water's proposal.

6.2.2.4 Complaint responsiveness

The current service standard is that SA Water will respond to 95 percent of written complaints (received by mail, fax, email or other means) within 10 business days if complaints do not require investigation and within 30 business days if investigation is needed.¹⁰² SA Water consistently meets this target service level.

SA Water is proposing to change the target timeframe to ten business days for all complaints, and to extend its complaints responsiveness service standard to apply to all complaints, regardless of whether they are made in writing, by phone, or through another channel.

This is appropriate. Less than half of all complaints to SA Water are made in writing (38 percent in 2017-18).¹⁰³ While around half of all complaints to SA Water require some investigation, SA Water's practice is to provide an interim response within ten days if a matter is complex and further information is required. Therefore, the Commission has made a draft decision to accept SA Water's proposal.

The Commission also notes that SA Water's practice of acknowledging complaints within two business days is important to customers, and that SA Water's 2018 research found that when customers contact SA Water by email or web form, they expect a response within four hours, and when customers contact SA Water by web chat, they expect a response within two minutes. SA Water will need to meet these expectations to maintain customer satisfaction (as discussed above).

6.2.2.5 Complaint escalation

SA Water has proposed a service standard for the proportion of complaints escalated to EWOSA¹⁰⁴ following dissatisfaction with SA Water's attempt to resolve that complaint.

100 SA Water *RBP*, Appendix C, p. 14.

101 Report of Independent Chair of the CNC, p. 45.

102 Commission, *Water Industry Guideline No 2 – regulatory information requirements for major retailers*, July 2016, Glossary, available at <https://www.escosa.sa.gov.au/ArticleDocuments/952/20160706-Water-GuidelineNo2-MajorRetailers-WG2-03.pdf.aspx?Embed=Y>

103 Reporting to the Commission showed that in 2017-18, 678 written complaints and 1763 total complaints were received.

104 SA Water is required by the Commission, under condition 9.2 of its Water Industry Retail Licence, to participate in an industry ombudsman scheme. That industry ombudsman scheme is provided by EWOSA.

SA Water's proposed target level of service is that less than 15 percent of complaints are escalated to EWOSA. On average, from 2015-16 to 2018-19, an average of 15.9 percent of complaints were escalated to EWOSA. In 2018-19, 11.2 percent of complaints made to SA Water were escalated.

This service standard has the potential to encourage SA Water to satisfactorily resolve customer complaints in the first instance, and is supported by EWOSA.¹⁰⁵ The value of this standard could be enhanced with greater alignment between the complaint categories used by SA Water and those used by EWOSA. The Commission has made a draft decision to accept SA Water's proposal.

6.2.3 Reliability

SA Water does not currently have network reliability service standards. It has proposed four new service standards in this area. Two relate to water services, and two to sewer services. Inclusion of service standards that address reliability responds to the advice of the Commission in Guidance Paper 3, and strong support for SA Water to focus on reliability demonstrated in customer engagement.¹⁰⁶

The Commission has made a draft decision to accept the four proposed reliability service standards, with some amendments. First, the target service level for three of the service standards will be set to reflect recent historical performance because SA Water has not demonstrated that customers are willing to pay for an improved target service level. Second, the measure of 'water leakage performance' will be changed to litres per service connection per day to make it more relatable to customers.

The Commission has made a further draft decision to require SA Water to propose two additional reliability service standards: one that relates to overall incidence of water service interruption frequency, and one that relates to sewerage overflows to the environment. The rationale for requiring these further service standards is discussed in section 6.2.1.2.

6.2.3.1 Water service interruption frequency – worst served customers

This proposed service standard relates to the number of customers experiencing three or more unplanned water service interruptions in a year. In the four years to 30 June 2019, there were an average of 2,862 customers in this 'worst served' group, comprised of 1,788 Adelaide metropolitan customers and 1,075 regional customers.

SA Water has proposed a target service level of 1,750 customers by 2024, a 39 percent improvement on current average annual performance.

SA Water's willingness to pay research (the What Matters to You Survey) demonstrated that customers are not willing to pay for the cost of delivering this improvement. This finding was consistent with that of SA Water's research completed in late 2016, which found that 70 percent of metropolitan customers would like SA Water to reduce the number of water breaks and leaks, as long as it did not increase their bill.

In response, SA Water has proposed that it can deliver this target service level for customers by reprioritising, not increasing, expenditure; however, within a total revenue cap, this still represents a relative increase in expenditure to reduce the number of worst served customers.

Therefore, the Commission has made a draft decision to accept this service standard, but to set the target service level to maintain current performance (defined as average annual performance in the four years to 30 June 2019).

105 EWOSA, p. 3.

106 Commission, *Guidance Paper 3*, p. 11.

As discussed in section 6.2.1, customer concern about water network reliability is not limited to the number of worst served customers. Customers are also concerned about the overall incidence of interruptions, and the impact of interruptions on individual customers, roads and traffic, and community infrastructure.

The Commission requires SA Water to revise its proposed expenditure on reticulation water mains asset management, in order to balance maintaining the current service level for worst served customers with other aspects of water network reliability (including the required service standard that relates to overall incidence of water service interruptions).

Average annual performance in the four years to 30 June 2019 was 2,862 customers per year. With expression changed to use occurrences per 1,000 customers as discussed in section 6.2.1.3, this is 3.72 customers per 1,000 customers, per year. The target level of service will be set at fewer than 3.72 customers per 1,000 customers, per year.

6.2.3.2 Water leakage performance

This proposed service standard relates to water leakage from infrastructure, and uses the measure kilolitres per kilometre of water main per day. SA Water has proposed this service standard because its customer engagement demonstrated that customers view leakage from SA Water infrastructure poorly and would value improvement.

The CNC agreed that *'customers are sensitive to the amount of water which leaks from the system and so it is important to have a standard relevant to this concern'*.¹⁰⁷ However, the CNC noted that the proposed measure is *'almost meaningless to customers'*.

Other options for measuring water leakage from infrastructure include:

- ▶ Those used NPR Reporting, which as well as kilolitres per kilometre of water main per day include litres per connection per day, and the infrastructure leakage index.¹⁰⁸
- ▶ Those used in other jurisdictions, including percentage of non-revenue water lost (as in Tasmania), and litres per kilometre of water main per day (as used by **Ofwat**, the economic regulator of the water sector in England and Wales).

As demonstrated in NPR data, leakage from the SA Water network compares well with other Australian water businesses,¹⁰⁹ so SA Water's focus is on leakage in areas where there is either above average use, or supply constraint. For this reason, the CNC recommended regular reporting to the Commission at a greater level of detail (for example, for regions, or particular areas of focus).¹¹⁰

The Commission has made a draft decision to include a water leakage performance service standard, and to use the measure of litres per service connection per day. This is both a measure used in NPR reporting, and more relatable to customers than the proposed measure of per kilometre of water main per day. Based on NPR data, in the four years to 30 June 2019, average annual performance was 80.5 litres per service connection per day. Further, the Commission will require SA Water to report on water leakage during SAW RD20.

107 Report of Independent Chair of the CNC, p. 45.

108 Indicators A9, A10 and A11 in the *National Performance Reporting framework*, see <http://www.bom.gov.au/water/npr/>.

109 See indicators A9, A10 and A11 in the *National Performance Reporting framework*, see <http://www.bom.gov.au/water/npr/>

110 Indicator A10 in the *National Performance Reporting framework*.

6.2.3.3 Internal sewer overflow frequency – worst served customers

This proposed service standard relates to the number of customers experiencing more than one internal sewer overflow in five years, measured as a rolling average. In the four years to 30 June 2019, there were an average of 33 customers in this 'worst served' group.

SA Water's customer engagement showed that internal sewer overflows are the aspect of sewerage service reliability that matters most to customers, although willingness to pay for improvements was not tested.

Therefore, the Commission has made a draft decision to accept this service standard, but to set the target service level to maintain current performance (defined as average annual performance in the four years to 30 June 2019).

Average performance in the four years to 30 June 2019 was 33 customers. With expression changed to use occurrences per 1,000 customers as discussed in section 6.2.1.3, this is 0.055 customers per 1,000 customers. The target level of service will be set at fewer than 0.055 customers per 1,000 customers.

6.2.3.4 Internal sewer overflow incidence

This proposed service standard relates to the number of internal sewer overflows each year. In the four years to 30 June 2019, there was an annual average of 217 internal sewer overflows.

SA Water's customer engagement showed that internal sewer overflows are the aspect of sewerage service reliability that matters most to customers, although willingness to pay for improvements was not tested.

Therefore, the Commission has made a draft decision to accept this service standard, but to set the target service level to maintain current performance (defined as average annual performance in the four years to 30 June 2019). The target service level will be 217 overflows (noting the requirement for SA Water to change expression to use occurrences per 1,000 customers or a percentage, as discussed in section 6.2.1.3).

Average annual performance in the four years to 30 June 2019 was 217 overflows per year. With expression changed to use occurrences per 1000 customers (as discussed in section 6.2.1.3), this is 0.360 overflows per 1000 customers, per year. The target level of service will be set at less than 0.360 overflows per 1000 customers, per year.

6.2.4 Response (attendance)

SA Water currently has six service standards that relate to response (attendance). Two are for response to water quality complaints (metropolitan and regional), two are for attendance at water network breaks, leaks and bursts (metropolitan and regional), and two are for attendance at sewerage network overflows (metropolitan and regional).

SA Water proposes to remove separate service standards for Adelaide metropolitan and regional customers, in favour of service standards that apply to the whole customer base. The Commission's draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2).

SA Water proposes to establish separate service standards for low and high priority water network events. The Commission has made a draft decision to accept that proposal, but to establish metropolitan Adelaide and regional area service standards for low priority events, and for high priority events. This means that in total, SA Water will have eight service standards that relate to response (attendance) in SAW RD20. The reasons for these draft decisions are set out below.

6.2.4.1 Water quality responsiveness

The current service standards are that SA Water will respond to 96 percent of water quality complaints in metropolitan Adelaide, and 99 percent of water quality complaints within regional areas, within target timeframes. The target timeframes are one hour (priority one incidents), two hours (priority two incidents), and 48 hours (priority three incidents).

SA Water’s performance has met target service levels in the four years to 30 June 2019 (average annual performance was 97.2 percent in the metropolitan Adelaide, and 99.5 percent in regional areas).

SA Water has proposed combining the current separate service standards for metropolitan Adelaide and regional areas into one service standard, with a target service level of 96 percent. The Commission’s draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2).

The existing level of service for regional areas (99 percent) will be retained as it reflects recent historical performance across the four years from 2015-16 to 2018-19. The existing level of service for metropolitan Adelaide (96 percent) will be changed to 97 percent to recent historical performance across the four years from 2015-16 to 2018-19.

SA Water has proposed retaining the current target timeframes, but to make changes to the definitions of complaint priorities. These are summarised in Table 6.3 below.

The proposed definition of priority one is broader than the current definition: it captures all complaints that indicate a potential risk to human health. The proposed definition of priority two does not mention human health, and instead emphasises water aesthetics. These definitions better reflect SA Water’s current practice, and the draft decision is to accept these changes in relation to the separate service standards for metropolitan Adelaide and regional areas.

Table 6.3: Proposed priority levels for water quality complaint responsiveness

	Current definition	Proposed definition
Priority 1	Where there is a potential for serious risk to human health Timeframe: 1 hour	Where the request indicates potential risk to human health Timeframe: 1 hour
Priority 2	Where there is the potential for low risk to human health Timeframe: 2 hours	Where the request indicates taste and odour issues or contaminated/dirty water Timeframe: 2 hours
Priority 3	All other cases Timeframe: 48 hours	All other water quality reports, for example milky/cloudy water Timeframe: 48 hours

6.2.4.2 Water event responsiveness – high priority

The current service standards are that SA Water will respond to 99 percent of water network breaks, leaks and bursts in the Adelaide metropolitan area, and 99 percent of water network breaks, leaks and bursts in regional areas, within the required timeframes of one hour (priority one incidents) and five hours (priority two incidents).

SA Water met target service levels in the four years to 30 June 2019 (average annual performance was 98.5 percent in the metropolitan Adelaide, and 99.0 percent in regional areas).

SA Water has proposed combining the current separate service standards for metropolitan Adelaide and regional areas into one service standard. The Commission's draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2). Further, existing levels of service will be retained as they reflect recent historical performance across the four years from 2015-16 to 2018-19.

SA Water has proposed that for SAW RD20, the water network breaks, leaks and bursts captured in the current service standard are known as 'high' priority events, and have a target service level of 99 percent, the same as that for the current water event responsiveness service standard. The Commission's draft decision is to accept this proposal, but to have separate service standards for metropolitan Adelaide and regional areas.

The Commission requires a change to the definition of Priority 1 events, to clarify that Priority 1 events are those that cause 'major or significant' damage. This revision is shown in Table 6.4. Without this clarification, if there is any damage events would be Priority 1, which may capture very minor damage.

6.2.4.3 Water event responsiveness – low priority

SA Water has proposed a new service standard for low priority water network events, such as leaking or noisy meters, and minor issues that have a limited customer or community impact. These events are not captured in the current water event responsiveness service standard, and are not reported to the Commission. 'Low' priority events would be priority three (target timeframe seven days) and priority four events (target timeframe 15 days), as set out in Table 6.4.

Table 6.4: Proposed priority levels for water network events

	Current definition	Proposed definition
Priority 1	A leak or service issue that: results, or may result, in a total loss of supply to a customer; results, or may result in, a major loss of water; causes, or may cause, damage to property or; poses, or may pose, an immediate danger to people or the environment. Timeframe: 1 hour	Water network break and leak events with the greatest customer or community impact. For example, total loss of supply to a customer, major loss of water, events that cause major or significant damage to property, events that pose an immediate danger to people or the environment. Timeframe: 1 hour
Priority 2	Any other burst of service issue. Timeframe: 5 hours	Any other water network break or leak event with potential for high impact to customers or the community. Timeframe: 5 hours
Priority 3	n/a	Water network break, leak and boundary events with low to medium customer or community impact, usually at the boundary, for example, a leaking meter. Timeframe: 7 days
Priority 4	n/a	Water network break, leak and boundary events with low customer or community impact, usually at the boundary, for example, a meter that cannot be located or read, or a noisy meter. Timeframe: 15 days

SA Water has proposed a target service level of 95 percent of low priority events responded to within seven business days (priority three) and 15 business days (priority four). The current level of service is six business days for priority three events and 21 business days for priority four events. SA Water has proposed this improvement at no net cost increase.

SA Water has consulted with customers regarding the definitions and timeframes for priority three and four events. Therefore, the draft decision is to accept addition of the 'water event responsiveness – low priority' service standard, with SA Water's proposed level of service. However, the Commission requires that two service standards are established – one for metropolitan Adelaide, and one for regional areas, so as to be consistent with the overall service standard framework, and for the reasons discussed in section 6.2.1.2). In addition, adding further description and examples to the definition of priority two events would ensure consistent service and reporting.

6.2.4.4 Sewer event responsiveness

The current service standards are that SA Water field crews will attend 99 percent of sewer network overflows in metropolitan Adelaide, and 99 percent of sewer network overflows within regional areas, within the required timeframes of one hour (priority one incidents), two hours (priority two incidents), and four hours (priority three incidents).

SA Water met target service levels in the four years to 30 June 2019 (average annual performance was 98.8 percent in the metropolitan Adelaide, and 99.6 percent in regional areas).

SA Water has proposed combining the current separate service standards for metropolitan and regional areas into one service standard, with a target service level of 99 percent. The Commission's draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2). Further, existing levels of service will be retained as they reflect recent historical performance across the four years from 2015-16 to 2018-19.

SA Water has proposed retaining the current target timeframes. The target timeframes are:

- ▶ Priority 1, where the overflow is inside a customer's building – one hour.
- ▶ Priority 2, where the overflow is outside a building on customer's property – two hours.
- ▶ Priority 3, where the overflow is external to a customer's property – four hours.

The Commission's draft decision accepts this proposal.

6.2.5 Timeframes for restoration

SA Water currently has six service standards in this area. Two are for water network service restoration (metropolitan and regional), two are for sewerage network service restorations (metropolitan and regional), and two are for sewerage network overflow clean-ups (metropolitan and regional). It has proposed to reduce these to three service standards, by aggregating metropolitan and regional service standards. The Commission's draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2). This means that in total, SA Water will have six service standards that relate to restoration in SAW RD20.

SA Water made a further proposal to change the wording of Category 1 interruption in relation to the water service restoration timeliness service standard. This change has not been accepted. These draft decisions are further described below.

6.2.5.1 Water service restoration timeliness

The current service standards are that SA Water will restore 99 percent of unplanned water service interruptions in the Adelaide metropolitan area and regional areas within the required timeframes of five hours (category one incidents), eight hours (category two incidents), and 12 hours (category three incidents).

SA Water's performance was close to target service levels in the four years to 30 June 2019 (average annual performance was 97.8 percent in the Adelaide metropolitan area, and 98.6 percent for regional areas).

SA Water has proposed combining the current separate service standards for metropolitan and regional areas into one service standard, with a target service level of 99 percent. The Commission's draft decision is to retain the current separate standards rather than accept this proposal (as discussed in section 6.2.1.2). The existing level of service for regional areas (99 percent) will be retained as it reflects recent historical performance across the four years from 2015-16 to 2018-19. The existing level of service for metropolitan Adelaide (99 percent) will also be retained. It is close to recent historical performance across the four years from 2015-16 to 2018-19.

SA Water has proposed retaining the current category definitions and target timeframes. The target timeframes are:

- ▶ Category 1, where the interruption could be life threatening or otherwise have serious consequences such as impacting critical needs customers, hospitals, schools, residential care facilities, child care centres, prisons, youth detention facilities or other correctional facilities – 5 hours.
- ▶ Category 2, where the interruption causes a disruption to a customer's business activities – 8 hours.
- ▶ Category 3, all other cases – 12 hours.

The current category definitions and timeframes will be retained. The Commission has decided to add 'prisons, youth detention facilities or other correctional facilities' to the list of examples in the Category 1 definition in the Code's service standard schedule, to align it with the list of examples in the Commission's Water Industry Guideline Number 2, which already includes these facilities.¹¹¹ In practice, for reporting purposes, SA Water prepares a definitive list of customer types considered to be critical needs customers, based on land use codes.

SA Water proposed changing the definition of Category 1 interruptions to be:

*where the interruption ~~could be~~ **is** life threatening or ~~otherwise have~~ **has potentially** serious consequences such as impacting critical needs customers, hospitals, schools, residential care facilities, or child care centres.*

If there is uncertainty about whether an interruption is life threatening or may have serious consequences, SA Water takes a precautionary approach in restoring supply. This is suitably reflected in the current definition. Therefore, the Commission has made a draft decision not to accept this proposed change.

111 Commission, *Water Industry Guideline No 2 – regulatory information requirements for major retailers*.

6.2.5.2 Sewer service restoration timeliness

The current service standards are that SA Water will perform 95 percent of sewerage network service restorations in target timeframes for metropolitan areas, and perform 99 percent in target timeframes for regional areas. The target timeframes are five hours (category one and category two incidents), 12 hours (category three incidents), and 18 hours (category four incidents).

SA Water's performance met target service levels in the four years to 30 June 2019 (average annual performance was 95 percent for the Adelaide metropolitan area, and 99.8 percent for regional areas).

SA Water has proposed combining the current separate service standards for metropolitan and regional areas into one service standard, with a target service level of 95 percent. The Commission's draft decision is that separate service standards will be retained (as further discussed in section 6.2.1.2). Further, existing levels of service will be retained as they reflect recent historical performance across the four years from 2015-16 to 2018-19.

SA Water has proposed retaining the current target timeframes. The target timeframes are:

- ▶ Category 1, where the interruption could be life threatening or otherwise have serious consequences such as impacting critical needs customers, hospitals, schools, residential care facilities, child care centres, prisons, youth detention facilities or other correctional facilities – 5 hours.
- ▶ Category 2, where the interruption causes a disruption to a customer's business activities – 5 hours.
- ▶ Category 3, all other full loss of service events – 12 hours.
- ▶ Category 4, all partial loss events where a customer has a sewerage service but it is draining slowly – 18 hours.

The current target timeframes will be retained. The Commission has decided to add 'prisons, youth detention facilities or other correctional facilities' to the list of examples in the Category 1 definition, as discussed above.

6.2.5.3 Sewer overflow clean-up timeliness

The current service standards are that SA Water will perform 98 percent of sewer overflow clean-ups in target timeframes for metropolitan areas, and perform 99 percent in target timeframes for regional areas. The target timeframes are four hours (category one incidents), six hours (category two incidents), and eight hours (category three incidents).

SA Water's performance was close to the target service level in the Adelaide metropolitan area in the four years to 30 June 2019 (it was 97.3 percent), and met the target service level in regional areas (99.3 percent).

SA Water has proposed combining the current separate service standards for metropolitan and regional areas into one service standard, with a target service level of 98 percent. The Commission's draft decision is that separate service standards will be retained (as further discussed in section 6.2.1.2).

The existing level of service for regional areas (99 percent) will be retained as it reflects recent historical performance across the four years from 2015-16 to 2018-19. The existing level of service for metropolitan Adelaide (98 percent) will also be retained.

SA Water has proposed retaining the current target timeframes. The target timeframes are:

- ▶ Category 1, where a sewer overflows inside a customer's building – 4 hours.
- ▶ Category 2, where a sewer overflows outside a building on a customer's property – 6 hours.
- ▶ Category 3, where a sewer overflows, external to customer's property – 8 hours.

The current target timeframes will be retained.

6.2.6 Connections

SA Water currently has four service standards that relate to connections. It has proposed to remove the trade waste application service standard, and change the target timeframe for connection application responsiveness from 20 to 15 business days. The Commission's draft decision is to accept these proposals.

The Commission has made a further draft decision to change the target service level for sewer network connection timeliness from the proposed 90 percent to 95 percent, to reflect recent historical performance. These draft decisions are further described below.

6.2.6.1 Connection application responsiveness

The current service standard is that SA Water will process 95 percent of network connection applications within a target timeframe of 20 business days. This applies to both water and sewer connections. SA Water exceeded this in 2018-19 (performance was 97 percent) and in 2017-18 (performance was 99 percent).¹¹²

SA Water has proposed changing the target timeframe to 15 days, and amending the target service level to 95 percent. SA Water expects this change will be cost neutral. This proposal aligns with findings from SA Water's customer engagement on connections, which found that surveyors in particular struggled with the length of the connection application process. The Commission's draft decision is to accept this proposal.

6.2.6.2 Water network connection timeliness

The current service standard is that SA Water will construct 95 percent of water network connections within target timeframes of 25 business days (standard installations) or 35 business days (non-standard installations). SA Water achieved this in the four years to 30 June 2019 (average annual performance was 95.8 percent).

SA Water has proposed retaining this service standard, its target timeframes and target service level in its current form. The Commission's draft decision is to accept this proposal.

6.2.6.3 Sewer network connection timeliness

The current service standard is that SA Water will construct 90 percent of sewer network connections within target timeframes of 30 business days (standard installations) or 50 business days (non-standard installations). SA Water exceeded this in the four years to 30 June 2019 (average annual performance was 96.1 percent). In each of the last three years, performance was 98 percent.

SA Water has proposed retaining this service standard, its target timeframes and target service level in its current form. The Commission's draft decision is to accept the proposal to retain the service standard and its target timeframes, but to set the target service level at 95 percent, to reflect recent historical performance.

112 Due to data integrity issues at SA Water, data are not available for 2016-17 or 2015-16.

6.2.6.4 Trade waste application responsiveness

The current service standard is that SA Water will process 99 percent of trade waste applications within 10 business days. SA Water has exceeded this in the four years to 30 June 2019 (average annual performance was 99.5 percent).

SA Water has proposed removing this service standard. Its rationale is that:

- ▶ This service standard relates to a small subset of customers, and therefore does not warrant inclusion in a service standard framework that represents the aspects of service its customers value most. (There were 750 trade waste applications received in 2018-19, compared with 11,753 water and sewer connection applications).
- ▶ SA Water is performing well against this service standard. Any change will be detected in SA Water's customer satisfaction and complaints monitoring, and responded to accordingly.

The Commission's draft decision is to accept SA Water's proposal and remove this service standard.

6.2.7 Guaranteed Service Level scheme

A Guaranteed Service Level (GSL) scheme is a system for making defined payments to individual customers who experience particular types of poor service. Typically, GSL scheme payments do not compensate customers for any losses they experience as a result of poor service; they simply provide a customer service gesture. Guidance Paper 3 discussed the merits of, and design options for, financial incentive and penalty schemes.¹¹³

SA Water does not currently have a GSL scheme, and has not proposed to introduce one in SAW RD20. This is consistent with advice provided by the Commission in Guidance Paper 3¹¹⁴ and the view of the CNC that GSL style payments funded by all customers are not warranted unless the inconvenience suffered is significant.¹¹⁵ Therefore, the Commission has made a draft decision not to introduce a GSL scheme during SAW RD20.

Although it does not have a GSL scheme, SA Water does make some service gesture payments to customers on a case-by-case basis (for example, small amounts when a billing error has been made, and more substantial payments where property is damaged by water or sewerage and SA Water is responsible). It also makes payments to assist customers to manage high water use, or leakage that occurs on the customer's side of the meter. The Commission considers payments of this nature to be a reasonable part of SA Water's customer service program.

In July 2019, as part of research to support consideration of a GSL scheme, the Commission requested expenditure data on these payments. Data was not available on payments made regarding damaged property, or on customer service gestures. Current expenditure on the leakage and high water use allowances is approximately \$2 million per annum.

Therefore, the Commission has made a further draft decision to require reporting, at an aggregate level, on SA Water's service gesture, high water use and leakage payments. The purpose of this is not to discourage SA Water from making payments of this nature, but to ensure that expenditure on these payments is transparent, as recommended by the CNC, and inform any future consideration of more formalised scheme of customer payments.

113 Commission, *Guidance Paper 3*, p. 12.

114 Commission, *Guidance Paper 3*, p. 12.

115 Report of Independent Chair of the CNC, p. 45.

Part C – Drinking water and sewerage retail services

The Commission's revenue determination allows SA Water to recover the efficient cost of providing drinking water and sewerage retail services to customers. The cost components that the Commission has determined are:

- ▶ operating expenditure
- ▶ return on RAB
- ▶ return on working capital
- ▶ return of capital (depreciation), and
- ▶ tax allowance.

SA Water operates a capital-intensive business and the return on assets and return of capital components cover its fixed infrastructure costs, including forecast capital expenditure. Operating expenditure is included as a separate building block component. The working capital allowance addresses the funding cost associated with the mismatch in the timing of SA Water's revenue and expenditure cash flows. The tax allowance reflects the net impact to shareholders of the tax obligations of the benchmark-efficient ownership entity.

7 Prudent and efficient expenditure

Draft decision - Asset Management System

SA Water has continued to refine the key plans and approaches that underpin its asset management system since SAW RD16. However, four broad issues have been identified with SA Water's asset management system that are likely to mean that SA Water has not proposed a prudent and efficient level of expenditure for the SAW RD20 period. The areas where further refinement is required include:

- ▶ the need for greater alignment between stakeholder expectations and asset management objectives, to ensure the need for, and expected outcomes from, expenditure are clear
- ▶ the need for greater consistency of approach between asset classes to provide greater assurance that medium and long term asset management planning and decision making considers the impact of reprioritisations across the entire asset portfolio
- ▶ the need for further prioritisation to achieve an optimised investment program for SAW RD20, and
- ▶ closer monitoring of the benefits of expenditure realised over time, to establish a clearer understanding of the relationship between expenditure and its intended performance outcomes.

These findings have led the Commission to propose a series of cost adjustments to the sample of SA Water's proposed programs, projects and initiatives which have been examined in detail, as well as the application of more challenging efficiency targets. Based on the Commission's analysis, those proposed adjustments will establish more efficient expenditure forecasts for SAW RD20 than those proposed by SA Water in its RBP.

Draft decision - Capital expenditure

The draft decision is that the prudent and efficient amounts of capital expenditure to be included in the calculation of the revenue caps are as follows:

- ▶ \$1,023.9 million (\$Dec18) for drinking water retail services, which is 20 percent higher than spent in SAW RD16 and 17 percent lower than that proposed by SA Water in its RBP, and
- ▶ \$447.7 million (\$Dec18) for sewerage retail services, which is 20 percent lower than spent in SAW RD16 and 11 percent lower than that proposed by SA Water in its RBP.

Draft decision - Operating expenditure

The draft decision is that the prudent and efficient amounts of operating expenditure to be included in the calculation of the revenue caps are as follows:

- ▶ \$1,278 million (\$Dec18) for drinking water retail services, which is 10 percent lower than spent in SAW RD16¹¹⁶ and 13 percent lower than that proposed by SA Water in its RBP, and
- ▶ \$525 million (\$Dec18) for sewerage retail services, which is the same as the amount spent in SAW RD16 and eight percent lower than that proposed by SA Water in its RBP.

¹¹⁶ Note: SA Water's actual operating expenditure for 2019-20 is not yet known so these figures include an estimate of actual expenditure as \$507.7 million (\$Dec18).

7.1 Introduction

This Chapter sets out the Commission's draft decision and reasoning in relation to the prudent and efficient operating and capital expenditure that SA Water should incur in providing retail services during the four-year period commencing 1 July 2020.

In doing so, the Commission has assessed the need or justification for any changes to existing expenditure levels, grouped into five areas:

- ▶ **External responsibilities:** investments by SA Water to meet its legal and regulatory responsibilities
- ▶ **Sustaining services:** investment to allow SA Water to continue to provide and sustain reliable services for its customers, by planning ahead and investing where needed
- ▶ **Improving services:** investments by SA Water to reflect customer feedback on what is important to them and what they are willing to pay for
- ▶ **Enabling growth:** costs associated with servicing new water and sewerage customers or increasing the services available to existing customers, and
- ▶ IT expenditure.

This assessment is undertaken in the context of the following factors:

- ▶ SA Water's customers' clear desire for prices to be as low as sustainably possible
- ▶ the expectation that SA Water, as a long-life asset owner and manager, will have in place prudent, efficient and robust long-term asset management and associated expenditure plans, such that any variations in required expenditure between regulatory periods is readily identifiable, transparent and justifiable (including to SA Water's customers)
- ▶ SA Water's current expenditure levels, including both the expectations set out in SAW RD16 and the actual expenditure that SA Water has incurred over the past four years
- ▶ SA Water's current performance levels, which, as explained in Chapter 5, have been generally consistent with overall regulatory requirements
- ▶ the customer engagement work undertaken by SA Water on investment options and expenditure requirements, and
- ▶ feedback and evidence from stakeholders, including SA Water's RBP proposals.

In that overall context, the Commission's focus has been on understanding the justification for any departures from current expenditure levels, as those levels (set under SAW RD16) are generally prudent and efficient, given outturn performance. The Commission's assessment has given regard to current performance and expenditure levels, SA Water's RBP, additional detailed information provided by SA Water to further explain its proposals, submissions received from stakeholders and an assessment of the evidence provided by Cardno, an expert asset management consultant engaged by the Commission.

This chapter therefore sets out:

- ▶ background information about the nature of SA Water's capital and operating expenditure, the 'prudent and efficient' test applied by the Commission to its proposed expenditure and information about past trends in SA Water's expenditure
- ▶ the Commission's assessment of SA Water's asset management system, which underpins its capital and operating expenditure proposals, and
- ▶ draft decisions on the prudence and efficiency of SA Water's actual capital expenditure during the SAW RD16 period and its proposed capital and operating expenditure for the SAW RD20 period.

7.1.1 Capital expenditure

Capital expenditure is expenditure on the purchase or creation of an asset that can be utilised into the longer term. SA Water operates in a capital intensive industry and owns many long-life assets, such as pipe networks, dams, and water and sewerage treatment plants. Capital planning and investment is a continuous and ongoing process. Over time, existing assets may be upgraded or replaced, and growth of the network requires that new assets be constructed or acquired.

The Commission adds capital expenditure to the RAB if it deems that expenditure to be prudent and efficient. SA Water is then allowed to earn a return on, and of, the value of the assets over their useful life (which in some cases is over 50 years).

7.1.2 Operating expenditure

Operating expenditure is driven by labour costs, electricity costs for pumping and treating water, carrying out maintenance activities, reading meters, sending out customer bills and the many other activities required to provide an ongoing service to customers. Unlike capital expenditure, operating expenditure is expensed as it is incurred, and so customers have the potential to benefit from any efficiency savings immediately.

7.1.3 Lifecycle value realisation

Effective asset management decision-making aims to maximise the value that can be realised over the life of an asset (acquisition/creation; operation and maintenance; and end of life decommissioning, disposal or renewal). Lifecycle value realisation is the process of trying to balance the costs and benefits of different renewal, maintenance and disposal strategies, which will generally include the assessment of several options with a combination of operating and capital expenditure.

While the Commission uses different methodologies to assess operating and capital expenditure, it assesses the overall prudent and efficient level of expenditure for programs and projects, noting that there may be trade-offs between capital and operating expenditure in some instances.

7.1.4 The prudent and efficient tests

Broadly speaking, expenditure (capital or operating) on an activity is considered to be *prudent* where there is a clear justification for that activity, driven by:

- ▶ a legislative or regulatory obligation, which SA Water must comply with
- ▶ an expectation that the activity will deliver benefits to consumers that outweigh the costs, or
- ▶ a clear expectation from customers that an outcome should be achieved, and that they are willing to pay for that outcome.

Expenditure is considered to be *efficient* where there is evidence that it represents the lowest sustainable (or 'long-term') cost of achieving the intended outcome.

The Commission assessed the effectiveness of SA Water's asset management system in supporting continuous improvement in SA Water's long-term investment planning, prioritisation and appraisal processes. This informs the Commission's conclusions on the prudence and efficiency of both past capital expenditure and future capital and operating expenditure proposals.

The Commission engaged Cardno, in association with Atkins Acuity, to provide an asset management, financial and engineering assessment of SA Water's capital and operating expenditure plans, and the asset management system used to develop those plans. Cardno's review included assessing whether SA Water's:

- ▶ decision-making systems and processes are consistent with the principles set out in its asset management framework
- ▶ capital expenditure in the current regulatory period (2016-2020) was prudent, efficient, and achieved its intended outcomes, and
- ▶ capital and operating expenditure proposals for the next regulatory period (2020-2024) are prudent, clearly identify intended outputs and outcomes, and reflect efficient costs of delivery.

This process assessed the prudent and efficient level of capital expenditure by examining a sample of proposed programs and projects, chosen to cover water and sewerage, metropolitan and regional areas and various asset types or categories. The projects and programs sampled comprise 24 percent of the SAW RD16 capital expenditure program and 45 percent of the SAW RD20 program. In examining the programs and projects, the Commission has been alert to matters such as unreasonable cost estimates, unnecessary engineering solutions, or inconsistencies between programs or projects.

Along with the evidence presented by SA Water and stakeholders, the Commission has given consideration to evidence provided by Cardno in reaching its proposed position on the prudent and efficient level of expenditure required for SAW RD20, and the need for any adjustments to the prudent and efficient level of expenditure from the SAW RD16 capital program to be included in the RAB.

In some cases, SA Water has yet to make the case for a departure from current expenditure levels as the proposed increases have not been supported by detailed business cases or other supporting evidence through the Commission's follow up enquiries. As a matter of general practice, in a long-life asset company such as SA Water, material or significant departures from forecast costs would not be expected without a clearly identifiable change in the operating environment. If sound and robust long-term asset management plans are in place and effective (including provision for reasonable contingencies), trends in likely material projects and costs drivers should be known well in advance, even if more granular costs (labour, materials and the like) will vary through time and may be somewhat less predictable over the longer run.

In particular, several of the proposed increases under 'sustaining services' and 'external obligations' do not appear to be additional or new activities that would necessarily lead to higher expenditure. SA Water has not demonstrated that a number of the proposed expenditure increases are justified relative to what it should already be carrying out as part of its regular business-as-usual activities.

Further, in the absence of a new obligation or significant change in circumstance, simply identifying new activities is not in itself a justification for an increase in total expenditure: while new activities may be required in the future, other activities which previously took place may no longer be required, offsetting those new costs.

Unless expressly stated otherwise, all of the figures in this chapter exclude the costs associated with the ZCEF initiative. As discussed in Chapter 4, the costs (and expected benefits) of ZCEF have been excluded on the basis that the program is a commercial electricity generation venture that does not meet the definition of a water retail service under the Water Industry Act. This means that the total figures presented in this chapter are different to the figures included in SA Water's RBP.

7.1.5 The importance of long-term asset management, cost variance assessment and ongoing monitoring of expenditure trends

As regulatory determinations are point in time assessments, SA Water's actual expenditure during each four-year regulatory period may—and in practice does—vary from forecasts, due to factors such as changing priorities (to meet clear and unequivocal customer preferences) and external factors (such as changes in regulatory obligations). SA Water may also need to respond to unexpected events, such as extreme weather conditions, an unforeseeable decline in the performance of a group of assets or changes in key input costs that it cannot directly control.

While some variation is expected over time, it is important to understand the factors driving any material variations. For example, SA Water may be entering a period in the life cycle of its assets where particular classes or systems need replacement, based on age, condition or performance. However, as many of SA Water's assets have long useful lives, the forecast long-term profile of any such expenditure should be readily identifiable.

A high-level understanding of long-term expenditure requirements should be both knowable and known in a long-term asset management company such as SA Water, and should be transparently available to stakeholders on a regular basis.

This means that some variation between the forecast and actual expenditure should be easily identified and explained as SA Water reprioritises its actual expenditure throughout a regulatory period to respond to changing circumstances.

However, responses to such matters should not always require an *increase* the total amount of expenditure needed to continue to provide drinking water and sewerage throughout a regulatory period, particularly as changes between forecast and actual expenditure will not always go in one direction.

Actual expenditure may be below previously forecast levels as a result of:

- ▶ improved business practices allowing more efficient operations
- ▶ a rebalancing of the operating and capital expenditure required to manage assets to deliver the same, or better, service outcomes in different ways, such as increasing maintenance operations for existing assets prior to pursuing an asset refurbishment or replacement decision
- ▶ a reprioritisation or deferral of previously planned investments, resulting from changes in demand, operating conditions or a better understanding of the actual operations of asset systems, or
- ▶ delays in the commencement of scheduled works resulting from the issues that arise through the detailed design phase of a project, coordination issues or other contracting or market conditions that impact on the availability of the required resources.

However, a decline in actual expenditure could also be evidence of unsustainable business practices or asset management and investment strategies. For example, in the case of long-life assets the impact of any under-investment may not become apparent in the level of service provided for some years.

The Commission requires SA Water to report annually on its actual expenditure, and to provide detailed explanations of the reasons for material variations from the amounts allowed in SA Water's regulatory determinations. The Commission's proposals for enhancing the monitoring and reporting framework are discussed further in Chapter 11.

7.2 Trends in expenditure since 2013-14

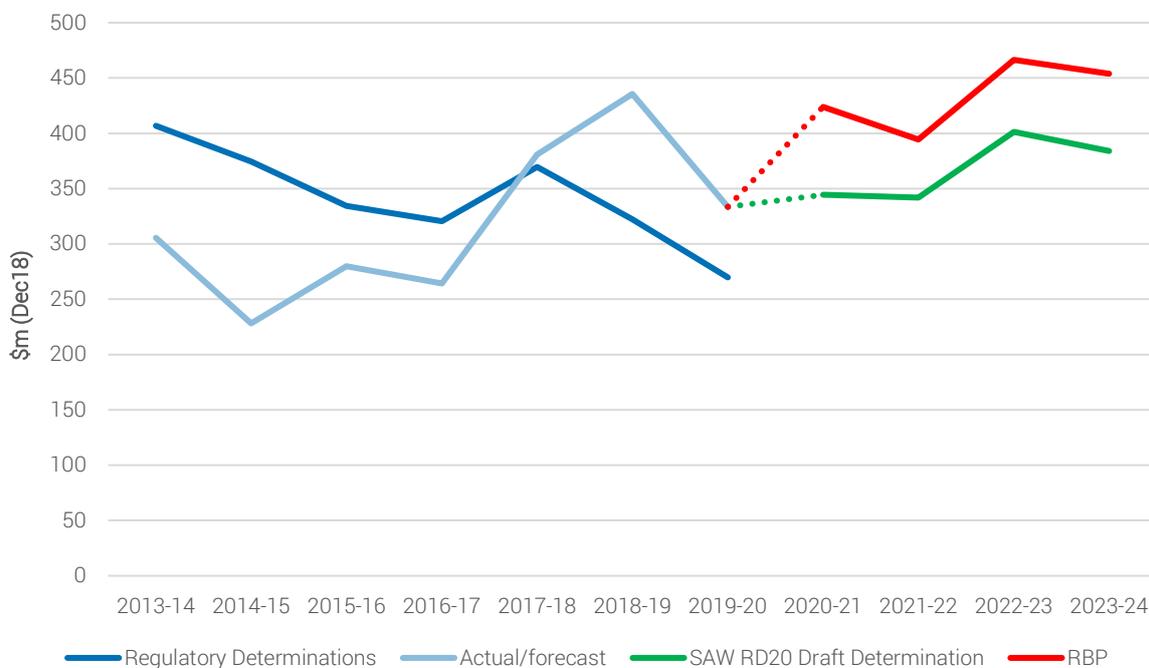
The Commission has made two regulatory determinations for SA Water: the first (SAW RD13) in 2013 and the second (SAW RD16) in 2016. Each involved *ex ante* assessment of the prudent and efficient costs of providing retail services, including an assessment of forecast expenditure requirements.

Analysing the drivers of expenditure variations as compared to those *ex ante* assessments assists with identifying ongoing efficiency improvements, and unsustainable business practices or asset investment and management strategies.

7.2.1 Capital expenditure has continued to increase

Figure 7.1 shows the trend in SA Water’s net capital expenditure from 2013-14 to 2023-24. It compares the differences between the expenditure benchmarks set in the Commission’s regulatory determinations in SAW RD13 and SAW RD16 and SA Water’s actual expenditure in each of these periods. It also shows two possible future investment paths; SA Water’s RBP and the Commission’s Draft Determination.

Figure 7.1: Net capital expenditure, 2013-14 to 2023-24



From 2013-14, actual annual capital expenditure was below the annual capital expenditure amounts incorporated into the Commission’s regulatory determinations. However, from 2017-18, SA Water has spent more than the amount forecast under SAW RD16, and it is expecting to exceed those forecasts in the remaining year of the current regulatory period.

The difference between the capital expenditure benchmark in SAW RD16 and the capital expenditure that SA Water is expected to incur in the SAW RD16 period is mainly driven by the construction of the Northern Adelaide Irrigation Scheme (NAIS). This project was not anticipated at the time of SAW RD16 and is forecast at \$88.4 million of net capital expenditure by the end of SAW RD16.

However, SA Water will also have spent more on water network management (88 percent higher) and sewerage network management (313 percent higher) by the end of the SAW RD16 period than was expected at the start of the SAW RD16 period. The additional expenditure on managing the water network has primarily been driven by the replacement of additional kilometres of water reticulation

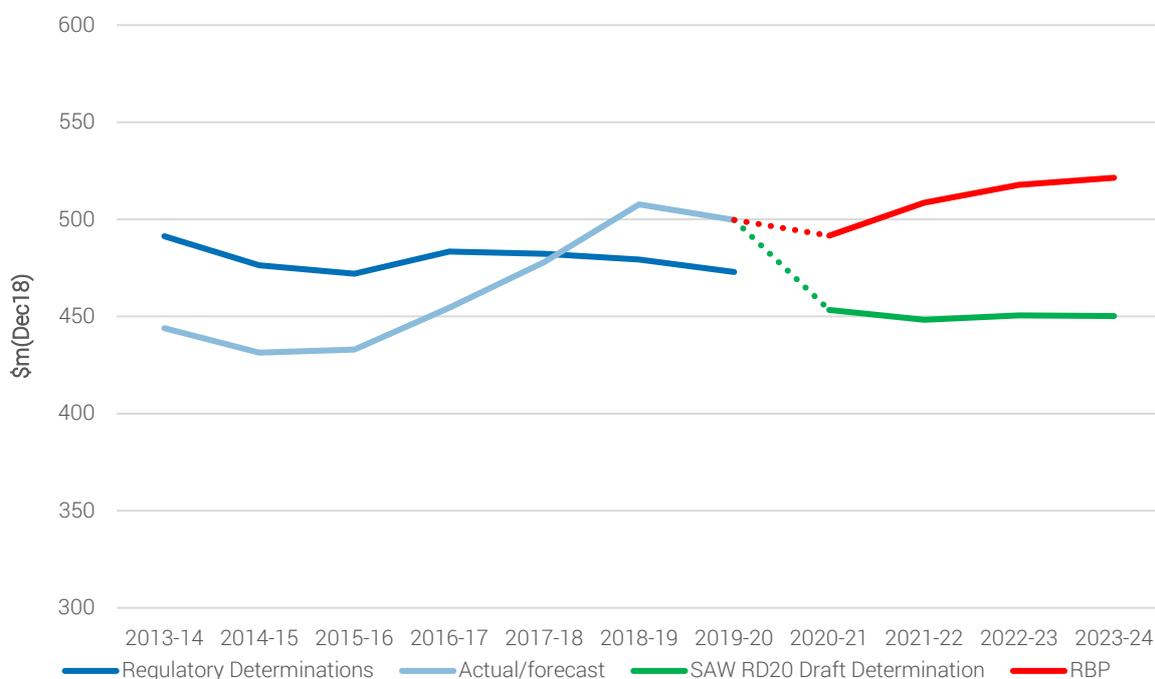
mains in metropolitan Adelaide (\$78.1 million extra or 94 percent higher) and investments in several small smart networks trials that were not envisaged at the start of the SAW RD16 period (\$15.3 million extra). The additional expenditure on managing the sewerage network has primarily been driven by additional sewer mains renewals (\$45.9 million) and odour management activities (\$30.3 million).

The higher level of expenditure in SAW RD16 will be partially offset by a lower level of expenditure on growth-related upgrades to its network and treatment plants (11 percent) and water tanks and other structures (18 percent).

7.2.2 Operating expenditure has continued to increase

Figure 7.2 shows the trend in SA Water’s operating expenditure from 2013-14 to 2023-24. As for capital expenditure, it compares the differences between the expenditure benchmarks set in the Commission’s regulatory determinations in SAW RD13 and SAW RD16 and SA Water’s actual expenditure in each of these periods. It also shows two possible future investment paths; SA Water’s RBP and the Commission’s Draft Determination.

Figure 7.2: Operating expenditure, 2013-14 to 2023-24



From 2013-14 to 2017-18, actual annual operating expenditure was below the annual amounts forecast in the regulatory determinations but has since move above those levels. However, actual operating expenditure has increased by around five percent each year since 2015-16.

Costs related to labour (26 percent), the Allwater Metro Alliance Contract (20 percent) and electricity (13 percent) account for just over half of SA Water’s operating expenditure.

Labour costs are the single largest cost line of SA Water’s operating expenditure at \$122 million in 2018-19. There are two key components to SA Water’s labour costs:

- ▶ the price of labour (wages and associated on costs such as superannuation, leave and personal injuries insurance), and
- ▶ the quantity of people employed (or hours worked).

SA Water's total labour costs are a function of these two factors, and to a large extent, the effect of any labour productivity changes. SA Water should be able to adjust these elements to ensure that total labour costs do not exceed CPI. SA Water's ability to pay above CPI wages and stay within its labour cost allowance will depend on how effectively it incentivises labour force productivity.

There is evidence that SA Water is effective at achieving labour force productivity gains over the longer term. Over the previous and current periods, SA Water has managed its workforce within the CPI envelope, despite growth in its full time employee numbers. For example, SA Water's annual reports show relatively stable outcomes for labour costs over the previous and current regulatory periods.¹¹⁷ Additionally, since 2014, SA Water's Enterprise Bargaining Agreements have included wage increases of between two and three percent, which is on average 0.6 percent per annum above CPI.

The Allwater Metro Alliance Contract is an outsourcing contract covering elements of the operation and maintenance of the water and sewerage system in the metropolitan Adelaide area. The costs of this contract have increased 1.5 percent year on year (above inflation) since 2012-13; rising from \$88 million in 2012-13 to a forecast amount of \$98 million in 2019-20.

SA Water has advised the Commission that it renegotiated the Allwater Metro Alliance Contract during 2018-19, after consecutive years of Allwater exceeding its agreed expenditure budgets. As part of this renegotiation, a revised 'gain and pain share' mechanism has been incorporated into the contract to strengthen incentives for Allwater to meet its financial targets. However, the rising costs of this arrangement were a key factor in SA Water's consideration of its future metropolitan service delivery model.

In SAW RD16, electricity costs amounted to 11 percent of total operational expenditure at \$217 million, with \$54.2 million included in the efficient base year. For SAW RD20 the efficient base year includes \$59.5 million for electricity costs, which is 13 percent of total efficient operating expenditure.

SA Water developed the ZCEF program to attempt to gain more control over its electricity costs. However, as previously noted in Chapter 6, this program does not meet the definition of a retail service under the Water Industry Act and so has been excluded from the Commission's assessment.

7.3 Assessment of SA Water's asset management system

Efficient and effective delivery of water and sewerage services by SA Water is dependent on an efficient and effective asset management system that aids in decision making on levels of service, risks and life cycle costs for a diverse portfolio of water and sewerage assets.

SA Water has been working to implement an asset management system that aligns with the Institute of Asset Management (IAM) Framework.¹¹⁸ The IAM Framework draws on ISO55000¹¹⁹, an international standard covering the management of assets of any kind, which focusses on the coordinated activity of an organisation to realise value from assets.

SA Water's asset management system is still evolving, and will continue to do so, as it is based continuous improvement. The more that SA Water learns about the way its assets work together to deliver the services that its customers value, the more it can refine those systems.

¹¹⁷ SA Water's *annual reports* are available at <https://www.sawater.com.au/about-us/annual-reports>

¹¹⁸ The IAM is an international professional body for asset management professionals. The IAM develops asset management knowledge and best practice and generates awareness of the benefits of the asset management discipline for the individual, organisations and wider society. The IAM has over 22,000 members in 158 different countries. <https://theiam.org/>

¹¹⁹ International Organisation for Standardisation, *ISO55000*, available <https://www.iso.org/standard/55088.html>

The Commission's regulatory determination process serves as a regular external assessment of the cycle of continuous improvement in SA Water's asset management system. The Commission reviews SA Water's expenditure and investment planning, prioritisation and appraisal processes. Evidence of sound and robust governance, systems and processes provides a level of comfort that the actual investment decisions SA Water makes during a regulatory period, to respond to changing needs and priorities, will be more likely to be prudent and efficient.

7.3.1 SA Water's description of its asset management system

SA Water has provided a high-level overview of its asset management system for its stakeholders as an attachment to its RBP.¹²⁰ It summarises the purpose, guiding principles and objectives for its asset management system as follows:

In managing our assets, we aim to deliver the services our customers and regulators expect while managing risks and ensuring the cost to deliver is as low as possible over the lifetime of each asset.

The key principles that guide our asset management are:

- ▶ *Infrastructure assets exist to provide our customers with safe, sustainable and affordable water and sewerage services.*
- ▶ *Asset management decisions follow the corporate principles for decision making.*
- ▶ *Across the business, people have the knowledge, accountability and behaviours to influence levels of service experienced by our customers through smart, innovative asset management and a total expenditure approach.*
- ▶ *Our Asset Management System aligns with industry best practice and we are committed to continual improvement.*
- ▶ *Asset Management objectives are designed to deliver the corporate performance measures.*

The Asset Management System sets out how we need to manage every asset across the State for a 30-year period based on its condition, age and current performance.

Decisions are based on customer expectations as well as our legal and regulatory responsibilities, mindful we respond as these expectations and responsibilities evolve. In addition, these aspects are balanced with the optimised life cycle cost to keep prices as low and stable as possible for our customers.

SA Water refers to the following key internal documents that support its asset management system:

- ▶ Strategic Asset Management Plan.
- ▶ Lead Asset Management Plans.
- ▶ System Asset Management Plans.
- ▶ Facility Type Asset Management Plans.

The Commission notes that these detailed documents are not publicly available, and so other stakeholders are limited in the feedback they can provide on SA Water's asset management framework.

¹²⁰ SA Water, RBP, Appendix O

7.3.2 Evidence on SA Water's asset management system

As detailed below and in the following section, the Commission, with assistance from Cardno, has reviewed the overall asset management framework, including a sample of the suite of non-public internal documents that further explain key elements of SA Water's asset management system. It has done so to assess the extent to which SA Water's decision-making systems and processes—as evidenced through actual expenditure outcomes in SAW RD16 and the expenditure proposal for SAW RD20—are consistent with the principles set out in its asset management framework.

The Commission has also had regard to a report prepared for SA Water's Board by AMCL, a consultancy endorsed by the IAM, on how well SA Water's asset management and operational approach to water main management aligns with international leading practice.¹²¹ These findings are discussed further in section 7.8.1.

Cardno's review of the asset management system identified four broad and somewhat interrelated issues summarised below, each of which is expanded upon in more detail in the following sections:

- ▶ alignment between stakeholder expectations and asset management objectives need further refinement during the SAW RD20 period
- ▶ medium and long term asset management planning and decision making is generally sound, but is undertaken with varying levels of maturity across asset classes
- ▶ further prioritisation is likely to be required to achieve an optimised investment program for SAW RD20, and
- ▶ closer monitoring of the benefits realised from expenditure is required to establish a clearer understanding of the relationship between expenditure and its intended performance outcomes.

7.3.3 Alignment between stakeholder expectations and asset management objectives need further refinement during the SAW RD20 period

The IAM Framework states that good asset management provides a clear connection between an organisation's strategic plan and the asset management activities delivered by staff. This is known as 'alignment' or 'line of sight' and enables all staff to understand how they contribute to achieving success.¹²²

Establishing a clear line of sight between the proposed expenditure and the expected service outcomes will make it easier for SA Water's customers and other stakeholders to monitor and evaluate whether:

- ▶ the proposed initiatives, programs and projects have a clearly identified driver, an expected service outcome and a robust system for monitoring, evaluating and reporting on achievement of the intended outcomes throughout the regulatory period, and
- ▶ any expenditure reductions are sustainable and the result of ongoing efficiencies or prudent short-term deferrals of expenditure that are unlikely to increase the total cost of delivering the necessary service outcomes in the future.

Under the planning approach taken by SA Water to develop its RBP, and consistent with the Commission's expectations as set out in its Guidance Papers, customer research has informed SA Water's corporate strategy, and this has, in turn, been used to develop objectives for its asset management system to achieve. The corporate strategy is therefore central to SA Water's asset management system.

¹²¹ AMCL, *SA Water water main management independent review*, August 2019.

¹²² IAM, 'An anatomy', available <https://theiam.org/knowledge/Knowledge-Base/the-anatomy/>

The Commission notes that, while SA Water has provided a short summary of its strategy on its website,¹²³ SA Water considers its corporate strategy (with the detailed KPIs and targets) to be an internal document. This materially limits stakeholders' ability to provide feedback on this critical foundation document.

Within its asset management system, SA Water has defined asset management objectives which are intended to support the overall corporate objectives and reflect stakeholder requirements (such as those expressed in the customer service standards, in legislation and identified through customer research). By defining asset management objectives based on stakeholder expectations, asset management processes are then able to support technical and financial decisions, planning and activities to achieve these objectives. As noted above, this is termed 'alignment' within the ISO55001:2014 standard. Clear 'alignment' helps to establish whether or not expenditure is prudent.

7.3.3.1 Cardno's evidence

Cardno concluded that SA Water's asset management objectives demonstrate a sound alignment with its strategic goals and transparently capture various regulatory obligations, including drinking water quality, environmental protection and the Commission's reliability service standards.¹²⁴ However, Cardno also observed that there were a number of asset management objectives that did not provide a clear line of sight between stakeholder expectations and asset management activities.¹²⁵

This issue presented itself in several of the sample of programs and projects reviewed in more detail and was most apparent when the key driver for an expenditure proposal was to improve services, based on customers' willingness to pay for those improvements.

A clear example of this issue is the proposal related to reticulated water mains management (discussed further in section 7.8.1). While SA Water has characterised this proposal as being required to 'sustain services', the outcome being sought is an improvement in the levels of water network reliability for its worst served customers (measured by a decrease in the number of customers experiencing three or more interruptions in a 12 month period).

The proposed improvement in current service levels would result in an increase in expenditure, which would need to be supported by clear and robust evidence that customers are prepared to pay for this investment. The evidence provided by SA Water was that its customers expected it to minimise interruptions, but that they were not prepared to pay the amount required to improve current levels of service.

This issue was also identified in AMCL's independent review into SA Water's approach to water main management, which noted the need for the business case process to include more robust challenge and assurance, to ensure 'line of sight' is maintained with stakeholder requirements (discussed further in Appendix 3).¹²⁶ This lack of alignment between stakeholder expectations and asset management activities means that SA Water's proposed investment in this area, (and several others discussed in more detail later), is unlikely to be prudent.

Cardno also identified an issue with a lack of clarity regarding the business objectives that are within the scope of the asset management system and those matters outside of that system, citing the brand health index and innovation index as two examples that rely on factors outside the control of asset management. This means that there is a risk that the performance of the asset management system is being measured on factors that are outside its ability to influence through sound asset management practices.

¹²³ Refer <https://www.sawater.com.au/about-us/about-sa-water/our-strategy>

¹²⁴ Cardno, pp. 19-21.

¹²⁵ Cardno, pp. 19-21.

¹²⁶ AMCL, *SA Water water main management independent review*, August 2019, p. 46.

7.3.3.2 Commission's position

In addition to making specific adjustments to expenditure in the sample of programs and projects examined (as explained later in this Chapter), the Commission accepts Cardno's evidence and proposes to apply a 'catch-up' efficiency to the remainder of SA Water's capital program to account for expected savings that will result from the refinement of alignment between stakeholder expectations and asset management objectives during the SAW RD20 period (discussed further in section 7.12).

7.3.4 Medium and long term asset management planning and decision making is generally sound, but is undertaken with varying levels of maturity across asset classes

Many of SA Water's assets have relatively long expected useful lives, which require sound long-term planning, maintenance and renewal processes.

Capital investment decision making uses a range of processes to evaluate and analyse options for the creation of new assets, increasing the capability of existing assets and the replacement (or disposal) of assets at the end of their useful life. The IAM Framework identifies a range of methods that can be used to evaluate whether an investment is worthwhile and to compare alternative investments, with Cost Benefit Analysis (CBA) using discounted cash flows one of the most commonly employed.¹²⁷ It further suggests that CBA calculations must consider the required period of the asset's function and include all expenditure and benefits; a process known as 'life cycle costing'.

7.3.4.1 Cardno's evidence

Cardno suggests that SA Water's planning framework is broadly sound. It allows SA Water to undertake planning at different levels (for example, at the individual asset level, the system level and the portfolio level) and through different lenses (for example, life cycle strategy, safety and emergency management). Further, Cardno has seen evidence to suggest that SA Water has continued to evolve its risk management framework, with Asset Management Plans providing greater definition of risks before and after controls have been employed.¹²⁸

However, while Cardno was satisfied that SA Water generally has sound plans in place for the medium and long term, there was evidence that long-term planning for asset renewal is performed with varying degrees of maturity across asset classes:

*For water mains, there are complementary models in place to assist SA Water's decision making which provides it with a balanced view of long term needs and the short term interventions included in the forward expenditure program. For sewer mains, we consider that SA Water has a sound understanding of long term needs across the asset class but there can be better integration with short term planning through an enhanced approach to assessing the consequence of failure of segments of mains. For water tanks, SA Water does not yet have a complete picture of the condition of the entire asset class which limits the extent to which long term planning is informative.*¹²⁹

It suggested that this inconsistency in approach between asset classes is likely to pose a greater challenge for SA Water in the near future, as the asset base (both in total and across a number of asset classes) is moving out of 'middle age' (as measured by the fair value divided by the replacement cost) and into a period where long-term planning needs to be increasingly integrated with short-term planning for renewal and replacement. SA Water will need to continue to improve its processes to be able to understand the relationship between investment, asset deterioration, asset performance and service provided.

¹²⁷ IAM, 'An anatomy', p. 43, available <https://theiam.org/knowledge/Knowledge-Base/the-anatomy/>

¹²⁸ Cardno, pp. 23-24.

¹²⁹ Cardno, pp. 23.

Cardno also noted that, while it saw evidence that SA Water undertakes life cycle costing and other financial analyses as part of its decision making processes for determining the appropriate interventions and the magnitude of investment required, these practices were inconsistently applied.¹³⁰

7.3.4.2 Commission's position

In addition to making specific adjustments to expenditure in the sample of programs and projects examined (as explained later in this Chapter), the Commission accepts Cardno's evidence and proposes to apply a 'catch-up' efficiency to the remainder of SA Water's capital program to account for expected savings that will result from improved asset management decision making in the SAW RD20 period (discussed further in section 7.12).

7.3.5 Further prioritisation is likely to be required to achieve an optimised investment program for SAW RD20

A rigorous investment planning, prioritisation and appraisal process, where future expenditure plans are thoroughly scrutinised, is more likely to lead to prudent and efficient investment decisions across the business. SA Water needs to have, and demonstrate to stakeholders that it has, such a process. It is also important for customers and other stakeholders to have the opportunity to have meaningful input into this process.

Guidance Paper 4 noted the Commission's expectation to see evidence that SA Water has made genuine efforts to understand what its diverse customer base expects, and how SA Water has responded to what it has heard in prioritising the various initiatives, programs and projects it ultimately proposes in its draft business plan.¹³¹

SA Water provided a high-level summary of its planning process in its publicly available documentation, describing the key stages in that process and how it had used feedback from its customers to inform various stages of that process.¹³²

7.3.5.1 Stakeholder evidence

Several stakeholders raised concerns about the level of information that SA Water provided publicly in its RBP, which made it hard for them to comment on the expenditure proposed. In particular, stakeholders commented that it was difficult to untangle the impact of SA Water's proposed expenditure (which it can control) from changes in the cost of financing its investments (over which has less control).

EWOSA noted that while SA Water has produced a document that is easy to read, it lacks detailed information that is generally provided to the public through regulatory review processes.¹³³

The Conservation Council SA noted its position throughout the review to date has been that it is critical for a long-term business planning exercise to:

- ▶ think beyond the confines of a regulatory period, and
- ▶ have sufficient transparency to allow the community to engage with the long-term challenges with planning for the efficient and equitable use of our water resources.

¹³⁰ Cardno, p. 24.

¹³¹ Refer <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20181101-Water-SAWSAW RD20-GuidancePaper4-PrudentAndEfficientExpenditure.pdf.aspx?Embed=Y>

¹³² SA Water, *RBP*, pp. 11-17, Appendix B and Appendix C.

¹³³ EWOSA, p. 5.

It suggested that SA Water needs to better recognise the benefits of working with consumers (and other stakeholders) to explore options and agree on the way forward on the various challenges facing the water industry, citing climate change adaptation, improving water security and resilience, and greater wastewater capture and reuse as examples.

ZCEF was singled out from the overall expenditure proposal as a positive example of SA Water seeking to mitigate its impact on climate change. However, the Conservation Council SA tempered its support by noting that the initiative appears to lack consideration of other energy users, the movement of costs to other consumers and the possibilities for affecting energy security in regions.

SACOSS summarised its position as follows:

SA Water's 'Our Plan 2020-24', forecasts bill savings for customers which it states result from operational efficiencies and the contained costs of its capital program. This narrative is a key concern for SACOSS. In fact, there are few underlying savings in SA Water's proposal, with the forecast bill reductions delivered via the lower cost of capital under the prevailing lower interest rates compared with the 2016-2020 regulatory period.

SA Water is launching or bringing forward several new capital initiatives to improve service quality which seem contrary to customers' clear desire for prices to be as low as sustainably possible. Arguably, SA Water should instead be striving to achieve savings in the underlying business in order to deliver greater savings for customers.

In this sense, SACOSS does not consider SA Water have given adequate weight to the views expressed by consumer participants in the Consumer Experts Panel Priorities Report, and by survey respondents generally that price was an important consideration and that bills should be kept in check as far as possible.¹³⁴

Further, several stakeholders commented that while it was clear that SA Water had undertaken a vast amount of customer research to inform its proposals, it was also important to consider more collaborative, cooperative and community-based methods for defining the issues that need to be solved and then develop cost-effective solutions to address those problems.

SAFFRA wanted to encourage SA Water to model best practice customer and community engagement, and to be more transparent, open and inclusive with customers.¹³⁵ In particular, it suggested that SA Water should collaborate with stakeholders to find more innovative water supply solutions and that the South Australian Government should fund, in consultation with SA Water, drinking water supply to remote areas of South Australia.

Consumers SA expressed broad support for the extra challenge provided through the use of the CNC, but highlighted some of the limitations with the process and made suggestions for the Commission to consider for the next regulatory review process.¹³⁶ It also expressed the view that SA Water appears to have made a genuine attempt to understand customer views, even if the CNC did not consider the process used to be best practice. However, Consumers SA suggested that SA Water should consider making more detailed information available on how its consultation processes led to the decisions ultimately made about the expenditure proposals included in the RBP, with ZCEF used as an example where it is unclear how, when and if at all SA Water consulted with the community or its customers on this program.¹³⁷

¹³⁴ SACOSS, p. 5.

¹³⁵ SAFRRA, *submission to SA Water RBP*, p. 5, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-SAFRRA.pdf.aspx?Embed=Y>

¹³⁶ Consumers SA, *submission to SA Water RBP*, p. 1, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-ConsumersSA.pdf.aspx?Embed=Y>

¹³⁷ Consumers SA, p. 2.

Mr Richard Clark also observed that the CNC challenge process appears to have been tremendously beneficial in testing SA Water's future plans, and expressed broad support for the CNC's recommendations for building in even greater community participation in developing future plans.¹³⁸ However, Mr Clark was concerned that SA Water's proposal provided limited evidence that it has considered alternative solutions to meet its proposed service outcomes, while achieving greater benefits at lower costs, citing the plans to upgrade the capacity of Bolivar to receive and treat additional wastewater and the NAIS as examples.¹³⁹

7.3.5.2 Further evidence considered by the Commission

The Commission's assessment has been able to draw on SA Water's detailed internal documentation that was not made publicly available. Two key documents provided further information on SA Water's planning process: the Water Lead Asset Management Plan and the Wastewater Lead Asset Management Plan.

To develop its RBP, SA Water first prepared a 'Technical Investment Plan', which is a bottom-up plan informed by specialist asset managers across the business. The Technical Investment Plan totalled \$2,079 million for both water and sewerage assets, but this did not include proposed IT expenditure. The levels of investment were based on the activities considered necessary to continue to achieve existing service levels as well as several areas in which customers had expressed some desire for improved services.

The Technical Investment Plan was then subject to internal challenge and scenario testing before a plan was developed to put forward to the CNC. The 'baseline' scenario totalled \$1,280 million and was developed to meet service requirements while sustaining or reducing asset risk.

The program put forward to the CNC reduced expenditure on asset renewals and increased expenditure to improve service levels for a total of \$1,512 million; which was a \$232 million (or 18 percent) increase on the internally-tested scenarios.

7.3.5.3 Cardno's evidence

Cardno suggested that, by inference, the Technical Investment Plan has a more conservative risk profile than that which SA Water is now willing to adopt for the SAW RD20 period.¹⁴⁰

Cardno noted that its analysis of the reprioritisation of the overall capital expenditure program between the program put forward to the CNC and that included in SA Water's RBP showed that some of the largest variances are \$103.7 million for the ZCEF project and \$123.7 million for growth projects (Kangaroo Island desalination, Eyre Peninsula desalination and the Upper Spencer Gulf Augmentation). It noted that while the emergence of new needs throughout a planning process is not unusual, the late inclusion of relatively large additional expenditure in these areas calls into question the cost-service-risk balance presented to the CNC, as no expenditure has been deferred or reprioritised to off-set the new items; they have been simply added to the previously proposed program.¹⁴¹

7.3.5.4 Commission's position

This evidence suggests to the Commission that there is likely to be further scope for SA Water to seek to reprioritise its capital expenditure program for the SAW RD20 period.

¹³⁸ Richard Clark, *submission to SA Water RBP*, pp. 1-2, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-RClark.pdf.aspx?Embed=Y>.

¹³⁹ Clark, pp. 3-5.

¹⁴⁰ Cardno, p. 27.

¹⁴¹ Cardno, pp. 26-30.

7.3.6 Closer monitoring of the benefits realised from expenditure is required to establish a clearer understanding of the relationship between expenditure and its intended performance outcomes

'Benefits realisation' is a standard process within expenditure governance frameworks.

SA Water has a form of benefits realisation in place, however, several issues were identified through this review. For example, SA Water identified a list of 172 'outcomes' that it wants to achieve during the SAW RD16 period. These outcomes are a combination of outputs (for example, activities undertaken or works delivered) and outcomes (for example, achieving an overall level of customer satisfaction of 87.5 percent), as well as measures of outcomes (for example, achieving 85 percent against the previous target).

While this list of outcomes for SAW RD16 is comprehensive, and performance is tracked across many of these areas, it is difficult to map the outcomes to SA Water's line of sight within its asset management framework and the use of outputs and outcomes within the framework for the same purpose creates some confusion around the relationship between expenditure and performance.

7.3.6.1 Cardno's evidence

Cardno acknowledged that estimating future benefits can be difficult. However, where benefits are unknown or uncertain, SA Water's customers are likely to benefit from a cautious approach that first verifies benefits through trials before wider expenditure programs are pursued.

Cardno noted that;

*'[w]hile capital program development and prioritisation seeks to optimise benefits to customers with cost, circumstances will inevitably change during the delivery period. Therefore, monitoring the benefits realised by expenditure provides assurance to customers and other stakeholders that an expenditure program continues to deliver value for money.'*¹⁴²

Cardno notes this is particularly important for the areas in which SA Water has proposed expenditure to improve service, as there is an explicit regulatory requirement that the benefits of this expenditure exceed the costs.

7.3.6.2 Commission's position

A more focused benefits realisation framework is required to establish a clearer relationship between expenditure and the performance outcomes achieved. This issue is linked to the issues raised about the need for greater alignment between stakeholder expectations and asset management objectives (as discussed in section 7.3.3), although it is more concerned with the process by which SA Water estimates future benefits (and performance outcomes) to be achieved at the time it is developing its plans and then seeks to verify the actual benefits achieved through ongoing monitoring and evaluation.

Benefits realisation should include specific measurement of performance or benefits before expenditure occurs to establish a robust baseline and further measurement afterward to confirm that the anticipated benefits have been achieved.

¹⁴² Cardno, p. 30.

7.4 Assessing expenditure proposed by SA Water for SAW RD20

SA Water's proposed capital expenditure program for SAW RD20 of \$1,738.3 million is around 23 percent higher than it is forecast to spend by the end of the SAW RD16 period. However, its proposed capital program for SAW RD20 is in itself around 36 percent higher than the capital expenditure benchmark used in the Commission's SAW RD16 Final Determination.

The major increase between SAW RD16 forecast expenditure and SA Water's RBP is driven by additional expenditure on water quality improvement programs (296 percent increase), growth-related projects (61 percent increase), mechanical and electrical works (58 percent increase), water network management (37 percent increase), and the IT program (13 percent increase). SA Water is proposing a marginal increase on sewerage network management (4 percent increase).

SA Water has proposed \$2,039 million of operating expenditure over the SAW RD20 period, when the expected efficiency benefits from the ZCEF initiative have been removed, which is five percent above actual expenditure in SAW RD16.

The remainder of this Chapter summarises the Commission's draft decisions on the prudence and efficiency of SA Water's actual capital expenditure during the SAW RD16 period and its proposed capital and operating expenditure for the SAW RD20 period by:

- ▶ establishing the efficient base year for operating expenditure (section 7.5)
- ▶ considering the operating expenditure for electricity across SAW RD20 (section 7.6)
- ▶ scrutinising the capital and operating expenditure proposed by SA Water and comparing the proposals against the longer-term expenditure and performance trends under the four key investment drivers SA Water used to categorise its expenditure proposal (external responsibilities in section 7.7, sustaining services in section 7.8, improving services section in 7.9 and enabling growth in section 7.10)
- ▶ scrutinising IT expenditure (section 7.11), and
- ▶ establishing top-down efficiency factors for both the operating and capital expenditure forecasts, taking into account any specific adjustments that have been made to the sample of programs, projects and initiatives reviewed, to avoid the potential for double counting of expected efficiencies (section 7.12).

7.5 Establishing the efficient base year for operating expenditure

In assessing the prudent and efficient level of operating expenditure for future years, the Commission starts by establishing an efficient 'base year'. This efficient base year takes an actual year of SA Water's operating expenditure, which is 'normalised' to remove any once-off or abnormal costs (or savings) incurred by SA Water in that year, to make it representative of the costs that SA Water is likely to face in future years. From this efficient base year, adjustments can then be made for known changes to SA Water's operating circumstances in future years.

7.5.1 SA Water's proposal

SA Water proposed 2018-19 as its base year for the purpose of calculating base line operational expenditure for SAW RD20. However, expenditure was higher than normal in 2018-19 for a number reasons including once-off and unique cost variances that SA Water has identified in its proposal. To account for this, SA Water proposed a number of 'normalisation' adjustments, which reduced operating expenditure by \$27.5 million, taking its starting position of \$506.5 million in 2018-19 down to a normalised base year of \$479 million.

The most significant of the normalisation adjustments proposed by SA Water related to electricity and associated energy costs, which accounted for a reduction of \$22.6 million. SA Water explained that electricity costs were abnormally high in 2018-19 because of the drier summer which resulted in a much higher volume of water being pumped than normal, both due to lower rainfall catchment in reservoirs and higher customer demand for water. In addition to this, average electricity prices remained high in 2018-19 and SA Water is exposed to the spot-price electricity market, having previously withdrawn from retail energy contracts in SAW RD16. SA Water also incurred a break-fee in choosing to terminate a long-term energy contract with AGL during 2018-19, although the cost of this break fee is likely to be outweighed by the benefits of future savings from a lower market price for Renewable Energy Certificates (RECs).

7.5.2 Commission's position

The Commission amended the starting position base year operating expenditure for 2018-19 from \$506.5 million to \$507.7 million in order to reconcile differences between the figures used in SA Water's RBP and actual expenditure as reported in its final regulatory accounts for that period.

From this revised starting point of actual operating expenditure in 2018-19, the Commission has determined that the 'normalised' prudent and efficient base year should be \$458 million (as compared with SA Water's proposal of \$479 million).

This is the result of removing the effects of the following once-off or abnormal costs incurred in 2018-19 to make it representative of a 'normal' year, and to account for anticipated efficiencies due to be recognised in 2019-20:

- ▶ \$6.9 million reduction to reflect the 1.5 percent general efficiency target applied by the Commission in the SAW RD16 final determination for 2019-20
- ▶ \$5.8 million reduction for electricity costs to:
 - remove \$3.2 million of revenue earned from the sale of RECs to help off-set higher energy costs in 2018-19 as SA Water actually recorded a loss on the disposal of RECs in 2018-19 (and it is proposed that revenue generated from the sale of RECs should be separately identified and accounted for in the future), and
 - remove \$2.6 million from the variable component of SA Water's network charges to reflect the abnormally high level of electricity used in 2018-19
- ▶ \$2.5 million reduction for labour costs primarily related to costs associated with positions that were left vacant, on the basis that it is normal to expect a certain level of vacancies in any given year, and
- ▶ \$2 million reduction for Allwater contract related costs (primarily an adjustment to reflect a payment made by Allwater in 2018-19 under the pain/gain share mechanism that was not recognised in SA Water's adjustments).

Further details on the adjustments made to establish the efficient base year are included in Appendix 3.

7.6 Incremental adjustments to electricity costs during SAW RD20

The Commission is proposing to make additional incremental adjustments to the operating expenditure benchmark for electricity costs during SAW RD20 to recognise the forecast reduction in electricity prices between the base year (2018-19) and throughout the period of SAW RD20.

These incremental adjustments are shown in Table 7.1 and are based on the change in the price of 'base load electricity' futures contracts traded on the Australian Securities Exchange (ASX), as published recently by the Australian Energy Regulator (AER).¹⁴³ The Commission has not made an incremental adjustment to the allowance for electricity operating costs in the final year of SAW RD20 given there are currently no futures contracts trading beyond 2022-23.

Table 7.1: SAW RD20 incremental adjustments to electricity

(\$m)	2020-21	2021-22	2022-23	2023-24
Normalised base year	59.6	59.6	59.6	59.6
Incremental adjustment for forecast reduction in energy prices	-5.4	-10.3	-9.7	-9.7
Electricity allowance for SAW RD20	54.2	49.3	49.9	49.9

Note: No incremental adjustment are proposed to 2023-24 due to there being no reliable source of electricity price forecasts beyond 2022-23.

7.7 External responsibilities

SA Water characterises external responsibilities as investments to meet its legal and regulatory responsibilities. In total, SA Water is proposing \$364.4 million of capital expenditure and \$50.4 million of operating expenditure in the SAW RD20 period to meet its external obligations, with the following key investments driving the majority of that expenditure:

- ▶ **Mount Bold Reservoir** – \$86.9 million of capital expenditure during SAW RD20 (with a further estimated \$215.5 million of capital expenditure during SAW RD24) for safety upgrades to the Mount Bold Reservoir to address the risks of failure posed by flood conditions and earthquakes, in line with the requirements of the Australian National Committee on Large Dams (ANCOLD) guidelines.
- ▶ **Eyre Peninsula Desalination Plant** – \$78.1 million of capital expenditure during SAW RD20 (with a further estimated \$13.1 million of capital expenditure during SAW RD16) to construct and operate a desalination plant at Sleaford Bay to address the water supply security issues that exist on the Eyre Peninsula while protecting the natural resources in the area.
- ▶ **Open Reservoirs** – \$13.8 million of capital expenditure during SAW RD20 to provide additional water treatment at Happy Valley treatment plant, as required under the Safe Drinking Water Act (\$9.2 million), and to upgrade site security and safety (fencing, gates, signage, cameras etc.) across seven reservoir sites (\$4.6 million) to allow recreational access to various reservoirs around the State.

The capital expenditure proposed represents a 17 percent decrease on the amount spent on external responsibilities in SAW RD16. However, SA Water is proposing an average additional \$12.6 million in operating expenditure per year across SAW RD20 to fund programs to meet its external responsibilities.

The Commission has been assisted by the members of the Regulators Working Group in seeking to assess the proposed expenditure under this driver.

¹⁴³ AER, ASX Energy (settled price on 27 September 2019) for base load contracts between 2019-20 and 2022-23.

7.7.1 Mount Bold Reservoir dam safety upgrade

SA Water proposes to invest \$86.9 million during SAW RD20 (and a further \$215.5 million during SAW RD24) for safety upgrades to the Mount Bold Reservoir. The safety upgrades involve increasing the structural strength of the spillway gate and dam to resist earthquake loads and large floods, and constructing an apron to prevent erosion that may occur as a result of overflows from a probable maximum flood. These safety upgrades will address the risks of failure posed by flood conditions and earthquakes, in line with the requirements of the ANCOLD guidelines.

The Technical Regulator supported SA Water's proposal, stating that the proposed works were necessary to meet ANCOLD guidelines, which are considered to be best practice for dam safety in Australia.¹⁴⁴

Cardno's assessment of this program also suggested that the proposed works were prudent, as they were within SA Water's overall obligations to manage its dams in line with the ANCOLD guidelines, and that the forecast costs represent the current best estimate of efficient costs for the project.¹⁴⁵

The Commission accepts the ANCOLD Guidelines as the basis of best practice for dam safety in Australia. Given the available evidence, the draft decision is that \$86.9 million is a prudent and efficient amount to be included in SAW RD20 for safety upgrades at the Mount Bold Reservoir. This is the same amount as proposed by SA Water. Given this project will be completed over two regulatory periods, the Commission is proposing to require that SA Water provide further documentation about the outputs expected by the end of SAW RD20.

Further details on this project are provided in Appendix 3.

7.7.2 Eyre Peninsula Desalination Plant

SA Water proposes to construct a desalination plant at Sleaford Bay on the Eyre Peninsula, to relieve pressure on the existing groundwater source (Uley South Basin), which is currently operating at above the long-term sustainable extraction level. The completed plant will have a capacity of 4 GL per annum, with the marine and transfer pipeline infrastructure sized for an ultimate capacity of 8 GL, to allow for future demand growth. Construction costs are estimated at \$91.2 million, with expenditure up to June 2020 forecast at \$13.1 million, and the remaining \$78.1 million included in the SAW RD20 proposal, with commissioning of the plant due ahead of the 2021-22 summer.

The Commission considered analysis by the Department for Environment and Water, which confirms that the current extraction levels from the Uley South Basin are unsustainable, and Cardno's assessment that the options analysis undertaken by SA Water was appropriate, and that the sizing and costing of the proposed desalination plant solution was efficient.¹⁴⁶

The draft decision is that \$78.1 million, as proposed by SA Water, is a prudent and efficient amount to be included in SAW RD20 for completion of the Eyre Peninsula desalination project. The Commission expects project-specific documentation on the outcomes this expenditure achieves (in this case, balancing supply and demand, water security, and water quality), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

Further details on this project are provided in Appendix 3.

¹⁴⁴ Technical Regulator, *submission to SA Water RBP*, p. 1 available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-OTR.pdf.aspx?Embed=Y>.

¹⁴⁵ Cardno, pp. 82-83, C21-C24.

¹⁴⁶ Cardno, p. 83 and pp. C25-C27.

7.7.3 Open Reservoirs

SA Water proposes to invest \$13.8 million of capital expenditure during SAW RD20 to provide additional water treatment at Happy Valley treatment plant (\$9.2 million), and to upgrade site security and safety (fencing, gates, signage, cameras etc.) across seven reservoir sites (\$4.6 million) to allow recreational access to various reservoirs around the State.

SA Health has advised that the works at Happy Valley treatment plant are required to allow SA Water to continue to meet its obligations under the Safe Drinking Water Act, while facilitating recreational access at this site. The proposed works to upgrade site security and safety at other reservoirs also appear to be reasonably required to ensure safe public access to these sites.

Accordingly, the Commission accepts that the additional works are required, and has included the \$13.8 million proposed capital expenditure in the Draft Determination. While the Commission has not scrutinised the efficiency of the planned open reservoirs expenditure as part of its sampling of SAW RD20 capital expenditure, the actual investment on this initiative may be tested as part of the ex-post sample at SAW RD24.

7.7.4 Additional operating expenditure proposed for meeting external obligations

SA Water is proposing an average additional \$12.6 million in operating expenditure per year across SAW RD20 to fund programs to meet its external responsibilities.

Table 7.2: SA Water initiative by average additional operational expenditure per annum

External obligations initiatives	SA Water proposal (\$m)	Draft Determination (\$m)	Adjustment (\$m)
Eyre Peninsula Desalination	5.1	3.9	-1.2
Asset investment operating costs	3.8	2.6	-1.2
NAIS	2.8	2.8	0
IT investment operating costs	1.8	1.8	0
Safety (property portfolio)	0.7	0.5	-0.2
Environmental improvement plans (including recycling)	0.8	0.8	0
Water industry licence fee reduction	-2.4	-2.4	0
Total	12.6	10	-2.6

The majority of the additional costs identified are the result of new obligations that SA Water is required to meet and are therefore considered prudent. However, several adjustments have been made to set the proposed costs at an efficient level of an average of \$10.0 million per year, which is 20 percent lower than the amount proposed by SA Water.

The adjustments are the result of:

- ▶ an average \$1.2 million per annum reduction to additional proposed operational expenditure for the Eyre Peninsula desalination plant
- ▶ an average \$1.2 million per annum reduction to additional proposed asset investment operational expenditure, and
- ▶ an average \$0.2 million per annum reduction to additional proposed operational expenditure for property portfolio related safety initiatives.

7.7.4.1 Eyre Peninsula Desalination

The Commission has determined that this project is prudent and efficient (refer 7.7.2). However, SA Water has provided inconsistent information on the required operational expenditure required to support this project.

SA Water's RBP proposed an average additional \$5.1 million per annum, while the more detailed business case proposed an average additional \$3.9 million per annum. The draft decision is to accept the level of expenditure proposed in the business case.

7.7.4.2 Asset investment operating costs

SA Water proposed an average additional \$3.8 million per annum of operating expenditure for the following programs to meet its external obligations:

- ▶ Optimising Waste Water Treatment Plant (WWTP) Wastewater treatment plant performance - \$1.2 million
- ▶ Non-electricity costs for the Eyre Peninsula Desalination Plant - \$1.2 million
- ▶ Sewerage odour reduction - \$1.0 million
- ▶ Water dam and network operations - \$0.4 million

The Commission accepts all of these proposed additional costs as being prudent and efficient, with the exception of the non-electricity costs for the Eyre Peninsula Desalination Plant, (which is in addition to the amount separately identified in section 7.7.4.1), as SA Water has provided no explanation of why these additional costs are necessary.

Further details on the drivers of additional operating expenditure for meeting external responsibilities are provided in Appendix 3.

7.8 Sustaining services

SA Water characterises sustaining services as investment to allow it to continue to provide and sustain reliable services for its customers, by planning ahead and investing where needed. In total, SA Water is proposing \$868.4 million of capital expenditure and \$65.7 million of operating expenditure in the SAW RD20 period to sustain services, with the following key investments driving a significant portion of that expenditure:

- ▶ **Reticulated water mains management** – \$144.2 million of capital expenditure to manage its water reticulation network to minimise interruptions to water supply, with a particular focus on decreasing the number of customers who experience three or more interruptions in a 12-month period down from 2,862 (the average across the four years to 2018-19) to 1,750 by the end of SAW RD20.

- ▶ **Sewerage mains management program** – \$67.6 million of capital expenditure on a program of work to renew approximately 89 kilometres of reticulated sewer mains, in order to maintain the serviceability of the sewer network.
- ▶ **Morgan to Whyalla Pipeline No. 1** – \$61.9 million of capital expenditure to renew approximately 14 km of the Morgan to Whyalla Pipeline No. 1, to ensure ongoing reliability of water supplies to townships and a number of large industrial users in the region.
- ▶ **Water Storage Tanks Renewal Reliability program** – \$19.7 million of capital expenditure to upgrade and improve the condition of water storage tanks, to maintain continuity of water supply, and to address risks to the quality of water supplied.

The capital expenditure proposed represents an 18 percent increase on the amount spent on sustaining services in SAW RD16. SA Water has also proposed an additional \$16.4 million per year (on average) across SAW RD20 to fund programs related to sustaining services.

Sustaining services should primarily involve work that is routine and repeatable and it is in an area where improvements in technology and strategic contracting arrangements are likely to result in ongoing efficiencies. This means that any proposed increases in expenditure should be able to point to a clear driver.

Two matters of general guidance were provided on the Commission's expectations for this driver of expenditure.

First, guidance was provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

Second, guidance was provided that service standards should cover the elements of service that matter to customers, so as to act as a reference point for expenditure proposals (Guidance Paper 3).

SA Water has not been able to demonstrate that a number of the proposed expenditure increases are justified relative to what it should already be carrying out as part of its regular business-as-usual activities. Further, in the absence of a new obligation or significant change in circumstance, simply identifying new activities is not in itself a justification for an increase in total expenditure. Rather, while some new activities may be required in the future, other activities which previously took place may no longer be required, offsetting the increase in other 'new' costs.

7.8.1 Reticulated water mains management

SA Water proposes to invest \$144.2 million during SAW RD20 to manage its reticulated water mains network, comprising \$112.0 million for mains replacement, and a further \$32.2 million for smart networks, pressure management, and additional isolation valves. This program aims to ensure the ongoing reliability of the water reticulation network to provide water supply to customers, using an internal target of 'no more than 1750 customers experiencing three or more interruptions in a 12 month period'. The proposed program comprises a combination of mains replacement; pressure management; smart networks; and reducing the number of customers impacted by an interruption through the installation of additional isolation valves.

SA Water's proposal for SAW RD20 is a decrease of \$17.1 million, or 11 percent, on actual SAW RD16 expenditure.

The Commission has reviewed the water reticulations mains program in both SAW RD16 and SAW RD20 in detail, given the importance of this program on the levels of service experienced by customers and its contribution to the cost of the overall water network management program.

The SAW RD16 Final Determination for reticulated mains replacement was \$83.2 million. In late 2016, following a spike in customers experiencing three or more unplanned water interruptions and considerable public interest and media coverage on mains bursts, SA Water's Board signed off a further \$53.6 million of mains replacement works to address the issue.

Cardno suggested that the response was disproportionate to the deterioration in performance, and resulted in bringing forward the need for mains replacement. An adjustment of \$22.0 million across the SAW RD16 period is recommended to recognise that outcome.¹⁴⁷

As this relates to the timing of mains replacement, rather than any issue over expenditure being wasteful or inefficient, the Commission is proposing to allow the investment to be added to the RAB after four years. That is, SA Water will forgo any return on the investment for a period of four years, and the investment will be added into the RAB over the SAW RD20 period.

SA Water's investment activities in SAW RD16 helped to inform the proposal to increase expenditure in this area in SAW RD20.

Cardno suggested that the proposed level of mains replacement in SAW RD20 was a reasonable approach to sustaining and gradually improving network performance, while noting that the improvements in service proposed, rather than seeking to sustain current service levels, required customer support. However, Cardno suggested that SA Water should be more cautious in pursuing smart networks and pressure management initiatives, until the benefits are known and able to be quantified to the extent necessary to justify and prioritise a more ambitious work program of the type proposed. It recommended that this program be adjusted so that only half of the proposed expenditure (\$13.2 million) for smart networks and pressure management should be considered prudent. Cardno concluded that the costs forecast by SA Water for this program of work were a reasonable estimate of efficient costs.¹⁴⁸

The Commission has also considered the outcomes of a review of SA Water's water main management, commissioned by the SA Water Board, and undertaken by AMCL. This report examined 24 asset management capability areas, assessing seven as leading, 15 as typical, and two where SA Water's approach did not compare favourably with its peers. These areas were resource management and investment optimisation.

AMCL commented that SA Water's resources are not managed strategically, with resource numbers not being aligned to forecast work volumes and poor planning of work leading to inefficient use of resources.¹⁴⁹ Further, AMCL identified misalignment between decision making and budget accountability, with a focus on meeting the Commission's targets, rather than delivering efficiently. There were further issues identified around the measurement of utilisation of Allwater work crews, and variations in training and competencies, driven by utilising a mix of unionised and non-unionised staff.

The Commission notes that SA Water has chosen not to renew its Allwater strategic alliance contract and, from 1 July 2021, will be implementing a revised metro Adelaide contracting strategy, which will afford it the opportunity to address the identified issues.

On investment optimisation, AMCL identified that SA Water had made '*significant assumptions and some errors*' in the development of its draft business case for the SAW RD20 period.¹⁵⁰ AMCL identified the need for the business case process to include more robust challenge and assurance, to ensure '*line of sight*' is maintained with stakeholder requirements. In particular, AMCL noted that incorrect communication had resulted in the business case including funding for improvements to service (a reduction in the number of customers experiencing three or more unplanned supply interruptions), when the outcome of the willingness to pay studies was to reject these improvements in service.

¹⁴⁷ Cardno, pp. 69-71 and pp. B1-B8.

¹⁴⁸ Cardno, p. 78-80 and pp. C1-C4.

¹⁴⁹ AMCL, p. 51.

¹⁵⁰ AMCL, p. 46.

As customers were not prepared to pay the amounts required to improve service in this area, the Commission has examined the underlying analysis used to establish the level of mains replacement required to instead maintain the current level of service. For metropolitan customers, maintaining the current level of service requires mains replacement of \$10.0 million per year, \$6.0 million per year (\$24.0 million over SAW RD20) less than SA Water's proposal. For regional customers, SA Water's proposal of \$12.0 million per year is appropriate to maintain the current level of service.

Further, the Commission accepts Cardno's evidence that further efficiencies should be achievable through a more cautious approach to pursuing smart networks and pressure management initiatives, until the benefits are proven, and consequently will adjust SA Water's proposed expenditure by the \$13.2 million amount put forward in Cardno's evidence.

The draft decision is that \$107.0 million is a prudent and efficient amount to be included in SAW RD20 for the reticulated water mains network management program. This is 34 percent lower than the amount spent in SAW RD16 and \$37.2 million less than the amount proposed by SA Water.

This level of funding should allow SA Water to manage the reticulated mains network to maintain the current level of service, while seeking to optimise the mix of mains replacement, pressure management, valve installations and the use of smart networks.

The Commission is also proposing to introduce additional service standards to monitor water network reliability outcomes (refer Chapter 6).

Further details on this project are provided in Appendix 3.

7.8.2 Sewerage mains management program

SA Water is proposing to invest \$98.8 million on its sewerage network management programs, which is an increase of \$3.8 million, or 4 percent, on SAW RD16 expenditure. This increase can be attributed to the following large programs:

- ▶ sewerage reticulation mains program (\$67.6 million)
- ▶ sewerage odour management program (\$20.2 million), and
- ▶ sewerage network ancillaries (\$8.8 million).

The Commission has reviewed the sewerage reticulation mains program in both SAW RD16 and SAW RD20 in detail, given that the proposed SAW RD20 program is a 47 percent increase on the SAW RD16 program.

The sewerage reticulation mains program in SAW RD16 covered the renewal of both trunk and reticulation gravity mains (37km in total), although the program principally covered sewer mains which can be lined rather than replaced. The expenditure benchmark was set at \$13.7 million at the start of SAW RD16, which was lower than the \$18.9 million SA Water had included in its original business case. Outturn expenditure is forecast to exceed this amount by a small margin (\$0.4 million or 2 percent) at \$19.3 million.

Cardno noted that there was an observable deteriorating trend in overflow performance, and that the rate of that deterioration was a cause for concern and provided sufficient evidence that an increased investment in the renewal of sewers to address end of life failure of assets and to avoid dry weather overflows is needed to avoid the occurrence of environmental, public health and service reliability impacts.¹⁵¹ Further, Cardno suggested that the approach adopted by SA Water of assessing and relining mains prior to complete asset failure was logical and economically sound.

¹⁵¹ Cardno, pp. 71-72, B12-B15.

A major project within the SAW RD16 sewerage mains program was also reviewed to assess whether it was a prudent investment, and that it had been delivered efficiently. The project relates to the installation of 2.5km of new sewer mains, to increase the sewer network capacity from the north west of Adelaide CBD, at a budgeted cost of \$11.4 million. The project overspent against the initial budget by \$0.6 million. A detailed review of this project revealed that the additional expenditure was driven by numerous issues that Cardno suggested should have been partially or entirely within the control of SA Water's contractor to manage. Cardno suggested that the budgeted cost of the project, rather than the actual costs incurred, better represented the efficient cost of the works. It is, therefore, proposed to not include the \$0.6 million of additional expenditure in the RAB¹⁵².

The review of the SAW RD16 program helped to inform the assessment of the SAW RD20 program.

SA Water proposed to invest \$67.6 million during SAW RD20 in a program of work to renew approximately 89 kilometres of reticulated sewer mains, in order to maintain the serviceability of the sewer network. The proposal is to continue its current practice of relining pipes rather than replacing assets after they have collapsed and failed, with all mains that have been assessed to be in 'poor' or 'very poor' condition included in the program for renewal. As noted above, this is a 47 percent increase on the amount spent on this program in SAW RD16.

Cardno noted that the magnitude of the proposed expenditure program is based on renewing all pipe sections known or estimated to be in 'poor' or 'very poor' condition during the SAW RD20 period, without clear evidence that the consequences of failure of these pipes had been adequately considered.¹⁵³ Cardno examined SA Water's Wastewater Gravity Main Decision Support Tool, which is used to prioritise renewals within the overall program. While Cardno found the tool to be broadly sound, it noted that the risk scoring for the 'consequence of failure' for specific sections of pipe identified for renewal within the overall program needed further refinement. Cardno noted that SA Water has acknowledged the need for further refinements to its risk-based approach, noting its intention to move towards more sophisticated consequence scoring in the future in its approach document for managing wastewater mains.

Cardno suggested that SA Water's current strategy is not appropriate, as it does not establish the risk threshold for the assets or allow for the determination of the optimal intervention timing based on the varying criticality of pipes within the broader proposed program.¹⁵⁴ For this reason, Cardno was not convinced that SA Water is able to satisfactorily balance cost and risk, or reliably enhance the performance of the sewerage network. Cardno noted that an improved understanding of risk in this asset class may lead to further improvements in performance (all else being equal) in the SAW RD20 period, without the need for a ramp-up in expenditure. On cost efficiency, Cardno recommended that a five percent efficiency adjustment (rather than the three percent proposed) be applied to the program, given that the work is routine, repeatable and in an area where technology gains are evident.¹⁵⁵

The draft decision is to accept the evidence provided by Cardno that SA Water should be able effectively manage its sewerage mains program with expenditure in SAW RD20, in line with that of SAW RD16, at \$45.1 million. This is \$22.5 million less than the amount proposed by SA Water.

The Commission is also proposing to introduce additional service standards to monitor sewerage network reliability outcomes (discussed further in Chapter 6).

Further details on this project are provided in Appendix 3.

¹⁵² Cardno, p. 72 and pp. B16-B18

¹⁵³ Cardno, p. 81 and pp. C9-C11.

¹⁵⁴ Cardno, p. 81 and p. C11.

¹⁵⁵ Cardno, p. C12.

7.8.3 Morgan to Whyalla Pipeline No. 1 works

SA Water proposes to invest \$61.9 million during SAW RD20 to renew approximately 14 km of the Morgan to Whyalla Pipeline No. 1, sections of which recent condition assessments have identified as being in a deteriorating condition. The major driver of the works is to ensure ongoing reliability of water supplies to townships and a number of large industrial users in the region.

Cardno suggested that, based on its review of the condition assessments undertaken by SA Water, it considered the proposed works to be prudent. It also concluded that, based on a review of the options analysis undertaken and an assessment of the proposed unit costs of the planned works, the forecast costs were likely to be efficient.¹⁵⁶

The draft decision is that \$61.9 million is a prudent and efficient amount to be included in SAW RD20 for renewal works on the Morgan to Whyalla Pipeline No. 1.

The Commission expects that SA Water will document capital and operating expenditure, and the related outputs and the outcomes, and that documentation will be available to support an ex-post review at the end of SAW RD20.

Further details on this project are provided in Appendix 3.

7.8.4 Water storage tank renewals

SA Water is proposing to invest \$176.5 million on its structures programs, which is a decrease of \$17.7 million, or 9 percent, on SAW RD16 expenditure.

The Commission has reviewed the Water Storage Tanks Renewal Reliability program in both SAW RD16 and SAW RD20 in detail, given that SA Water has proposed to spend less in this area in the SAW RD20 period, which was itself a decrease on the capital expenditure benchmark in the SAW RD16 Final Determination.

SA Water proposes to invest \$19.7 million during SAW RD20 to upgrade and improve the condition of water storage tanks through its Water Storage Tanks Renewal Reliability program, to maintain continuity of water supply, and to address risks to the quality of water supplied.

The Commission has considered the evidence provided by Cardno on its review of the structures program for SAW RD16, including all planned works on water storage tanks, which concluded that SA Water had overstated the risk related to these assets at the time of SAW RD16. It recommended that the prudent level of investment over the SAW RD20 period should be reduced by \$5.8 million, to reflect the fact that SA Water had spent 26 percent less than it had previously planned for the SAW RD16 period, and had failed to complete an inspection program to assess the condition of all storage tank assets, with 34 percent of water storage tanks remaining uninspected.¹⁵⁷

The draft decision is that \$13.9 million is a prudent and efficient amount to be included in SAW RD20 for the Water Storage Tanks Renewal Reliability program. This is \$5.8 million less than the amount proposed by SA Water. The adjustment reflects that SA Water appears to have overestimated the risks relating to water storage tanks.

SA Water should inspect the remainder of its water storage tanks during SAW RD20, to determine a complete picture of the risks associated with these assets. Following this, a revised program of works should be established to mitigate risks.

¹⁵⁶ Cardno, p. 8 and pp. C17-C19.

¹⁵⁷ Cardno, pp. 81-82 and pp. C13-C17.

The Commission expects project-specific documentation on the outcomes that expenditure achieves (in this case, ongoing reliability of water supplies), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

Further details on this project are provided in Appendix 3.

7.8.5 Additional operating expenditure proposed for sustaining services

In total, SA Water proposes an additional \$16.4 million per year (on average) across SAW RD20 to fund programs related to sustaining services.

Table 7.3: SA Water initiative by average additional operational expenditure per annum

Sustain initiatives	SA Water proposal (\$m)	Draft Decision (\$m)	Adjustment (\$m)
Adelaide Desalination Plant contract	4.4	2.4	-2.0
Asset investment operating costs	4.1	0.0	-4.1
SAW RD16 IT operating cost uplift	3.2	0.5	-2.7
Wage increases	2.1	0.0	-2.1
Technical training	1.0	0.15	-0.85
IT licencing cost above inflation	0.6	0.6	0
IT investment operating costs	0.4	0.4	0
Water network management	0.4	0.0	-0.4
Total	16.4	4.2	-12.2

The draft decision is that an additional \$4.2 million per year is likely to be prudent and efficient additional operational expenditure, on the basis that the increased preventative maintenance proposed is a sound approach to managing the Adelaide Desalination Plant (ADP) and some of the additional IT costs are reasonably required to maintain current services. This is 74 percent lower than the amount proposed by SA Water.

The adjustments are the result of:

- ▶ an average \$2.0 million per annum reduction to additional proposed operating expenditure for the ADP
- ▶ an average \$4.1 million per annum reduction to additional proposed asset investment operating expenditure
- ▶ an average \$2.7 million per annum reduction to additional proposed operating expenditure to provide ongoing support for the SAW RD16 IT capital program
- ▶ an average \$2.1 million per annum reduction to additional proposed operating expenditure for an above CPI wage increase, and
- ▶ an average \$0.85 million per annum reduction to additional proposed operating expenditure for technical training.

7.8.5.1 Adelaide Desalination Plant contract

SA Water proposes an average additional \$4.4 million per annum of operational expenditure for increased costs associated with operating and maintaining the ADP.

The following two elements make up approximately half of the proposal each:

- ▶ higher maintenance costs due to aging ADP assets, and
- ▶ an increase in the cost of energy (specifically the cost of buying RECs) to operate the ADP.

The ADP is subject to a federal funding agreement that requires 100 percent of its electricity to be offset by accredited Green Power RECs. Until now, SA Water has met this requirement through an electricity contract with AGL, which required SA Water to buy a minimum number of RECs per year at a specified price. Under the AGL contract, both the price and the number of RECs SA Water were required to buy were forecast to rise in SAW RD20. These contractual obligations would have materially increased the ADP energy costs over SAW RD20.

SA Water's proposal for additional operating expenditure to run the ADP does not appear to take into account the fact that it terminated the AGL contract, effective June 2020.

As a consequence that termination, from the start of the new regulatory period in July 2020 SA Water will be able to limit its purchases to only the number of RECs required under the federal funding agreement and at market prices.

The number of RECs SA Water must purchase under its federal funding agreement for the ADP will increase over SAW RD20; however, this increase is significantly less than that which had been required under the AGL contract. As SA Water will be purchasing RECs from the market, the cost associated with the required increase in RECs will not be significant (approximately 0.5 percent of SA Water's total forecast electricity costs). That cost has been included in the proposed operational expenditure benchmark for electricity in SAW RD20.

As such, the Draft Determination removes the additional expenditure associated with SA Water purchasing additional RECs (beyond those it needs to fulfil its federal funding agreement obligations) at a higher price during SAW RD20.

7.8.5.2 Asset investment operating costs

SA Water proposes an average additional \$4.1 million per annum of operational expenditure for a range of programs to sustain its network and ancillary assets:

- ▶ Prioritised investigations and maintenance of major non-pipeline assets - \$3.2 million
- ▶ Maintenance on ancillaries in the sewerage network - \$0.5 million
- ▶ Condition investigations across pumping mains - \$0.2 million
- ▶ Major pipeline ancillary asset refurbishment - \$0.2 million

SA Water has not clearly aligned the proposed activities under this proposed asset investment expenditure with an associated rationale or specific explanation or justification. Without understanding why these works have not previously been undertaken, and why SA Water's existing operating expenditure for investigation and maintenance cannot be reprioritised to deliver this program of works, the Commission cannot justify allowing this expenditure. Rather, in the absence of any evidence to the contrary, the Commission has accepted Cardno's evidence that this expenditure should be seen as business-as-usual and accommodated within existing levels of expenditure.¹⁵⁸

¹⁵⁸ Cardno, pp. 55-56.

7.8.5.3 Additional ongoing operating expenditure to support IT investments undertaken in SAW RD16

SA Water proposed an average additional \$3.2 million per annum of operational expenditure to support the ongoing, and increasing, costs associated with its current SAW RD16 IT capital program.

SA Water state that increasing costs related to the SAW RD16 IT capital program are being driven by:

- ▶ higher initial operating costs associated with the use of Software as a Service solutions, and
- ▶ the transformation of SA Water to a digital utility.

However, SA Water's proposal for an average additional \$3.2 million per annum of operational expenditure to support the SAW RD16 IT program, is in addition to the \$2.8 million of operational expenditure that is embedded in the base year to support these IT programs. Consequently, if this additional operational expenditure is approved, the anticipated peak operating costs associated with SA Water's SAW RD16 IT program will have almost doubled. Additionally, no further efficiencies or business savings will be generated from the proposed additional operating expenditure other than those already embedded in the base year.

The Commission does not consider this additional operating expenditure to be prudent and efficient.

However, as these programs are ongoing the Commission accepts an average additional \$0.5 million per annum of operating expenditure to bring the \$2.8 million per annum embedded in the base year up to the approved peak operating expenditure for the SAW RD16 IT program of \$3.2 million per annum.

7.8.5.4 Wage increases

SA Water proposes an average additional \$2.2 million per annum of operational expenditure to cover the costs of providing wage increases above the CPI for its staff. SA Water's proposal has two underlying drivers:

- ▶ In the renegotiation of its enterprise bargaining agreement, SA Water anticipates strong argument for an above CPI wage increase to compensate employees for the forecast labour productivity growth (demonstrated by the forecast gap between Wages Price Index (**WPI**) and CPI).
- ▶ Offering above CPI wage increases is key to attracting and retaining talent, improving internal Engagement and Culture indexes, and increasing labour productivity.

The draft decision is that no additional operational expenditure is required to allow SA Water to manage its labour costs in SAW RD20.

Labour costs are the single largest cost line of SA Water's normalised base year operating expenditure at \$122 million, this is 26 percent of its total controllable operating expenditure. It is a fundamental principle of economic regulation to incentivise efficiency in these costs that SA Water can control.

SA Water has stated that its labour prices have historically risen at a rate higher than the CPI and has pointed to evidence that wages, through the WPI, have done the same. The Commission accepts this argument over the long-term.

However, in the short-run, the Commission considers that the growth in the price of labour can be expected to vary with, among other things, economic conditions (namely spare capacity in the labour market), short and long-term inflation expectations, and bargaining power. Accordingly, while the gap between WPI and CPI may be indicative of labour productivity growth, it may at times reflect other factors. For instance, slower economic growth and spare capacity in the labour market may limit real wage demands in wage bargaining.

There is evidence that SA Water has demonstrated effectiveness at achieving labour productivity gains over the longer term, and managing its labour costs in a manner that meets employee and market expectations within the CPI envelope.

By driving labour force productivity over the longer term, SA Water will continue to have the capacity to pay above CPI wages to attract and retain talent, and improve employee engagement.

To address the potential for 'double counting' efficiencies, the Commission has removed SA Water's efficient base year labour costs from the calculation of the 0.5 percent general efficiency target for operational expenditure.

Further details on the drivers of additional operating expenditure are provided in Appendix 3.

7.9 Improving services

SA Water characterises improving services as investments reflecting customer feedback on what is important to them and what they are willing to pay for. In total, SA Water is proposing \$278.5 million of capital expenditure and \$32.9 million of operating expenditure in the SAW RD20 period to improve services.

The capital expenditure proposed represents a 148 percent increase on the amount spent on improving services in SAW RD16. SA Water is also proposing an average additional \$8.2 million in operating expenditure per year across SAW RD20 to fund programs to improve services.

The majority of the improvement program is focused on water quality management programs, which total \$186.6 million, an increase of \$175.3 million on SAW RD16 expenditure. The water quality management program is driven by three large projects:

- ▶ **Metropolitan water quality improvement program** – \$122.2 million to improve the taste of drinking water in metropolitan Adelaide by changing its disinfection and filtration practices, with a particular focus on improving customers' perceptions of water quality, noting that while 80 percent of its metropolitan Adelaide customers drink mains water, only 49 percent are satisfied with its taste, citing the chlorine, earthy or musty taste as the main issues.
- ▶ **Upgrades to 340 of 650 properties in regional areas with non-potable supplies** – \$37.7 million to start its program to upgrade the water supply to drinking water quality for 340 properties out of the total of 650 properties in regional areas where SA Water currently provides non-drinking water, with the remaining customers' supplies upgraded in SAW RD24.
- ▶ **Regional towns water aesthetics** – \$24.8 million to improve the quality of the drinking water provided in several regional towns, noting that while 61 percent of its regional customers drink mains water, only 75 percent are satisfied with its taste. The majority of the investment in SAW RD20 will be in the regional townships of Melrose, Naracoorte, Quorn and Wilmington, where the aesthetic quality of the drinking water makes it unpalatable to drink and results in the premature aging of appliances.

The Commission has reviewed each of these projects in detail, given the contribution of these projects to the overall water quality management program, and that SA Water's proposal to undertake them is in response to feedback provided by its customers.

Three matters of general guidance were provided on the Commission's expectations for this driver of expenditure.

First, guidance was provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

Second, guidance was provided that evidence from customer engagement would be required to support expenditure proposals designed to improve levels of service, including evidence drawn from the results of willingness to pay research (Guidance Paper 3).

Third, guidance was provided that service standards should cover the elements of service that matter to customers, so as to act as a reference point for expenditure proposals (Guidance Paper 3).

7.9.1 Metropolitan water quality program (Happy Valley Water Treatment Plant and chloramination plant)

SA Water proposes to invest \$122.2 million during SAW RD20 to improve metropolitan water quality. This is comprised of two interrelated projects: Happy Valley water treatment plant upgrades (\$68.6 million), and the introduction of chloramination (\$53.6 million), to be delivered over four years and completed by the end of SAW RD20.

SA Health has expressed support for this program, but noted that it is not necessary to meet drinking water quality guideline requirements. Support among other stakeholders for undertaking this program was mixed. While this investment is not required to meet the requirements of the ADWG, it is expected to provide wider public health and environmental benefits. There is clear support for introducing chloramination from SA Health, the CNC, and Consumers SA. However, aesthetic improvements that do not have public health benefits are not supported by SACOSS, Business SA or Uniting Communities. These reservations need to be considered alongside the results of the willingness to pay research which showed that the majority of customers are willing to pay for the costs of the metropolitan water quality projects (\$124 million) to improve the taste of drinking water.¹⁵⁹

As previously noted in Chapter 6, Cardno's analysis confirms that SA Water is already exceeding some of the requirements of the ADWG.¹⁶⁰ Cardno suggested that it is important for SA Water to revisit its interpretation of the guidelines relating to aesthetic parameters and establish a scientific basis for the pre and post position for investment. It also suggested that SA Water's intention to undertake focused customer surveys before and after the investment, alongside water quality testing, was important for documenting the benefits of this program.

In assessing the proposed delivery timeframe, Cardno put the view that it would be prudent for SA Water to deliver these works across six years rather than the four proposed, to enable it to better learn from and overcome the technical challenges expected from a rollout of this size. It further noted that this approach would also allow SA Water to be able to better define the benefits to be achieved and to document how these benefits have actually been realised.

On the matter of efficiency, Cardno noted that the proposed costs are based on the best available information at this time, but that efficient costs will only become clear following a procurement process. Further, Cardno confirmed that there are material cost benefits to undertaking the two parts of the project together.

The draft decision is that \$80.8 million is a prudent and efficient amount to be included in SAW RD20 for the metropolitan water quality projects. This is \$41.4 million less than the amount proposed by SA Water. This reflects the Commission's position that it is prudent to undertake the works over six years, rather than the four years that SA Water proposed.

¹⁵⁹ Marsden Jacobs Associates, *SA Water customer willingness to pay survey*, May 2019, included as Appendix C to SA Water's RBP.

¹⁶⁰ Cardno, p. 87, C-31 to C-37.

The stated key driver for this increased level of investment is responding to customer willingness to pay for improved service. Accordingly, it is important for SA Water to undertake further work to establish the baseline performance from both a technical/scientific analysis of the water produced, and how it is intending to accurately monitor and measure customer perceptions of water quality directly attributable to this investment.

Given the stated importance of this program to customers, the Commission is also proposing to introduce a new reporting requirement around water aesthetics to separate out scientifically measurable technical outputs from customer perceptions of water quality, with the latter being a strong driver of SA Water's proposed investment in this area. This is discussed further in Chapter 6.

Further details on this project are provided in Appendix 3.

7.9.2 Upgrades to 340 of 650 properties in regional areas with non-potable supplies

SA Water proposes to invest \$37.7 million during SAW RD20 to provide potable water supplies to 340 properties across 19 systems that currently have a non-potable water supply. Seventeen of these systems are in the upper north of South Australia. The initial focus is on northern railway towns, with the remaining 310 properties to be addressed during SAW RD24.

The Commission notes that, through its willingness to pay research, SA Water has established customer support for this program of work.

However, there was broad opposition to this proposal from stakeholders, over issues of both cost, and wider public policy considerations. For example, concerns were raised by the CNC, and echoed by SACOSS, that the extent of SA Water's obligation to supply, and the broader matters of where and how potable water supplies are provided, and funded, are matters of South Australian Government policy that are likely to require wider consideration. The Commission agrees that these are matters of South Australian Government policy.

Notwithstanding the mixed views of stakeholders on this program, in its current form, it proposes a partial solution that provides limited incremental benefits to a small number of customers at a very high cost per directly-benefitting customer. Therefore, the draft decision is to not include the \$37.7 million proposed to upgrade non-potable water supply for 340 properties.

The Commission will liaise, where appropriate, with the South Australian Government to help inform policy development regarding SA Water's obligation to supply, and where and how potable water supplies are provided and funded. If required, in order to be consistent with South Australian Government policy, the Commission will reconsider expenditure proposals for upgrading non-potable supplies during SAW RD20, using the contingent project review mechanism described in Chapter 4.

Further details on this project are provided in Appendix 3.

7.9.3 Regional towns water aesthetics

SA Water proposes to invest \$24.8 million during SAW RD20 to improve water aesthetics in regional towns. The expenditure covers the connection of Melrose, Wilmington and Quorn with supply from the River Murray at Booleroo via a 90 kilometre pipeline; construction of a desalination plant at Naracoorte; and, minor improvements at Swan Reach, Morgan, Nangwarry and Cadell.

While the program and level of expenditure are broadly supported by customers, SA Water has not established a long-term program for regional water aesthetic upgrades (the need for which was identified at SAW RD16), or a clear line of sight between its proposed infrastructure projects and the improvements customers should expect.

The draft decision is to not allow the \$24.8 million proposed for the regional water quality improvement program because SA Water has not established that it is prudent and, in its current form, the program appears to provide limited incremental benefits to a small number of customers at a very high cost per customer. However, the Commission would be prepared to consider a proposal for expenditure to allow for the development of a long-term plan (with the amount to be determined), and to place the regional water quality improvement program on the 'contingent project' list, with its progression contingent on finalisation of that long-term plan, and establishment of a clear line of sight between the proposed expenditure and the expected benefits to be achieved.

Further details on this project are provided in Appendix 3.

7.9.4 Additional operating expenditure for improving services

In total, SA Water proposes an additional \$8.2 million in operating expenditure per year (on average) across SAW RD20 to fund programs to improve services.

Table 7.4: SA Water initiative by average additional operational expenditure per annum

Improve initiatives	SA Water proposal (\$m)	Draft Decision (\$m)	Adjustment (\$m)
Asset investment operating costs	3.7	2.2	-1.5
IT investment operating costs	3.3	3.3	0
Regional community support	0.7	0.3	-0.4
Reconciliation Action Plan	0.3	0.0	-0.3
Recycled water expansion	0.1	0.0	-0.1
GIS Data Quality Improvement	0.1	0.0	-0.1
Total	8.2	5.8	-2.4

The draft decision is that an average of \$5.8 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to improve services. This is 28 percent lower than SA Water's proposal.

The adjustments are the result of:

- ▶ an average \$1.5 million per annum reduction to additional proposed operational expenditure for asset investment operating costs
- ▶ an average \$0.4 million per annum reduction to additional proposed operational expenditure for regional community support program
- ▶ an average \$0.3 million per annum reduction to additional proposed operational expenditure for the Reconciliation Action Plan
- ▶ an average \$0.1 million per annum reduction to additional proposed operational expenditure for recycled water expansion, and
- ▶ an average \$0.1 million per annum reduction to additional proposed operational expenditure for Geospatial Information Systems (GIS) data quality improvement.

7.9.4.1 Asset investment operating costs

SA Water proposes an average additional \$3.6 million per annum of operational expenditure across four programs of work that are associated with capital expenditure programs.

These programs include a mains cleaning program to support reducing wastewater overflows with an average additional \$2.2 million of operating expenditure per annum, and three programs to improve water quality that amount to an average additional \$1.5 million per annum of operating expenditure.

The draft decision is to accept \$2.2 million of this proposed additional operational expenditure per annum to support reducing environmental overflows, as the associated capital project has been approved in full.

The draft decision is not to accept the average additional \$1.5 million of operational expenditure per annum for water quality improvements. This is a consequence of:

- ▶ the capital projects associated with the regional water quality improvements not being accepted as prudent and efficient, and
- ▶ the metropolitan water quality improvement capital program being extended over a longer period, making the operating expenditure for SAW RD20 immaterial.

Further details on these adjustments are provided in Appendix 3.

7.10 Enabling growth

SA Water characterises enabling growth as investments in the costs associated with servicing new water and sewerage customers or increasing the services available to existing customers.¹⁶¹ In total, SA Water is proposing \$190.7 million of capital expenditure in the SAW RD20 period to enable growth, with the following key investments driving the majority of that expenditure:

- ▶ Bolivar wastewater treatment plant capacity growth (\$23.6 million)
- ▶ Construction of a desalination plant on Kangaroo Island (\$22.8 million)
- ▶ Upper Spencer Gulf augmentation (\$22.8 million)
- ▶ Network augmentation Bolivar South (\$15.4 million)
- ▶ Barossa subsystem growth (\$14.2 million)
- ▶ Murray Bridge growth (\$12.2 million)

The capital expenditure proposed represents a 65 percent increase on the amount spent on enabling growth in SAW RD16. SA Water is also proposing an average additional \$3.4 million in operating expenditure per year across SAW RD20 to fund programs to enable growth.

The majority of the proposed increase can be attributed to two large projects: the Kangaroo Island desalination plant and the Upper Spencer Gulf augmentation. The financial viability of each project is heavily dependent on the expectation of the revenue that will be earned from a single large customer for each project. In each case, SA Water has not yet provided robust evidence that the future demand is firm. Accordingly, all costs associated with these proposals have been removed and placed on a 'contingent project' list on the basis that SA Water has not demonstrated firm demand requiring this project to go ahead in SAW RD20.

¹⁶¹ SA Water, *RBP*, p. 21.

While not included in RBP, SA Water has also foreshadowed a list of possible investment opportunities that may arise during the SAW RD20 period. In total, these potential investments are in the order of an additional \$2 billion, which is dominated by two large projects that are contingent on a single large customer for each project. These projects have not been looked at in any detail, given the early stages of development for these investments.

7.10.1 Additional operating expenditure for enabling growth

In total, SA Water propose an additional \$3.4 million per year (on average) across SAW RD20 to fund growth related programs.

Table 7.5: SA Water initiative by average additional operational expenditure per annum (\$m, per year)

Growth initiatives	SA Water proposal	Draft Decision	Adjustment
Upper Spencer Gulf capacity upgrade	1.6	0	-1.6
Asset investment operating costs	1.0	1.0	0
Kangaroo Island desalination	0.8	0	-0.8
Total	3.4	1	-2.4

The draft decision is that the additional \$1 million per year of operational expenditure for asset investment operating costs is likely to be prudent and efficient, as a certain level of incremental cost is expected and reasonable to manage ‘natural’ growth.

This is 70 percent lower than the amount proposed by SA Water. The adjustments are the result of removing the additional operating expenditure directly associated with the Upper Spencer Gulf capacity upgrade and Kangaroo Island desalination plant, as SA Water has not yet provided robust evidence that these projects are prudent or efficient, noting that each development relies on a firm commitment of future demand from a single large customer to be financially viable.

Further details on the assessment of drivers of additional operating expenditure are provided in Appendix 3.

7.11 IT expenditure

SA Water has proposed capital expenditure of \$143.5 million on IT during SAW RD20, across seven program areas, the most substantial of which are:

- ▶ IT risk management (refreshing hardware and software, managing cyber security)
- ▶ digital presence (CRM, digital communications), and
- ▶ integrated operations (information management to enable better decision making).

This is an increase of 12 percent on IT capital expenditure during SAW RD16, which in turn was 57 percent higher than in previous years. Business SA, SACOSS and Uniting Communities are concerned about this increase, and lack of clarity about the benefits for customers.

Determining whether individual IT projects are prudent, and their efficient costs, is challenging because of SA Water’s approach to designing its IT proposals. The approach avoids locking in exact solutions too early, so it can take advantage of new and emerging technologies.

Nevertheless, Cardno found the sample of IT capital expenditure projects it considered (which covered 61 percent of proposed expenditure) to be prudent, and recommended an efficiency adjustment of \$9.6 million. The Commission accepts this evidence, and has made a draft decision to allow \$133.9 million for IT capital expenditure in SAW RD20.

A weakness of SA Water's IT program is its documentation of project expected and outturn benefits. For example, Cardno's ex-post review of the SAW RD16 IT program found unsatisfactory documentation of efficiencies delivered by IT projects. Cardno noted that *'...savings have been committed top-down, not quantified based on a bottom-up evaluation of the initiatives'*¹⁶²

One-third of the proposed IT capital expenditure has the objective of improving services, but documented support from customer engagement is weak. SA Water did not explore whether customers are willing to pay for IT projects. Further, it has not clearly identified the IT costs of delivering on some of its new service standards. For example, SA Water elsewhere states that introducing 'first contact resolution' to its call centre will be cost neutral, but explains in its digital presence program (\$26.3 million) business case that investment in the CRM will *'improve our ability to resolve issues the first time customers contact us, one of our new service standards'*.

To address these issues, the Commission will require that SA Water improve its documentation of the outputs and outcomes expected from each IT capital expenditure project, and make that documentation available for an IT specific ex-post review which will begin in 2023.

Further, at SAW RD24 the Commission will seek clarification on an efficient level of IT capital expenditure for SA Water by undertaking its own independent benchmarking of IT capital expenditure costs, using suitable comparator businesses with underlying cost structures similar to SA Water.

Further details on this program are provided in Appendix 3.

7.12 Efficiency challenges for SAW RD20

The Commission has identified the potential for further significant efficiency savings over the SAW RD20 regulatory period beyond those proposed by SA Water. Top-down 'catch up efficiency' and 'continuing efficiency' targets are proposed for both the operating and capital expenditure forecasts.

Table 7.6 provides a summary of the efficiency challenges in SA Water's proposal versus those proposed in the Draft Determination.

Table 7.6: Summary of efficiency challenges proposed for SAW RD20

Efficiency Challenges	SA Water proposal	Draft Decision
Capital Expenditure:		
Catch-up	Flat 5% top down	1.5% per annum ¹⁶³
Continuing		0.5% per annum
Operating expenditure:		
Catch-up	0.5% per annum	\$64 million ¹⁶⁴
Continuing		0.5% per annum ¹⁶⁵

¹⁶² Cardno, pp. 74-75 and pp. B33-B35.

¹⁶³ Applied only the portion of capex not reviewed through the sampling process.

¹⁶⁴ Specific identified efficiencies related to IT, contract management, and procurement processes.

¹⁶⁵ Applied only to operating expenditure excluding labour costs.

7.12.1 What has SA Water proposed?

For operating expenditure, SA Water has proposed an incremental general efficiency target of 0.5 percent per annum for both water and sewerage services over the SAW RD20 period. It proposes achieving this through identifying and realising general efficiencies within its business. These general efficiency savings are not directly attributable to specific initiatives; they are stretch targets that the business has set for itself.

For capital expenditure, SA Water has set itself a flat top down efficiency target of five percent across both water and sewerage services over the SAW RD20 period. This has not been split between catch-up efficiency and continuing efficiency, nor has it been set on an incremental basis.

7.12.2 Issues identified with the asset management system suggest greater capital delivery efficiencies are achievable in SAW RD20

An efficiency target of 1.5 percent is proposed for the portion of the capital program that was not reviewed through the sampling approach. This target has been informed by the evidence provided by Cardno that there were at least two key areas in the asset management system where it believes SA Water should be able to make material improvements to its processes during SAW RD20: improved assurance over expenditure justification and improved asset management decision making. The nature of the issues identified are summarised below.

7.12.2.1 Improved assurance over expenditure justification

There is scope for SA Water to refine its asset management objectives and line of sight so that there is greater recognition and integration with the regulatory framework in which SA Water operates. This would provide a higher level of assurance that expenditure is justified on the grounds of both stakeholder expectations and the regulatory framework. Cardno identified multiple examples¹⁶⁶ of expenditure being proposed in the sample reviewed where there was insufficient evidence to conclude that it was a prudent investment:

- ▶ The proposal to increase expenditure in Smart Networks to \$20.9 million in SAW RD20 without quantifying the benefits expected to be delivered, even though a trial has been completed providing information to inform this assessment.
- ▶ The water network structures program proposing a level of expenditure to mitigate an unconfirmed level of asset failure risk, despite SA Water being aware of the benefits of quantifying this risk during the SAW RD16 period but not doing so.
- ▶ The wastewater networks program has been developed with limited consideration of consequence of failure. A more sophisticated approach will provide more assurance that cost and risk are being balanced.

The Commission is proposing to accept this evidence from Cardno that the above issues should generate an incremental cost efficiency of one percent per annum over the SAW RD20 period.

7.12.2.2 Improved asset management decision making

Asset management decision making refers to lifecycle cost and risk analysis to determine optimum intervention to assets to achieve the asset management objectives.

Cardno identified numerous examples in the sample of programs and projects reviewed where SA Water's approach to lifecycle costing appeared to fall short of good practice, was inconsistently applied, or lacking in rigour. In some instances, financial analysis was limited (even in some cases

¹⁶⁶ Cardno, pp. 88-89.

where financial benefits were the key justification for the expenditure), limited sensitivity testing and scenario analysis was conducted, and the financial analysis period did not match the expected life of the underlying assets.¹⁶⁷

Cardno suggested that improved asset management decision making should allow SA Water to realise the following benefits during SAW RD20:

- ▶ selection of options that are more favourable than what may be identified through less robust analysis
- ▶ avoidance of projects where the decision making criteria are not met, and
- ▶ better appreciation of the lifecycle cost impacts across the entire program and over the long term to inform better decisions regarding totex and affordability.

The Commission is proposing to accept the evidence from Cardno that the above issues should generate an incremental cost efficiency of 0.5 percent per annum over the SAW RD20 period.

7.12.2.3 Improved cost intelligence

Cardno suggests that a third area in which SA Water is likely to be able to make material efficiency gains during SAW RD20 is its approach to cost estimating. However, it noted that it has not suggested any catch-up efficiency for this area of improvement, as SA Water has identified its expectation that improved cost intelligence will support it to achieve the 'top-down' five percent efficiency gain it is already intending to apply to the overall capital expenditure program.¹⁶⁸

7.12.3 Issues identified that suggest greater operating expenditure efficiencies are achievable in SAW RD20

A catch-up efficiency target of \$64 million for operating expenditure has been calculated to ensure IT-enabled efficiencies are transparently embedded in SA Water's budgets and to recognise planned changes in procurement processes that should enable efficiencies to be achieved in the SAW RD20 period. These items have been separated out from the calculation of any ongoing efficiency target, as they are specifically identified issues that SA Water can influence from the start of the SAW RD20 period.

7.12.3.1 Embedding IT-enabled business efficiencies so that they remain cost-neutral

SA Water has stated its expectation that business savings driven by its IT investment over SAW RD20 will result in that investment being almost 'operating expenditure neutral'. However, SA Water's operating expenditure proposal did not appear to reflect the expected savings in full.

While the Commission's draft decision is to accept that the proposed operating expenditure is necessary to achieve the wider business efficiencies, it wants to ensure that the associated operating expenditure is transparently accounted for in the SAW RD20 period. Accordingly, it has made an adjustment to reduce the prudent and efficient operating expenditure benchmark of \$22.3 million so that the expected savings are more easily identifiable than in SAW RD16, and thereby increase the level of accountability for efficient IT delivery in the future.

¹⁶⁷ Cardno, p. 89.

¹⁶⁸ Cardno, p. 88.

7.12.3.2 Locking in the expected savings from contract management and procurement processes

SA Water has identified \$5.2 million per year in procurement contract savings to be achieved over SAW RD20, as a result of breaking its long-term electricity contract with AGL (discussed further in section 7.5). The Commission has identified further savings of \$1.2 million it believes SA Water should be able to realise across the SAW RD20 period as a result of this decision.

SA Water has also decided to terminate its service delivery contract with Allwater and implement a revised service delivery model for water and sewerage retail services in the Adelaide metropolitan area from 2020-21. This revised model will assist SA Water to manage underlying cost drivers, achieve efficiencies, improve customer satisfaction and implement more innovative solutions. In making its decision to change its service delivery model, SA Water estimated that efficiency savings should be achievable. However, SA Water does not appear to have made an adjustment for these anticipated savings, and so the Commission is proposing to set an efficiency target of \$16 million over the SAW RD20 period to capture the savings that should be able to be achieved under the new model once it is implemented.

7.12.4 SA Water should also be able to achieve ongoing efficiency in line with the wider Australian economy

The draft decision is that a continuing efficiency target of 0.5 percent per annum should be applied to SA Water's capital and operating expenditure across the SAW RD20 period. This is based on a conservative view of the reasonable range for productivity improvements using multi-factor productivity (MFP) estimates for the Australian economy, with an expectation that SA Water should be able to become more efficient at least as quickly as the Australian economy has achieved in recent years.

However, as MFP is a measure that captures the effect of capital productivity as well as labour productivity, the continuing efficiency target has been applied only to operating expenditure excluding labour costs, which the Commission is proposing to cap at CPI across the SAW RD20 period (refer section 7.8.5.4), to avoid any double count of efficiencies.

Cardno put the view that a continuing efficiency target of 0.8 percent per annum be applied to both operating and capital expenditure for SAW RD20. This was based on long-term analysis of MFP estimates for the whole-economy indicators, which produced a range of productivity increases from 0.7 percent to 1.0 percent per annum. Cardno also considered recent analysis by Europe Economics, on behalf of Ofwat, of the potential for 'Frontier Shift' for the England and Wales water industry over the five year period from 2020-2025. The recommended frontier shift range was 0.6 percent to 1.4 percent per annum, with a 1.1 percent per annum efficiency applied in the final determination.¹⁶⁹

Drawing on Cardno's suggestion, the Commission has further considered MFP in Australia over time, based on published Australian Bureau of Statistics data.¹⁷⁰

The Australian Bureau of Statistics publishes data for the '*Electricity, Gas, Water and Waste Services*' sector. The Commission notes that this data shows negative productivity growth since the late 1990s. This is due to the effects of materially increased inputs in this sector outstripping output growth over this period (for example, the construction of seawater desalination plants, and the investments in renewable power generation).

¹⁶⁹ Cardno, pp. 61-62.

¹⁷⁰ Australian Bureau of Statistics, *5260.0.55.002 Estimates of Industry Multifactor Productivity, Australia*, released 2 December 2019, available at <https://www.abs.gov.au/ausstats/abs@.nsf/mf/5260.0.55.002>

The Commission has also looked at the nation-wide measure of MFP, which measures productivity growth across the Australian economy. This has averaged +0.5 percent per annum in the period from 2012. Prior to this, strong growth was observed in the 1990s as micro-economic reforms took effect, followed by low growth in the 2000s, which some attribute to high capital investment in mining.

Taking account of the above, and recognising the level of uncertainty that exists over future productivity, the Commission has taken a conservative view that SA Water should be able to become more efficient at least as quickly as the Australian economy has achieved in recent years.

8 The cost of funding and using assets

Draft decision – rate of return

The Commission's draft decision is that the regulatory rates of return will be calculated as the weighted average cost of capital, using the capital asset pricing model (CAPM) to determine the cost of equity. The rates of return would be calculated on a real, post-tax basis and would be updated annually prior to the commencement of each financial year, to reflect movements in market-based parameters.

The Commission's draft decision is that real regulatory rates of return will be updated annually and calculated prior to the commencement of each financial year. The Commission's proposed methodology for calculating the rate of return is to:

- ▶ use a 10-year trailing average of the yield on 10-year BBB corporate bonds to measure the cost of debt
- ▶ calculate the cost of equity based on a 60-day average of the yield on 10-year Commonwealth Government Securities (CGS), a market risk premium of 6 percent, and an equity beta of 0.65, and
- ▶ adopt a 'glide path' approach to estimating long-term inflation expectations (using two years of RBA forecasts for inflation and a linear glide path to the IMF's medium-term projection of consumer price inflation in Australia).

Based on market data as of 6 February 2020, the indicative rates of return for the four-year SAW RD20 period are:

- ▶ 2.71 percent (real, post-tax) for 2020-21
- ▶ 2.45 percent (real, post-tax) for 2021-22 (indicative calculation only; to be updated annually)
- ▶ 2.25 percent (real, post-tax) for 2022-23 (indicative calculation only; to be updated annually)
- ▶ 2.04 percent (real, post-tax) for 2023-24 (indicative calculation only; to be updated annually)

The rates of return outlined above represent the Commission's estimates of the real, post-tax costs of capital required to provide drinking water and sewerage services. Those estimates will be updated for the Final Decision based on financial market information at that time. The decline in the indicative regulatory rate of return over the regulatory period reflects the use of a 10-year trailing average cost of debt. The adoption of the annual update methodology of the rate of return is a deviation from SAW RD16. The rate of return estimates for 2021-22 to 2023-24 are indicative only; these will be updated annually.

Draft decision – regulatory depreciation and the value of the RAB

The Commission has updated SA Water's drinking water and sewerage asset values to reflect capital additions, disposals and depreciation in the SAW RD16 period, and has projected those values forward to the SAW RD20 period based on forecast capital additions, disposals and depreciation. It has adopted the RAB 'roll forward' methodology consistent with the requirements of the Pricing Order and NWI Pricing Principles.

The Commission's proposed RAB's are as follows:

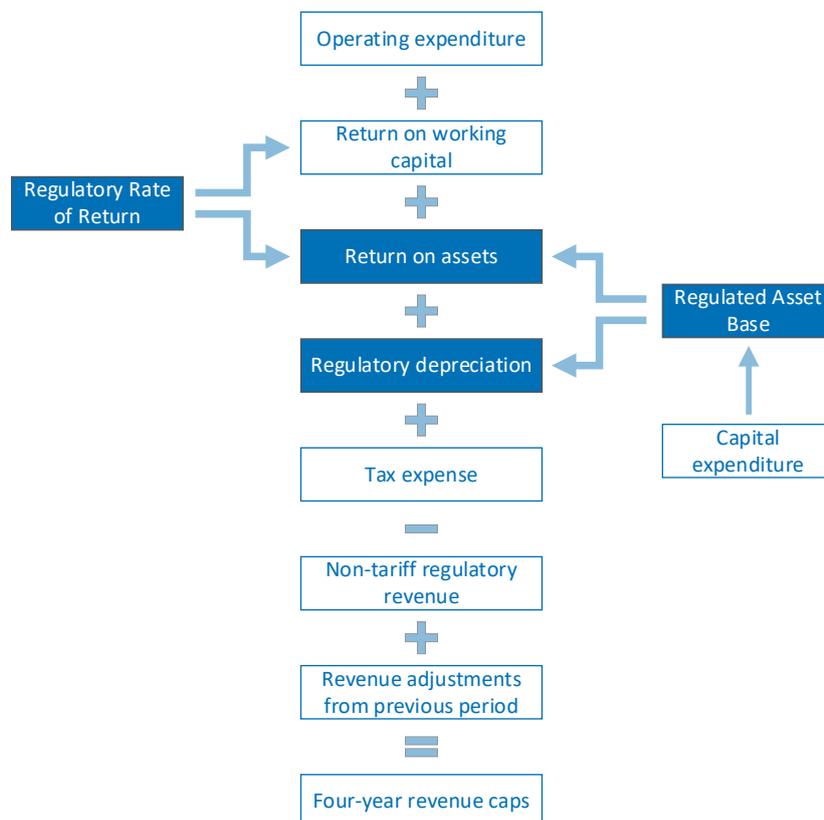
- ▶ for drinking water, the value of the RAB at 1 July 2020 (in dollars of December 2018) will be \$9,013.0 million, and
- ▶ for sewerage, the value of the RAB at 1 July 2020 (in dollars of December 2018) will be \$3,914.6 million.

The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water’s RAB and drinking water prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.

8.1 Introduction

Investment in water and sewerage infrastructure benefits customers over many decades and, accordingly, the infrastructure investment costs are shared between customers of today and tomorrow. The two main costs of providing drinking water and sewerage services are: the cost of financing new and existing infrastructure (the return on regulated assets) and the expected wear and tear over the life of the infrastructure (regulatory depreciation) (Figure).¹⁷¹ Approximately 40 percent of SA Water’s total costs are made up by the return on regulated assets and 20 percent by regulatory depreciation. Both the return on assets and regulatory depreciation are dependent in part on the value of the RAB.

Figure 8.1: Regulatory rate of return, return on assets, regulatory depreciation and the RAB



¹⁷¹ In addition, there are two relatively small costs related to the cost of funding and using water and sewerage assets. These costs relate to the return on working capital, which is the return on short-term assets that SA Water needs to cover its day-to-day expenses, and SA Water’s tax expense, which is the amount of tax that is payable on profits from drinking water and sewerage services. These two costs are discussed in Chapter 9 – the determination of total revenue caps.

A key determinant of SA Water’s return on regulated assets is the regulatory rate of return. The regulatory rate of return represents the efficient cost of financing new and existing regulated assets and is intended to reflect the return expected by investors in a water and sewerage business with a similar degree of risk. Movements in the regulatory rate of return, which are known to result from changes in economic and market conditions, can have a large impact on allowed revenues, given that the return on assets accounts for a large share of SA Water’s total costs.

The Commission issued a series of Guidance Papers explaining, and seeking feedback from stakeholders on, the proposed requirements and methodology that would apply for SAW RD20. This chapter deals with the return on regulated assets and regulatory depreciation. It outlines the Commission’s reasoning in relation to all inputs into the estimation of the regulatory rates of return to apply for SAW RD20 and, unless a compelling case has been made to deviate from the proposals, the Commission has maintained the approach established in those Guidance Papers. This chapter should therefore be read in conjunction with the Guidance Papers.

8.2 What has SA Water proposed?

8.2.1 Summary of SA Water’s rate of return proposal and the Commission’s draft decision

For the most part, SA Water’s proposed rate of return parameters match those outlined in the Commission’s Guidance Paper 5, 6 and 7. However, SA Water, which does not want to adopt annual updates, has proposed amendments to the averaging period of the risk-free rate and the method for estimating long-term inflation expectations, and has selected an equity beta parameter at the upper end of the range provided by the Commission. This is highlighted in Table 8.1, which compares rate of return parameters and the Commission’s draft decision.

Table 8.1: Selection of parameters and assumptions in the regulatory rate of return calculation

	Guidance Papers 5, 6, 7 and 9	SA Water proposal	Commission’s draft decision
Rate of return calculation	Proposed annual update Real, post-tax WACC	No annual update Real, post-tax WACC	Annual update Real, post-tax WACC
Cost of debt			
Cost of debt (asset and term to maturity)	Yield on 10-year BBB corporate security (used in SAW RD16)	Yield on 10-year BBB corporate security	Yield on 10-year BBB corporate security
Averaging period of cost of debt	10 years (used in SAW RD16)	10 years	10 years
Debt raising costs (ppt)	0.125 (used in SAW RD16)	0.125	0.125

	Guidance Papers 5, 6, 7 and 9	SA Water proposal	Commission's draft decision
Cost of equity			
Risk-free rate (asset and term to maturity)	10-year CGS (used in SAW RD16)	10-year CGS	10-year CGS
Averaging period of risk-free rate	20-60 days (20 days used in SAW RD16)	60 days	60 days
Market risk premium (%)	6.0 (used in SAW RD16)	6.0	6.0
Equity beta (%)	0.6-0.7 (0.7 used in SAW RD16)	0.7	0.65
Other			
Measure of long-term inflation expectations	10-year average: one-year RBA forecast and mid-point of RBA inflation targeting band thereafter. (used in SAW RD16)	One-year RBA forecast; inflation estimate capped at inputted risk-free rate minus 0.15%	10-year average: RBA forecast for 2 years; linear glide path to IMF medium-term projection of consumer price inflation in Australia; mid-point of RBA inflation targeting band thereafter.
Credit rating	BBB (used in SAW RD16)	BBB	BBB
Gearing (%)	60 (used in SAW RD16)	60	60

8.2.1.1 The main difference between SA Water's proposed rate of return and the Commission's draft decision reflects the measure of long-term inflation expectations

Table 8.2 (below) shows SA Water's proposal (top row) and the Commission's draft decision (bottom row). The differences between the sets of estimates can be accounted for by the measure of long-term inflation expectations and the equity beta parameter. Of the proposed amendments, SA Water's proposal to modify the method for estimating long-term inflation expectations would, if accepted by the Commission, have a significant impact.

Table 8.2: Summary of SA Water's proposed rates of return compared with the Commission's draft decision*

	2020-21	2021-22	2022-23	2023-24
SA Water proposal (%)	4.17	3.91	3.71	3.50
Difference due to SA Water's proposed inflation amendment* (%)	1.34	1.34	1.34	1.34
Difference due to SA Water's proposed equity beta selection (%)	0.12	0.12	0.12	0.12
Commission's draft decision (%)	2.71	2.45	2.25	2.04

* The latest available market data including 6 February 2020 are used. SA Water's measure of long-term inflation expectations has been estimated based on a 60-day average of nominal yields on ten-year CGS minus 0.15 percentage points.

8.2.2 The value of the RAB and regulatory depreciation

SA Water has proposed 1 July 2020 RAB values of \$8,678 million and \$4,049 million for drinking water and sewerage respectively to determine the return on assets and the return of assets building block components for the SAW RD20 revenue caps. These RAB values were calculated by applying a RAB roll-forward methodology, consistent with the requirements of the Pricing Order.¹⁷² The RAB roll-forward methodology incorporates adjustments to the RAB value for capital expenditure, disposals and depreciation. It also requires that the RAB value be re-indexed for inflation at the commencement of each new regulatory period.

SA Water's proposed regulatory depreciation by asset class is in line with the Commission's draft decision with the exception of SA Water's proposed addition of ZCEF assets.

The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water's RAB and drinking water prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.

8.3 Discussion

8.3.1 Discussion – rate of return

This section explains the Commission's draft decision on the allowed regulatory rate of return. The decision takes into account responses and information provided by SA Water and other stakeholders, available economic and regulatory research, and analysis and information presented in the Commission's Guidance Papers. This chapter should be read in conjunction with Guidance Papers 2, 5, 6, 7 and 9. An important feature of economic regulation is the balancing of risks. Guidance Paper 2 explained, in detail, the risks faced by SA Water and its customers, and where those risks should lie in terms of management and mitigation.¹⁷³

The regulatory rate of return is set by the Commission with reference to the rates that could be expected to apply, in the open market, for a benchmark efficient entity facing similar risks to SA Water. The Commission has previously outlined the characteristics of a benchmark efficient entity in the principles for setting SA Water's regulatory rate of return (see Appendix 4). Those rate of return principles are consistent with and give effect to the requirements of the ESC Act and the WI Act in the determination of the lowest sustainable cost of delivering drinking water and sewerage services.

The Commission's methodology for, and assessment of, the regulatory rate of return needs to be viewed in the context of low nominal and real risk-free rates in Australia and globally. In that environment, the cost of funding new and existing regulated water and sewerage assets in Australia is expected to be low, and allowed regulatory rates of return in Australia have generally been declining over recent years. The rate of return methodologies used in, and the parameters selected by, other jurisdictions in Australia have been considered by the Commission (see Appendix 4).

A low (or high, as has been the case in the past) regulatory rate of return is not a reason by itself to change the methodology for calculating the rate of return. Nor are short-term economic conditions. Importantly, as outlined in earlier chapters of the draft determination, the Commission's primary objective is for the protection of the long-term interests of South Australian consumers with respect to the price, quality and reliability of essential services.

¹⁷² The Pricing Order for SAW RD20, Section 6, pp. 4-5.

¹⁷³ Commission, *Guidance paper 2*, pp. 13-14 available at <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20181101-Water-SAWRD20-GuidancePaper2-DeterminingDrinkingWaterAndSewerageRevenues.pdf.aspx?Embed=Y>.

SA Water's proposal is to amend three rate of return parameters, and to modify the overall rate of return methodology in order to set a minimum threshold for the rate of return. SA Water stated that:

*'[w]e propose a minimum threshold for financial returns, and that the rate of return be considered in light of a minimum acceptable financial viability. This ensures our business maintains appropriate financial viability and there is incentive for long-term investment.'*¹⁷⁴

It further argued that:

*'... the rate of return outcome needs to facilitate: price stability for customers across the regulatory period; a reasonable return to owner, for the significant investment in regulated assets; maintenance of our financial viability and the incentive for long-term investment, a regulatory objective as stated in the ESC Act, Section 6.'*¹⁷⁵

Stakeholders cautioned against changing the rate of return methodology merely because rates of return are currently low.¹⁷⁶

Uniting Communities highlighted that:

*'[i]n setting rates of return in the current circumstances, regulated business owners and regulators need to accept prevailing methods of calculating rates of return, where these arrangements have been in place for some time and are designed to give fair balance between return and cost of bills – suppliers and customers – over time. We are satisfied that the current methodology for calculating SA Water's rate of return is sound, and fair over time.'*¹⁷⁷

While the CNC noted that:

*'[t]he facts are that interest rates have been in steady decline now for a number of years and, under the Commission's current methodology, this will have an impact on the rate of return on equity which will favour customers.'*¹⁷⁸

8.3.1.1 The Commission proposes to continue to use a real, post-tax rate of return approach

As noted in Chapter 3, a Pricing Order for the regulatory period 1 July 2020 – 30 June 2024 has been issued in accordance with section 35(4) of the WI Act. Under the Pricing Order, the Commission must adopt or apply the NWI Pricing Principles when making a determination, to the extent that those, or any of those, principles are relevant to the determination in question.¹⁷⁹

The NWI Pricing Principles outline, among other things, that:

- ▶ the regulatory rate of return should be calculated in a manner consistent with an approach that uses a weighted average of the return on debt and equity (**WACC**), including that the cost of equity is derived from the CAPM; and
- ▶ the regulatory rate of return methodology should be consistent with the form of asset valuation used.

¹⁷⁴ SA Water, RBP, Appendix E, p. 2.

¹⁷⁵ SA Water, RBP, Appendix E, p. 2.

¹⁷⁶ Uniting Communities, p. 28; and Report of Independent Chair of the CNC, 2019, p. 83.

¹⁷⁷ Uniting Communities, p. 28.

¹⁷⁸ Report of Independent Chair of the CNC, p. 83.

¹⁷⁹ The Pricing Order for SAW RD20, Section 4, p. 2.

In line with requirements under the Pricing Order, the Commission’s draft decision is that it will use a real, post-tax framework for developing SA Water’s allowed revenues, calculated as:

$$WACC_{real}^{post-tax} = \frac{1 + (k_e \frac{E}{V} + k_d \frac{D}{V})}{(1 + i_{exp})} - 1$$

Where:

- k_e = cost of equity
- k_d = cost of debt
- i_{exp} = adjustment for expected inflation
- E = market value of equity
- D = market value of debt
- V = market value of the firm ($V = E + D$)

The real rate of return approach is a forward-looking concept

A key principle followed by the Commission is that the allowed real rate of return should reflect what would be expected by private investors looking to invest in a business with a similar degree of risk. Under a real-return approach, regulators look to derive an expected real return while compensating for inflation through the RAB. However, even if the regulator can match the risk profile of the regulated company to a benchmark group of companies, the total market return for this benchmark group of companies is measured in nominal terms. As a result, the inflation estimate used to convert the nominal return into an expected real return plays a significant role. If this is based on forecast inflation then the real return is fixed over the period and the company takes the risk that this return reflects the opportunity cost of capital. Over-estimating long-term inflation expectations may result in a real return over the regulatory period which is lower than the opportunity cost of capital; the opposite is true if regulators under-estimate long-term inflation expectations.

A submission from Frontier Economics, submitted through SA Water, and the multiple submissions from SA Water in response to Guidance Papers 6, 7 and 9, do not support the Commission’s approach of setting an ex ante (targeted) real return.¹⁸⁰ Rather, these submissions directly, or indirectly, advocate that investors would receive some form of ex post compensation.¹⁸¹ As discussed later, real-time measures of investor expectations are almost always likely to differ from actual observations. This is the case for various rate of return parameters including long-term inflation expectations and the market risk premium. After all, private investors do not have perfect foresight and forecast risk is a business risk.

¹⁸⁰ Frontier Economics, *Review of ESCOSA’s approach to estimating inflation and the return on equity*, report prepared for SA Water, February 2020, pp. 1-6, available at: https://www.escosa.sa.gov.au/ArticleDocuments/11293/20200213-SAWRD20-WACC_InflationSTC-Advice-FrontierReport.pdf.aspx?Embed=Y; SA Water, *Submission on Guidance Papers 6 and 7 for the SA Water Regulatory Determination 2020*, 19 August 2019, p. 6, available at: https://www.escosa.sa.gov.au/ArticleDocuments/11293/20190829-Water-SAWRD20-GuidancePapers6_7-Submission-SAWater.pdf.aspx?Embed=Y; and SA Water, *Submission on Guidance Paper 9: Annual updates of the regulatory rate of return*, pp. 1-2, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20200213-SAWRD20-RegulatoryRateReturn-GuidancePaper9-Submission.pdf.aspx?Embed=Y>.

¹⁸¹ Frontier Economics, pp. 1-6, and SA Water, *Submission on Guidance Paper 9*, pp. 1-2.

Notwithstanding the limitations, the Commission's use of a real rate of return methodology is consistent with the Commission's objective in the ESC Act 2002 for the protection of consumers' long-term interests

The real rate of return approach can in some instances create a mismatch between the charges customers pay and the cash costs of the regulated business. Repayment of debt will involve a nominal interest rate applied to a non-indexed principal, whereas the business will receive revenues based on a real rate of return applied to a real asset value. The mismatch can be pronounced when the proportion of debt financing (gearing level) for any individual project, or the regulated company more generally, is high.

Frontier Economics claimed that this cash flow mismatch will likely compress already-low equity returns caused by a claimed overestimation of long-term inflation expectations.¹⁸² Frontier Economics argued that:

'ESCOSA should choose regulatory approaches that compensate regulated businesses efficiently in every period, rather than relying on an assumption that outcomes even out in the long run'.¹⁸³

Frontier Economics advocated for a nominal approach to the rate of return, in particular proposing that the Commission use a nominal return on debt. A nominal approach makes no inflation adjustment to the assets from which the return is determined and would 'front end' returns to SA Water. The result is that customers in the future pay less than customers of today, despite receiving a similar utility from the asset. This is particularly important in the water industry where asset lives can span generations.

However, the Commission's use of a real regulatory rate of return leads to a constant recovery of an investment return over the life of that investment. This is because the real approach – both for equity and debt returns – capitalises part of the inflation return in the RAB, which is recovered over the life of the assets. The real approach is considered appropriate as the benefit to customers from investment is constant over its life.

This approach is in line with the requirements of the Essential Services Commission Act, which provides that the Commission's primary statutory objective is the 'protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services'. (emphasis added)

The Commission's use of a real return is also consistent with the current-cost asset valuation approach used (where the asset base is rolled forward and an adjustment for inflation is included so as to calculate a real asset value).

The real rate of return approach is generally used by regulators in Australia; the Commission is not aware of any Australian regulators using a nominal rate of return approach as opposed to a real rate of return. While the AER is required under the national energy rules to use a post-tax nominal rate of return, it also uses an indexed RAB and a negative revenue adjustment (to correct for inflation being counted in both the WACC and RAB), such that revenues deliver a target real rate of return.¹⁸⁴

¹⁸² Frontier Economics, pp. 3.

¹⁸³ Frontier Economics, pp. 3-4.

¹⁸⁴ AER, *Rate of return instrument: Explanatory Statement*, December 2018, p. 356, available at: <https://www.aer.gov.au/system/files/Rate%20of%20Return%20Instrument%20-%20Explanatory%20Statement.pdf>

A mismatch in cash flow can be, at least partly, mitigated by SA Water and its owner

The mismatch in cash flows is largely a reflection of a company's capital structure. A mismatch in cash flows is a risk for the equity investor to manage, through equity injection in the short-term to generate a return in the long-term, or acceptance of a lower return in the short-term. Further, there are available financial tools and products, namely inflation-indexed products and overdraft facilities, which could be used to mitigate cash flow mismatch, and SA Water also has flexibility to set pricing within the regulatory period to further mitigate risk.

Frontier Economics noted three concerns regarding the notion that financial tools and products could be used to mitigate cash flow problems. First, the use of available financial tools and products may involve some financial transaction cost. Second, there are practical difficulties in arranging a swap contract with a price, duration and inflation protection that is suitable. Third, consumers do not have the ability to access and use inflation swaps to hedge inflation risk.¹⁸⁵

However, the magnitude of the transaction costs involved is likely to be relatively small. For example, as discussed later, debt-raising costs (which may provide some indication of the cost of using inflation swaps) are known to be somewhere between 8 basis points and 12.5 basis points. In addition, the presence of practical difficulties in arranging some degree of inflation protection is not a reason to eschew available products and mechanisms that could help to mitigate any problem. Accordingly, the Commission considers that a cash flow mismatch for a large regulated business such as SA Water could be at least partly mitigated by the use of financial tools and products. Additionally, it should be noted that SA Water's RAB has grown significantly over the past ten years, due to water security investments. Part of the inflation return of those security investments are spread out over the life of the assets.

The inflation risk under the real approach is symmetric between SA Water and consumers. Unlike businesses, and as was highlighted by Frontier Economics, consumers do not have available financial products to mitigate inflation risk. However, the degree of risk for individual consumers is small when scaled against household income and the prices of other household goods and services that can be volatile (such as fuel and food). A move away from the real approach to the rate of return would shift the balance of risks toward consumers now, rather than spreading the cost over consumers in the longer term. As noted earlier, the Commission's statutory objective is the long-term protection of consumers, and a nominal approach that front-ends returns would not be consistent with that objective.

Submissions from Uniting Communities, Business SA and SACOSS did not raise concern regarding the Commission's use of a real rate of return.¹⁸⁶ Uniting Communities stated: *'We are satisfied that the current methodology for calculating SA Water's rate of return is sound, and fair over time.'*¹⁸⁷

Any adverse cash flow implications of the real rate of return methodology do not necessarily need to be adjusted by changing the Commission's real rate of return methodology; alternative options are available

SA Water (via the submission from Frontier Economics and proposals in its RBP for changes in certain parameters in the rate of return) has, in effect, proposed a change to the rate of return methodology in response to current financial market conditions. However, SA Water's proposals would, on the Commission's analysis, be more likely to impose costs on consumers in the long term.

¹⁸⁵ Frontier Economics, pp. 39-40.

¹⁸⁶ Uniting Communities, p. 26, SACOSS, pp. 24-30, and Business SA, pp. 24-30.

¹⁸⁷ Uniting Communities, p. 26.

Any concern about the financial implications of the real rate of return methodology needs to be considered in the context of whether or not the Draft Determination provides sufficient cash flow to finance prudent and efficient investments in drinking water and sewerage infrastructure. To the extent that there were temporary insufficient cash flows resulting from the application of the Commission's real rate of return methodology, the Commission would consider adopting an adjustment to revenues in SAW RD20 (which would be net present value (NPV)-neutral between regulatory periods), rather than changing the real rate of return methodology. As Isle Utilities, submitted through Business SA, highlighted: '*... any near-term price increase to support financial viability should be 'paid back' to customers in the long term*'.¹⁸⁸

SA Water has not proposed a NPV-neutral adjustment in its submissions, and, at this stage, has not provided evidence of insufficient cash flow caused by the real rate of return methodology that could not otherwise be managed by the business or the owner. It is also unclear to the Commission why consumers in South Australia should defer a fall in water prices when they, too, may be experiencing cash flow pressures in the face of soft economic conditions. Indeed, in the context of its submission, Uniting Communities states that there is: '*... mounting financial stress for a growing number of people*'.¹⁸⁹

The financial implications of the draft decision are discussed in full in Chapter 10.

8.3.1.2 The Commission proposes to introduce an annual update methodology for the rate of return

The Commission's draft decision is that the real regulatory rate of return will be updated annually. To meet the requirements set out in the Pricing Order, the annual update methodology allows for adjustments in revenues in response to events beyond SA Water's control and has been specified in the Draft Price Determination as a formula.¹⁹⁰ The formula specifies an objective calculation of separate four-year revenue caps for drinking water and sewerage services.

The use of annual updates can reduce forecast error associated with government and corporate bond yields and, therefore, on an annual basis, better align SA Water's revenues and hence customer prices with market conditions.¹⁹¹ This includes reducing the risk of large changes in revenue and price at the time of each regulatory determination. The CNC was supportive of the notion of annual updates.¹⁹²

An indicative four-year revenue allowance has been calculated and will be revised each year as annual updates of the rate of return occur. The rate of return would be re-calculated each year using updated estimates of selected parameters.

No materiality threshold would be applied to annual updates. The approach would allow SA Water the flexibility to adjust tariffs each year to adjust for pricing impacts and to provide some of the stability that SA Water claims its customers value, provided that the present value of the total allowable four-year revenue cap is not exceeded.

¹⁸⁸ Business SA, p.18.

¹⁸⁹ Uniting Communities, p. 4.

¹⁹⁰ The Pricing Order for SAW RD20, Sections 4, 5 and 6, pp. 3-5.

¹⁹¹ Commission, *Guidance paper 7*, pp. 7-12 available at <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20190606-SAWRD20-GuidancePaper7-AveragingPeriodRiskFreeCostBorrowing.pdf.aspx?Embed=Y>.

¹⁹² Report of Independent Chair of the CNC, p.4.

8.3.1.3 The proposal for annual updates of the rate of return will apply to the risk-free rate, the cost of debt and long-term inflation expectations

In principle, all of the parameters in the regulatory rate of return could be updated annually. In practice, however, updates of certain variables are likely to require judgement and a balancing of various evidence. For instance, the market risk premium and equity beta parameters represent investors' expectations about the riskiness of the firm's returns relative to the market, and how much risk there is in the market overall. Those expectations are considered difficult to quantitatively estimate and unlikely to be improved through annual re-calculation. The parameters to be updated annually are the risk-free rate, long-term inflation expectations and the cost of debt. Those three variables have been selected because the data would be readily available and/or the update is expected to lower forecast error (see Table 8.3).

Table 8.3: Parameters in the WACC under an annual updates methodology

Parameter	Updated annually	Not updated annually	When to update	How and what to update
r_f (risk free rate)	Yes		Each financial year	Calculated as per method outlined below
MRP (market risk premium)		No	At time regulatory determination	Held constant over regulatory period.
β_L (equity beta)		No	At time of regulatory determination	Held constant over regulatory period.
k_d (cost of debt)	Yes		Each financial year	Calculated as per method outlined below
i_{exp} (long term inflation expectations)	Yes		Each financial year	Calculated as per method outlined below

A worked hypothetical example of the annual update approach is in Appendix 4. The example shows, on a step-by-step basis, how SA Water's maximum revenues would be adjusted each year to reflect movements in the risk-free rate, cost of debt and long-term inflation expectation.

8.3.1.4 The Commission acknowledges that the annual update approach may involve some costs

SA Water has concern that price volatility and uncertainty under the annual update methodology could impose additional costs on SA Water and its customers, relative to costs imposed under the current regulatory approach.¹⁹³ In particular, and as acknowledged by the Commission in Guidance Paper 9, the annual update approach could raise uncertainty in decision-making (for example, firms may compensate for increased uncertainty by adding an extra risk premium to prices, and households may compensate for increased uncertainty by delaying consumption of goods and services more generally), and could increase the administrative costs faced by SA Water and its customers (for example, the cost of managerial and administrative time and effort of reviewing and changing prices each year to reflect the revised rate of return, rather than once every four years).

¹⁹³ SA Water, *Submission on Guidance Papers 6 and 7*, p. 6, and SA Water, *Submission on Guidance Paper 9*, pp. 1-2.

As SA Water stated in its submission to Guidance Paper 9:

*[a]nnual adjustments to the rate of return risks price uncertainty for customers. Currently, SA Water takes the approach that price adjustments are passed on to customers in full at the start of the regulatory period with subsequent annual price movements aligned to CPI. This provides the price certainty we believe customers value. The adoption of annual adjustments would require a price adjustment in addition to CPI, thereby precluding a commitment to a price path for the regulatory period. The worked examples in the Guidance Paper show the rate of return adjustment in one direction, but in practice they could increase and decrease in different years within the four-year regulatory period. Analysis of interest rate movements in the last regulatory period reflect this. Further, given the short-term averaging period used to determine the risk-free rate, this volatility would be reflected in prices and the intended outcome to avoid step changes in price would not be achieved.*¹⁹⁴

However, there are several reasons to suggest that the costs from adjusting prices more regularly may be relatively small.

- ▶ First, the prospect of large periodic price shocks under the existing arrangements may already be imposing costs on business and households by leading some business and households to require some form of compensation to manage uncertainty. For example, there is evidence that consumers dislike large periodic changes¹⁹⁵ and some firms may fear that making large price changes may upset customers. Households and businesses that spend proportionally more on water and sewerage services, including some low-income households, may be already more exposed in this regard.^{196,197}
- ▶ Second, fluctuations in the market prices of goods known to be volatile, such as automotive fuel and food, are already managed by households and business.
- ▶ Third, SA Water chooses to adjust its prices by CPI inflation each year within a regulatory period and already incurs certain administrative costs through that process.
- ▶ Finally, SA Water has the flexibility to structure its revenue collection and prices to provide some of the stability that SA Water claims its customers value. The Commission notes that SA Water has not provided evidence that customers would value price stability in all circumstances. As the CNC stated:

*[i]t seems highly likely to the Committee that customers would prefer price stability to further price increases, but that is not the same as saying they would prefer price stability under all circumstances.*¹⁹⁸

SA Water also argued that there is a risk that a trend increase in yields on CGS, coupled with deferred adjustments, could exacerbate 'price shocks' between regulatory periods.¹⁹⁹ However, this risk already exists: that is, under the existing arrangements any trend increase or decrease in yields on CGS would lead to a large price movement between regulatory periods. As pointed out in Guidance Paper 9, the key

¹⁹⁴ SA Water, *Submission on Guidance Paper 9*, pp. 1-2.

¹⁹⁵ Jacobs, Perera and Williams, *Inflation and the cost of living*, RBA Bulletin, March quarter 2014, pp. 40-41, available at: <https://www.rba.gov.au/publications/bulletin/2014/mar/pdf/bu-0314-4.pdf>.

¹⁹⁶ Jacobs, Perera and Williams, p. 38.

¹⁹⁷ Uniting Communities argues that SA Water's indicative prices for water, as presented in the RBP, are regressive (lower income consumers pay a higher percentage of income on water prices). See Uniting Communities, p. 27.

¹⁹⁸ Report of Independent Chair of the CNC, p. 83.

¹⁹⁹ SA Water, *Submission on Guidance Paper 9*, pp. 1-2.

trade-off involved in the annual updates methodology (perceived reduced risk of large periodic changes at the expense of more frequent annual changes) is difficult to quantify given that the future level and volatility of financial market based costs is highly uncertain.²⁰⁰

As well as this, SA Water has claimed that, if the annual update methodology is to be applied, then the adjustment should include a retrospective adjustment for both the cost of debt and inflation. That is, the rate of return would be adjusted annually to correct for the discrepancy between the forecast and the actual outcome.²⁰¹ However, the Commission's methodology for the real rate of return is based on the notion that each year SA Water's allowed real rate of return should reflect what would be expected by private investors looking to invest in a business with a similar degree of risk. This is consistent with the CAPM methodology which, under the Pricing Order, the Commission must apply. Real-time measures of investor expectations, including of long-term inflation, the market risk premium, and of the forecast for the cost of debt, are almost always likely to differ from ex post actual observations. Private investors do not have perfect foresight and forecast risk is a business risk.

In the context of the AER's 2017 review of long-term inflation expectations, Professor Shaun Vahey provided expert advice to the AER, and summarised the use of retrospective inflation adjustments as follows:

*'...[i]t is possible to assume that agents have perfect foresight and then simply use the historical inflation realisations (once released, with a delay) as an ex post measure of expected inflation. Unfortunately, actual inflation almost always differs from the real-time measures of inflation expectations in the data, so the approach would generate considerable unease among most stakeholders and the public. It may also open up disputes with stakeholders along the lines of 'what is the best measure of inflation?' – a topic as contentious as the best estimate of expected inflation.'*²⁰²

SACES, submitted through SA Water, commented on the annual updates proposal outlined in Guidance Paper 9. It interpreted the Commission's proposal as calculating the rate of return as a type of average over four years.²⁰³ However, as discussed above and shown in Appendix 4, the Commission's proposal is not targeting the use of averages of parameters in order to calculate and smooth the rate of return, as suggested by SACES. Rather, the Commission's proposal is to update the rate of return each financial year. Those updates provide an updated indication each year of the total four-year revenue envelope.

SACES also argued that the Commission's annual update proposal would not take into account the relationship between long-term inflation expectations and the nominal yield on 10-year CGS.²⁰⁴ However, as explained in Appendix 4, the extent of the relationship between those two variables is ambiguous; the relationship depends on various economic and risk factors.

Both SACES and Frontier Economics argued that the annual update methodology will not address concern about long-term inflation expectations.²⁰⁵ Frontier Economics suggested that the use of a one-year ahead inflation forecast (using outturn inflation from the previous year, akin to a 'random walk' approach to forecasting inflation) could be used as part of the annual update methodology to estimate long-term inflation expectations.²⁰⁶ However, as explained in Appendix 4, there are limitations in the

²⁰⁰ Commission, *Guidance Paper 9*, pp. 15-17.

²⁰¹ SA Water, *Submission on Guidance Paper 9*, pp. 1-2.

²⁰² Vahey, *Report to the AER on estimating expected inflation*, 2017, p. 17.

²⁰³ SACES, *Estimating Inflation Expectations for Regulatory Decisions, Final report prepared for SA Water*, 2020, pp. 5-7, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20200213-SAWRD20-EstimatingInflationExpectations-DeptTreasuryFinance.pdf.aspx?Embed=Y>.

²⁰⁴ SACES, pp. 1-9.

²⁰⁵ SACES, pp. 1-7, and Frontier Economics, p. 55.

²⁰⁶ Frontier Economics, pp. 55-56.

claims made by both Frontier Economics and SACES regarding long-term inflation expectations. Further, and as discussed in the Appendix 4, Frontier Economics' proposal to use a one-year ahead forecast for inflation (using the previous year's observation) as a measure of long-term inflation expectations has similar measurement and conceptual limitations as SA Water's proposal outlined in its RBP.

8.3.1.5 The benchmark-efficient entity has a gearing ratio of 60 percent and a credit rating of BBB

The Commission's draft decision is that a gearing ratio of 60 percent debt and 40 percent equity be maintained throughout the SAW RD20 period. The assumption is consistent with general regulatory practice in Australia and is consistent with the Commission's practice in SAW RD13 and SAW RD16.

None of the submissions raised concerns in relation to the gearing assumption of 60 percent.

Credit ratings are used as part of the process of calculating the benchmark cost of debt. The Commission's draft decision is to adopt a credit rating within the BBB investment grade band (for example, BBB+, BBB or BBB-).²⁰⁷ The decision to use BBB investment grade reflects, first, that the gearing assumption (of 60 percent) points to a credit rating in this band and, second, that data are publicly available for this particular investment band (as noted further below, estimates of the cost of debt for BBB corporate securities are published by the RBA).

SA Water supported the credit rating and gearing assumptions.

Most submissions did not raise concerns in relation to the credit rating assumption. However, in its submission to the draft SAW RD20 Framework and Approach paper, Uniting Communities rejected the principle of assuming that a prudent financing strategy should not depend on the ownership of the regulated business.²⁰⁸

As discussed in Guidance Paper 5,²⁰⁹ there are three reasons that ownership is not relevant in determining the rate of return for use in SAW RD20. First, the introduction of government ownership would imply that cross subsidies between tax payers and SA Water's consumers may exist. Using the benchmark efficient entity approach allows the Commission to exclude from maximum revenues any potential costs that may be associated with government ownership that are non-commercial, such as social programmes which are expected to be funded separately. Second, the use of the benchmark efficient entity means that the regulatory framework operates regardless of whether or not any change of ownership takes place during the regulatory period. Third, SA Water is provided with an incentive to outperform the cost of capital awarded to a benchmark efficient entity.

²⁰⁷ Each ratings agency uses a slightly different labelling and classification system of credit ratings. The Commission and other regulators have adopted the Standard and Poor's classification of BBB-category to reflect the minimum investment grade.

²⁰⁸ Uniting Communities, *Submission to: Essential Services Commission of South Australia, RD20 Draft Framework and Approach*, February 2018, p. 13, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/1171/20180216-Water-SAWRD2020-FA-Draft-Submission-UnitingCommunities.pdf.aspx?Embed=Y>.

²⁰⁹ Commission, *Guidance Paper 5*, November 2018, p.31, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20181101-Water-SAWRD20-GuidancePaper5-CostOfFundingAndUsingAssets.pdf.aspx?Embed=Y>.

8.3.1.6 The Commission proposes to use a 10-year trailing average of the yield on 10-year BBB corporate bonds to measure the cost of debt. Debt raising costs are to be added to the cost of debt.

The Commission's draft decision is to estimate the cost of debt using the yield on 10-year BBB corporate bonds.²¹⁰ This selection reflects two considerations. First, the 10-year bond term reflects the long-lived nature of the infrastructure assets being regulated (and there is limited liquidity of corporate bonds in Australia beyond a 10-year maturity).²¹¹ Second, investment practitioners, academics, and regulators and government agencies tend to use, or commonly refer to, the 10-year term as the benchmark for both the risk free rate and the cost of debt.²¹²

Alongside this, the Commission's draft decision is to adopt a 10-year trailing average of the yield on 10-year BBB corporate bonds to calculate the cost of debt. The trailing average approach recognises that the business may not finance all of its debt around the same time, so holding a portfolio of debt with staggered maturity dates and the possibility to use derivative products to hedge interest rate exposure is likely to be an efficient debt financing approach.²¹³ The trailing average approach aims to be reflective of the actual debt management approaches of an efficient benchmark entity. Consistent with this, several regulators in Australia use the 10-year trailing average to calculate the cost of debt.²¹⁴

The Commission proposes to adopt an estimate of 12.5 basis points per annum to reflect the efficient transaction costs associated with raising debt financing in the bond market (for example, the direct costs of underwriting fees, legal and registry fees and company credit rating fees). These direct financing costs could be expected for any prudent and efficient utility that issues corporate securities as part of its portfolio of debt. There can be divergence in estimates of debt-raising costs; according to the Economic Regulation Authority Western Australia (ERA (WA)), estimates used by regulators between 2014 and 2018 tended to lie between 8.4 basis points and 12.5 basis points.²¹⁵ An estimate of 12.5 basis points was considered appropriate when viewed in the context of interstate regulatory decisions.²¹⁶

SA Water supported the proposed approach to calculating the cost of debt. None of the submissions raised concerns in relation to the methodology for calculating the cost of debt.

²¹⁰ As published by the RBA in statistical table F3, available at: <https://www.rba.gov.au/statistics/tables/#interest-rates>.

²¹¹ Davis, *The Debt Maturity Issue in Access Pricing*, 11 December 2013, p. 2, available at: <http://www.kevindavis.com.au/secondpages/acadpubs/2014/The%20Debt%20Maturity%20Issue%20in%20Access%20Pricing-v2.pdf>.

²¹² RBA, Box B: *Why are Long-term Bond Yields So Low*, May 2019 RBA Statement on Monetary Policy, available at: <https://rba.gov.au/publications/smp/2019/may/box-b-why-are-long-term-bond-yields-so-low.html>; and AER, *Rate of return instrument: Explanatory Statement*, p. 126.

²¹³ AER, *2013 Explanatory Statement – rate of return guideline, December 2013*, pp. 107-109, available at: <https://www.aer.gov.au/system/files/AER%20Explanatory%20statement%20-%20rate%20of%20return%20guideline%20-%20December%202013.pdf>.

²¹⁴ AER, *Rate of return instrument: Explanatory statement, p. 276*; and ICRC, *Final report: Regulated water and sewerage services price 2018-23, 2018, p. 18*, available at: https://www.icrc.act.gov.au/_data/assets/pdf_file/0019/1250236/Report-1-of-2018-Final-Report-Water-Sewerage-Services-2018-23.pdf.

²¹⁵ ERA (WA), *Final Gas Rate of Return Guidelines Explanatory Statement, December 2018, p. 240*, available at: <https://www.erawa.com.au/cproot/19969/2/2018%20Final%20Gas%20Rate%20of%20Return%20Guidelines%20Explanatory%20Statement.PDF>.

²¹⁶ ICRC, p. 95; ERA (WA), *Final Gas Rate of Return Guidelines Explanatory Statement, p. 240*; and IPART, *Review of our WACC method, 2018, p. 24*, available at: <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/final-report-review-of-our-wacc-method-february-2018.pdf>.

8.3.1.7 The Commission proposes to calculate the cost of equity based on a 60-day average of the yield on 10-year CGS, a market risk premium of 6 percent, and an equity beta of 0.65

Consistent with requirements under the NWI Pricing Principles, the nominal cost of equity is calculated using the CAPM.²¹⁷ In the CAPM, the cost of equity is defined as the sum of the returns on a risk-free asset (the expected rate of return on an asset with practically no risk of default) and a risk premium to accept the risks associated with equity. The CAPM formula is as follows:

$$k_e = r_f + (\beta_L \times \text{MRP})$$

Where

k_e = cost of equity

r_f = risk free rate

β_L = the levered or equity beta (which reflects the systematic risk of an equity)

MRP = market risk premium, which is calculated as the total market return less the risk-free rate.

Risk-free rate

The Commission's draft decision is to use the annualised yield on ten-year CGS as a measure of the risk-free rate, as government default risk is low in Australia and CGS provide an objective comparison of investment in other assets.²¹⁸ As with the cost of debt, the 10-year term to maturity approximates the long-lived nature of the infrastructure assets being regulated. It is also in line with the term used by regulators and investment practitioners,²¹⁹ and accommodates for the relatively limited liquidity of CGS that are well beyond a 10-year term to maturity.²²⁰

One submission indirectly questioned the value in using a 10-year CGS. SACES highlighted the presence of time-varying inflation risk premiums inherent in yields on these products, and proposed that the risk-free rate should exclude this particular type of premium.²²¹ The Commission considers that it would be inappropriate to remove the inflation risk premium, as proposed by SACES, without simultaneously removing the real risk premium. The technical limitations in removing the inflation and real risk premium are discussed in Appendix 4.

The Commission's draft decision is to use a 60-day averaging period of CGS to calculate the risk-free rate. As noted earlier, the calculation of the risk-free rate will be updated annually. The calculation will occur as close as practically possible to the start of each financial year, taking into account practical allowances for SA Water's planning and timing of implementation. Specifically, the draft decision is to calculate the 60-day average for the risk-free rate to be used in the final determination as the 60 business days up to and including 24 April 2020. For each yearly update, the Commission's draft decision is to calculate the average based on the 60 business days up to and including the end of the second week of February. The second week of February allows the calculation of the risk-free rate to match the timing of the RBA's latest forecasts of inflation (released on the Friday after the first Tuesday of February).

²¹⁷ See NWI Pricing Principles – Principle 1: Cost recovery for new capital expenditure. While strictly speaking, this principle applies to new capital expenditure, it is not practicable to split the cost of capital into more than one method; the Commission uses CAPM consistently across new and existing capital expenditure.

²¹⁸ Hon Josh Frydenberg MP, *Australia's AAA credit rating reaffirmed by Fitch*, media release 28 October 2019, available at: <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/australias-aaa-credit-rating-reaffirmed-fitch>.

²¹⁹ AER, *Rate of return instrument: Explanatory statement*, p. 131.

²²⁰ Clunies-Ross, *Tough times, easy task*, speech delivered by Ian Clunies-Ross, Head of Investor Relations, on behalf of Rob Nicholl, CEO, to the Australian Business Economists Luncheon, available at: <https://www.aofm.gov.au/publications/speeches/tough-times-easy-task-sydney>.

²²¹ SACES, pp. 1-5.

Research suggests that few, if any, forecast approaches for financial variables, including the yields on CGS, have been able to consistently improve upon the so-called 'random walk' model. The random walk model assumes that increases and decreases are equally likely over the forecast horizon and therefore the latest observation is likely to be the best predictor of the short to medium-term outlook. Accordingly, many regulators, including the Commission, use a short-term averaging period of recent observations, in order to recognise the advantage of a no-change assumption while at the same time recognising that pricing anomalies on any particular day might affect the calculation used in the regulatory determination.²²²

The Commission's draft decision to use a 60-day averaging period is a change from the 20-day averaging period used in SAW RD16 and SAW RD13. However, in Guidance Paper 7, the Commission assessed that there was likely to be little difference in forecast accuracy between 20-day and 60-day averaging periods.²²³ None of the submissions to that Guidance Paper raised concern with the Commission's finding.

It was partly in the context of Guidance Paper 7 that SA Water proposed to use a 60-day averaging period, stating that:

*'... a 60-day averaging period... would, to some extent, smooth the volatility of interest rates while ensuring the risk-free rate is still a fair representation of current market rates which is deemed to be the best estimate of future interest rates.'*²²⁴

It is worth noting that the AER currently adopts an averaging period of up to 60 days.²²⁵

The CNC had no objection to the use of a 60-day averaging period.²²⁶ Isle Utilities supported the 60-day average, arguing that it was reasonable, given the guidance provided by the Commission and the regulatory practice of the AER.²²⁷ In contrast, SACOSS argued against the use of a 60-day averaging period, noting that SA Water may select an averaging period that is most favourable to it.²²⁸ The Commission notes that the risk of any 'gaming' of the averaging period is low. It is inherently difficult to predict the outlook for bond yields and the nomination of the averaging period occurred in November 2019, more than six months from the commencement of the regulatory period.

The discussion above has considered the *nominal* risk-free rate rather than the *implied real* risk-free rate in the regulatory determination. A real risk-free rate is an unobserved variable. It represents the nominal risk-free rate adjusted for some measure of inflation expectations. The real risk-free rate can fluctuate according to market conditions, and the presence of a negative real risk-free rate would still provide a comparison of investments in assets and is not inconsistent with economic theory. The real risk-free rate is discussed further in Appendix 4.

Market risk premium

The Commission's draft decision is for an estimate of the market risk premium of 6 percent. This is consistent with the estimate used in SAW RD16 and SAW RD13. SA Water supported the use of a market risk premium of 6 percent in its RBP.²²⁹ The market risk premium parameter will not be part of the annual update process.

²²² Commission, *Guidance paper 7*, pp. 7-12.

²²³ Commission, *Guidance paper 7*, p. 9.

²²⁴ SA Water, *RBP*, Appendix E, p. 3.

²²⁵ AER, *Rate of return instrument: Explanatory statement*, p. 131

²²⁶ Report of Independent Chair of the CNC, p. 82.

²²⁷ Business SA, p. 6.

²²⁸ SACOSS, p. 27.

²²⁹ SA Water, *RBP*, Appendix E, p. 1-4.

The market risk premium represents the expected return on equities over CGS. It is a measure of investors' expectations about how much risk there is in the market and the price that investors place on that risk.²³⁰ The Commission estimates a single 6 percent figure for the market risk premium based on long-run data, to be used as a forecast for the regulatory horizon, and applies as a premium over the 10-year CGS.

There is debate among academics and regulators about the level of the market risk premium and its relationship with the risk-free rate. The view among many regulators in Australia, including the AER, Independent Competition and Regulatory Commission (ICRC) and the ERA (WA), is that it is difficult to improve upon a long-run average of past returns when making forecasts for the long-term horizon of the additional return investors expect to receive from equities relative to that returned from CGS.²³¹

The Commission supports this position. The long-run average method was reviewed by the AER in 2018²³² and was considered reasonable given there are few robust alternative methods.²³³ Several other regulators use, or place reliance on, historic market risk premiums.²³⁴

Frontier Economics argued that there is an inverse relationship between the market risk premium and the risk-free rate and that the Commission should '*adopt an approach to estimating the required return on equity that pairs the risk-free rate consistently with the MRP*'.²³⁵ The implication is that the market premium should be higher in a low interest rate environment. Frontier Economics cited commentary from current and former Governors of the RBA and RBA research on stable hurdle rates of return.²³⁶

The Commission's current assessment is, however, that while there may be some evidence of an inverse relationship, the magnitude and timing of that relationship is ambiguous. The commentary and research from the RBA – cited by Frontier Economics – does not specify the exact level of the market risk premium; the comments and research imply only that the market premium may have fluctuated over time and risen recently. Furthermore, there are reasons to think that the market risk premium used in SAW RD16 and SAW RD13, of 6 percent, is on the higher side of long-run estimates. For instance, research from the RBA in 2019 suggested that the long-run average of historical data could, after taking account of some potential downward bias from the use of geometric averaging, be closer to 5 percent than 6 percent.²³⁷

Frontier Economics argued that there is an inconsistency between the use of the historical average of the market risk premium and the latest observation of the yields on CGS.²³⁸ In this instance, Frontier Economics appeared to argue for the use of a market-implied estimate of the market risk premium in SAW RD20. However, market-implied approaches to estimating the market risk premium have known limitations including that the estimates are highly variable and dependent on assumptions regarding future dividend yields. Furthermore, the latest observation of the yield on CGS is likely to be the best

²³⁰ The market risk premium does not relate to specific risks associated with investing in a water utility. Any non-diversifiable risks associated with investing in the benchmark efficient water utility are captured through the equity beta parameter.

²³¹ A summary of regulator approaches can be found in: IPART, Review of our WACC method, 2018, p. 86-91.

²³² AER, *Discussion paper – market risk premium, risk free rate averaging period and automatic application of the rate of return*, March 2018, p. 11, available at: <https://www.aer.gov.au/system/files/AER%20-%20MRP%20Risk%20Free%20Rate%20Averaging%20Period%20and%20Automatic%20Application%20Discussion%20Paper%20-%20March%202018.pdf>.

²³³ AER, *Rate of return instrument: Explanatory Statement*, p. 220.

²³⁴ ERA (WA), pp. 178-179, and ICRC, pp. 105-106.

²³⁵ Frontier Economics, p. 4.

²³⁶ Frontier Economics, pp. 42-51.

²³⁷ Mathews, *A History of Australian Equities*, RBA Research Discussion Paper – RDP 2019-04, June 2019, p. 10, available at: <https://www.rba.gov.au/publications/rdp/2019/2019-04/full.html>.

²³⁸ Frontier Economics, pp. 42-51.

predictor of future yields over the four-year horizon,²³⁹ and the Commission considers that it is difficult to improve upon a long-run average of past returns when making forecasts for the long-term horizon of the additional return investors expect to receive from equities relative to that returned from CGS. Frontier Economics did not provide any forecast assessment of estimates of the market risk premium.

Appendix 4 provides further discussion and supporting evidence in relation to the market risk premium.

Equity beta

The Commission's draft decision is for an equity beta of 0.65. The equity beta parameter will not be reset as part of the annual update methodology process.

Equity beta measures the 'riskiness' of a firm's returns compared with that of the market.²⁴⁰ The higher the equity beta, the more exposure to undiversifiable risk. While there is unanimous agreement among regulators in Australia that equity beta for regulated utilities is less than one (for example, regulated companies are perceived as being less risky than the average of companies that make up the share market), there is uncertainty regarding the exact level of beta. Further, equity beta for SA Water cannot be directly estimated, as SA Water is not a publicly listed company.

While equity beta estimates for some overseas water companies are higher than 0.7 (including as reported in recent research from the Independent Pricing and Regulatory Tribunal (IPART)),²⁴¹ the Commission's starting position for SAW RD20 is that the upper bound estimate for equity beta among utilities in Australia is around 0.7. An estimate of 0.7 was used in SAW RD16.²⁴²

Guidance Paper 5 noted that the revenue cap form of regulation applied to SA Water, as opposed to the price cap form of regulation, may be a reason to think that beta for a monopoly water supplier would likely be lower than for an electricity distribution company.²⁴³ For those reasons a range from 0.6 to 0.7 was presented in Guidance Paper 5.²⁴⁴

Some stakeholders, such as SACOSS, argued that the range of equity betas from research lay somewhere between 0.4 to 0.8, therefore *'it would seem reasonable to select an equity beta of 0.6 rather than 0.7'*.²⁴⁵

The adoption of the annual update methodology is expected to reduce SA Water's firm-level risk relative to the risks faced under the approach used in SAW RD16. This is because, as noted earlier, the adoption of the annual updates methodology reduces forecast risk for financial variables such as the risk-free rate and allows a return more aligned with market returns. While the annual update approach may increase demand risk, as SA Water's customers face greater uncertainty of prices and may therefore adjust behaviour in response, the demand adjustment mechanism built into the regulatory settings protects against this risk. There is, therefore, a prima facie case for lowering equity beta below 0.7. Estimating the magnitude of the reduced level of risk is difficult. The Commission's draft decision of 0.65 recognises that a reduction to 0.65 is the mid-point of the range of most estimates used by regulators in Australia (Table 8.4).

²³⁹ Commission, *Guidance paper 7*, pp. 1-12.

²⁴⁰ Specifically, equity beta measures the standardised correlation between the returns on an individual risky asset or firm with that of the overall market.

²⁴¹ Ofwat, *PR19 final determinations: Allowed return on capital technical appendix*, 2019, p. 5, available at: <https://www.ofwat.gov.uk/publication/pr19-final-determinations-allowed-return-on-capital-technical-appendix/>.

²⁴² Commission, *SAW RD16*, p. 125.

²⁴³ Commission, *Guidance paper 5*, pp. 22-25, available at <https://www.escosa.sa.gov.au/ArticleDocuments/1200/20181101-Water-SAWRD20-GuidancePaper5-CostOfFundingAndUsingAssets.pdf.aspx?Embed=Y>.

²⁴⁴ Commission, *Guidance Paper 5*, p.11.

²⁴⁵ SACOSS, p.25.

Table 8.4: Equity beta decisions across jurisdictions, adjusted for gearing assumptions

Regulator	Equity β in latest guidance
ESCOSA	0.60-0.70
IPART	0.70 ²⁴⁶
ERA	0.77 ²⁴⁷ (energy)
AER	0.60 ²⁴⁸ (energy)
ESCV	0.65 ²⁴⁹
OTTER	0.65 ²⁵⁰
ICRC	0.70 ²⁵¹
QCA	0.65 ²⁵²
Average	0.68

SA Water argued that the risk of underestimating the required return on equity is substantially greater if an equity beta at the bottom of its range is adopted as opposed to choosing a point estimate at the top of its range.²⁵³ However, the Commission’s draft decision for equity beta is not derived from estimates from the bottom of the range of academic estimates. As noted above, SACOSS has suggested that betas for the energy sector may possibly be as low as 0.4.²⁵⁴

8.3.1.8 The Commission proposes to adopt a ‘glide path’ approach to estimating long-term inflation expectations

The Commission’s draft decision in relation to long-term inflation expectations is that SA Water must adopt a ‘glide path’ approach to estimating long-term inflation expectations for SAW RD20. The glide path approach recognises that there is a degree of uncertainty over the timing of the recovery path for inflation, which may currently be affecting household, firm and investor long-term expectations about inflation, while at the same time, the glide path approach recognises that the majority of available

²⁴⁶ See IPART, *Estimating Equity Beta*, 1 April 2019, p. 2, available at:

<https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/fact-sheet-estimate-equity-beta-1-april-2019.pdf>.

²⁴⁷ ERA (WA), p. 236. The ERA (WA) decision assumes a benchmark gearing assumption of 55 percent rather than the usual 60 percent. When equity beta is adjusted to be on the same gearing basis it moves from 0.7 to 0.77.

²⁴⁸ AER, *Rate of return instrument: Explanatory Statement*, December 2018, p. 142.

²⁴⁹ ESCV, *Melbourne Water 2016 Price Review*, 2016, p. 28, available at:

<https://www.esc.vic.gov.au/sites/default/files/documents/3216479e-fa62-4b8b-8ad7-a1ea3542f76e.pdf>.

²⁵⁰ OTTER, *2018 Water & Sewerage Price Determination Investigation - Final Report*, 2018, p. 10, available at: <https://www.economicregulator.tas.gov.au/Documents/2018%20Water%20and%20Sewerage%20Price%20Determination%20Investigation%20Final%20Report.pdf>.

²⁵¹ ICRC, p. 87.

²⁵² QCA, *Long-term framework for SEQ water retailers – WACC*, August 2014, p. 21, available at:

<https://www.qca.org.au/getattachment/a61eda28-464f-4bdc-b99a-df55a0593e9a/WACC-Paper.aspx>.

²⁵³ SA Water, *RBP*, Appendix E, p. 6.

²⁵⁴ SACOSS, p.25.

evidence suggests that inflation targeting has anchored long-term inflation expectations within the RBA's 2 to 3 percent target band.²⁵⁵ Frontier Economics also put forward the option of a glide path approach.²⁵⁶

There are no legislative requirements that specify the exact measure of long-term inflation expectations to be applied in the determination.²⁵⁷ The Commission has considered the expected long-term inflation rate that can facilitate the determination of the lowest sustainable cost of drinking water and sewerage services.

The Commission considered a range of approaches to estimating long-term inflation expectations including:

- ▶ SA Water's proposal, which, in effect, proposes to use the lower number of either the RBA's one-year inflation forecast, or the 60-day average of nominal yields on the 10-year government bond rate minus 0.15 percentage points
- ▶ market-based approaches: the 10-year bond breakeven rate, calculated as the difference in yields between nominal and inflation-indexed bonds; and, the 10-year inflation swaps rate, which is a type of financial derivative product
- ▶ surveys of professional forecasters' long-term inflation expectations, and
- ▶ the Commission's approach outlined in Guidance Paper 5, which takes the RBA's one-year inflation forecast and assumes an inflation expectation of 2.5 percent for the nine years thereafter, and then calculates a geometric average of the ten observations.

Selection of the most appropriate approach involves some compromise, balancing the theoretical and practical advantages and disadvantages of each approach. The supporting discussion, information and evidence informing the Commission's considerations of each of these approaches, including submissions, can be found in Appendix 4.

In particular, the Commission does not accept SA Water's proposed method for estimating long-term inflation expectations: the proposed method has major limitations. As discussed in Appendix 4, there are conceptual and measurement problems in the method proposed by SA Water, and several stakeholders have raised concerns regarding these problems. For instance, SACOSS highlighted the low level of long-term inflation expectations implied under SA Water's proposal part 1.²⁵⁸

As SACOSS stated:

*'Capping the forecast inflation rate at the risk-free rate minus 0.15% would produce a result of $1.17 - 0.15 = 1.02$ percent, which is well below the current inflation rate (0.68 percent below the current inflation rate). This would mean that SA Water would receive the benefit of an artificially low inflation rate estimate based on its proposed capping mechanism.'*²⁵⁹

Isle Utilities argued that the short-term nature of the RBA's one-year inflation forecast is unreasonable as a measure of long-term inflation expectations in the context of long-term investments and funding requirements.²⁶⁰

²⁵⁵ Debelle, 'Twenty five years of Inflation Targeting in Australia', in RBA, Central Bank Frameworks: Evolution or Revolution, proceedings of RBA conference, edited by John Simon and Maxwell Sutton, 2018, pp. 53-71, available at: <http://www.rba.gov.au/publications/confs/2018/pdf/rba-conference-volume-2018.pdf>.

²⁵⁶ Frontier Economics, pp. 62-64.

²⁵⁷ Including under the Pricing Orders for SAW RD20.

²⁵⁸ SACOSS, pp. 28-29.

²⁵⁹ SACOSS, pp. 28-29.

²⁶⁰ Business SA, p. 18.

Frontier Economics and SACES supported the use of market-based approaches to estimating long-term inflation expectations.²⁶¹ Frontier Economics claimed *that 'there is overwhelming evidence from a variety of sources that current market expectations of inflation are well below 2 percent'*.²⁶² However, as explained in Appendix 4, and outlined below, there are limitations with the propositions put forward by SACES and Frontier Economics. For example, both submissions rely on observed data for inflation swaps and bond break even rates, yet neither of the submissions provided empirical evidence addressing liquidity and risk premiums discussed in Guidance Paper 6.

Frontier Economics claimed that market-based measures outperform alternative options in terms of forecast accuracy.²⁶³ However, its evidence is based on a chart that uses data from only 2010.²⁶⁴ The chart merely shows, as was explained in Guidance Paper 6, that actual inflation has been low over recent years at the same time that bond break even rates and swaps rates have been low; Frontier has not provided a full forecast assessment. When viewed over the inflation targeting period, the 10-year bond breakeven rate is more variable and has a higher forecast error (see Appendix 4).

Frontier Economics cited both forecasts of, and commentary from, the RBA about low inflation.²⁶⁵ But these forecasts and commentary are not about long-term inflation expectations. Those forecasts and commentary are, as noted above, an indicator that there is a degree of uncertainty over the timing of the recovery path for actual inflation.

Frontier Economics cited comments from several market economists/analysts as to the outlook for low inflation.²⁶⁶ However, the submission also showed that surveys of professional forecasters are for inflation of around 2.4 percent in 5 to 10 years' time. This survey evidence presented by Frontier Economics stands in contrast to Frontier Economics' other citation of remarks from market analysts and the proposition that *'there is overwhelming evidence from a variety of sources that current market expectations of inflation are well below 2 percent'*.²⁶⁷

In addition, Frontier Economics proposes that the Commission estimate long-term inflation expectations over the length of the regulatory period, rather than over a 10-year horizon. However, as explained in Appendix 4, the nominal yield on 10-year CGS includes, among other things, an unobserved long-term inflation expectation. The implication of Frontier Economics' proposal, although not stated, is that the term to maturity of the risk-free rate would also need to be set at the length of the regulatory horizon. However, Frontier Economics did not consider or address this implication in the submission.

As mentioned earlier, the Commission considered the term to maturity for the risk-free rate, and decided that the 10-year term to maturity approximates the long-lived nature of the water and sewerage infrastructure assets being regulated, and that the term was also in line with the term used by regulators and investment practitioners.

The Commission's glide path approach

The Commission's previous approach in SAW RD16 (and the approach outlined in the Guidance Papers) was underpinned by the credibility of the inflation targeting regime in Australia. While there are risks and challenges surrounding this regime, there are reasons to think that it, for the time being, remains credible.

²⁶¹ Frontier Economics, pp. 24-51, and SACES, pp. 1-7.

²⁶² Frontier Economics, p. 24.

²⁶³ Frontier Economics, pp. 28-29.

²⁶⁴ Frontier Economics, pp. 36-37.

²⁶⁵ Frontier Economics, pp. 24-27.

²⁶⁶ Frontier Economics, pp. 24-41.

²⁶⁷ Frontier Economics, p. 34.

First, the flexible inflation targeting framework is underpinned by an agreement between the Federal Treasurer and the RBA Governor, and that agreement was renewed in November 2019.^{268,269}

Second, while market-based indicators of long-term inflation expectations are currently low and outside of the target band, surveys of professional forecasters' (and of union officials') long-term inflation expectations remain within the RBA's 2 to 3 percent target range.²⁷⁰ As stated by the RBA in February 2020 '[l]ong-term survey-based measures of inflation expectations are between 2-2½ percent and remain consistent with the Bank's medium-term inflation target.'²⁷¹

Third, international experience, namely in the United States, Europe and the United Kingdom, suggests that low interest rates and, in some cases unconventional monetary policy, helped to maintain long-term inflation expectations, despite actual inflation in those countries deviating from target ranges for some years.²⁷² In drawing on that overseas experience for his expert advice to the AER's review of inflation expectations in 2017, Professor Shaun Vahey noted that '[t]here are good reasons ... to suspect that RBA credibility would survive a prolonged period of low nominal interest rates, associated with perhaps negative real interest rates'.²⁷³

Notwithstanding the credibility of inflation targeting over the longer-term, with interest rates in Australia at historic lows, house prices and household debt at high levels in parts of the economy, and economic growth in Australia gradually coming out of a soft patch,²⁷⁴ there is uncertainty regarding the current and future effectiveness of monetary policy, and hence the speed in which inflation might return

²⁶⁸ The flexible inflation targeting framework is set out in an agreement between the RBA and the Australian Government. See: *Statement on the Conduct of Monetary Policy: The Treasurer and the Governor of the Reserve Bank*, 19 September 2016, available at: <https://www.rba.gov.au/monetary-policy/framework/stmt-conduct-mp-7-2016-09-19.html>. While the latest published agreement was made on 19 September 2016, the Commonwealth Treasurer has recently (as of 5 November 2019) released a public statement indicating that the existing agreement would continue and remain unchanged. The Treasurer stated that '[w]hile inflation has been below the 2-3 percent band for some time, I recognise that Australia is not alone in experiencing an extended period of low inflation, low unemployment and low interest rates. Over the medium term, inflation is expected to return to the band, consistent with the Statement'. See Hon. Josh Frydenberg MP, Media release: Statement of conduct of monetary policy, 5 November 2019, available at: <https://joshfrydenberg.com.au/wp-content/uploads/2019/11/Media-Release-Treasurer-Statement-on-the-Conduct-of-Monetary-Policy.pdf>.

²⁶⁹ Debelle, *Twenty five years of Inflation Targeting in Australia*, pp. 53-71.

²⁷⁰ RBA, *Statement on Monetary Policy* – February 2020, 2020, p. 67, available at: <https://www.rba.gov.au/publications/smp/2020/feb/pdf/statement-on-monetary-policy-2020-02.pdf>.

²⁷¹ RBA, *Statement on Monetary Policy* – February 2020, 2020, p. 67.

²⁷² Vlieghe, *The yield curve and QE*, speech given by Gertjan Vlieghe External MPC Member Bank of England, Imperial College Business School, Tuesday 25 September 2018, available at: <https://www.bankofengland.co.uk/-/media/boe/files/speech/2018/the-yield-curve-and-qe-speech-by-gertjan-vlieghe.pdf?la=en&hash=B7E9AF612B5DB7EFBAADEBCBD0A1EAA87FB1CF90>; Carney, *A framework for all seasons*, speech given by Mark Carney Governor of the Bank of England, Bank of England Research Workshop on The Future of Inflation Targeting, p. 26, available at: <https://www.bankofengland.co.uk/-/media/boe/files/speech/2020/a-framework-for-all-seasons-speech-by-mark-carney.pdf?la=en&hash=EA36470F17CF3EC86AD9A08108FC295348BD5680>; and Vahey, *Report to the AER on estimating expected inflation*, 2017, p. 10, available at: <https://www.aer.gov.au/system/files/Prof%20Shaun%20P%20Vahey%20-%20Report%20to%20the%20AER%20on%20estimating%20expected%20inflation%20-%2015%20September%202017.PDF>

²⁷³ Vahey, *Report to the AER on estimating expected inflation*, 2017, p. 10.

²⁷⁴ RBA, *Statement on Monetary Policy* – February 2020, 2020, p. 1.

sustainably within the RBA's 2 to 3 percent target range.^{275,276} In line with this, the RBA currently forecasts annual inflation to be 1.9 percent over the year to the June 2021 and 2.0 percent over the year to June 2022, largely reflecting the amount of spare capacity expected to remain in the Australian labour market over the forecast period.²⁷⁷ This contrasts with the inflation expectation of 2.5 percent for financial year 2021-22 that the Commission's approach used in SAW RD16 for estimating long-term inflation expectations.²⁷⁸

The uncertainty over the timing of the forecast recovery path for inflation may affect household, business and investor expectations about the level of short and long term inflation. This uncertainty does not suggest that inflation targeting in Australia is not credible over the longer term. Rather, the uncertainty suggests an approach to estimating inflation expectations that explicitly recognises a gradual recovery in inflation towards the RBA's target range in the current environment.

The Commission's glide path approach has two elements:

- ▶ using the RBA forecasts of inflation for the next two years, and
- ▶ using the IMF medium-term (five year) inflation projection for Australia and assume a linear transition from the RBA second-year forecast to the IMF projection for inflation in five years' time.

The first element is based on the approach adopted by the AER for estimating long-term inflation expectations, which uses two years of RBA forecasts of CPI inflation, with the midpoint of the inflation target band assumed for the remainder of the ten year period. The use of two years of RBA forecasts was previously supported by SA Water in its RBP in 2016.²⁷⁹ The RBA's forecasts can be considered a subjective assessment of the inflation path, implicitly weighting many indicators, including various inflation models as well as surveys and market-based measures of inflation expectations.²⁸⁰ The Commission's approach is, therefore, taking into account market conditions (as was advocated by Frontier Economics on behalf of SA Water).²⁸¹

The second element of the proposal is to adopt a linear glide path from the second-year RBA forecast to the IMF medium-term (five-year) projection of inflation in Australia (see equation below). The IMF publishes country-level projections of consumer price inflation in April and October of each year, as part of its regular World Economic Outlook (WEO) publications. Those projections are for the calendar year five years ahead of the point time in which the forecasts are made. For example, in 2019 the IMF

²⁷⁵ RBA, *Minutes of the Monetary Policy Meeting of the Reserve Bank Board*, Sydney, 5 November 2019, available at: <https://www.rba.gov.au/monetary-policy/rba-board-minutes/2019/2019-11-05.html>. For instance, the RBA Board minutes stated: '[w]hile members judged that lower interest rates were supporting the economy through the usual transmission channels (including a lower exchange rate, higher asset prices and higher cash flows for borrowers), they recognised the negative effects of lower interest rates on savers and confidence. They also discussed the possibility that a further reduction in interest rates could have a different effect on confidence than in the past, when interest rates were at higher levels'.

²⁷⁶ There is a risk that if inflation outcomes are away from the target for too long then inflation expectations could drift away from the target, and therefore central banks might have to expect a longer delay in returning inflation to target. Agathe Côté, *Inflation, Expectations and Monetary Policy*, Remarks by former Deputy Governor of the Bank of Canada, Mont-Tremblant, February 19 2015, available at: <https://www.bankofcanada.ca/2015/02/inflation-expectations-monetary-policy/>.

²⁷⁷ RBA, *Statement on Monetary Policy* – February 2020, 2020, pp. 71-79.

²⁷⁸ Commission, *Guidance Paper 6*, pp. 1-14 available at <https://www.escosa.sa.gov.au/ArticleDocuments/11293/20190606-SAWRD20-GuidancePaper6-InflationForecastingMethodology.pdf.aspx?Embed=Y>.

²⁷⁹ SA Water, *Regulatory Business Proposal 2016-2020*, 2016, p. 45, available at: https://www.sawater.com.au/_data/assets/pdf_file/0020/26921/RBP-2016.pdf.

²⁸⁰ Vahey, *Report to the AER on estimating expected inflation*, p. 7.

²⁸¹ Frontier Economics, p. 60.

published a projection of consumer price inflation in Australia for calendar-year 2024. Based on the latest data, the IMF reports a projection of 2.5 percent in calendar year 2024 for Australia.²⁸²

$$\text{Expected inflation} = \left(\sqrt[n]{ \begin{matrix} (1 + \text{forecast2020} - 21) * (1 + \text{forecast2021} - 22) * \\ (1 + \text{linear glide path 2022} - 23) * (1 + \text{linear glide path 2023} - 24) * \\ (1 + \text{IMF medium term anchor}) * (1 + \text{mid point of RBA target band}) * \dots \text{etc} \end{matrix} } \right) - 1$$

where:

forecast 2020-21 is the RBA forecast for year-ended CPI inflation, one year ahead

forecast 2021-22 is the RBA forecast for year-ended CPI inflation, two years ahead

n is the number of years of forecast, which in this case is 10.

linear glide paths are calculated as: (the difference between the IMF medium-term anchor and latest available RBA forecast) plus the previous year calculation, divided by one plus the number of glide path observations

IMF medium-term anchor is the IMF's five year projection of consumer prices as published by the IMF in its WEO publication and the mid point of the RBA's target band is to be used for the remainder of the ten year period

The draft decision is to use the RBA's forecasts of inflation as published in the February Statement of Monetary Policy (SMP). For each yearly update, the Commission's draft decision is to use the updated forecasts of inflation as published in the February SMP.

The challenge with any glide path approach is in maintaining objectivity in the projected path.²⁸³ The proposed linear approach is simple and transparent, and relies on publicly available data from institutions that are considered by the Commission to be independent and credible. In April 2020, the IMF is expected to release a projection of inflation in Australia for calendar 2025. The Commission's final decision will, subject to availability, use the IMF's projection for consumer prices in 2025. This is reflected in the final column of Table 8.5. For each yearly update, the IMF's latest available projection as at the end of the second week of February (to be consistent with the calculation of the risk-free rate) would be used. For simplicity, the Commission proposes a linear glide path from the RBA year two forecast to the IMF year five projection (Table 8.5). The method can be updated on an annual basis.

Table 8.5: Path for long-term inflation expectations

Financial year	Draft decision (%)	Draft Decision, including April 2020 IMF outlook
2020-21	1.90 (RBA forecast)	(RBA forecast)
2021-22	2.00 (RBA forecast)	(RBA forecast)
2022-23	2.17 (linear glide path)	Linear glide path
2023-24	2.33 (linear glide path)	Linear glide path
2024-25	2.5 (IMF projection for 2024)	Linear glide path
2025-26	2.5	IMF projection 2025
2026-27	2.5	Mid point of RBA target band

²⁸² IMF, October 2019 World Economic Outlook 2019: *Global Manufacturing Downturn, Rising Trade Barriers*, 2019, p. 155, available at: <https://www.imf.org/en/Publications/WEO/Issues/2019/10/01/world-economic-outlook-october-2019#Statistical%20Appendix>.

²⁸³ There are many feasible glide paths; see Vahey, pp. 14-15.

Financial year	Draft decision (%)	Draft Decision, including April 2020 IMF outlook
2027-28	2.5	Mid point of RBA target band
2028-29	2.5	Mid point of RBA target band
2029-30	2.5	Mid point of RBA target band
Geometric average (%)	2.32	To be updated

Sources: RBA; IMF; Commission

Appendix 4 discusses the glide path approaches suggested by Frontier Economics.

8.3.1.9 Summary of the draft decision

Based on market data as of 6 February 2020, the application of the above parameters result in the post-tax, real rate of return summarised in the table below. Those estimates will be updated for the Final Decision based on financial market information at that time. The rate of return estimates for 2021-22 to 2023-24 are indicative only; these will be updated annually.

Table 8.6: Summary of regulated rate of return parameters (shaded rows indicate parameters to be updated annually)

	2020-21	2021-22	2022-23	2023-24
		Indicative; selected parameters to be updated annually		
Nominal risk-free rate (%)	1.16	1.16	1.16	1.16
Market risk premium (%)	6.0	6.0	6.0	6.0
Equity beta	0.65	0.65	0.65	0.65
Post-tax, nominal cost of equity (%)	5.06	5.06	5.06	5.06
Nominal cost of debt (%)	5.13	4.69	4.35	4.00
Gearing %	60	60	60	60
Post-tax, nominal WACC (%)	5.10	4.84	4.63	4.42
Long-term inflation expectations (%)	2.33	2.33	2.33	2.33
Post-tax, real WACC (%)	2.71	2.45	2.25	2.04

8.3.2 Discussion – regulatory depreciation and the value of the RAB

Two important and closely interrelated components of the regulated revenue allowance are the RAB (the assets) and depreciation (the return of assets). The RAB value combines with the rate of return on assets in the calculation of a major component of allowed revenues.

The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water's drinking water RAB and prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.

As outlined in Chapter 4, the Commission's draft decision is that the assets related to ZCEF should not form part of the RAB and that no depreciation and return on assets allowance relating to ZCEF should be allowed. This does not mean that SA Water would not recover those costs; they would be recovered through commercial charges in the energy market rather than paid by drinking water and sewerage customers. Therefore, in this draft decision, the RAB and its allowed depreciation for SAW RD20 is lower than anticipated by SA Water.

As mentioned in the introduction, the Commission allows for the wear and tear of assets (regulatory depreciation) over their economic lives to be recovered from customers. The regulatory depreciation allowance takes into account the standard useful lives of assets and provides a cash flow for the return of money spent on assets.

Regulatory depreciation is also directly affected by the value of the RAB which is, in turn, affected by the way its value is rolled forward over time to reflect remaining asset lives, new capital expenditure and asset disposals. The Commission has a process for determining the value of the RAB at the commencement of SAW RD20, and to determine how the RAB's value is rolled forward each year of the regulatory period. Specifically:

- ▶ the initial values of the RAB must be based on the requirements of the Treasurer's second Pricing Order for SAW RD13, and
- ▶ the methodology for rolling forward the values of the RAB must be consistent with Principle 5 of the NWI Pricing Principles.²⁸⁴

An important principle of the RAB roll-forward in the NWI Pricing Principles²⁸⁵ is that customers only fund prudent and efficient capital expenditure. In accordance with this principle, the Commission has, with the support of Cardno/Atkins, reviewed capital expenditure over SAW RD16 and recommends some adjustments. Capital expenditure expected over SAW RD20 has also been tested for prudence and efficiency.

Key assumptions in the calculation of the RAB roll forward and depreciation are:

- ▶ For each year of the determination, a mid-year RAB value is used in calculating the return of assets, to recognise that revenue is generated throughout the year rather than at the end of it.
- ▶ New capital expenditure is recognised in the year it is incurred, rather than when the asset is commissioned.
- ▶ The timing of capital expenditure and asset disposals is assumed to occur evenly throughout the year which, for modelling purposes, is the same as assuming that all annual capital expenditure is incurred at the midpoint of that year.
- ▶ Customer contributions and gifted assets are not included in capital expenditure as they are funded separately by other customers. This is consistent with the requirements of the NWI Pricing Principles.
- ▶ All monetary values are in \$Dec 2018, which is the mid-point of the 2018-19 base year agreed with SA Water.

²⁸⁴ Principle 5 of the *NWI Pricing Principles* refers procedures for rolling forward the RAB.

²⁸⁵ The NWI Pricing Principles formula for RAB roll-forward calculations, Principle 5, specifies only 'prudent capital expenditure.'

Standard asset lives in the draft decision are consistent with those proposed by SA Water (Table 8.7). The exception is for ZCEF; those assets have been removed (as discussed in Chapter 7).

Table 8.7: Regulatory asset lives for SA Water's assets

Regulatory asset lives (weighted averages in years)	Remaining life (existing assets 1 July 2020)	Standard life (new assets)
Drinking water		
Pipes	56.9	103.0
Non-pipes	36.4	64.0
ADP	48.6	57.0
ADP – short-lived assets	-	7.0
Corporate	10.2	15.0
Sewerage		
Pipes	61.7	107.0
Non-pipes	28.5	47.0
Corporate	7.4	15.0

The actual and forecast capital expenditure, asset disposals and depreciation are combined to roll-forward the capital value of the assets comprising the RAB which, for SAW RD20, are set out in Table 8.8.

Table 8.8: SA Water's proposed RAB roll-forward over SAW RD20 (mid FY – \$million, Dec18\$)

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Drinking water								
Opening value	8,678.3	8,649.7	8,708.9	8,788.4	8,948.9	9,203.1	9,267.9	9,329.0
Capital expenditure	161.3	252.0	276.0	358.1	454.9	273.5	275.6	273.1
Disposals	-0.5	0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Depreciation	-189.4	-192.8	-196.1	-197.3	-200.2	-208.3	-214.1	-219.9
Closing value	8,649.7	8,708.9	8,788.4	8,948.9	9,203.1	9,267.9	9,329.0	9,381.7

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Sewerage								
Opening value	4,049.0	4,049.8	4,073.2	4,189.6	4,288.6	4,278.5	4,298.0	4,354.1
Capital expenditure	102.8	128.3	224.9	210.6	100.8	134	174.4	157.9
Disposals	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Depreciation	-101.8	-105.0	-108.4	-111.6	-110.9	-114.4	-118.2	-122.3
Closing value	4,049.8	4,073.2	4,189.6	4,288.6	4,278.5	4,298.0	4,354.1	4,389.6

The Commission also conducts an ex-post review of capital expenditure incurred during the SAW RD16 period, to ensure it has been prudently and efficiently spent. If this has not been the case, the spending may be offset in future through an adjustment to the RAB. This assessment was outlined in Chapter 7.

As a result of this process, and the Commission's assessment of the prudence and efficiency of proposed capital expenditure in SAW RD20, as outlined in Chapter 7, some adjustments have been made to the RAB roll-forward, such as the exclusion of ZCEF assets, which result in a slightly lower RAB (Table 8.9). Compared with SA Water's Regulatory Business Plan for SAW RD20, the RAB for water will be 4.4 percent lower and the RAB for sewer will be 7.2 percent lower.

Table 8.9: The Commission's proposed RAB roll-forward over SAW RD20 (Dec18\$)

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Drinking water								
Opening value	8,687.0	8,659.7	8,717.2	8762.1	8739.6	8830.0	8863.3	8919.0
Capital expenditure	162.6	250.4	241.4	175.0	280.8	229.2	256.8	257.0
Disposals	-0.5	-0.0	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Depreciation	-189.4	-192.8	-196.1	-196.1	-190.0	-195.4	-200.6	-206.0
Closing value	8659.7	8717.2	8762.1	8739.7	8830.0	8863.3	8919.0	8969.2
Sewerage								
Opening value	4,039.1	4,032.5	4052.4	4132.3	4170.3	4127.8	4131.9	4164.7
Capital expenditure	95.9	124.1	188.4	149.6	63.6	112.7	144.5	127.0
Disposals	-0.2	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Depreciation	-101.8	-104.9	-108.4	-111.6	-106.1	-108.5	-111.7	-115.1
Closing value	4,032.5	4052.4	4132.3	4170.3	4127.8	4131.9	4164.7	4,073.8

Straight-line depreciation over the weighted asset life is applied to the RABs to reflect consistent depreciation throughout an asset's life. SA Water's proposed depreciation by asset class for SAW RD20 is in Table 8.10.

Table 8.10: Proposed depreciation by asset class over SAW RD20 - Dec18\$

Return of RAB (Dec18\$)	Water				Sewerage				TOTAL
	2020-21	2021-22	2022-23	2023-24	2020-21	2021-22	2022-23	2023-24	
SA Water's RBP 20									
Pipes	80.0	80.8	81.7	82.7	39.8	39.9	40.4	40.8	486.1
Non-pipes	63.5	66.8	69.0	71.2	52.0	53.4	55.3	57.4	488.6
ADP	30.3	30.3	30.3	30.3	-	-	-	-	121.2
ADP short-lived assets	0.3	0.9	1.5	2.1	-	-	-	-	4.8
Energy assets	10.3	11.9	11.9	11.9	4.4	5.1	5.1	5.1	65.7
Corporate depreciable	15.9	17.7	19.7	21.7	14.7	15.9	17.5	19.1	142.2
Total mid-year value	200.2	208.3	214.1	219.9	110.9	114.4	118.2	122.3	1308.3
Draft Decision									
Pipes	79.6	80.4	81.4	82.2	39.4	39.5	39.7	39.9	482.1
Non-pipes	63.0	65.2	66.9	69.0	54.5	55.9	57.9	60.0	492.4
ADP	30.3	30.3	30.3	30.4	-	-	-	-	121.3
ADP short-lived assets	0.2	0.7	1.1	1.5	-	-	-	-	3.5
Energy assets	-	-	-	-	-	-	-	-	-
Corporate depreciable	16.8	18.8	21.0	23.3	12.2	13.1	14.1	15.2	134.5
Total mid-year value	190.0	195.5	200.8	206.4	106.1	108.5	111.7	115.1	1234.1

9 Determination of total revenue caps

Draft decision

The Commission's draft decision is that the present value of the indicative total revenue caps for the four year period commencing 1 July 2020 should be:

- ▶ for drinking water, \$2,488.1 million (in December 2018 dollars), and
- ▶ for sewerage, \$1,104.7 million (in December 2018 dollars).

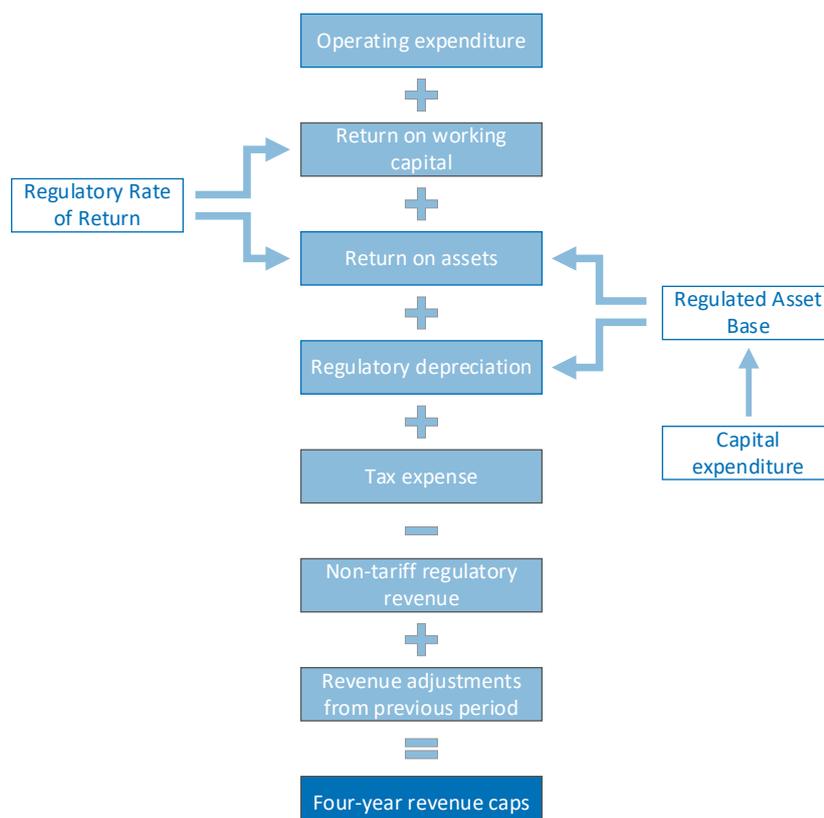
These indicative revenue cap estimates will be updated in the Final Determination.

As noted in Chapter 8, the Commission's draft decision is to update the regulatory rate of return on an annual basis. As a result, the drinking water and sewerage revenue caps listed above are indicative only; those caps will be subject to change each year to reflect changes in market-based parameters of the rate of return.

9.1 Introduction

The Commission determines SA Water's total allowable four-year revenue cap using the building block approach. The approach calculates allowed revenues as the sum of key cost components ('building blocks'). It aims to provide SA Water with the efficient economic costs of providing drinking water and sewerage services. In particular, the building block approach sums together each building block (operating expenditure, return on working capital, return on assets, regulatory depreciation, tax allowance and any revenue adjustments from previous periods) and adjusts for non-tariff regulatory revenues (such as payments for CSOs) (Figure 9.1).

Figure 9.1: The building block approach is used to determine allowable four-year revenues, for drinking water and sewer businesses



Separate revenue caps are calculated for SA Water’s drinking water and sewerage services. Any costs that are common to both drinking water and sewerage services are allocated between services based on relevant cost drivers. From these total costs, revenues that are not recovered through drinking water and sewerage charges, such as recycled water charges or CSO payments received from the South Australian Government, are removed.

Revenue caps set through the building block process are not sensitive to changes in demand, unless they are substantial enough to trigger the demand adjustment mechanism. SA Water expects demand to increase steadily throughout the SAW RD20 period commensurate with increases in population and gross state product.

This chapter sets out the Commission’s draft decision on the combination of the building block components required to determine the total revenue caps for the drinking water and sewerage businesses for SAW RD20.

9.2 What has SA Water proposed?

The annual allowable revenues (unsmoothed) proposed by SA Water are summarised in Table 9.1. The breakdown of proposed building block components are discussed later in this chapter.

Table 9.1: SA Water’s proposed annual revenue allowance (present value in Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
RBP					
Drinking water	805.6	779.0	747.7	714.3	3046.7
Sewerage	351.8	335.2	323.3	312.4	1322.6
Total RBP	1157.7	1114.2	1071	1026.7	4369.3

Overall, in present value terms, SA Water’s proposed total revenue caps for SAW RD20 for drinking water and sewerage were as follows:

- ▶ for drinking water, \$3,046.7, and
- ▶ for sewerage, \$1,322.6.

In terms of revenues adjustments for the SAW RD16 period, SA Water has proposed:

- ▶ no cost pass-through events
- ▶ no adjustment for revenue compliance (subject to the remainder of the 2019-20 financial year)
- ▶ no adjustment for the demand variation adjustment mechanism (subject to the remainder of the 2019-20 financial year), and
- ▶ an adjustment for sales of temporary allocations of River Murray water in the SAW RD16 period, to reflect a net benefit of \$18.0 million. This additional net revenue would be deducted from SAW RD20 revenues.

SA Water proposed ongoing application of adjustments for revenues derived from River Murray water licences and adjustments for cost pass-through events. As discussed in Chapter 4, it has also proposed a ‘contingent projects’ mechanism to apply in the next regulatory period.

As discussed later, SA Water’s modelling approach used a corporate tax rate of 30 percent and a value of gamma of 0.5.

9.3 Discussion

As specified in the Pricing Order, the Commission has used the building block approach to determine total revenues in this Draft Determination.²⁸⁶ The building block approach is an established approach that provides SA Water with the efficient economic costs of providing drinking water and sewerage services. None of the submissions commented directly on the application of the building block methodology. SA Water applied the building block approach in its RBP.

9.3.1 In summary, the Commission’s proposal is for an indicative four-year revenue cap that is more than 16 percent below the revenue caps allowed in SAW RD16

The Commission’s draft decision is that the present value of the indicative revenue allowances for SAW RD20 are:

- ▶ for drinking water, \$2,488.1 million, and
- ▶ for sewerage, \$1,104.7 million.

The calculation of the SAW RD20 revenue caps is summarised in Table 9.2 and Table 9.3.

Table 9.2: Calculation of SAW RD20 revenue caps (Dec18\$m)²⁸⁷

	2020-21	2021-22	2022-23	2023-24	Revenue cap
Pre-tax real WACC (%)	3.06	2.80	2.60	2.39	
Discount factor	0.9850	0.9570	0.9318	0.9092	
Drinking water					
Annual revenue amounts	664.7	664.7	656.2	644.2	
PV of annual revenue amounts	654.7	636.1	611.5	585.7	2,488.1
Sewerage					
Annual revenue amounts	301.5	291.3	289.4	285.3	
PV of annual revenue amounts	296.9	278.7	269.7	259.4	1,104.7

²⁸⁶ The Pricing Order for SAW RD20, Section 6, p. 4.

²⁸⁷ The discount factors are calculated based on cumulative pre-tax WACC rates, assuming mid-year discounting.

Table 9.3: Draft Determination of drinking water and sewerage four-year revenue caps, compared to SAW RD16 and SA Water's RBP (Dec18\$m, present value of revenue amounts)

	Draft Determination for SAW RD20	SA Water's proposal for SAW RD20	SAW RD16
Total Drinking water	2,488.1	3,046.7	3,035.4
Operating expenditure	1208.4	1229.4	1266.8
Return on assets	784.9	1206.3	1304.2
Depreciation	749.0	776.7	709.0
Tax allowance	3.7	71.7	29.0
Non-tariff regulatory revenue	-261.1	-242.1	-279.2
Return on working capital	3.1	4.8	5.6
Total sewerage	1,104.7	1,322.6	1,269.3
Operating expenditure	496.3	478.5	482.6
Return on assets	367.5	563.8	609.4
Depreciation	417.0	429.4	388.6
Tax allowance	0.8	25.8	2.0
Non-tariff regulatory revenue	-178.2	-176.7	-211.5
Return on working capital	1.3	1.9	2.2

The drinking water revenue cap is, in real terms, 18 percent lower than that allowed in SAW RD16, and the sewerage revenue cap is, in real terms, 13 percent lower. The large falls mainly reflect the lower return on assets to be applied in SAW RD20 compared with the return applied in SAW RD16. Changes in the remaining building blocks are relatively small. The reductions in the drinking water and sewerage revenue caps are illustrated in Figure 9.2 and Figure 9.3.

Figure 9.2: Changes in the drinking water PV revenue cap from SAW RD16 to SAW RD20 (Dec18\$m)

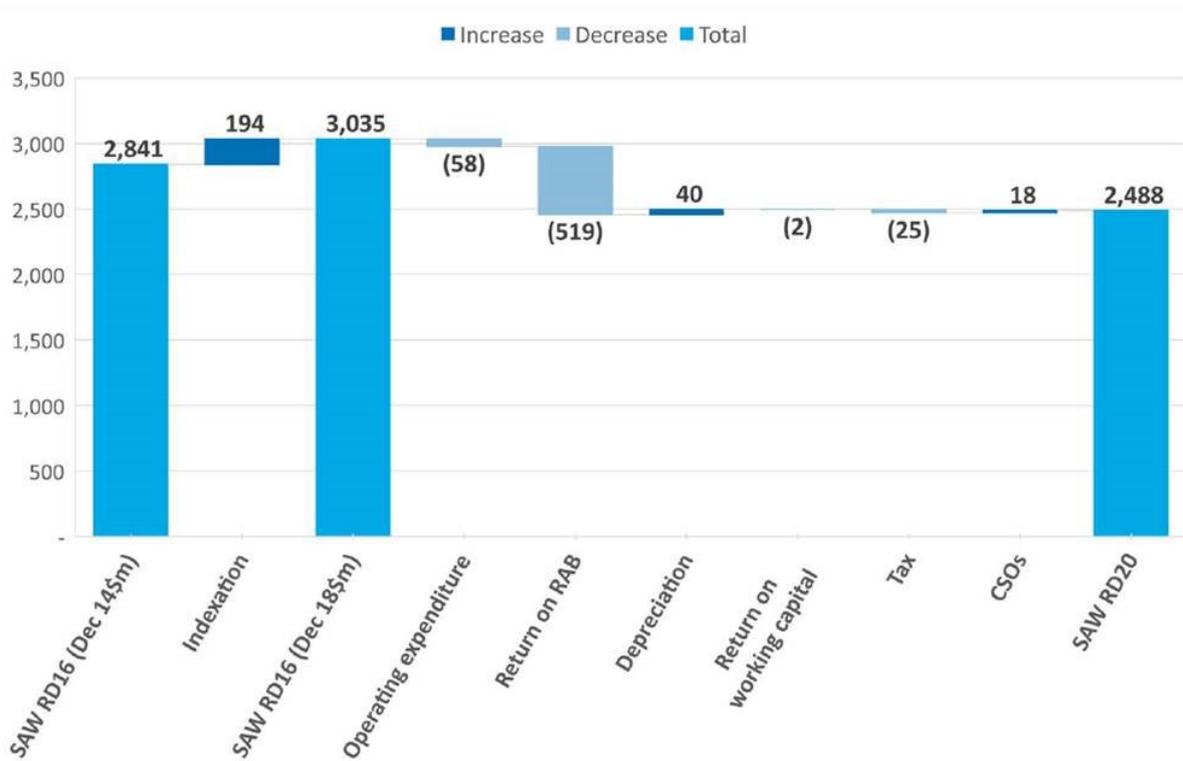
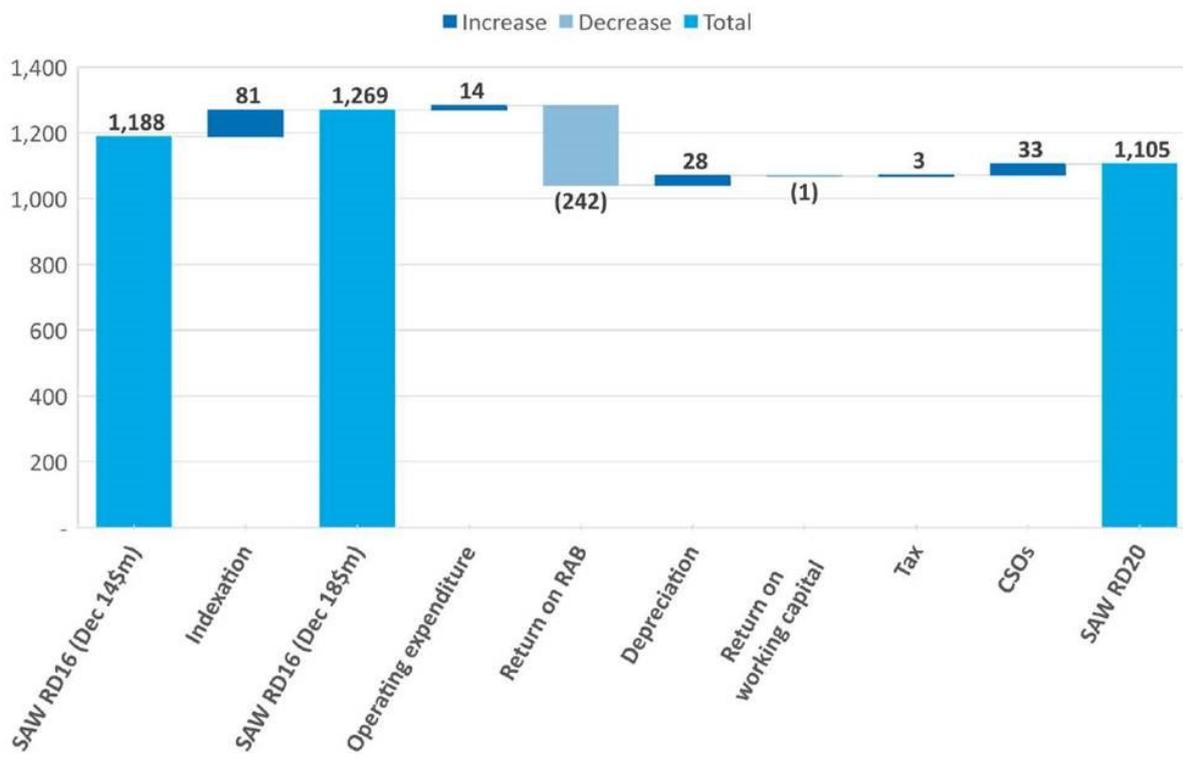


Figure 9.3: Changes in the sewerage PV revenue cap from SAW RD16 to SAW RD20 (Dec18\$m)



9.3.2 The Commission proposes to update the four-year revenue cap each year

The revenue caps for SA Water’s drinking water and sewerage businesses would be updated each financial year, in accordance with a revenue control formula for each service, specified in the Draft Price Determination. The formula-based approach provides an objective and replicable method for updating the regulatory rate of return (based on the approach discussed in Chapter 8) and revenue caps each year.

As a result of the proposed approach to annual revenue updates, the revenue cap estimates presented above are indicative only. The annual revenue amounts for drinking water and sewerage services over the SAW RD20 period are discounted to present value terms and are expressed in dollar values of 31 December 2018.

Annual revenues are assumed to be earned throughout the year and so are discounted based on the mid-point of the financial year. As the revenue caps represent pre-tax cash flows, the pre-tax regulatory rate of return is used as the discount rate.

SA Water has a stated preference for the implementation of a revenue smoothing mechanism to minimise annual price changes to reflect CPI inflation over the regulatory period. There is no regulatory impediment that prevents SA Water from implementing price smoothing, so long as the total revenue cap is not breached. However, the adoption of a smoothing approach by SA Water will need to have regard to the Commission’s proposal for the use of annual updates to the regulatory rate of return.

9.3.3 The Commission’s proposed allowance for prudent and efficient operating expenditure is lower than proposed by SA Water

The Commission’s discussion in relation to prudent and efficient operating expenditure is set out in Chapter 7. Below is a summary of SA Water’s proposal compared with the Commission’s draft decision (Table 9.4).

Table 9.4: Summary of operating expenditure (Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
Drinking water (excl. ZCEF)	353.7	366.2	372.6	375.5	1468
Sewerage (excl. ZCEF)	137.6	142.4	144.9	146	570.9
Total – RBP20	491.3	508.6	517.5	521.5	2038.9
Drinking water	321.9	318.8	319.0	317.8	1277.5
Sewerage	131.5	129.5	131.5	132.4	524.8
Total – Draft Decision	453.4	448.3	450.5	450.2	1802.3

9.3.4 The Commission’s proposal is to treat working capital the same as was the case in SAW RD16

The return on working capital is a product of the post-tax WACC and the assumed investment in working capital. It is calculated according to the following formula:

$$Working\ Capital = \left(\frac{Lag(Days) - Lead(Days)}{365} \right) \times Operating\ Expenditure$$

Where:

- ▶ ‘lag’ is the delay by which revenue is received relative to when it is generated (assumed to be evenly throughout the year). SA Water has estimated the revenue lag to be 70 days, which incorporates half of the three-month billing cycle, plus the estimated average period between meter reading and customer payment
- ▶ ‘lead’ is the delay by which operating expenditures are paid relative to when they are incurred (which is assumed to be evenly throughout the year). SA Water has estimated the operating expenditure lead to be 30 days, and
- ▶ ‘operating expenditure’ reflects the annual operating expenditure, as allowed by the Commission.

The Commission’s draft decision on the return on working capital for SAW RD20 is in Table 9.5. As can be seen below, return on working capital is a relatively small cost.

Table 9.5: Return on working capital (Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
RBP					
Drinking water	1.4	1.3	1.3	1.2	5.2
Sewerage	0.5	0.5	0.5	0.5	2.0
Total RBP	1.9	1.8	1.8	1.7	7.2
Draft Decision – Drinking water					
Return on working capital	1.0	0.9	0.8	0.7	3.3
Draft Decision – Sewerage					
Return on working capital	0.4	0.3	0.3	0.3	1.3
Draft Decision – Total (drinking water and sewerage) return on working capital	1.4	1.2	1.1	1.0	4.6

9.3.5 Method for calculating the return on the RAB and the RAB roll-forward

The annual return on the RAB is calculated as the product of the estimated post-tax rate of return (calculated and presented in Chapter 8) and the average value of the RAB for that year, to derive a year-end equivalent return on assets, which is then discounted by six months, to recognise that revenue is generated consistently throughout the year, rather than at year end.

The value of the RAB is determined at any point by rolling forward the historical RAB, using the principles initially set out in SAW RD13. They state that:

- ▶ new capital expenditure is recognised as an asset immediately it is incurred, rather than on an as commissioned basis
- ▶ capital expenditure is net of customer contributions and gifted assets
- ▶ the timing of capital expenditure (and asset disposals) is considered to occur evenly throughout the year (this is equivalent to assuming that all capital expenditure and asset disposals in a year are incurred at the midpoint of that year)
- ▶ as a consequence of this mid-year timing assumption for capital expenditure (and asset disposals), only half of these items are included in the calculation for depreciation for that year, and
- ▶ all values are expressed in December 2018 prices and all roll forward calculations apply real values.

The Commission notes that the South Australian Government is considering the recommendations of an independent Inquiry into SA Water’s drinking water RAB and prices: this Draft Determination does not take into account any outcomes that might arise from that Inquiry.²⁸⁸

Table 9.6: Useful lives of assets (years)

Regulatory asset lives (weighted averages in years)	Remaining life (existing assets 1 July 2020)	Standard life (new assets)
Drinking water		
Pipes	56.9	103.0
Non-pipes	36.4	64.0
ADP	48.6	57.0
ADP - short lived assets	-	7.0
ZCEF assets	22.4	23.0
Corporate	10.2	15.0
Sewerage		
Pipes	61.7	107.0
Non-pipes	29.2	47.0
ZCEF assets	22.4	23.0
Corporate	8.6	15.0

²⁸⁸ Information about the Inquiry into SA Water’s drinking water prices is available at <https://www.treasury.sa.gov.au/south-australia-water-pricing-inquiry>.

The RAB roll-forward model calculates the annual return of capital using a straight-line method of depreciation, which is based on the standard asset lives provided by SA Water for new assets, and rolled forward remaining useful lives for existing assets. With the exception of SA Water’s proposed new asset class for ZCEF assets (which have been removed from the RAB), the standard asset lives for new assets for SAW RD20 are consistent with those applied for SAW RD13 and SAW RD16. All useful life assumptions are summarised in Table 9.6.

9.3.6 The Commission’s proposal for regulatory depreciation is slightly lower than proposed by SA Water

The regulatory depreciation calculations proposed by SA Water implicitly assume that depreciation occurs at the end of each financial year. As a consequence, the average RAB values (upon which the return on RABs are calculated) are not reduced by current year depreciation. Offsetting this, the depreciation calculations are reduced to reflect the assumption that the revenues are generated consistently throughout each year, meaning that the returns on assets are recovered ahead of the assumed depreciation timing.

The Commission has modified this treatment in SAW RD20 to reflect the fact that depreciation occurs consistently throughout an asset’s life, rather than in periodic lumps. This has an immaterial impact on the revenue caps because the resultant increase in depreciation is broadly offset by the corresponding decrease in the return on assets.

Table 9.7 sets out the Commission’s draft decision with respect to the return of the RAB.

Table 9.7: Regulatory depreciation (Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
RBP					
Drinking water	200.2	208.3	214.1	219.9	842.5
Sewerage	110.9	114.4	118.2	122.3	465.8
Total – RBP	311.1	322.7	332.3	342.2	1308.3
Draft decision					
Drinking water	190.0	195.5	200.8	206.4	792.6
Sewerage	106.1	108.5	111.7	115.1	441.3
Total – Draft Decision	296.1	304.0	312.5	321.5	1233.9

9.3.7 The Commission’s proposal for the return on assets is much lower than SA Water’s proposal

Table 9.8 (below) sets out the Commission’s draft decision with respect to the return on the RAB. The Commission’s draft decision with respect to the post-tax rate of return is set out in Chapter 8. Those rates of return are an important driver of the differences between the Commission’s draft decision and SA Water’s proposal in the RBP.

Table 9.8: Return on RAB (Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
RBP					
Drinking water	348.1	332.9	319.0	303.8	1,303.8
Sewerage	164.3	154.6	148.4	141.9	609.2
Total – RBP	512.4	487.5	467.4	445.7	1,913.0
Draft Decision					
WACC	2.71%	2.45	2.25	2.04	
Drinking water					
Opening RAB	8739.6	8830.0	8863.3	8919.0	
Capital expenditure	280.8	229.2	256.8	257.0	
Disposals	-0.4	-0.4	-0.4	-0.4	
Depreciation	-190.0	-195.5	-200.8	-206.4	
Closing RAB	8830.0	8863.3	8919.0	8969.2	
Average RAB	8,784.8	8846.7	8891.2	8944.1	
Return on average RAB	234.9	214.1	197.8	180.6	827.5
Sewerage					
Opening RAB	4170.3	4127.8	4131.9	4164.7	
Capital expenditure	63.6	112.7	144.5	126.9	
Disposals	-0.1	-0.1	-0.1	-0.1	
Depreciation	-106.1	-108.5	-111.7	-115.1	
Closing RAB	4127.8	4131.9	4164.7	4176.4	
Average RAB	4149.1	4129.9	4148.3	4170.6	
Return on average RAB	111.0	100.0	92.3	84.2	387.4
Total – Draft Decision	345.9	314.1	290.1	264.8	1214.9

9.3.8 Reflecting the low cost of equity driven by a low risk-free interest rate, the tax allowance in the Commission's draft decision is lower than that proposed by SA Water

The regulatory building block model adopted by the Commission incorporates an allowance for tax as one of the cost building blocks. This is because the Commission uses a post-tax real rate of return.

The methodology used to calculate the tax allowances for SAW RD20 is based on the Australian corporate taxation regime, adjusted to reflect the estimated value to equity holders of associated imputation credits.

The following methodology was used by SA Water to arrive at its estimation of the benchmark regulatory tax allowances.

- ▶ The nominal taxable income for each of the drinking water and sewerage services was estimated based on inflating real forecasts by estimated annual inflation rates for each year (based on SA Water's proposal for long-term inflation expectations). All revenues were treated as taxable, including CSO and contributed assets. Tax depreciation deductions were estimated by applying tax useful life estimates to the opening tax written down values of existing assets, and the costs of new assets acquired during the SAW RD20 period.
- ▶ The tax allowance was calculated by applying the corporate tax rate of 30 percent, reduced by the estimated value ascribed to imputation credits (using a value of 0.50 for gamma) to the estimated annual taxable incomes of the drinking water and sewerage businesses. The Commission accepts SA Water's proposal for the use of a value of 0.5 for gamma.

The regulatory building block model is based on real forecasts for capital and operating expenditure, and leads to revenue caps expressed in real terms. To reflect the underlying tax regime, these forecasts must be converted to nominal terms to calculate tax allowances. Under this model, benchmark corporate tax is deferred, because:

- ▶ it is only the real return on assets that is captured within the taxable revenue cap. The inflationary component is capitalised into the value of the RAB, and is not taxable until it is returned to equity holders via the depreciation allowance in future years, and
- ▶ conversely, the benchmark interest expense deduction is nominal, and reflects the product of the nominal cost of debt to the assumed nominal value of debt.

As a consequence of the above, the allowances made for tax within SA Water's RBP are small in the case of drinking water, and zero in the case of sewerage, which leads to an accumulation of tax losses. The Commission has reviewed the tax allowance, and is generally satisfied that the methodology and assumptions used by SA Water to determine the tax allowances are appropriate (although the Commission has used an assumption of 2.3 percent for each year of the SAW RD20 period, in line with the draft decision regarding long-term inflation expectations). The tax allowance in the Commission's draft decision is substantially lower than that proposed by SA Water in its RBP. This is largely due to materially lower returns to equity reflecting lower risk-free rates of interest.

Table 9.9: Tax allowances (Dec18\$m)

	2020-21	2021-22	2022-23	2023-24	Total
RBP16					
Drinking water	19.6	19.1	19.2	19.8	77.7
Sewerage	8.0	7.0	6.5	6.4	27.9
Total - RBP16	27.6	26.1	25.7	26.2	105.6
Draft Decision					
Drinking water	1.1	0.4	1.5	0.9	3.9
Sewerage	0.8	0.0	0.0	0.0	0.8
Total – Draft Decision	1.9	0.4	1.5	0.9	4.7

9.3.9 The removal of non-tariff regulatory revenues is consistent with the SAW RD16 methodology

The sum of the regulatory building blocks is used to determine the total regulatory revenue caps for SA Water. An important step of the process is to subtract the regulated revenue streams that SA Water generates outside of its retail tariffs, as these revenue streams exist to offset operating costs or carry out non-commercial functions. These revenue streams include reimbursements for CSOs made by the South Australian Government (in relation to both drinking water and sewerage) and revenues from the sale of recycled water (sewerage only).

The majority of the CSO revenue is set in advance (in nominal terms) and is published in the South Australian Government Gazette. The remaining CSO revenue represents reimbursements made in relation to the provision of drinking water and sewerage retail services to bodies that have been exempted by the South Australian Government from being required to pay for those services. SA Water estimated these adjustments on the basis that CSO payment amounts for the SAW RD20 period had not been set by the South Australian Government.

As those payment amounts are still to be determined, this Draft Determination has incorporated CSO payments based on SA Water's estimates. CSOs have been estimated on the basis that:

- ▶ CSO payments are likely to be indexed by inflation as measured by the CPI, other than the state-wide pricing CSO, which is likely to be fixed in nominal terms.
- ▶ As set out in its RBP, SA Water expects that CSO payments will decrease by an average of 3.4 percent (\$2.6m) per year for water and 1.6 percent (\$0.8m) per year for sewerage. SA Water proposes that CSO payments for community concessions be treated outside the cost building block model, rather than within the model as was the case for SAW RD16. Unlike other CSO payments, which are fixed in advance of the regulatory period, the CSO payment for community concessions is set each year and is linked to water and sewerage prices and the demand for the concessions.

The Commission agrees that it is appropriate to deduct the community concessions CSO payment from the revenue caps before setting prices for drinking water and sewerage rates and sales each year, rather than deduct a forecast payment through the building block model.

9.3.10 SAW RD16 period adjustments

SAW RD16 allows for adjustments to be made to revenue caps to reflect the costs of any material unforeseen events or legislative changes over the previous regulatory period. There are four forms of potential adjustments to the SAW RD20 revenue caps that relate to the SAW RD16 period:

- ▶ revenue compliance
- ▶ demand variation adjustment mechanism
- ▶ cost pass-through event, and
- ▶ sales of temporary allocations of water.

Subject to outcomes of the remainder of the 2019-20 financial year, the only mechanism that results in a revenue adjustment is for sales of temporary allocations of River Murray water. Under SAW RD16, a River Murray Water Licence Adjustment mechanism exists, as it is not possible to make a reasonable estimate of the sales of temporary water allocations prior to the commencement of a regulatory period. The Commission accepts that the regulatory adjustment for the sale of temporary water allocations is \$18.0 million, which reflects the net benefit to SA Water of those sales and should be deducted from drinking water revenues for SAW RD20.

The Commission's Final Determination for SAW RD20 may include other adjustments under the SAW RD16 revenue adjustment mechanisms, depending on updated information provided by SA Water prior to the Final Determination.

10 The financial implications of the determination

Draft decision

The Commission has considered the financial implications of the draft determination on SA Water, taking into account the proposed reduction in drinking water and sewerage revenues and having regard to the need to ensure that SA Water can continue to provide regulated services to customers in the long term. There has been no evidence provided to demonstrate that the regulatory settings, as opposed to management or owner decisions, would lead to cash flow deficiencies that cannot otherwise be addressed by SA Water.

10.1 Introduction

SA Water and its customers face various risks. A critical feature of economic regulation is the balancing of those risks and the consideration of the financial implications of regulatory decisions. The Commission explained, in detail, the risks faced by SA Water and its customers, and where those risks should lie in terms of management and mitigation, in Guidance Paper 2.²⁸⁹ As explained later in this chapter, the risks faced by SA Water are generally considered by the Commission to be low, given the nature of SA Water's monopoly business, together with the design of the cost-based revenue caps (with cost pass-through arrangements).

The ESC Act requires the Commission to have regard to the financial implications of its regulatory determination,²⁹⁰ and, in performing its functions, to have regard to the need to facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment.²⁹¹ It is in customers' long-term interests that the Commission considers the impact of its regulatory determinations on SA Water's financial position, as persistent deficiencies in its financial position could make it difficult to maintain customer service levels and make necessary capital investments in future. This chapter discusses the Commission's consideration of the financial viability risks facing SA Water.

10.2 What has SA Water proposed?

SA Water has proposed that, for what it considers to be financial viability reasons, a minimum threshold for the rate of return should be set in order to meet indicators of an investment grade (BBB) issuers' credit quality.²⁹²

²⁸⁹ Commission, *Guidance paper 2*, pp. 13-14.

²⁹⁰ ESC Act 2002, section 25(4)(f).

²⁹¹ ESC Act 2002, section 6(b)(vi).

²⁹² A BBB (BBB+, BBB or BBB-) rating is generally known to indicate that the company has adequate capacity to meet its financial commitments, though adverse economic conditions or changing circumstances may weaken its capacity to meet financial commitments. A BBB- or above rating is generally considered investment grade. In contrast, a BB+ rating is generally known to indicate that the company faces ongoing uncertainties and exposure to adverse business, financial or economic conditions, which could limit the company's capacity to meet its financial commitments.

The proposed indicators of credit quality are: the interest coverage ratio (measures the ability to service debts through available cash flow), funds from operations (FFO) to net debt (measures ability to repay debts when they are due), and the gearing ratio (measures leverage as a proportion to the capital invested on which the company is allowed to earn a return) (see below).

$$\text{Interest coverage} = \frac{\text{Funds from operations} + \text{net interest expense}}{\text{net interest expense}}$$

$$\text{FFO / Net debt} = \frac{\text{Funds from operations}}{\text{net debt}}$$

$$\text{Debt gearing} = \frac{\text{net debt}}{\text{RAB}}$$

The aim of those purely quantitative assessments is to compare the actual and projected levels of cash flow and debt against target levels that are consistent with those that credit rating agencies (and hence capital markets) may consider are needed for a credit rating within the BBB investment grade range. The use of those indicators is commonly known by some regulators as ‘financeability assessments’²⁹³ or ‘financial viability tests’.²⁹⁴

The context for SA Water’s proposal is that it expects the ratio for FFO over net debt (FFO-to-net debt) to be below the benchmark ratios used by credit rating agencies over the regulatory period. SA Water states that:

[u]sing this [the Commission’s] methodology and applying market data as at June 2019, we forecast a rate of return of 2.52 percent (post-tax real). This rate of return does not meet financial viability requirements, nor does it meet the other criteria previously noted.’²⁹⁵

10.3 Discussion

The Commission has considered the financial implications on customers and SA Water of the draft determination. The draft determination:

- ▶ Proposes an 18 percent and 13 percent reduction in SA Water’s drinking water and sewerage revenues (respectively) from 1 July 2020, while proposing service standards that would maintain existing levels of services.
- ▶ Finds that there is no evidence to indicate that the regulatory determination will lead to a financial viability problem for SA Water. An assessment of financial viability should be based on all available quantitative and qualitative information. When viewed as a whole, the quantitative indicators presented do not indicate an unambiguous cash flow deficiency, and qualitative indicators suggest that there is a range of available mechanisms that SA Water could use to mitigate cash flow risks. Crucially, neither SA Water nor any other party presented evidence that demonstrated that regulatory settings, as opposed to management or owner decisions, might lead to cash flow deficiencies.

²⁹³ IPART, *Review of financeability test 2018*, 2018, p. 82, available at: <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-review-of-financeability-test-2018/legislative-requirements-review-of-financeability-test-2018/final-report-review-of-our-financeability-test-november-2018.pdf>.

²⁹⁴ ESCV, *Assessing the financial viability of Victorian water businesses: Summary of views and proposed new indicator*, June 2014, p. 5, available at: <https://www.esc.vic.gov.au/water/inquiries-studies-and-reviews/financial-viability-victorias-water-industry-review-2014#tabs-container2>.

²⁹⁵ SA Water, *RBP*, p. 2.

10.3.1 Financial viability is difficult to define and measure

There are several potential sources of a financial viability problem under a binding rate of return framework. Timing mismatches between revenue and costs can possibly arise due to regulatory settings, weaker-than-expected demand and/or higher-than-expected expenses (for example, from project cost overruns, lower productivity or mistimed capital expenditure). Also, a deficient level of cash could arise due to higher-than-expected borrowing costs (for which limited or no hedging protection exists).

There is no single measure for assessing a benchmark efficient firm's required level of cash flow, to both deliver essential services and impart a degree of resilience to unanticipated financial events. Accordingly, the measurement of financial viability involves judgement.

Furthermore, determining causation can be difficult. Consistent with the Commission's approach to incentivising regulated businesses to achieve efficiencies in controllable costs and to bear the risk of underperformance, the Commission's approach is for the owner and management to determine how to best finance the investment program and to take the risk and rewards around that approach. Accordingly, any financial viability issue needs to be assessed in that context.

SACOSS and Isle Utilities (submitted through Business SA), argued that rate of return settings already take into account risks and should therefore provide theoretical certainty over a financially viable outcome.²⁹⁶ In that context that SACOSS argued that:

*'... using the [financeability] measures provides a gaming opportunity as it provides the firm with an incentive to increase debt to very high levels, and thus 'require' the regulator to provide a high rate of return to allow the firm to meet its financial viability measures.'*²⁹⁷

Consistent with its approach in SAW RD16,²⁹⁸ the Commission has calculated the financial viability indicators proposed by SA Water in its RBP (interest cover, FFO-to-net debt and gearing). Those indicators aim to consider the ability of a benchmark efficient firm to raise funds from investors to manage its activities.

Isle Utilities recommended that the Commission give consideration to the financial viability implications of the draft decision. In particular, it supported the adoption of three principles for the assessment:

- ▶ that maintaining an investment grade credit rating over time is an appropriate objective for a financeability assessment of a regulated water service provider
- ▶ if a financeability constraint is identified, then a cash flow adjustment should be made only if the constraint is not a result of poor management practices, such as excessive gearing or poor financial decisions, and
- ▶ any financeability assessment should be undertaken on the basis of competitive neutrality.

The Commission agrees with the intent of those principles having regard to the terms of the statutory framework under which this determination is being made.

²⁹⁶ SACOSS, pp. 29-30, and Business SA, pp. 15-16.

²⁹⁷ SACOSS, pp. 29-30.

²⁹⁸ Commission, *SAW RD16 – final determination*, June 2016, p. 143, available at: <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>.

10.3.2 When viewed in isolation, any individual quantitative indicator can understate or overstate risk

Selection of financial target ratios involves discretion. The credit rating agencies use a range of quantitative and qualitative indicators to assess an issuer's credit quality.²⁹⁹ Key quantitative indicators include the three measures that are noted in SA Water's RBP. Those indicators are also used by some Australian³⁰⁰ and international³⁰¹ regulators. However, the exact level of the ratios used by credit rating agencies can differ, and the prioritisation of individual indicators varies across credit rating agencies and regulators. The wide range of estimates used by credit rating agencies reflects the difficulty in trying to estimate the reasons for, and hence indicators of, a company's probability of default.

Generally speaking, when assessed in nominal terms, such as when relying on statutory accounts, an interest coverage ratio above 1.8, debt gearing below 70 percent and a FFO to net debt level above six percent are close or within the ranges set by credit rating agencies. If the assessment is made in real terms, two of the target ratios increase: the interest coverage target ratio becomes 2.2 and FFO to net debt becomes seven percent. The debt gearing does not change. Those particular ratios cited are in line with those used by IPART.³⁰²

10.3.3 The performance of SA Water's financial ratios has been reasonable in the past, but the funds from operations over net debt parameter is projected to be low

Table 10.1 (below) presents the three indicators proposed by SA Water in its RBP for SAW RD13 and SAW RD16 periods (the ratio for 2019-20 is an estimate). The ratios appear at an investment grade credit rating. The table includes actual data for the total business including non-regulated income.³⁰³ The Commission has considered SA Water's business as a whole when reviewing the measures below.

Table 10.1: Estimated financial ratios for SAW RD13 and SAW RD16, based on statutory accounts

	Target	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Nominal interest coverage ratio	> 1.8	2.8	2.4	2.4	2.1	2.3	2.4	2.6
Nominal FFO to Net Debt (%)	> 6.0	10.9	6.6	7.1	5.8	6.5	6.6	7.9
Nominal net Debt to RAB (%)	< 70	31	54	54	52	52	53	54

Table 10.2 (below) calculates the forward-looking benchmark ratios based on the draft decision for SAW RD20 (assuming a gearing ratio of 60 percent). SA Water's current and projected interest coverage ratio meets the investment grade credit rating criteria for each year of the regulatory period, other than the final year. However, the FFO-to-net debt ratio is below the standard ratio for an investment grade company.

²⁹⁹ Moody's Investors Service (MIS), *Exhibit 2 – Procedures and Methodologies Used to Determine Credit Ratings*, 2019, p.6, available at: <https://www.sec.gov/Archives/edgar/data/1698547/000119312519091962/d721318dex99e2nrsro.pdf>.

³⁰⁰ IPART, *Review of financeability test 2018*, November 2018, p. 82.

³⁰¹ IPART, *Review of financeability test 2018*, November 2018, p. 82.

³⁰² IPART, *Review of financeability test 2018*, November 2018, p. 53.

³⁰³ The estimated financial ratios for the SAW RD13 and SAW RD16 periods rely on nominal figures sourced from SA Water's audited statutory financial accounts. The exception is for the year 2019-20, for which SA Water's estimates were used.

Table 10.2: Estimated financial ratios: benchmark ratios anticipated for the SAW RD20 period³⁰⁴

	Target	2020-21	2021-22	2022-23	2023-24
Real interest coverage ratio	> 2.2	2.4	2.3	2.21	2.1
Real FFO / Net Debt (%)	> 7.0	4.5	4.1	3.9	3.6
Net Debt / RAB (%) (benchmark)	< 70	60	60	60	60
Return on capital employed (%)		4.8	4.4	4.3	4.1

The Commission, as do some other regulators, tends to prioritise interest cover in assessments of financial viability, as it gives an indication of a business' ability to service finance and other payment obligations.³⁰⁵

The FFO-to-net debt ratio can, on a benchmark basis, be thought of as being driven primarily by the real return on equity (as shown by IPART³⁰⁶). As a result, a low real risk-free rate, and hence a low real return on equity, will on a benchmark basis likely result in a lower outcome for this ratio. It is unclear how the credit rating agencies are taking the current low interest rate environment into account when issuing these ratios.

10.3.4 There are risk mitigation mechanisms available to SA Water

The target financial ratios serve as a trigger for further consideration of the system as a whole (including existing risk mitigation mechanisms and qualitative factors). Qualitative factors are considered by credit rating agencies and are given substantial weight in their analysis. Factors include the regulatory and legal regime, quality of the company's management, the macroeconomic environment, the firm's ownership model, operational characteristics, and the treatment of debt (including hedging, to the extent that it is not captured in the quantitative ratios).³⁰⁷

There are mechanisms available to SA Water and its owner to, in principle and to the extent possible, help to manage short-term cash flow issues. These may include:

- ▶ the use of equity injection
- ▶ the ability to set (and change) prices within the regulatory period
- ▶ the ability to use financial tools and products (to hedge inflation and interest rates and to access overdraft facilities from financial institutions)
- ▶ the regulatory setting of the cost of debt, calculated as a 10-year trailing average³⁰⁸, and

³⁰⁴ The financial ratios for the SAW RD20 period have been calculated using real inputs for expected costs and income from this Draft Determination.

³⁰⁵ ESCV, *Assessing the financial viability of Victorian water businesses: Summary of views and proposed new indicator*, p. 5, and NERA, *Assessing the financeability of regulated water service providers*, 30 October 2013, p. 35, available at: <https://www.esc.vic.gov.au/sites/default/files/documents/9460b29d-8e62-46aa-8eb4-ff3091683fde.pdf>.

³⁰⁶ IPART, *Review of financeability test 2018*, November 2018, p. 76. Assuming 60 percent gearing and a RAB normalised to 1, IPART show that the real FFO over net debt ratio can be thought of as: $\text{FFO-to-net debt} = [(1/\text{weighted average asset life}) + 0.4 \times \text{real cost of equity}] / 0.6$.

³⁰⁷ Moody's Investors Service, *Exhibit 2 – Procedures and Methodologies Used to Determine Credit Ratings*, p.6.

³⁰⁸ The trailing average methodology insulates a substantial portion of the business' costs from a large unexpected increase in the cost of debt.

- ▶ the regulatory cost pass-through mechanism.³⁰⁹

10.3.5 As highlighted in Chapter 8, there may, in principle, be instances when cash equity returns may be insufficient to cover nominal interest costs

Frontier Economics used hypothetical examples to argue that a real rate of return approach can lead to instances of cash flow mismatch, particularly when forecast errors are large, risk-free rates are low (at the same time as long-term inflation expectations are within the RBA's 2 to 3 percent), and real equity returns are low.³¹⁰ In Chapter 8, the Commission discussed cash flow mismatch in the context of the real rate of return approach.

There are several counterpoints to Frontier Economics' examples that are worth noting. First, Frontier Economics did not provide a forecast assessment of rate of return parameters (including, for example, for long-term inflation expectations and the risk-free rate). Nor did it provide alternative forecasting methods that are justified with the use of empirical evidence. The Commission acknowledges that forecast errors – depending on the direction and size – can lead to cash flow difficulties or higher-than-allowed returns. The risk of forecast error is, in fact, a key reason for the Commission's draft decision to adopt annual updates of the regulatory rate of return (as outlined in Chapter 8).

Second, Frontier Economics claimed that: 'in the current market conditions, nominal government bond yields are very low. One reason for that is very low inflation expectations'.³¹¹ However, as discussed in Appendix 4, the extent of the relationship between nominal yields on 10-year CGS and long-term inflation expectations is ambiguous; it depends on various economic and risk factors. Frontier Economics provided no economic theory or empirical evidence to support the proposition regarding the extent of the relationship between nominal yields and long-term inflation expectations.

Third, Frontier Economics reported that, in the face of low real equity returns, the ratio of cash to inflationary returns (earned through indexation of the RAB) may be low. This situation can place pressure on SA Water's cash flows, by limiting the extent to which equity returns can be used to cover nominal interest costs. It is in that hypothetical context that Frontier Economics has argued that *'[u]nder ESCOSA's current approach, and in the current financial market conditions, there is a negative cash return to equity after tax for each year of the regulatory period'*.³¹²

However, the example cited by Frontier Economics is, as stated earlier, hypothetical and highly stylised. It did not include benefits from inflation-indexed debt and non-regulated income. Nor did the example take into account regulatory depreciation or represent an actual assessment of SA Water's finances.

In that context, given the seriousness of the statement made by Frontier Economics, the Commission sought further information from SA Water regarding that statement. SA Water confirmed to the Commission that Frontier Economics' claim was not underpinned by any actual SA Water operational and financial data and analysis.

The challenge arising in Frontier Economics' hypothetical example is primarily about short-term cash returns to shareholders. A cash flow adjustment in these circumstances may be a more appropriate response rather than, as suggested by Frontier Economics, a change in the rate of return methodology.³¹³

³⁰⁹ Changes in uncontrollable costs, which could include weaker-than-expected demand and project cost overruns, may be recouped via a cost pass-through mechanism. To the extent that cost overruns reflect management decisions than these may not be considered uncontrollable and could result in cash flow problems.

³¹⁰ Frontier Economics, pp. 11-23.

³¹¹ Frontier Economics, p. 15.

³¹² Frontier Economics, p. 3.

³¹³ Frontier Economics, p. 21.

As highlighted in Chapter 8, the Commission's real approach to the rate of return – where investors earn a return on an inflating asset base and the real element of the return is earned directly from the revenue allowance – spreads investment costs across consumers over the longer term. This is consistent with the Commission's primary objective of the protection of the long-term interest of South Australian consumers with respect to the price, quality and reliability of essential services. In contrast, Frontier Economics advocated for a nominal approach that front-ends returns.³¹⁴ This approach would not, in the Commission's view, be in the long-term interests of consumers.

10.3.6 An assessment relying on three purely quantitative indicators is not a substitute for an assessment of overall risks. Further, no evidence has been presented to show that the regulatory settings are causing financial viability issues

SA Water's RBP does not demonstrate that the regulatory settings as a whole are causing cash flow deficiencies. Isle Utilities highlighted that the RBP did not show whether the level of the financial ratios was due to regulatory settings or to business-specific factors.³¹⁵

The Commission will continue to monitor SA Water's financial position. After considering equity solutions and other risk mitigating options, if there were unambiguous evidence of a temporary cash flow problem for SA Water, a NPV-neutral revenue adjustment could be made. This would mean that any funds obtained from customers in the short-term to rectify a cash flow problem would need to be returned to customers in subsequent periods so that, overall, they do not pay more, adjusting for appropriate discount factors.

That approach would be more appropriate than changing the real rate of return methodology (including the selection of rate of return parameters). The use of a NPV-neutral adjustment is followed by two large Australian (IPART³¹⁶) and overseas (Ofwat³¹⁷) regulators.

Consistent with this, Isle Utilities suggested that, if a financial viability problem were to be identified which was not the result of management practices, then an adjustment could be made so long as the adjustment was *'paid back' to customers in the long term*.³¹⁸ However, SA Water has not, at this stage, proposed any NPV-neutral adjustment in its submissions.

10.3.7 The risks to SA Water are considered to be low

As outlined in Guidance Paper 2, there are various types of risks that SA Water and its customers face. Table 10.3 shows relevant risks and comments on how those risks are allocated between SA Water and its customers, based on the Commission's current regulatory framework. It shows that risks to SA Water are generally considered by the Commission to be low. The Commission acknowledges the subjectivity of the assessment, but it recognises that the nature of SA Water's monopoly business, together with the design of the cost-based revenue caps (with cost pass-through arrangements), gives SA Water certainty that it will be able to recover its efficient costs in the long term. This has important implications for the Commission's regulatory determination as the Commission explicitly recognises risk in SA Water's regulatory rate of return.

³¹⁴ Frontier Economics, p. 21.

³¹⁵ Business SA, pp. 15-16.

³¹⁶ For example, IPART, *Review of financeability test 2018*, November 2018, pp. 66-68.

³¹⁷ Ofwat, *PR19 final determination: aligning risk and return technical appendix*, December 2019, pp. 67-99, available at: <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Aligning-risk-and-return-technical-appendix.pdf>.

³¹⁸ Business SA, p. 16.

Table 10.3: How risks are shared between SA Water and its customers

Type of risk	What is the risk?	How does the risk apply to customers?	How can SA Water mitigate this risk?
Demand risk	The risk that revenue is affected because demand for water or sewerage differs from that forecast. This risk is significant for drinking water services because SA Water's drinking water costs are largely fixed, while its drinking water revenues are largely variable. Demand risk is lower for sewerage services, where revenues are largely fixed and demand is more predictable. SA Water is subject to a revenue cap rather than price cap, so it is able to adjust prices to compensate for demand risk (subject to the presence of a demand variation adjustment mechanism).	Demand risk is shared between SA Water and its customers, through the operation of the revenue caps with a demand variation adjustment mechanism. Drinking water prices may increase or decrease each year, should drinking water demand differ from that forecast.	SA Water does not face significant long-term demand risk under revenue cap regulation.
Input price risk	The risk that the cost of inputs to the provision of water and sewerage services, such as labour or electricity, changes more than is forecast and allowed for under the revenue determination. The presence of a cost pass-through mechanism abates this risk to SA Water.	Customers face the majority of input price risk, as SA Water is able to recover its efficient costs through revenue caps and, in the event of an unexpected material input price increase, may seek a cost pass-through during a regulatory period.	SA Water may be able to mitigate input price risk through hedging instruments (for example, electricity derivatives). SA Water may still face input price risk where the cost impacts cannot be mitigated and are not sufficient to trigger a cost pass-through. If SA Water cannot influence the input price or cannot mitigate the price risk, it may incur costs that are not recovered through regulated revenues.
Cost volume risk	The risk of uncertainty about the quantity of inputs required to deliver services, for example, more chemicals required to treat sewage, or more labour required to replace pipes. The presence of a cost pass-through mechanism abates this risk	Customers face the majority of cost volume risk, as SA Water is able to recover its efficient costs through revenue caps and, in the event of an unexpected material change in input volumes, may seek a cost pass through during a regulatory period.	SA Water may still face cost volume risk where the cost impacts are not sufficient to trigger a cost pass through.

Type of risk	What is the risk?	How does the risk apply to customers?	How can SA Water mitigate this risk?
Supplier risk	The risk that suppliers or contractors fail to deliver agreed services, which may cause a search for replacement suppliers. This type of business risk rests with SA Water and is not addressed through the regulatory framework.	Customers should not face the risk of supplier failure, which is able to be mitigated by SA Water.	SA Water can mitigate this risk through its contractual arrangements and effective contractor management.
Inflation risk	The Commission's approach to setting revenue in real terms largely abates inflation risk. Nonetheless, there is some risk inherent in the calculation of the real regulatory rate of return. This reflects the deflation of nominal returns to real returns, using the Commission's estimate of the long-term inflation expectations embedded in nominal parameters, such as the yield on a 10-year nominal CGS.	Customers largely face inflation risk as SA Water's prices are adjusted each year for actual inflation, which is passed through to customers.	There is some residual risk that SA Water faces under the regulatory rate of return calculation, should actual inflation depart from the long-term expectation of inflation incorporated in the nominal yield on a 10-year nominal CGS.
Competition risk	The risk that a competitive supplier of water or sewerage emerges to take customers from SA Water. SA Water does not face significant competition risk as it is largely a monopoly business. To the extent that competition does exist, any loss of revenue is addressed when setting maximum revenues, as those revenues reflect efficient costs, which are largely fixed and would not materially change due to loss of customers.	Should SA Water lose significant revenue to a competitor, it will continue to be able to recover its fixed costs from remaining customers under the revenue cap calculation. This transfers competition risk to customers.	As a monopoly supplier of drinking water and sewerage services, there is little competition risk faced by SA Water. SA Water faces some competition under the third party access regime. However, the pricing approach established under that regime protects SA Water's existing customers from the effects of any lost revenue to competitors, through its 'retail minus avoidable cost' approach.
Stranding risk	The risk that assets owned by SA Water become obsolete earlier than expected. The Commission's approach to 'rolling forward' the existing regulated asset value abates this risk.	Stranding risk is passed on to customers by allowing SA Water to recover past efficient capital expenditure through prices, even if the asset becomes obsolete (for example, through technological change).	SA Water would only face stranding risk if there were political/regulatory changes that led to a change in the value of its existing regulated assets (see political/regulatory risk below).

Type of risk	What is the risk?	How does the risk apply to customers?	How can SA Water mitigate this risk?
Political/regulatory risk	The risk that the services or income stream for SA Water are unfavourably impacted by regulatory or political decisions. The presence of independent economic regulation of SA Water is intended to address this risk.	Independent economic regulation aims to ensure that customers pay prices that reflect efficient costs only.	As noted earlier, independent economic regulation of SA Water is intended to address regulatory and political risk. There are also other institutional mechanisms that can mitigate regulatory risk, including bodies such as the South Australian Civil and Administrative Tribunal. More generally, it is important to note that degrees of political risk are faced by, and must be managed by, all private firms.
Other business risk	Unforeseen events such as natural disasters or terrorism. The presence of a cost pass-through mechanism abates this risk.	Customers may face the risk of disrupted services and the risk of a material cost increase, which could be passed through to customers' prices if those costs are efficient and if the event was unable to be mitigated by SA Water.	SA Water can mitigate these risks through its operating practices, including its security measures, and insurance.
Refinancing risk	The risk that the debt portfolio is not easily refinanced, or unable to be refinanced. The Commission's approach to setting a trailing average cost of debt (discussed in Guidance Paper 5 – The cost of funding and using assets) abates this risk.	The Commission's approach to setting the regulatory rate of return aims to ensure that customers only pay for efficient financing costs. If financing costs increase due to illiquid debt markets, the maximum revenues may increase or SA Water may seek a cost pass-through if the impacts are material and cannot be mitigated by SA Water.	SA Water can manage this risk by refinancing a proportion of its debt each year. This reduces the risk of there being insufficient liquidity in debt markets at any point in time. If it is unable to refinance debt under that strategy, equity holders may face the risk. SA Water's refinancing risk is also abated via South Australian Government ownership, although this is irrelevant to the determination of SA Water's revenues.

Type of risk	What is the risk?	How does the risk apply to customers?	How can SA Water mitigate this risk?
Interest rate risk	The risk of a large sudden movement in the cost of debt.	Under an approach where the outlook for the cost of debt is fixed at the time of the determination, the forecast risks associated with the cost of debt are shared between SA Water and customers. In the face of a large sudden increase in the cost of debt, SA Water's costs may have to rise, despite that the allowed maximum revenue is set for the four-year regulatory setting. Conversely, SA Water's costs may fall in the face of a large and sudden decrease in the cost of debt, despite the allowed maximum revenues being set for the four-year regulatory setting.	<p>The annual update process lowers the risk to SA Water (and to customers) of a large reset to the cost of debt at the time of each determination.</p> <p>The trailing average method for the cost of debt insulates a large portion of SA Water's cost of debt from a large unexpected increase in the cost of debt.</p> <p>Hedging may also be used by SA Water to reduce interest rate risk.</p> <p>The regulatory cost pass through mechanism also exists.</p>
Default risk	The risk of cash not being available to service short-term obligations, through timing mismatches between revenues and costs.	The maximum revenue seeks to ensure that there is sufficient cash flow for SA Water to operate its regulated business. If there were temporary deficiencies in cash flows within the regulatory period, it could make it difficult for SA Water to maintain service levels and make necessary capital investments. This could impact customers now and in future.	The annual update process lowers the risk to SA Water of cash flow issues arising due to forecast error associated with government and corporate bond yields. Also, SA Water can mitigate risk to cash flows through various mechanisms, including short-term equity injection, the ability to set (and change) prices within the regulatory period, and the ability to use financial tools and products (including overdraft facilities).
Financial counterparty risk	The risk that third parties fail to honour their obligations under arrangements entered into to manage risk, for example, insurance, hedging, currency swaps.	SA Water's costs may have to rise in this circumstance (likely through the impact on the cost of debt and other financial transactions), despite the allowed maximum revenues being set for the four-year regulatory setting. This could make it difficult for SA Water to maintain service levels and make necessary capital investments. This could impact customers now and in future.	<p>SA Water's financial counterparty risk is limited to the extent that it directly uses financial products and hedging contracts.</p> <p>The regulatory cost pass through mechanism also exists.</p>

11 Monitoring, evaluating and reporting the outcomes achieved in SAW RD20

Draft decision

The Commission's draft decision is that it will require SA Water to provide public reports on:

- ▶ its performance against the service standards in the Code, on a quarterly basis
- ▶ its progress in achieving the outcomes it has committed to deliver in its final regulatory business plan, on an annual basis, and
- ▶ its performance during major service interruptions or significant performance events, shortly after those events.

SA Water will also be required to develop, and publicly report on, its longer-term asset management plans and expected expenditure profile, on a rolling annual basis.

This enhanced public reporting suite will be supported by quarterly reports to the Commission, and the other members of the Regulators Working Group, on key financial and service delivery performance measures.

11.1 Introduction

This chapter sets out the Commission's proposed framework for monitoring and reporting SA Water's performance in meeting its commitments to customers in its regulatory business plan.

The final framework will need to be refined (including through stakeholder consultation) and will depend on the final service standards and initiatives that are approved in the SAW RD20 final determination, to be released in May 2020.

11.2 Areas where public reporting is proposed for SAW RD20

The Commission proposes to enhance its framework for monitoring and reporting the performance of SA Water. More transparent public reporting will enable stakeholders to understand the extent to which SA Water is delivering on the intended outcomes of its regulatory business plan and, more generally, serving consumers' long-term interests.

In particular, the Commission's objective is to deliver information to inform stakeholders about the extent to which SA Water is:

- ▶ providing water and sewerage services at the lowest sustainable price, at the quality and reliability levels valued by customers, and
- ▶ implementing sound long-term asset management, operating and financing strategies, which support the provision of those services for customers of today and tomorrow.

The purpose of the monitoring and reporting framework is therefore to transparently capture SA Water's progress against its four-year plan, monitoring the actual outcomes that it delivers to customers and tracking any material changes relative to that forecast.

This will require a clear statement of the intended outcomes to be delivered to customers during SAW RD20 to be developed and published.

At this stage, the Commission proposes the monitoring and reporting framework to contain the following elements:

- ▶ A requirement that SA Water publicly reports each quarter on its performance against the service standards established under the Code, consistent with SA Water's commitment in its RBP.³¹⁹ The reporting and monitoring may include:
 - time-series performance data, where available, to show trends in performance over time
 - information on outcomes achieved for different customer groups, where data is available, to show differences in service levels received by different customer groups
 - benchmarking of performance against other utilities, where performance data is comparable
 - information about the health of SA Water's assets, to provide lead indicators of performance and demonstrate the effectiveness of SA Water's asset management system
- ▶ A simple tracking report, showing SA Water's expenditure plans and intended outcomes from its major initiatives. This should include information on future expenditure profiles, beyond the current regulatory period, to provide transparency as to possible future expenditure and price trends over time. The expenditure plans would be updated by SA Water annually, to show:
 - progress in delivering each major project/program approved under SAW RD20 and to provide commentary on any material departures from the plan, with intended actions
 - comparisons of actual expenditure against forecasts for each project/program
 - the outcomes that are being delivered under each project/program, relative to those expected
 - any mitigating action taken where post-implementation review indicates that project/program objectives have not delivered the intended outcomes
 - any new projects/programs that have arisen, that were not included in the forecasts, with intended outcomes, forecast expenditure and actual expenditure and outcomes delivered
- ▶ Where a major performance event occurs that has a material impact on customers, the Commission may request SA Water to prepare an immediate report on the event, its response and future actions to mitigate the risk of future similar events occurring.

The Commission proposes to continue to require annual regulatory financial accounts from SA Water, which will provide a basis for, and complement, the project/program information that SA Water would be required to report.

The Commission will consult further on the detailed reporting requirements for the SAW RD20 period as it develops the Final Determination.

³¹⁹ SA Water, *RBP*, p.13.

11.3 Reviewing the regulatory determination process for SAW RD24

The process to date has identified a range of areas where either regulatory process or methodology may benefit from further review after the SAW RD20 Final Determination is made. Those include the need for:

- ▶ greater clarity around the role, and best way to incorporate, diverse stakeholder feedback into the Commission’s regulatory determination process and SA Water’s long-term business planning processes
- ▶ greater clarity around the longer-term challenges SA Water is facing and the opportunity for it to consider more collaborative, cooperative and community-based methods for defining the issues that need to be solved and then develop cost-effective solutions to address those problems
- ▶ SA Water to provide more information publicly to allow stakeholders to better understand the aggregate impact of the expenditure proposed—with a clearer articulation of the factors that SA Water can control from the changes in the cost of financing its investments (over which it has less control)—to allow a wide group of stakeholders to be able to more effectively comment on the investment prioritisation process
- ▶ various refinements to SA Water’s asset management system to:
 - achieve greater alignment between stakeholder expectations and asset management objectives, to ensure the need for, and expected outcomes from, expenditure are clear
 - achieve greater consistency of approach between asset classes to provide greater assurance that medium and long-term asset management planning and decision making considers the impact of reprioritisations across the entire asset portfolio
 - more closely monitor the benefits of expenditure realised over time, to establish a clearer understanding of the relationship between expenditure and its intended performance outcomes

As noted in Chapter 2, the Commission intends to conduct such a review, in an open and transparent form, and any relevant lessons learned from that process will inform the methodology for SAW RD24.

Appendix 1 About SA Water

The *South Australian Water Corporation Act 1994* establishes SA Water as a statutory corporation, wholly owned by the South Australian Government. It is a public corporation subject to the *Public Corporations Act 1993*. SA Water's primary functions are to provide services for the:

- ▶ supply of water by means of reticulated systems
- ▶ storage, treatment and supply of bulk water, and
- ▶ removal and treatment of sewage by means of sewerage systems.

It also has other functions, including:

- ▶ carrying out research and works to improve water quality and sewage disposal and treatment methods
- ▶ commercial development and marketing of its products, processes and intellectual property produced or created in the course of the SA Water's operations, and
- ▶ encourage and facilitate private or public sector investment and participation, whether from within or outside the State, in the provision of water and sewerage services and facilities.

In addition, SA Water is also responsible for acting as the agent of the Minister:

- ▶ in the Minister's capacity as Constructing Authority under the *Murray-Darling Basin Act 2008*, and
- ▶ for the purpose of purchasing water entitlements under the *River Murray Act 2003*, for and on behalf of and as instructed by the Minister from time to time.

As a statutory corporation, wholly owned by the South Australian Government, SA Water must comply with various South Australian Government requirements. As a result, SA Water:

- ▶ has a Board that is accountable to the Minister and the Treasurer for the sound management and stewardship of SA Water and its assets for and on behalf of its owners
- ▶ must undertake its commercial operations in accordance with prudent commercial principles and use its best endeavours to achieve a level of profit consistent with its functions
- ▶ must undertake its non-commercial operations in an efficient and effective manner, consistent with the requirements of its charter, which are:
 - subject to a CSO agreement between SA Water and a purchasing Minister
 - subject to a direction under section 6 of the *Public Corporations Act*³²⁰
 - related to the operational responsibility of water and wastewater facilities for identified Aboriginal communities, or
 - agreed by the Minister and the Treasurer to be non-commercial
- ▶ must comply with South Australian Government policies and relevant Treasurer's Instructions on dividend and tax equivalent payments; including paying all rates, duties and taxes that would apply if SA Water were not a government-owned entity.³²¹

³²⁰ Pursuant to section 6 of the *Public Corporations Act 1993* and sections 6 and 7(2)(f) of the *South Australian Water Corporation Act 1994*.

³²¹ Refer section 29 and section 30 of the *Public Corporations Act 1993*.

Appendix 2 How has this Draft Regulatory Determination met the legal requirements?

Table A2.1 lists the legal requirements that relate to SAW RD20, under the *Essential Services Commission Act 2002*, the *Water Industry Act 2012*, and the Pricing Order, made by the Treasurer on 28 October 2018 pursuant to section 35(4) of the *Water Industry Act 2012*.

Those requirements are binding on the Commission in making SAW RD20. The manner in which the Commission has taken those requirements into account is summarised in Table A2.1. Where relevant, it refers to Chapters of this draft determination that provide further detail on how those requirements were taken into account.

Table A2.11.1: Legal requirements for SAW RD20

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>ESC Act, s.6(a):</p> <p><i>In performing the Commission's functions, the Commission must have as its primary objective protection of the long term interests of South Australian consumers with respect to the price, quality and reliability of essential services</i></p>	<p>This draft determination is consistent with the Commission's primary objective and factors under section 6(b) of the ESC Act as it:</p> <ul style="list-style-type: none"> ▶ proposes service standards that are based on consumers' preferences, reflecting the service levels that customers are willing to pay for, and ▶ proposes drinking water and sewerage revenues to reflect the lowest sustainable cost of providing those services at the determined standards and in accordance with the obligations set by other regulators of SA Water. <p>It seeks to achieve the outcome under which SA Water has sufficient revenue to efficiently deliver the services valued by customers, in the long term. The Commission is not seeking to deliver low prices in the short-term at the expense of long-term service delivery. That would be inconsistent with the Commission's requirement to protect the long-term interests of SA Water's customers.³²² Nor is the Commission seeking to set revenues above the efficient cost of service delivery, as that would deliver excessive profits to SA Water, be economically inefficient and be inconsistent with the long-term interests of consumers.</p>	<p>Chapter 6</p> <p>Chapters 7, 8 and 9</p>

³²² See section 6(1) of the ESC Act.

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>ESC Act, s.6(b):</p> <p><i>In performing the Commission's functions, the Commission must at the same time, have regard to the need to –</i></p> <ul style="list-style-type: none"> <i>(i) promote competitive and fair market conduct; and</i> <i>(ii) prevent misuse of monopoly or market power; and</i> <i>(iii) facilitate entry into relevant markets; and</i> <i>(iv) promote economic efficiency; and</i> <i>(v) ensure consumers benefit from competition and efficiency; and</i> <i>(vi) facilitate maintenance of the financial viability of regulated industries and the incentive for long term investment; and</i> <i>(vii) promote consistency in regulation with other jurisdictions</i> 	<p>This draft determination proposes service standards that are based on consumers' preferences and maximum revenues to reflect the lowest sustainable cost of providing those services, which is consistent with:</p> <ul style="list-style-type: none"> ▶ the outcomes of a competitive market (s.6(b)(i)) ▶ the prevention of the misuse of market power by SA Water (s.6(b)(ii)), and ▶ promoting economic efficiency (s.6(b)(iv)) <p>Proposing revenues that reflect efficient costs promotes entry into related markets that rely on SA Water's services, as it promotes efficient use of water and sewerage services (s.6(b)(iii)).</p> <p>SA Water would be subject to binding service standards and maximum revenues, in order to ensure that consumers receive the benefits of the determination (s.6(b)(v))</p> <p>The draft determination proposes revenues that recover efficient costs, including a reasonable return on assets. This facilitates the financial viability of SA Water and promotes long-term investment (s.6(b)(vi))</p> <p>This draft determination proposes regulation that is considered to be in the long-term interests of South Australian consumers. Where that objective can be achieved, options that may promote consistency in regulation with other jurisdictions have been considered by the Commission (s.6(b)(vii)).</p>	<p>Chapter 6</p> <p>Chapters 7, 8 and 9</p> <p>Chapter 6</p> <p>Chapters 7, 8 and 9</p> <p>Chapters 4, 5, 6, 7, 8 and 9</p>

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>ESC Act, s.25(3):</p> <p><i>a price determination may regulate prices, conditions relating to prices, or price fixing factors in any manner the Commission considers appropriate, including:</i></p> <ul style="list-style-type: none"> <i>a) fixing a price or the rate of increase, or decrease, in a price</i> <i>b) fixing a maximum price, or maximum rate of increase, or minimum rate of decrease, in a maximum price</i> <i>c) fixing an average price for specified goods or services, or an average rate of increase or decrease in an average price</i> <i>d) specifying pricing policies or principles</i> <i>e) specifying an amount determined by reference to a general price index, the cost of production, a rate of return on assets employed, or any other specified factor</i> <i>f) specifying an amount determined by reference to quantity, location, period or other specified factor relevant to the supply of goods or services</i> <i>g) fixing a maximum average revenue, or maximum rate of increase, or minimum rate of decrease in maximum average revenue, in relation to specified goods or services, or</i> <i>h) monitoring the price levels of specified goods and services</i> 	<p>The draft determination proposes drinking water and sewerage revenue caps, subject to a demand adjustment mechanism, which is a hybrid form of revenue cap and average revenue cap (s.25(3)(g)). It is also consistent with the requirements of the Pricing Order.</p> <p>The draft determination proposes pricing principles for excluded services, including recycled water, which is consistent with the ESC Act, section 25(3)(d) and meets the requirements of the Pricing Order.</p>	<p>Chapter 9</p> <p>Chapter 4</p>

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>ESC Act, Section 25(4):</p> <p><i>In making a price determination, the Commission must (in addition to having regard to the general factors specified in Part 2) have regard to—</i></p> <ul style="list-style-type: none"> a) <i>the particular circumstances of the regulated industry and the goods and services for which the determination is being made</i> b) <i>the costs of making, producing or supplying the goods or services</i> c) <i>the costs of complying with the laws or regulatory requirements</i> d) <i>the return on assets in the regulated industry</i> e) <i>any relevant interstate and international benchmarks for prices, costs and return on assets on comparable industries</i> f) <i>the financial implications of the determination</i> g) <i>any factors specified by a relevant industry regulation Act, or by regulation under the Act, and</i> h) <i>any other factors that the Commission considers relevant</i> 	<p>This draft price determination:</p> <ul style="list-style-type: none"> ▶ takes into account SA Water’s expected operating environment when considering its efficient forecast costs (s.25(4)(a)) ▶ sets maximum revenues to recover the efficient cost of providing drinking water and sewerage services (s.25(4)(b)). ▶ considers the efficient cost of providing drinking water and sewerage services taking into account the cost of complying with laws or regulatory requirements that are relevant to those services (s.25(4)(c)). ▶ considers an efficient return on assets, having regard to returns earned by comparable regulated businesses (s.25(4)(d)) ▶ considers benchmarks for costs and return on assets, where robust and comparable interstate and international benchmarks are available (s.25(4)(e)) ▶ contains analysis of the financial impacts of the draft determination on customers and SA Water (s.25(4)(f)) 	<p>Chapter 7</p> <p>Chapter 9</p> <p>Chapter 7</p> <p>Chapter 8</p> <p>Chapters 6 and 7</p> <p>Chapter 10</p>
<p>ESC Act, section 25(5):</p> <p>In making a price determination under this section, the Commission must ensure that:</p> <ul style="list-style-type: none"> a) wherever possible, the costs of regulation do not exceed the benefits, and b) <i>the decision takes into account and clearly articulates any trade off between costs and service standards.</i> 	<p>The benefits of making a price determination, in promoting economically efficient behaviour by SA Water and ensuring that consumers benefit from efficiencies, are significant and well exceed the cost of regulation. Since, the Commission’s first SA Water Regulatory Determination in 2013, the annual drinking water bill for a typical residential customer has decreased, in real terms (using 2018-19 prices), from \$1,008 in 2013-14 to \$851 in 2016-17 (a 16 percent reduction), with the corresponding annual residential sewerage bill reducing from \$581 in 2013-14 to \$450 in 2016-17 (a 22 percent reduction). In 2020, SA Water’s drinking water and sewerage revenues are now approximately \$110 million per annum lower than the annual revenue outcomes in 2012, in real terms.</p>	

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
	<p>To ensure that those revenue and bill reductions are not achieved at the expense of service levels, the Commission’s regulatory framework requires SA Water to maintain service levels over time. Since 2013, SA Water has maintained its service levels to customers while also delivering consistently on the broader consumer protections provided for under the Code.</p> <p>This draft determination proposes further revenue reductions, while maintaining service levels.</p>	<p>Chapter 5</p> <p>Chapter 9</p>
<p>ESC Act, Section 28(3):</p> <p><i>The Commission must, before making, varying or revoking a code or rules, consult with the industry Minister and such representative bodies and participants in the regulated industry as the Commission considers appropriate</i></p>	<p>The Commission has undertaken extensive public consultation during SAW RD20 to date. It will conduct further public consultation on this draft determination, before making a final determination in May 2020.</p>	<p>Chapter 2</p>
<p>ESC Act, Section 28(5):</p> <p><i>The Commission must—</i></p> <p><i>a) give notice of the making, variation or revocation of a code or rules—</i></p> <p><i>(i) to the Minister and the industry Minister; and</i></p> <p><i>(ii) to each regulated entity to which the code or rules apply; and</i></p> <p><i>b) ensure that copies of the code or rules (as in force from time to time) are available for inspection and purchase by members of the public.</i></p>	<p>The Commission will undertake public consultation on proposed changes to the Code in May 2020. Following that consultation, it will provide the required notice of the final Code when it releases its final decision in October 2020.</p> <p>The final Code will be made available on the Commission’s website.</p>	<p>Chapter 5</p>

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>Water Industry Act, section 25(5):</p> <p><i>A code or set of rules under subsection (1)(a) must include provisions to assist customers who may be suffering specified types of hardship relevant to the supply of any services (being provisions that comply with any direction of the Minister and that will apply under the code or rules despite any provision made by the Essential Services Commission Act 2002).</i></p> <p>This provision operates in conjunction with section 37(1) of the <i>Water Industry Act</i> which requires the Minister to develop and publish a customer hardship policy in respect of residential customers of water industry entities</p>	<p>The proposed Code includes provisions to assist customers experiencing payment difficulties.</p>	<p>Chapter 5</p>
<p>Pricing Order Cl.4.1:</p> <p><i>Subject to Parts 5 and 6 of this Order, the Commission must adopt or apply the NWI Pricing Principles (other than the Principles for Recovering the Costs of Water Planning and Management Activities) when making a determination, to the extent that those, or any of those, principles are relevant to the determination in question.</i></p>	<p>This draft determination adopts the relevant NWI Pricing Principles in determining SA Water's maximum revenue caps and adopts the NWI Pricing Principles that are relevant to SA Water's excluded retail services.</p>	<p>Chapters 4, 7 and 8</p>
<p>The determination must adopt a four-year regulatory period (commencing 1 July 2020) using a revenue cap form of control</p>	<p>This draft determination adopts a four-year regulatory period and revenue cap form of control.</p>	<p>Chapter 4</p>
<p>The determination must adopt separate total revenue cap controls for drinking water and sewerage services, but not apply revenue caps based on customer class or location</p>	<p>This draft determination adopts separate total revenue cap controls for drinking water and sewerage services.</p>	<p>Chapter 4</p>

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
<p>The determination must include a mechanism to adjust the total revenue cap if there is any over or under recovery of revenue due to variations between actual and forecast water consumption or sewerage connections (such mechanism to operate on the basis of efficient costs associated with variations in demand, and so as to promote a stable price path)</p>	<p>This draft determination adopts a demand variation adjustment mechanism that provides a 50/50 sharing between SA Water and customers of the revenue impact of any material difference between forecast and actual demand.</p>	<p>Chapter 4</p>
<p>The determination must include an appropriate mechanism that allows for the adjustment of the total revenue cap where there is an event beyond the control of SA Water which has, or will, have a material impact of the cost of provision of a retail service (such mechanism to operate on the basis of efficient costs associated with the event, and so as to promote a stable price path)</p>	<p>This draft determination adopts a cost pass-through mechanism that would adjust revenue caps if SA Water's costs materially change due to an event outside its control.</p>	<p>Chapter 4</p>
<p>The determination must allow SA Water to recover the efficient costs of assets acquired (or to be acquired) after 1 July 2013 which are required to support activities that SA Water is required to provide in accordance with a direction under Section 6 of the <i>Public Corporations Act 1993</i></p>	<p>This draft determination allows for the relevant assets required to support activities as directed under Section 6 of the <i>Public Corporations Act 1993</i>, to be included in the RAB.</p>	<p>Chapter 9</p>
<p>The determination must, in relation to costs relating to externalities (including water planning and management), allow SA Water to recover such costs as are attributable to and payable by SA Water in accordance with the law, including a direction under Section 6 of the <i>Public Corporations Act 1993</i></p>	<p>This draft determination allows for the recovery of costs relating to externalities where payable by SA Water in accordance with the law.</p>	<p>Chapter 7</p>
<p>The determination must allow SA Water to recover such costs (less any relevant contributions to such costs that it receives) that are attributable to activities that SA Water is required to provide in accordance with a direction under Section 6 of the <i>Public Corporations Act 1993</i>, and either specified in that direction, or, if not specified, determined by the Commission to be efficient</p>	<p>This draft determination allows for the recovery of costs relating to directions under Section 6 of the <i>Public Corporations Act 1993</i>.</p>	<p>Chapter 7</p>

Legal requirement	How the requirement is met in this Draft Determination	Where to find further information
The determination must be based on a 'building blocks' approach and must set out all assumptions, methods and values assigned to the various building block components	This draft determination adopts a cost-based, building block, approach.	Chapters 4, 7, 8 and 9
The draft determination must identify any areas where a forecast cost is likely to change materially between draft and final determination, including the cause and likely magnitude of the variation	The only forecast cost that is likely to change between draft and final determination is the regulatory rate of return. Other forecast costs may change, subject to the Commission's consideration of submissions and further evidence received in response to this draft determination.	Chapters 7, 8 and 9

Appendix 3 Expenditure review

This appendix contains a detailed description of the Commission's review of SAW RD20 capital and operating expenditure.

It begins by setting out the methodology employed. It then describes ex-post adjustments to investments made to expenditure in SAW RD13, and SAW RD16.

It then sets out the Commission's review in relation to each of four expenditure drivers: growth, meeting external obligations, sustaining services, and improving services. The Commission's review of IT projects is described separately.

Finally, the appendix summarises the impact of the Commission's expenditure review, and illustrates how efficiency factors have been applied to arrive at the overall draft determination.

A3.1 Methodology

A3.1.1 Asset management

The Commission has undertaken an assessment of the effectiveness of SA Water's asset management system, in supporting a cycle of continuous improvement in SA Water's long-term investment planning, prioritisation and appraisal processes. This enables the Commission to draw conclusions on whether or not past capital expenditure was prudent and efficient, and whether or not proposed future capital and operating expenditure is prudent and efficient.

The Commission engaged Cardno, in association with Atkins Acuity, to provide an asset management, financial and engineering assessment of SA Water's capital and operating expenditure plans, and the asset management system used to develop these plans.³²³ Cardno's review included assessing whether SA Water's:

- ▶ decision-making systems and processes are consistent with the principles set out in its asset management framework
- ▶ capital expenditure in the current regulatory period (2016-2020) was prudent, has delivered its intended outputs efficiently, and achieved its intended outcomes, and
- ▶ capital and operating expenditure proposals for the next regulatory period (2020-2024) are prudent, clearly identify intended outputs and outcomes, and reflect efficient costs of delivery.

A3.1.2 Capital expenditure

The Commission assesses the prudent and efficient level of capital expenditure by examining a sample of the programs and projects that SA Water is proposing to invest in, with the sample being chosen to cover water and sewerage, metropolitan and country areas and various asset types or categories.

In examining the programs and projects, the Commission is able to identify issues with SA Water's systems and processes that mean adjustments should reasonably be made to its forecast costs (for example, unreasonable cost estimates, unnecessary engineering solutions, or inconsistencies between programs or projects). Together, the projects and programs sampled comprise 24 percent of the SAW RD16 capital expenditure program and 45 percent of the SAW RD20 program.

³²³ Cardno, *Evaluation of SA Water's asset management system, March 2020*, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21462/20200304-Water-SAWRD20-EvaluationSAWaterAssetManagementSystem-Cardno.pdf.aspx?Embed=Y>.

A3.1.3 Operating expenditure

Establishing an efficient base year

In assessing the prudent and efficient level of operating expenditure for future years, the Commission starts by establishing an efficient 'base year'. This efficient base year begins as an actual year of SA Water's operating expenditure, before being 'normalised' to remove any once-off or abnormal costs (or savings) incurred by SA Water in that year, to make it representative of the costs that SA Water is likely to face in future years. From this efficient base year, adjustments can then be made for known changes to SA Water's operating circumstances in future years.

Additional operating expenditure

Where identified, adjustments are also made where programs or projects are expected to have an impact on both operating and capital expenditure.

A3.1.4 Efficiencies

Two top-down efficiency factors, a 'catch up efficiency' and a 'continuing efficiency', are then applied to both the operating and capital expenditure forecasts.

For capital expenditure, a catch-up efficiency factor has been calculated based on specific areas where SA Water should be able to make material improvements to its asset management system during the SAW RD20 period. This catch-up efficiency factor has been applied to capital expenditure net of the value of the capital expenditure projects included in the sample to avoid any double counting of efficiencies.

For operating expenditure, a catch-up efficiency factor has been calculated to ensure IT-enabled efficiencies achieved in the SAW RD16 are transparently embedded in SA Water's budgets and to recognise planned changes in procurement processes that should enable efficiencies to be achieved in the SAW RD20 period.

A continuing efficiency target of 0.5 percent per annum has also been applied to SA Water's capital and operating expenditure across the SAW RD20 period. This is based on a conservative view of the reasonable range for productivity improvements using MFP estimates for the Australian economy, with an expectation that SA Water should be able to become more efficient at least as quickly as the Australian economy has achieved in recent years. However, as MFP is a measure that captures the effect of capital productivity as well as labour productivity, the continuing efficiency target has been applied only to operating expenditure excluding labour costs, which the Commission is proposing to cap at CPI across the SAW RD20 period.

A3.2 Ex-post reviews

A3.2.1 Adjustment to SAW RD13 expenditure

At SAW RD16, the Commission made a number of ex-post adjustments to investment during the SAW RD13 period. One of these adjustments related to SA Water choosing to advance a number of capital expenditure projects ahead of the timing considered prudent. Analysis of the completed projects shows that works to a value of \$16.9 million were advanced by one to two years. The Commission's SAW RD16 final decision was to add this investment into the RAB at the time when it was prudently required, rather than follow the actual profile of expenditure.

The final \$8.4 million of this investment has been added into the true-up of capital expenditure for 2015-16.

A3.2.2 Adjustment to SAW RD16 expenditure

Following a review of a sample of SAW RD16 projects and programs of work, the draft decision is to make two ex-post adjustments to SAW RD16 investment, as follows:

► Reticulated mains replacement capital expenditure

The SAW RD16 final determination for reticulated mains replacement was \$83.2 million. In late 2016, following a spike in customers experiencing three or more unplanned water interruptions, and considerable public interest and media coverage on mains bursts, SA Water's Board signed off a further \$53.6 million of mains replacement works to address the issue.

Cardno considered SA Water's response to be disproportionate to the deterioration in performance, and resulted in bringing forward the need for mains that would require future replacement. An adjustment of \$22.0 million across the SAW RD16 period is recommended to recognise that the mains laid as part of this program would be required in the future.³²⁴

As this relates to the timing of mains replacement, rather than any issue over expenditure being wasteful or inefficient, the draft decision is that this investment will be added to the RAB after four years. That is, SA Water will forgo any return on the investment for a period of four years, and the investment will be added in the RAB over the SAW RD20 period.

► Western Adelaide Wastewater Network Upgrade

This project relates to the installation of 2.5 km of new sewer mains, to increase the sewer network capacity from the north west of Adelaide CBD, at a budgeted cost of \$11.4 million. The project overspent its original budget by \$0.6 million.

A detailed review of this project revealed that the additional expenditure was driven by numerous issues that should have been partially or entirely within the control of the contractor. Evidence from Cardno suggests that the budgeted cost of the project represents the efficient cost of the works.³²⁵

Therefore, the draft decision is to not include the \$0.6 million of additional expenditure in the RAB.

A3.3 Efficient base year operating expenditure

A3.3.1 Draft decision

The draft decision is that the appropriate normalised base year operating expenditure for 2018-19 is \$458.7 million.

This is a reduction of \$20.3 million on SA Water's submission for SAW RD20 of \$479 million.

SA Water's proposal

SA Water's submission for the base year operating expenditure in SAW RD20, comprised a starting figure from its preliminary 2018-19 regulated operating expenditure of \$506.5 million. This figure was then adjusted (or 'normalised') for identifiable once-off costs or other unique cost variances that occurred during 2018-19, to establish an efficient base year.

³²⁴ Cardno, pp. 69-71 and pp. B1-B8.

³²⁵ Cardno, p. 72 and pp. B16-B18.

The most significant of these normalisation adjustments related to:

- ▶ high electricity and associated energy costs in 2018-19 for which SA Water proposed a reduction of \$14.2 million for electricity
- ▶ a \$8.4 million reduction relating to an energy contract break-fee recognised in its 2018-19 accounts, and
- ▶ initially, a proposed normalisation adjustment for a 'balancing reduction' of \$4.3 million to make the normalised base year match the SAW RD16 Final Determination figure of \$479.0 million.³²⁶

Along with some other minor adjustments, these material adjustments reduced SA Water's proposed operating expenditure by \$27.5 million to arrive at a proposed normalised base year operating expenditure amount of \$479.0 million.

Commission's consideration

The Commission has accepted SA Water's proposal for 2018-19 to be used as the base year for calculating operating expenditure for SAW RD20. However, in reviewing SA Water's proposed normalisation adjustments, the Commission has made a draft decision that differs to SA Water's proposal in a number of instances that are explained in the following discussion.

Through its review process, the Commission also amended the starting position base year operating expenditure for 2018-19 from \$506.5 million to \$507.7 million to reconcile with SA Water's final regulatory accounts.

The draft decision is that the prudent and efficient normalised base year operating expenditure for 2018-19 is \$458.7 million. This represents a reduction of \$20.3 million on SA Water's proposal of \$479.0 million.

The reduction of \$20.3 million relates largely to the Commission's alternative views on a number of SA Water's proposed normalisation adjustments, and the addition of a 2019-20 general efficiency target of 1.5 percent to the normalised base year. These adjustments are listed in Table A3.1.

Table A3.1: Base year and normalisation adjustments

SA Water 2018-19 Base Year and Normalisation Adjustments	SA Water original proposal	SA Water revised proposal	Commission draft decision
Actual Regulated Accounts	506.5	506.5	507.7
Electricity	-14.2	-14.2	-20.1
Chemicals	-0.7	-0.7	-1.7
Treatment Plant Contracts	-1.1	-1.1	-1.1
AGL contract termination	-8.4	-8.4	-8.4
Site Restoration	-1.4	-1.4	-1.4
Over accrual	-0.2	-0.2	-0.2

³²⁶ SA Water made a number of minor adjustments to its efficient base year proposal in late 2019. However, as these changes reduced SA Water's 'balancing reduction' (listed as 'other/unknowns' in Table A3.1) from \$4.3 million to \$1.8 million, these resulted in no net change to its normalised base year operating expenditure of \$479.0 million.

SA Water 2018-19 Base Year and Normalisation Adjustments	SA Water original proposal	SA Water revised proposal	Commission draft decision
Additional Labour	0.8	0.8	-3.3
Additional Contractors	1.7	1.7	1.0
Additional Training	0.2	0.2	0.0
Other/unknowns	-4.3	-1.8	0.0
IT savings		-1.3	-2.9
Murray Bridge operating expenditure		1.0	0.0
South Australian Gross Radio Network (GRN)		-1.2	-1.2
Allwater contract costs		-1.0	-3.0
General efficiency target 2019-20 (1.5%)	0	0	-6.9
Base year operating expenditure	479.0	479.0	458.7
Difference - SA Water and draft decision			-20.3

A3.3.2 Labour

SA Water's proposal

SA Water proposed a normalisation adjustment of an additional \$0.8 million in operating expenditure for labour costs, due to an increase in full time equivalents (FTEs) and for vacancies that existed as at the end of 2018-19.

This proposed increase of \$0.8 million takes operating expenditure for labour costs from the actual amount of \$125.1 million incurred in 2018-19 to SA Water's proposed normalised base year figure of \$126.0 million.

The draft decision

The prudent and efficient base year normalisation adjustment for Labour is a reduction of \$3.3 million, which results in a base year expenditure figure of \$121.9 million.

SA Water has sought an additional \$0.8 million operating expenditure for labour costs in its normalised base year. This represents an additional nine FTEs recruited late in 2018-19 and early in 2019-20 (\$0.5 million) and the cost of filling vacancies that existed at the end of 2018-19 (\$0.3 million), which were left vacant due to pressure to deliver within overall operating expenditure budgets for the year.

Cardno noted that it is normal for a business to be under pressure to deliver within operating budgets and to have a number of staff vacancies. Cardno was not convinced that these are, in themselves, strong justifications for an increase in base year operating expenditure.³²⁷

³²⁷ Cardno, p. 43.

Cardno also noted that, after SA Water's proposed normalisation, its 2018-19 net labour operating expenditure is higher than all other years in SAW RD16, including SA Water's budget for 2019-20.³²⁸ Cardno recommended an alternative approach to normalising SA Water's base year, which is to adopt SA Water's budget for 2019-20 of \$122.7 million, noting this figure is similar to the average of the two prior years 2016-17 and 2017-18 (\$122.3 million).³²⁹

The Commission has made four normalisation adjustments for labour costs. These, when combined, reduce labour by \$3.3 million and comprise the following:

- ▶ The Commission has disallowed SA Water's proposal for \$0.3 million additional operating expenditure associated with the identified vacancies, on the basis that it is normal to expect a certain level of vacancies in any given year.
- ▶ The Commission has allowed SA Water's normalisation adjustment for an additional nine FTEs on the basis that these positions have been filled, but expects that SA Water will monitor its employee levels to manage its costs within the envelope of expenditure allowed during SAW RD20. These nine additional FTEs increase the base year operating expenditure by \$0.5 million. The Commission notes that with the nine FTEs related to the above normalisation adjustment and other additional FTEs recruited during 2018-19, which SA Water has explained are reflected in the base year operating expenditure, the base year labour costs represents an increase of approximately 31 FTEs as compared with 2017-18.
- ▶ The Commission is not yet satisfied that actuarial adjustments for leave provisions and workers compensation costs of \$2.3 million made in SA Water's 2018-19 accounts is reflective of a normal year, and is therefore reducing the base year operating expenditure by that amount.
- ▶ The Commission also notes that labour costs transferred to capital projects was abnormally low in 2018-19 with reference to prior year's actual results and the current year budget for 2019-20; and is therefore reducing the normalised base year expenditure by \$1.5 million.

With the above mentioned increase allowed to the base year operating expenditure for nine additional FTEs of \$0.5 million and the above two adjustments totalling a reduction in operating expenditure of \$3.8 million, the net adjustment made by the Commission to the base year operating expenditure for labour is \$3.3 million.

A3.3.3 Allwater Metro Alliance Contract

SA Water's proposal

SA Water proposed a downward normalisation adjustment of \$1.0 million to take account of a once-off catch up in backlog works that resulted in \$1.0 million additional costs in 2018-19.

This proposed adjustment reduces operating expenditure for the Allwater Metro Alliance Contract from the actual amount incurred in 2018-19 of \$98.9 million to SA Water's proposed normalised base year figure of \$97.9 million.

The draft decision

The appropriate base year normalisation adjustment for the Allwater Metro Alliance Contract is a reduction of \$3.0 million, which results in a base year expenditure figure of \$95.9 million.

SA Water proposed a normalisation adjustment of \$1.0 million relating to a once-off catch up in backlog works that occurred in 2018-19, and which was not reflective of a normal year activity.

³²⁸ Cardno, p. 43.

³²⁹ Cardno, p. 43.

Cardno proposed an alternative approach to normalising SA Water's base year expenditure for the Allwater Metro Alliance Contract, which is to align the base year with average expenditure in other years of SAW RD16, resulting in a proposed \$2.0 million reduction to the base year.³³⁰

While the Commission has referenced patterns of expenditure during SAW RD16 in its review of SA Water's base year operating expenditure, the Commission has focused, as much as possible, on deriving its normalisation adjustments on specific analysis of the base year and therefore, has not adopted Cardno's proposed approach for this item of operating expenditure.

The Commission has adopted SA Water's proposed \$1.0 million adjustment for the catch up in backlog works given it was a once-off increase in 2018-19. However, the Commission has made an additional normalisation adjustment for the Allwater Metro Alliance Contract, as explained below.

SA Water advised the Commission that it renegotiated the Allwater Metro Alliance Contract during 2018-19, after consecutive years of Allwater exceeding its agreed expenditure budgets. As part of this, a revised 'gain and pain share' mechanism has been incorporated into the contract to strengthen incentives for Allwater to meet its financial targets.

The Commission understands a \$2.0 million 'pain share' payment was made by Allwater to SA Water due to actual expenditure significantly exceeding agreed budget during 2018-19.

In recognition of this payment relating to activity during 2018-19, the Commission has made a further \$2.0 million normalisation adjustment to reduce the base year operating expenditure by this amount.

A3.3.4 Electricity

SA Water's proposal

SA Water proposed a normalisation adjustment to reduce operating expenditure for electricity by \$14.2 million in recognition of the abnormally high costs in 2018-19.

This proposed reduction of \$14.2 million takes operating expenditure for electricity from the actual amount incurred in 2018-19 of \$79.7 million to SA Water's proposed normalised base year figure of \$65.5 million.

The draft decision

The prudent and efficient base year normalisation adjustment for electricity is a reduction of \$20.1 million, which results in a base year operating expenditure figure of \$59.6 million.

In calculating its proposed normalisation adjustment for electricity, SA Water determined that its costs in 2018-19 were \$17.5 million higher than otherwise expected for a normal year, due to a combination of energy volume and price-driven variances.

SA Water explained that the higher costs in 2018-19 resulted from both more energy being used to pump a higher volume of water during the unusually dry summer and also due to higher than expected electricity prices.

However, as part of its normalisation adjustment, SA Water then deducted \$3.3 million, which is the amount of revenue that it earned in 2018-19 from the sale of excess RECs. SA Water explained that these were sold to mitigate the higher electricity costs in that year. This took SA Water's proposed normalisation adjustment for electricity on a net basis down to \$14.2 million.

The Commission notes that SA Water has not included a normalisation adjustment in relation to the network and other charges component of its electricity costs. This is discussed further below.

³³⁰ Cardno, p. 46.

Cardno proposed an alternative approach to normalising SA Water's base year electricity costs based on analysis of average costs in 2016-17 and 2017-18.³³¹ Cardno suggested an adjustment to this average, to reflect a forecast 25 percent reduction in wholesale electricity prices in SAW RD20 as compared to prevailing prices between 2016 and 2018. The normalisation adjustment suggested by Cardno applying this approach was a reduction of \$30.2 million against the actual costs of \$79.9 million in 2018-19, or a normalised base year expenditure of \$49.5 million.³³²

The Commission has not adopted Cardno's evidence in making this adjustment, due to the Commission's approach to, as much as possible, base its normalisation adjustments on specific analysis of the base year expenditure. In this instance, SA Water has provided detailed explanations for cost variances in electricity during 2018-19 and the Commission is basing its decision on that information.

In relation to SA Water's proposed normalisation adjustment, the Commission understands, from enquiries into SA Water's base year accounts, that SA Water realised a loss overall on the disposal of RECs in 2018-19 due to falling market values during the year. The Commission considers it is therefore not appropriate for the normalisation adjustment for electricity to be reduced by an amount of revenue that actually relates to a financial loss that has been recognised elsewhere in SA Water's accounts.

For the energy component of SA Water's electricity operating costs, the Commission has adopted the gross adjustment of \$17.5 million calculated by SA Water, being the volume and price variance for electricity in 2018-19 (prior to deducting revenue from sale of RECs) as the appropriate normalisation adjustment in the base year.

For the network and other charges component of SA Water's electricity operating costs, the Commission has made a further normalisation adjustment, to take into account the estimated reduction in these costs due to the lower volume of energy assumed to be consumed in the normalised base year. This normalisation adjustment is a \$2.6 million reduction and has been calculated to reflect the estimated impact on variable network and other charges from the significantly lower volume of energy consumption assumed in the base year (37 percent less) as compared with actual costs in 2018-19.

The Commission's normalisation adjustments to the 2018-19 base year for the volume and price of energy (\$17.5 million) and for the network and other charges component of SA Water's electricity operating costs (\$2.6 million) therefore total \$20.1 million.

A3.3.5 Incremental adjustments to Electricity during SAW RD20

The Commission has made additional incremental adjustments to the operating expenditure allowance for electricity operating costs during SAW RD20 to recognise the forecast reduction in energy prices between the base year (2018-19) and throughout the period of SAW RD20.

These incremental adjustments are shown in the following table and are based on SA Water's own normalised base year cost per megawatt hour of electricity and the change in the price of 'base load electricity' futures contracts traded on the ASX, as published recently by the AER.³³³ The Commission has not made an incremental adjustment to the allowance for electricity operating costs in the final year of SAW RD20 given there is currently no futures contracts trading beyond 2022-23.

³³¹ Cardno, pp. 41-42.

³³² Cardno, p. 42.

³³³ AER, ASX Energy (settled price on 27 September 2019) for base load contracts between 2019-20 and 2022-23.

Table A3.2: SAW RD20 incremental adjustments to electricity

Stage (\$m)	2020-21	2021-22	2022-23	2023-24
Normalised base year	59.6	59.6	59.6	59.6
Incremental adjustment for forecast reduction in energy prices	-5.4	-10.3	-9.7	-9.7
Electricity allowance for SAW RD20	54.2	49.3	49.9	49.9

A3.3.6 Contracts

SA Water's proposal

SA Water's initial proposal for operating expenditure related to contracts in SAW RD20 included normalisation adjustments to increase operating expenditure by \$1.4 million in recognition of certain activities being deferred to deliver within the overall operating budget for 2018-19.

This increase relates to the following activities:

- ▶ asset decommissioning typically costing \$0.8 million per annum
- ▶ sludge disposal costs that were an estimated \$0.5 million lower than normal, and
- ▶ training contracts which was underspent by \$0.2 million against budget.

SA Water also initially proposed a further \$0.3 million increase in contracts operating expenditure due to a contract renewal for debt collection services being delayed, resulting in expenditure being lower than normal in 2018-19.

Combined, SA Water's initial proposal included normalisation adjustments to increase the base year operating expenditure for contracts by \$1.7 million.

During the Commission's review, SA Water proposed another normalisation adjustment in relation to \$1.2 million of operating expenditure on the GRN, which is now funded via a CSO payment, thereby reducing proposed contracts operating expenditure by that amount.

SA Water has proposed a net increase in operating expenditure for contracts of \$0.5 million, taking the actual amount incurred in 2018-19 of \$36.8 million to SA Water's proposed normalised base year figure of \$37.3 million.

The draft decision

The prudent and efficient base year normalisation adjustment for contracts operating expenditure is a reduction of \$0.2 million, which results in a base year expenditure figure of \$36.6 million.

Cardno, rather than addressing SA Water's specific reasons for its proposed normalisation adjustments, recommended that the base year be normalised with reference to the average of SA Water's contracts operating expenditure in 2016-17 and 2017-18.³³⁴ As explained previously in this Appendix, it is the Commission's preference, as much as possible, to base its normalisation adjustments on specific issues relating to the base year, as set out below.

³³⁴ Cardno, p. 45.

The Commission has accepted SA Water's proposed normalisation adjustment for additional asset decommissioning costs (\$0.8 million) and debt collection costs (\$0.3 million) and the proposed reduction for the GRN expenditure (\$1.2 million).

The Commission considers the additional asset decommissioning and debt collection costs to be justifiable due to those being material and normal operating activities that were lower than normal in 2018-19 for the reasons stated.

Further, given the GRN expenditure is now specifically funded via a CSO payment from government, the Commission has also accepted this adjustment. These normalisation adjustments result in a net reduction to the base year for Contracts of \$0.2 million.

The Commission has not accepted SA Water's proposed increases for sludge disposal (\$0.5 million) and training (\$0.2 million) for the reasons explained below.

In reviewing SA Water's contracts operating for sludge disposal for the prior three years, the Commission notes that actual expenditure in 2018-19 of \$1.0 million is greater than the amounts incurred in 2017-18 (\$0.7 million) and 2016-17 (\$0.3 million). While information provided by SA Water indicates that expenditure has been below budget in all three years, the Commission does not accept this as a reason to increase expenditure in the base year beyond the actual amount incurred in 2018-19.

In relation to SA Water's proposed increase for training, given this expenditure was deferred due to overall cost pressures that existed in 2018-19, and noting that not every line of expenditure is being normalised, the Commission expects SA Water will be able to accommodate its training expenditure within the overall operating expenditure envelope available to SA Water in SAW RD20.

A3.3.7 Treatment Plant Contracts

SA Water's proposal

SA Water proposed a normalisation adjustment to reduce operating expenditure by \$1.1 million for abnormal volume driven variances in 2018-19 related to the Riverland Treatment Plant contract.

SA Water has also proposed a separate operating expenditure increase of \$1.0 million associated with the new Murray Bridge WWTP. Specifically this relates to an Environmental Improvement Program (EIP) scheme to cease operating an older Murray Bridge WWTP and move to an alternative site to better manage odour and to service population growth profile. SA Water submitted that the capital expenditure procurement included a period of operation and maintenance for the new WWTP for proving purposes.

In total, SA Water has proposed to reduce operating expenditure for Treatment Plant Contracts by \$0.1 million, taking the actual amount incurred in 2018-19 of \$27.7 million to SA Water's proposed normalised base year figure of \$27.6 million.

The draft decision

The prudent and efficient base year normalisation adjustment for 'Treatment Plant Contracts' is a reduction of \$1.1 million which results in a base year expenditure figure of \$26.7 million.

Cardno recommended accepting SA Water's proposed adjustment for the Riverland Treatment Plant to reduce operating expenditure by \$1.1 million, as it leads to lower normalised treatment plant contract expenditure than in 2016-17 and 2017-18.³³⁵

³³⁵ Cardno, p. 45.

In considering SA Water's proposed increase for expenditure at the Murray Bridge WWTP, Cardno observed that SA Water had not clearly articulated why this higher operating expenditure should be carried forward to the SAW RD20 base year, considering that there should be offsetting benefits from not having to operate the older Murray Bridge WWTP.³³⁶ Therefore, Cardno did not recommend accepting this adjustment.³³⁷

The Commission's draft decision is to accept SA Water's proposed normalisation adjustment to reduce operating expenditure in the base year for the Riverland WWTP given the \$1.1 million higher costs in 2018-19 related to above normal treatment volumes. However, the Commission has not accepted SA Water's proposed \$1.0 million increase for the Murray Bridge WWTP, on same the basis as noted by Cardno.

A3.3.8 Other Expenses

SA Water's proposal

SA Water proposed a number of normalisation adjustment to reduce operating expenditure in other expenses by \$2.9 million relating to the following items:

- ▶ \$1.4 million in once-off site restoration costs incurred in 2018-19
- ▶ \$1.3 million in savings from IT related initiatives not yet realised in 2018-19, and
- ▶ \$0.2 million for an over accrued expense relating to the prior year 2017-18 that resulted in 13 months of expenditure being reflected in 2018-19.

SA Water has proposed a \$2.9 million reduction in operating expenditure for other expenses, taking the actual amount incurred in 2018-19 of \$30.2 million to SA Water's proposed normalised base year figure of \$27.3 million.

The draft decision

The prudent and efficient base year normalisation adjustment for other expenses is a reduction in operating expenditure of \$4.5 million, which results in a base year expenditure figure of \$25.7 million.

Cardno evidence was that SA Water's proposed normalisation adjustments for \$1.4 million site remediation costs and for the \$0.2 million over accrual should be accepted.

Given the site restoration costs were a once-off activity, not an ongoing business cost; and that the over accrual resulted in 13 months of expenditure being reflected in the 2018-19 base year, the Commission has accepted both of these proposed normalisation adjustments.³³⁸

SA Water proposed a normalisation adjustment of \$1.3 million for savings yet to be realised from IT investments made in 2018-19, that had not yet been realised in the 2018-19 actual operating expenditure results.

Cardno dealt with IT investment efficiencies as part of its consideration of overall efficiency targets, rather than specifically against this line of operating expenditure.³³⁹

³³⁶ Cardno, p. 46.

³³⁷ Cardno, p. 46.

³³⁸ Cardno, p. 45.

³³⁹ Cardno, p. 47.

In recognition of IT driven savings that SA Water has committed to realise in the final year of SAW RD16 (2019-20), the Commission has made an additional normalisation adjustment of \$1.6 million, increasing the normalisation adjustment relating to IT driven savings from SA Water's proposed \$1.3 million to a figure of \$2.9 million.

The Commission has made this additional normalisation adjustment on the basis that SA Water has advised it is committed to realising these savings and has reduced operational budgets accordingly.

A3.3.9 Office Expenses

SA Water's proposal

SA Water proposed a normalisation adjustment to increase operating expenditure by \$0.2 million for training-related costs that were under-spent against budget, in order to deliver within the overall operating expenditure budget in 2018-19. Along with other training costs included under contracts expenditure, SA Water proposed a total of \$0.4 million per annum additional operating expenditure for training in SAW RD20 as compared with the 2018-19 base year.

SA Water has proposed an additional \$0.2 million operating expenditure for office expenses, taking the actual amount incurred in 2018-19 of \$18.5 million to SA Water's proposed normalised base year figure of \$18.7 million.

The draft decision

The prudent and efficient base year expenditure figure for office expenses is \$18.5 million as there is no need to make an adjustment for the small amount proposed.

Cardno did not consider that underspending against budget, in itself, is a robust justification for a normalisation adjustment and did not recommend accepting this proposal.³⁴⁰

The Commission considers that given this expenditure was deferred due to overall cost pressures that existed in 2018-19; and considering not every line of expenditure is being normalised, SA Water should be able to accommodate expenditure for training within the overall operating expenditure envelope available in SAW RD20.

A3.3.10 Chemicals

SA Water's proposal

SA Water proposed a normalisation adjustment to reduce operating expenditure for chemicals by \$0.7 million to take account of unusually high demand and therefore higher treatment volumes in 2018-19.

This \$0.7 million reduction in operating expenditure proposed by SA Water, takes chemicals from the actual amount incurred in 2018-19 of \$7.2 million to SA Water's proposed normalised base year figure of \$6.5 million.

The draft decision

The prudent and efficient base year normalisation adjustment for chemicals is a reduction of \$1.7 million, which results in a base year expenditure figure of \$5.5 million.

³⁴⁰ Cardno, p. 47.

The Commission has reviewed SA Water's actual expenditure over the past three years and also considered the current year (2019-20) budgeted expenditure for chemicals. In doing this, the Commission noted after SA Water's proposed normalisation adjustment, the base year would remain materially higher than normal relative to other years in SAW RD16.

Cardno referred to its analysis of SA Water's expenditure over SAW RD16 and the current year budget, and recommended an additional normalisation adjustment to the base year.³⁴¹

The Commission has amended the normalisation adjustment for chemicals by a further \$1.0 million, to align the base year with a typical year of expenditure.

A3.3.11 Application of 2019-20 general efficiency target

SA Water's proposal

SA Water has not provided a proposal to incorporate the 2019-20 general efficiency target applied by the Commission in the SAW RD16 Final Determination.

The draft decision

The Commission has applied a 1.5 percent general efficiency to the normalised base year to reflect the general efficiency target applied by in the SAW RD16 Final Decision.

This reduces the base year by \$6.9 million, from \$465.6 million to \$458.7 million.

Commission's consideration

In the SAW RD16 Final Determination, the Commission applied continuing efficiencies equal to 1 percent per annum in 2016-17 and 2017-18 and 1.5 percent per annum in 2018-19 and 2019-20 and, to date, SA Water has met or exceeded these targets. This suggests that SA Water should make general efficiencies of 1.5 percent or \$6.9 million in 2019-20.

Cardno has taken the same approach as the Commission, and applied the 1.5 percent general efficiency target to its version of SA Water's normalised base year.³⁴²

A3.4 SAW RD20 expenditure for external obligations

The draft decision is that \$364.4 million³⁴³ is a prudent and efficient amount to be included in SAW RD20 for capital expenditure to meet external obligations. This represents a 17 percent reduction on the \$436.7 million capital expenditure to meet external obligations in SAW RD16.

Further, the draft decision is that an average of \$10 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to meet external obligations. This is in addition to the existing operating expenditure included in SA Water's normalised base year.

The capital expenditure draft decision amount is the same as the amount proposed by SA Water, and the additional operating expenditure amount of \$10 million is 20 percent lower than the amount proposed by SA Water.

³⁴¹ Cardno, p. 44.

³⁴² Cardno, p. 47.

³⁴³ Before the application of catch-up and continuing efficiencies

A3.4.1 Introduction

SA Water describes costs under this driver as *‘investments to meet its legal and regulatory responsibilities.’*³⁴⁴ In SAW RD16, SA Water’s capital expenditure to meet external obligations was \$436.7 million, and operating expenditure for this purpose was included in the efficient base year. In total, SA Water proposed \$364.4 million of capital expenditure and an additional \$50.4 million (or an average \$12.6 million per annum) of operating expenditure in SAW RD20 period to meet its external obligations services.

Two capital expenditure proposals included in the sample examined by Cardno relate to this investment driver: the Mount Bold reservoir dam safety upgrade (\$86.9 million), and the Eyre Peninsula desalination project (\$78.1 million).

In reviewing these proposed investments, and their related operating expenditure, the Regulators Working Group guided the Commission’s approach to ensuring all regulatory requirements are reflected in SAW RD20.

A3.4.2 Capital expenditure

A3.4.2.1 Water – Mount Bold reservoir dam safety upgrade

The draft decision is that \$86.9 million is a prudent and efficient amount to be included in SAW RD20 for the Mount Bold reservoir dam safety upgrade. This is the same amount proposed by SA Water. SA Water has forecast further capital expenditure of \$215.5 million during SAW RD24 to complete this project.

The Mount Bold reservoir dam safety upgrade is the major project within the SAW RD20 dam safety program, which has total expenditure during SAW RD20 of \$90.6 million. This is an 18 percent reduction on SAW RD16 dam safety program expenditure of \$110.1 million.

Given this project will be completed over two regulatory periods, the Commission is proposing to require that SA Water provide further documentation about the outputs expected by the end of SAW RD20.

What has SA Water proposed?

SA Water proposed to invest \$86.9 million during SAW RD20, and \$215.5 million during SAW RD24 for safety upgrades to the Mount Bold Reservoir. The safety upgrades will address the risks of failure posed by flood conditions and earthquakes, in line with the requirements of the ANCOLD guidelines.³⁴⁵

SA Water has been progressively addressing the risk of failure of its dams since 1998, and Mount Bold Reservoir has the highest level of risk associated with its failure of all dams within SA Water’s portfolio.

The safety upgrade involves increasing the structural strength of the spillway gate and dam to resist earthquake loads and large floods, and constructing an apron to prevent erosion that may occur as a result of overflows from a probable maximum flood.

³⁴⁴ SA Water, RBP, p. 25.

³⁴⁵ ANCOLD, Safety Guidelines, for more information see https://www.ancold.org.au/?page_id=334.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). This investment has a clear objective of managing the risks associated with failure, in line with the requirements of the ANCOLD guidelines.

Is SA Water's proposal supported by the CNC?

The CNC's view was that SA Water dams should be upgraded to bring failure risks in line with ANCOLD guidelines. With respect to Mount Bold Reservoir, the CNC noted:

*'In light of the known deficiencies relative to accepted national standards and the catastrophic consequences of a failure, the Committee considers that customers would want this project to proceed.'*³⁴⁶

How well does SA Water's proposal meet the Regulators Working Group requirements?

South Australia does not have specific dam safety regulations. However, SA Water must understand and manage the risks relating to its dams. SA Water documents these commitments in a Safety, Reliability and Maintenance Technical Management Plan (SRMTMP) which is required by and provided to the Technical Regulator.

The Technical Regulator supported SA Water's proposal for safety upgrades at Mount Bold Reservoir. The Technical Regulator's submission to the RBP noted that:

*'[T]he proposed upgrades to dams, in particular to Mt Bold reservoir is necessary if [SA Water] are to be able to meet the ANCOLD Guidelines which are considered to be best practice for dam safety in Australia.'*³⁴⁷

What have other stakeholders said about this issue?

Uniting Communities noted that, *'[T]he upgrades to Mount Bold, Baroota and Hindmarsh Valley seem reasonable to our understanding of the issues involved'*.³⁴⁸

What evidence has Cardno provided on this issue?

Cardno's evidence was that the proposed works are prudent, and within SA Water's overall obligations to manage all of its dams in line with the ANCOLD guidelines, which represent good industry practice:

*'We consider that it is prudent for SA Water to act to manage the risks identified to bring these to an acceptable level. Mount Bold has the highest level of risk associated with its failure within SA Water's portfolio.'*³⁴⁹

³⁴⁶ Report of Independent Chair of the CNC, p. 63.

³⁴⁷ Technical Regulator, p. 21.

³⁴⁸ Uniting Communities, p. 22.

³⁴⁹ Cardno, p. 82.

Cardno stated that the forecast submitted by SA Water represents the current best estimate of efficient costs of the project, and that the staged approach to undertaking these works is appropriate: *'We are satisfied that the forecast submitted by SA Water represents the current best estimate of efficient costs of this project.'*³⁵⁰

Any other relevant considerations?

A secondary benefit of the project is that the upgraded dam will provide flood mitigation for the community downstream in Onkaparinga. That is, in addition to the dam upgrade works reducing the risk of failure, they will also reduce the risk of downstream flooding.

SA Water has considered flood mitigation benefits in its options analysis. The optimal flood mitigation benefits come at a marginal cost, which SA Water has indicated is in the order of five to ten percent of overall project costs. However, flood mitigation is not an SA Water responsibility, and so would need to be funded separately by the community or the South Australian Government.

Commission's consideration

Based on the views of the CNC, the Technical Regulator, and Cardno, the Commission accepts the ANCOLD Guidelines as the basis of best practice for dam safety in Australia.

The Commission accepts Cardno's evidence that \$86.9 million is a prudent and efficient amount to be included SAW RD20 for safety upgrades at Mount Bold Reservoir.

The Commission notes SA Water's recent success delivering the safety upgrade at Kangaroo Creek. The Kangaroo Creek upgrade was examined by Cardno in its SAW RD16 expost review. Cardno's review confirmed the upgrade was prudent, and its costs were efficient (5.8 percent more than the SAW RD16 proposal, which was based on incomplete information about construction costs), although it was delivered over a longer period of time than initially planned.³⁵¹ This provides an indication of SA Water's ability to successfully manage the Mount Bold upgrade.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The outputs of the Mount Bold Reservoir dam safety upgrade are civil works to increase structural resistance to floods and earthquakes. These will be delivered after the end of SAW RD20, during SAW RD24.

Given this project will be completed over two regulatory periods, the Commission is proposing to require SA Water to provide further documentation about the outputs expected by the end of SAW RD20 (such as construction milestones), so there is a clear benchmark against which to assess progress at the end of SAW RD20.

Further, SA Water should keep sufficient financial records to be able to demonstrate that the marginal costs of any possible flood mitigation works that proceed as part of the project are funded by third parties (such as the community or the South Australian Government), and are not charged to water customers.

³⁵⁰ Cardno, p. 83.

³⁵¹ Cardno, p. 73.

A3.4.2.2 Water - Eyre Peninsula Desalination Plant

The draft decision is that \$78.1 million is a prudent and efficient amount to be included in SAW RD20 for completion of the Eyre Peninsula desalination project. This is the same amount as proposed by SA Water. The project commenced in 2018-19, with expenditure up to June 2020 forecast at \$13.1 million, leading to total project cost of \$91.2 million.

The completed plant will have a capacity of 4 GL per annum, with the marine and transfer pipeline infrastructure sized for an ultimate capacity of 8 GL, to allow for future demand growth. The plant will relieve pressure on the existing groundwater source (Uley South Basin), which is currently operating at above the long-term sustainable extraction level.

What has SA Water proposed?

SA Water proposed to invest \$91.2 million in the period from 2018-19 to 2020-21, to construct a 4 GL desalination plant at Sleaford Bay on the Eyre Peninsula. Early works (totalling \$13.1 million) are to be completed in the period to June 2020, with the main construction (totalling \$78.1 million) taking place during 2020-21, and commissioning due ahead of the 2021-22 summer.

This project aims to address the water supply security issues that exist on the Eyre Peninsula, while protecting the natural resources in the area.

The primary source of water on the Eyre Peninsula is currently the Uley South Basin, which provides approximately 5.3 GL of groundwater per annum. This is supplemented by a pipeline from the Morgan-Whyalla system, which can provide up to 1.5 GL per annum of River Murray water to the region. These sources, together with other minor water sources, meet the current average demand of 7.1 GL per annum.

Poor rainfall in the period since 2014, and consequential low aquifer recharge, together with recent (2018) investigations that have reduced the known size of the Uley South Basin, have triggered a requirement to augment the water supply to the Eyre Peninsula.

SA Water's proposal is to construct a 4 GL capacity desalination plant. This will relieve pressure on the Uley South Basin, allowing annual extraction to reduce to a maximum long-term sustainable level of 3.8 GL. Further, it will provide some capacity for future growth in the region, and will allow the pipeline from the Morgan-Whyalla system to be reversed, reducing reliance on the River Murray, and freeing up capacity upstream to meet potential commercial opportunities in the Upper Spencer Gulf region.

SA Water intends to size the marine and transfer pipeline infrastructure for an ultimate capacity of 8 GL, allowing the desalination plant to be duplicated at a future date, should there be either a step change in demand (for example, a mining development), or were the Uley South Basin to become unusable for any reason. The marginal cost of upsizing the pipeline infrastructure now is estimated at approximately \$5.3 million, whereas duplicating the pipeline infrastructure at a later date is likely to be at double the original cost (approximately \$30 million).

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). This investment has the clearly expressed outcome of relieving pressure on the Uley South Basin, allowing annual extraction to reduce to a maximum long-term sustainable level of 3.8 GL.

Is SA Water's proposal supported by the CNC?

The CNC was 'persuaded that this project is prudent but [was] not equipped to form a view about whether it is efficient.'³⁵²

How well does SA Water's proposal meet the Regulators Working Group requirements?

The DEW has provided information based on detailed modelling of the Uley South Basin, which confirms the maximum sustainable long-term extraction level is 3.8 GL per annum. Higher levels of extraction were also modelled by DEW, which resulted in reducing groundwater levels in the aquifer over time, and a likelihood of increased salinity due to increased inflow from seawater intrusion.

What have other stakeholders said about this issue?

Business SA, through a report prepared by its consultant, Isle Utilities, commented that, based on benchmarking, the costs of the project appear high, but that there was insufficient site specific information in the public domain to form any definitive view.³⁵³

The SACOSS submitted that the Commission should give close consideration to both the size and timing of the proposed works.³⁵⁴ SACOSS recommended that ESCOSA require SA Water to provide confirmation that demand analysis supports the 4GL per annum and the oversized inlet and outfall pipes at 8GL per annum; and to demonstrate that a smaller plant could not be installed at acceptable risk to water security in view of forecast demand.³⁵⁵

The SAFRRA provided more general support, stating its desire for a reduced reliance on River Murray water.³⁵⁶

Uniting Communities submitted that a desalination plant is necessary for the Eyre Peninsula region, and that further drawing on the Uley South Basin is not likely to be sustainable.³⁵⁷ Uniting Communities stated that active, open engagement with local bill payers and communities will be crucial in effective implementation of this project.³⁵⁸

What evidence has Cardno provided on this issue?

Cardno's evidence was that the works are prudent, based on the need for continuity of water supply to the area, and the potential for damage to the Uley South Basin, should the current levels of extraction continue. Options analysis determined the desalination plant as the lowest cost supply option, and Cardno confirmed that the proposed costs are efficient. Further, Cardno supported upsizing the pipeline infrastructure to 8 GL capacity as a prudent approach.³⁵⁹

Any other relevant considerations?

Cardno identified that a further benefit of the project is that the desalinated water will be of a higher and more consistent quality than the current supply.

Commission's Considerations

Based on the modelling undertaken by DEW, there is a need to find a further water source to address the supply issues on the Eyre Peninsula into the longer term.

³⁵² Report of Independent Chair of the CNC, p. 49.

³⁵³ Business SA, pp. 13-14.

³⁵⁴ SACOSS, pp. 19-20.

³⁵⁵ SACOSS, p. 19.

³⁵⁶ SAFRRA, p. 3.

³⁵⁷ Uniting Communities, p. 22.

³⁵⁸ Uniting Communities, p. 22.

³⁵⁹ Cardno, p. 83 and pp. C25-C27.

SA Water considered duplicating the existing pipeline from the Morgan-Whyalla system, but this was dismissed on the grounds of cost.

On the sizing of the new plant, a scalable 4 GL plant provides sufficient capacity to address current and future demand, at a limited marginal cost when compared with constructing a smaller plant. Likewise, choosing to upsize the marine and transfer pipeline infrastructure at this time is a prudent option, given the limited marginal cost of this work when compared to having to duplicate the infrastructure at a later date.

Taking account of all of the above, the Commission considers that the project is prudent and efficient.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, balancing supply and demand, water security, and water quality), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.4.3 Operating expenditure

The draft decision is that an average of \$10.0 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to meet external obligations. This operating expenditure is in addition to the existing operating expenditure included in SA Water's normalised base year.

The draft decision amount of \$10.0 million is 20 percent lower, or \$2.5 million per annum reduction, than the amount proposed by SA Water. The draft decision is that an average of \$10 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to meet external obligations. SA Water proposed an average additional \$12.6 million per annum of operating expenditure across SAW RD20 to fund programs to meet its external responsibilities.

The draft decision amount of \$10 million per annum is comprised of the amounts shown below (against SA Water proposed amounts);

- ▶ Eyre Peninsula Desalination Plant - \$3.9 million (\$5.1 million)
- ▶ Asset investment operating costs - \$2.6 million (\$3.8 million)
- ▶ NAIS - \$2.8 million (\$2.8 million)
- ▶ Operating expenditure related to IT capital expenditure programs - \$1.8 million (\$1.8 million)
- ▶ Environmental Improvement Plans (including recycling) - \$0.8 million (\$0.8 million)
- ▶ Safety - \$0.5 million (\$0.7 million), and
- ▶ Water industry licence fee reduction - \$2.4 million reduction (\$2.4 million reduction).

This operating expenditure is in addition to the existing operating expenditure included in SA Water's normalised base year.

A3.4.3.1 Eyre Peninsula Desalination Plant

What has SA Water proposed?

SA Water proposed to invest \$91.2 million of capital expenditure in the period from 2018-19 to 2020-21, to construct a 4 GL desalination plant at Sleaford Bay on the Eyre Peninsula. SA Water proposed an average additional \$5.1 million per annum of operational expenditure to support this desalination plant.

This project aims to address the water supply security issues that exist on the Eyre Peninsula, while protecting the natural resources in the area.

See section A3.4.2.2 for further details on SA Water's proposal.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.4.2.2.

Is SA Water's proposal supported by the CNC?

See section A3.4.2.2.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.4.2.2.

What have other stakeholders said about this issue?

No submissions were received on the operating expenditure component of this project. Submissions on SA Water's proposed capital investment plan for the Eyre Peninsula desalination plant are articulated in section A3.4.2.2.

What evidence has Cardno provided on this issue?

Cardno's evidence was that this project appears to be prudent and efficient. Cardno's considerations in relation to the capital investment proposal are articulated in the analysis of the capital expenditure, at A3.4.2.2.

However, Cardno recommended an adjustment to the proposed operational expenditure to be consistent with SA Water's business case for the project, which identified \$5.3 million per annum for three years (2021-22, 2022-23 and 2023-24), or an average additional \$3.9 million per annum over SAW RD20.³⁶⁰

Commission's consideration

At section A3.4.2.2 the Commission noted that it considers the proposed capital expenditure for this project to be prudent and efficient.

However, SA Water has provided inconsistent information in relation to the required operational expenditure for this program. In the relevant business case, it stated that an average \$3.9 million per annum of additional operational expenditure is required to support the operation of the desalination plant over SAW RD20. In 'Our Plan', and other supporting documentation, SA Water stated an average additional \$5.1 million per annum is required to support the desalination plant.

The draft decision is that the operating expenditure SA Water has evidenced as necessary in its business case for this program of works, of an average additional \$3.9 million per annum, is prudent and efficient.

³⁶⁰ Cardno, p. 57.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, balancing supply and demand, water security, and water quality), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.4.3.2 Asset investment operating costs

Summary of SA Water's proposal

SA Water proposed an average additional \$3.8 million per annum of operational expenditure for a range of programs to meet its external obligations:

▶ **Optimising Wastewater treatment plant performance - \$1.2 million**

This project proposed to improve SA Water's sewage treatment plant performance, and to enable it to meet its environmental compliance obligations. It includes a \$22 million capital expenditure over SAW RD20 and an additional \$1.2 million per annum in operating expenditure.

▶ **Non-electricity costs for the Eyre Peninsula Desalination Plant - \$1.2 million**

This operational expenditure is proposed to support the ongoing operation of a desalination plant proposed to be constructed on the Eyre Peninsula. It is in addition to the operational expenditure proposed above at A3.4.3.1.

▶ **Sewerage odour reduction - \$1.0 million**

This project proposed to reduce the impact of odour on the community by investing \$20 million of capital expenditure in priority areas of SA Water's sewer network, and applying \$1 million per annum of operating expenditure on optimising this investment and to fund operational solutions.

▶ **Water dam and network operations - \$0.4 million**

This project proposed further protection for communities downstream from dams, by reducing the likelihood of dam structure failures from floods or earthquakes. It included an investment of \$91 million of capital expenditure over SAW RD20 and an additional \$0.4 million per annum in operating expenditure. Analysis in relation to the capital expenditure is provided at A3.4.2.1.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to these works.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

With the exception of the proposed additional operating expenditure associated with the non-electricity costs for the Eyre Peninsula Desalination Plant, SA Water has established a clear line of sight between proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC did not challenge the need for this operational expenditure, and supported the proposed capital expenditure programs for dam safety, odour reduction and optimising wastewater treatment plant performance.³⁶¹

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA supported SA Water's proposal for improving SA Water's wastewater treatment plant performance to meet compliance requirements under the Environment Protection Act and EPA licence conditions for required Environmental Improvement Plans. The EPA stated that the proposed approach will lead to significant improvements to environmental outcomes.³⁶²

The EPA also supported SA Water's proactive and targeted response to sewerage odour reduction, and stated it is an approach that *'begins to address the worst odour cluster locations, as well as wider network odour issues.'*³⁶³

The Technical Regulator submitted that, from its observations, SA Water:

*'show[s] a clear commitment to meet the ANCOLD Guidelines.' And that, 'the proposed upgrades to dams, in particular to Mt Bold reservoir is necessary if [it is] to be able to meet the ANCOLD Guidelines which are considered to be best practice for dam safety in Australia.'*³⁶⁴

What have other stakeholders said about this issue?

► Non-electricity costs for the Eyre Peninsula Desalination Plant

Several submissions were received on the Eyre Peninsula desalination plant capital expenditure proposal. These submissions are summarised at A3.4.2.2. No submissions were received on the proposed average additional \$1.2 million per annum of operational expenditure.

► Sewerage odour reduction

Uniting Communities stated that the capital and operating expenditure associated with the odour reduction initiative seem reasonable.³⁶⁵

► Water dam and network operations

Uniting Communities stated that the upgrades to SA Water's dams seem reasonable to the extent of their understanding of the issues.³⁶⁶

What evidence has Cardno provided on this issue?

Cardno reviewed SA Water's proposed capital investment programs for the Eyre Peninsula desalination plant (see A3.4.2.2) and the dam safety program (see A3.4.2.1). It did not review the capital investment associated with the odour reduction or sewerage treatment plant performance improvement programs.

³⁶¹ Report of Independent Chair of the CNC, p.57.

³⁶² Environment Protection Authority, *Submission to SA Water RBP*, December 2019, p. 2, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-EPA.pdf.aspx?Embed=Y>.

³⁶³ EPA, p. 5.

³⁶⁴ Technical Regulator, p. 1.

³⁶⁵ Uniting Communities, p. 23.

³⁶⁶ Uniting Communities, p. 24.

In relation to the proposed operational expenditure, Cardno stated that SA Water had not demonstrated that the proposed increases are justified increases relative to what it should be carrying out as part of its business-as-usual operating activities:

*'in the absence of a new obligation or significant change in circumstance, simply identifying new activities is not in itself a justification for an increase in total operating expenditure.'*³⁶⁷

However, Cardno was supportive of increases in sewage reuse and odour reduction considering that operational expenditure solutions in these areas are often prudent and efficient.³⁶⁸

Commission's consideration

The draft decision is that an average additional \$2.6 million per annum of operational expenditure to optimise sewerage treatment plant performance, reduce sewerage odour, and improve dam and network operations is prudent and efficient.

SA Water is investing \$22 million of capital expenditure over SAW RD20, and an average additional \$1.2 million per annum of operating expenditure, to upgrade the performance of its sewerage treatment plants and networks. Upgrades across SA Water's wastewater treatment plants are required for two primary reasons:

- ▶ population growth in the sewerage catchment areas, and
- ▶ to meet licence compliance requirements particularly in relation to continuous improvement in environmental outcomes.

Based on evidence provided, this expenditure is prudent and efficient.

Odour from wastewater systems can have material effect on quality of life. SA Water's approach to reducing the impact of odour from its operation on the community should:

- ▶ Improve the technical response to odour reports and, as a result, customer outcomes. Additionally, having the right people with the right tools responding to odour complaints will help reduce the costs of odour issue resolution.
- ▶ Reduce the public health hazard and impost on SA Water customers and the community as a by-product of its sewerage services.
- ▶ As the odours that cause complaints are made of compounds that also cause corrosion to SA Water assets, dealing with odour more effectively will help reduce corrosion rates on concrete assets and reduce renewals costs.

Based on evidence provided, this expenditure is prudent and efficient.

SA Water's proposed investment in dam and network operations is related to a significant investment in upgrading its large dam network. Over SAW RD20 this program of works will include \$90.6 million of capital expenditure and an additional \$0.4 million of operating expenditure. Primary works will upgrade the Mount Bold reservoir to address the risks of failure posed by flood conditions and earthquakes, in line with the requirements of the ANCOLD guidelines.

Based on evidence provided, this expenditure is prudent and efficient.

³⁶⁷ Cardno, p. 56.

³⁶⁸ Cardno, p. 56.

SA Water has provided no explanation for the proposed additional 'non-electricity costs for the Eyre Peninsula desalination plant'. This proposal is in addition to the \$3.9 million per annum of operational expenditure approved by the Commission above at A3.4.2.1.

As no evidence for the additional \$1.2 million per annum of operating expenditure requested by SA Water has been provided, this expenditure is not considered prudent and efficient.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, meeting its environmental compliance requirements, and meeting ANCOLD guidelines), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.4.3.3 Northern Adelaide Irrigation Scheme

What has SA Water proposed?

SA Water proposed an average additional \$2.8 million per annum of operational expenditure to support the NAIS.

The NAIS program and associated infrastructure was implemented by SA Water under a direction of the Minister for Water on 23 August 2017. With a planned net capital expenditure investment of \$110.0 million (\$155.6m gross cost less \$45.6 million Commonwealth Government contribution), the NAIS is a significant initiative that seeks to reuse 12GL of treated wastewater from the Bolivar Wastewater Treatment Plant, by transferring it to the Northern Adelaide Plains, to be used beneficially for food production. The initiative avoids the need to discharge into Gulf St Vincent and assists SA Water to meet environmental obligations under its licence.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Is SA Water's proposal supported by the CNC?

The CNC suggested that the Commission examine options for how the cost of this project is included in the RAB so as to ensure the commercial risks are appropriately allocated, for example, to the South Australian Government.³⁶⁹

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA stated its support for NAIS:

*'as a means to avoid environmental discharge, particularly into the Gulf of St Vincent and as a means of productive, beneficial and sustainable use of recycled water,' and as a 'key to delivery of part of the metropolitan EIP requirements derived from the ACWQIP [Adelaide Coastal Water Quality Improvement Plan] Targets.'*³⁷⁰

What have other stakeholders said about this issue?

No submissions were received on the operating expenditure component of these programs of work. However, submissions from stakeholders were received on SA Water's proposed capital investment plan.

³⁶⁹ Report of Independent Chair of the CNC, p.59.

³⁷⁰ EPA, p. 6.

Business SA commented that SA Water should be solely responsible for commercial risks associated with this project, such that sewerage charges are not linked to SA Water's ability to earn irrigation related revenues, or that proposed cost increases impacting sewerage charges are capped.³⁷¹

SACOSS highlighted the commercial risk aspects of the project and suggested that it would be appropriate for the cost of the project that is allowed onto the RAB to be capped at the actual cost or no more than the \$67.6 million NPV of the existing discharge arrangement. SACOSS went on to comment that the Commonwealth Government contribution to the project should not be included on SA Water's RAB as it is a capital contribution from a third party; and that the South Australian Government should bear the cost of any project cost over-runs by capping the cost that is allowed onto the RAB.³⁷²

Uniting Communities submitted that it understands the proposed release of treated wastewater is best undertaken through the NAIS, rather than discharging into Gulf St Vincent and that using the treated water for food production is sensible. However, Uniting Communities asked the Commission to check the cost allocations between SA Water sewerage customers and users of water delivered through the NAIS to ensure SA Water sewerage customers are not paying more than is necessary for this project.³⁷³

What evidence has Cardno provided on this issue?

Cardno recommended accepting the proposed operational expenditure increase for this initiative.³⁷⁴

Commission's consideration

The draft decision is that an average additional \$2.8 million per annum of operational expenditure to support the operation of the NAIS is prudent and efficient.

Construction work is well advanced on the NAIS, with net capital expenditure forecast at \$88.4 million (\$120.6m gross cost less \$32.2 million contributions) by the end of the SAW RD16 period. SA Water forecasts to invest a further \$23.8 million during SAW RD20, with further contributions of \$28.1 million forecast to be received during the SAW RD20 period. This will take the net project cost at completion to \$84.0 million, and this amount has been included in the draft determination.

While the NAIS was not part of either the SAW RD16 or SAW RD20 sample of projects and programs of work, the Commission is aware of the importance of ensuring that costs and revenues are appropriately allocated, in order to protect sewerage customers from commercial risks.

Therefore, prior to the final determination, the Commission intends to review the allocation of both capital expenditure and contributions for the NAIS between direct control retail services, excluded, and non-regulated services, to ensure that all NAIS related costs and revenues are treated appropriately.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

As the EPA stated in its submission, an important underlying objective of this program is avoiding environmental discharge particularly into the Gulf of St Vincent. This is a key requirement for SA Water to achieve its Environmental Improvement Plan targets for its metropolitan WWTP. The Commission would expect that SA Water met these targets during SAW RD20.

³⁷¹ Business SA, p. 5

³⁷² SACOSS, p. 18.

³⁷³ Uniting Communities, p. 23.

³⁷⁴ Cardno, pp. 56-57.

A3.4.3.4 Safety

What has SA Water proposed?

SA Water proposed an average additional \$0.7 million per annum of operational expenditure to fund a program of work to improve safety at approximately 500 of its sites, and meet revised EPA compliance requirements.

SA Water's proposed program of work includes updating asbestos registers, renewing firefighting and suppression equipment, undertaking site based safety and risk assessments, and implementing minor actions. SA Water stated that additional operational expenditure is also required for new licenses costs to meet EPA requirements regarding the storage and handling of asbestos, and for increasing costs associated with the disposal of spoil (for example, soil and bitumen).

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

SA Water has established a clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC noted that:

*'as all network depots which temporarily store asbestos now need to be licensed as waste depots... the conditions associated with these licences have resulted in additional cost for the disposal of asbestos waste' and accepted that these costs must be incurred.*³⁷⁵

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA has confirmed that it has varied its compliance requirements in relation to asbestos. These revised requirements have affected SA Water as it is now required to licence its depots as waste transfer stations for the purpose of storing asbestos material.

Changes to the allowable level of contamination (for example, bitumen) in spoil for reuse, which have meant increased disposal of spoil rather than reuse, have also led to increased compliance costs for SA Water.

What have other stakeholders said about this issue?

No submissions were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno's evidence was that half of the proposed additional operating expenditure should be allowed to account for the new requirements related to new requirements for asbestos removal and spoil disposal. Cardno put this views on the basis that *'it seems likely that some of the change in disposal costs is already in place in the base year.'*³⁷⁶

³⁷⁵ Report of Independent Chair of the CNC, p. 57.

³⁷⁶ Cardno, p. 60.

Cardno further recommended that, in relation to the asbestos and fire related activities, the costs should either be able to be met within existing budgets as the activities should be considered business-as-usual, while noting that the portion of the costs associated with building improvements could potentially be capitalised.³⁷⁷

Commission's consideration

The draft decision is that an average additional \$0.5 million per annum of operational expenditure for SA Water to meet new EPA licensing obligations is prudent and efficient.

The EPA confirmed that it has imposed new requirements on SA Water, and Cardno advised that these costs are not unreasonable.

However, the Commission considers the other activities related to site safety should be considered business-as-usual and met within existing budgets.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

The EPA has confirmed that its requirements have changed in relation to the handling of asbestos, which has resulted in additional compliance requirements for SA Water. As a consequence of this additional operating expenditure, the Commission expects SA Water to meet these new EPA licensing requirements.

A3.4.3.5 Environmental improvement plans (including recycling)

What has SA Water proposed?

SA Water proposed an average additional \$0.8 million per annum of operational expenditure to treat used water for reuse as recycled water.

This operational expenditure supports an \$11 million capital expenditure investment in SA Water's sewerage treatment plants, to implement new EPA licence compliance requirements associated with EIP at Hahndorf, Millicent and Port Augusta East.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

SA Water has established a clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC supported the capital expenditure related to this operating expenditure.³⁷⁸

³⁷⁷ Cardno, p. 60.

³⁷⁸ Report of Independent Chair of the CNC, p.73.

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA has noted that it has prioritised Hahndorf, Millicent and Port Augusta East as the wastewater treatment plants most urgently requiring upgrades to allow SA Water to continue to meet the conditions of its operating licences. The EPA stated its support for SA Water's proposed works to reduce environmental harm to receiving environments caused by wastewater discharge.³⁷⁹

What have other stakeholders said about this issue?

No submissions were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno's evidence was that the Commission should accept this operational expenditure.³⁸⁰

Commission's consideration

The EPA has revised SA Water's licences to operate the Hahndorf, Millicent and Port Augusta wastewater treatment plants to include a requirement to undertake Environmental Improvement Plans over the SAW RD20 period. Those plans require SA Water to carry out investigative works and address concerns primarily relating to the levels of nutrients being discharged into the relevant receiving water bodies; Hahndorf Creek, Lake Bonney and the Upper Spencer Gulf, respectively.

To meet these compliance requirements, SA Water is investigating and prioritising the reuse of waste streams for community benefit over investing in improving the quality of waste discharged to the environment.

The draft decision is that an average additional \$0.8 million per annum of operational expenditure to treat used water for reuse as recycled water is prudent and efficient.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

As the EPA stated in its submission, an important underlying objective of this program is avoiding environmental discharge proximate to the Hahndorf, Millicent and Port Augusta wastewater treatment plants. This is a key requirement for SA Water to achieve its Environmental Improvement Plan targets for these wastewater treatment plants. The Commission would expect that SA Water met these targets during SAW RD20.

A3.4.3.6 Water industry licence fee reduction

What has SA Water proposed?

SA Water proposed an average additional \$2.4 million per annum reduction of operational expenditure related to an anticipated reduction in its Water Industry Act licence fee. SA Water has estimated this reduction, as it has not received firm advice on this matter.

How well does SA Water's proposal meet our guidance on this issue?

No guidance has been provided in relation to this proposal.

³⁷⁹ EPA, p.3.

³⁸⁰ Cardno, p. 60.

Is SA Water's proposal supported by the CNC?

The CNC acknowledged this proposed reduction.

How well does SA Water's proposal meet the Regulators Working Group requirements?

There are no requirements for this proposal.

What have other stakeholders said about this issue?

Uniting Communities noted the proposed reduction in SA Water's licence fee under the Water Industry Act, and stated;

*'if this is part of the \$9 million efficiency dividend, we do not consider this to be appropriate as an SA Water led efficiency measure as it is exogenous to SA Water, not part of areas that are the direct responsibility for SA Water management and operation.'*³⁸¹

What evidence has Cardno provided on this issue?

Cardno's consideration was not sought on this proposal.

Commission's consideration

As a water retailer, SA Water is required under the Water Industry Act, to pay an annual licence fee to the Commission. Currently, SA Water's licence fee is \$9.5 million per annum. This annual licence fee is related to the costs incurred by the Commission, the Office of the Technical Regulator, Department for Environment and Water, and the Department of Treasury and Finance performing regulatory functions within the water industry.

Section 24(3) of the Act provides that:

'the annual licence fee for a licence is the fee fixed, from time to time, by the Treasurer in respect of that licence as an amount that the Treasurer considers to be a reasonable contribution towards prescribed costs after taking into account advice contained in a written report provided to the Treasurer by the Commission.'

In November 2019, the Commission provided advice to the Treasurer that it considers a reasonable contribution towards prescribed costs of administering the Act to amount to full cost recovery.³⁸²

It is anticipated that by June 2020, the Treasurer will set water licence fees for the 2020-2024 period, beginning 1 July 2020. Until the Commission has an updated estimate, the Commission will accept SA Water's estimated reduction of an average \$2.4 million per annum. The Commission notes that SA Water has included this as an identified saving, but it will not be included as contributing towards its continuing efficiency target.

What is the Commission proposing to monitor throughout the SAW RD20 period?

No monitoring over SAW RD20 is required for this proposal.

³⁸¹ Uniting Communities, p. 21.

³⁸² Commission, *Advice to the Treasurer on Water Industry Licence Fees*, November 2019, is available at: https://www.treasury.sa.gov.au/_data/assets/pdf_file/0006/124557/2019-Report-to-Treasurer-on-licence-fees.pdf.

A3.5 SAW RD20 expenditure for sustaining services

The draft decision is that \$815.3 million³⁸³ is a prudent and efficient amount to be included in SAW RD20 for capital expenditure to sustain services. This represents an eleven percent increase on the \$734.3 million capital expenditure to sustain services in SAW RD16.

Further, the draft decision is that an average of \$4.2 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to sustain services. This is in addition to the existing operating expenditure included in SA Water's normalised base year.

The capital expenditure draft decision amount represents a reduction of \$53.1 million (6 percent) on the amount proposed by SA Water, and the additional operating expenditure draft decision amount of \$4.2 million represents a \$12.2 million (74 percent) reduction on the amount proposed by SA Water.

A3.5.1 Introduction

SA Water characterises sustaining services as investment to allow it to continue to provide and sustain reliable services for its customers, by planning ahead and investing where needed.

In total, SA Water is proposing \$868.4 million of capital expenditure and \$65 million (an average of \$16.4 million per annum) of operating expenditure in the SAW RD20 period to sustain services.

This section discusses the four capital expenditure proposals included in the sample examined by Cardno (which together account for \$293.4 million of the proposed \$868.4 million), and the proposed changes to base year operating expenditure related to this driver.

A3.5.2 Capital expenditure

A3.5.2.1 Water – Reticulated Mains Network Management Program

The draft decision is that \$107.0 million is a prudent and efficient amount to be included in SAW RD20 for the reticulated water mains network management program. The allowed expenditure represents a \$54.3 million (34 percent) reduction on the \$161 million spent on water mains network management in SAW RD16, and a \$37.2 million (26 percent) reduction to the amount proposed by SA Water for SAW RD20.

This level of funding should allow SA Water to manage the reticulated mains network to maintain the current level of service, while seeking to optimise the mix of mains replacement, pressure management, valve installations and the use of smart networks.

The Commission is proposing to introduce additional service standards to monitor water network reliability outcomes.

What has SA Water proposed?

SA Water proposed to invest \$144.2 million during SAW RD20 to manage its reticulated water mains network, a reduction from the \$161.3 million forecast to be invested during SAW RD16. This comprises capital expenditure of \$112.0 million for mains replacement, \$20.9 million of smart networks, \$5.7 million for pressure management, and \$5.6 million for valve installations.

³⁸³ Before the application of catch-up and continuing efficiencies.

This program aims to ensure the ongoing reliability of the water reticulation network to provide water supply to customers. It is designed to improve performance against the measure of 'number of customers experiencing three or more interruptions in a year', and reduce the number of these worst-served customers to 1750 by 2024.

The proposal will address two technical level of service measures in order to achieve the improvement in the number of worst-served customers. These are:

- ▶ Failure rate of reticulation mains (2024 targets: less than 20 failures per 100 kilometres per year in metropolitan Adelaide, and less than 11 failures per 100 kilometres per year in regional areas).
- ▶ Shut off blocks with more than 50 customers (2024 target: not specified; 2028 target: less than 2.8 percent).

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this program. However, three matters where general guidance was provided are relevant to its assessment.

First, guidance was provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). The customer-focused measure of '*number of customers experiencing three or more interruptions in a year*' and the technical levels of service measures provide a clear line of sight for the outcomes being sought through this expenditure. The basis for the targets to improve service, rather than maintain service, is less clear.

Second, guidance was provided that evidence from customer engagement would be required to support expenditure proposals designed to improve levels of service, including evidence drawn from the results of willingness to pay research (Guidance Paper 3). This expenditure proposal is designed to improve levels of service, by reducing the number of worst served customers from 2862 (the average across the four years to 2018-19) to 1750 by the end of 2024. This improvement is not supported by the results of SA Water's willingness to pay research (as discussed in Chapter 6).

Third, guidance was provided that service standards should cover the elements of service that matter to customers, so as to act as a reference point for expenditure proposals (Guidance Paper 3). There are several aspects of water network reliability that are important to customers, including the number of worst-served customers, the overall incidence of water network interruptions, and the impact of interruptions on traffic and community infrastructure. The Commission has made a draft decision to require SA Water to develop, consult on and propose further service standards that address these other aspects of water network reliability, specifically the overall incidence of water network interruptions (as discussed in Chapter 6).

Is SA Water's proposal supported by the CNC?

The CNC was sceptical of the proposed level of expenditure on mains replacement to reduce the frequency of mains breaks, noting that the proposed investment is well above historical levels.³⁸⁴ It was, however, supportive of the proposed works on smart networks, pressure management, and valve installations. The CNC cited the independent review of water main management (commissioned by SA Water and completed by consultant AMCL),³⁸⁵ as a valuable tool in determining an appropriate level of expenditure on maintenance of the water reticulation network.

³⁸⁴ Report of Independent Chair of the CNC, pp. 68-70.

³⁸⁵ SA Water, *AMCL Water Main Management Independent Review*, 30 August 2019, available at https://www.sawater.com.au/_data/assets/pdf_file/0003/434172/SA-Water-Water-Main-Management-Independent-Review-v1.0.pdf

How well does SA Water’s proposal meet the Regulators Working Group requirements?

The Technical Regulator submitted that it was supportive of smart network infrastructure, and considered increasing the number of valves in the network and undertaking pressure management trials to be worthwhile.³⁸⁶

What have other stakeholders said about this issue?

Consumers SA commended the increasing use of smart networks to assist in determining where likely bursts will occur and to enable SA Water to fix them before they happen.³⁸⁷

EWOSA submitted that it considers that the approval of expenditure for water mains renewal should be in line with the AMCL review of water main management.³⁸⁸

SACOSS stated that it considered it premature to spend \$112.0 million on mains replacement, given that the other elements of the mains network management program should allow SA Water to better identify which mains to replace in future, and to reduce the impact of mains bursts.³⁸⁹ Further, SACOSS noted that the rate of mains failures has been stable or falling for many years, and that levels of leakage are very low by both national and international standards.

What evidence has Cardno provided on this issue?

On mains replacement, Cardno considered that the proposed levels of investment were a reasonable approach to sustaining and gradually improving network performance. However, Cardno also noted that the improvements in service required customer support, as demonstrated by willingness to pay studies.³⁹⁰

Cardno stated that, assuming the target of improving service, the costs forecast by SA Water are a reasonable estimate of efficient costs.³⁹¹

However, Cardno suggested an adjustment to reduce capital expenditure on this program of works by \$13.2 million. This is based on a view that SA Water has been conservative in estimating the benefits arising from the water mains management program as a whole.³⁹²

It suggests that SA Water should be more cautious in pursuing smart networks and pressure management initiatives until their benefits are known and able to be quantified to the extent necessary to justify and prioritise a more ambitious work program of the type proposed. It recommends that this program be adjusted so that only half of the proposed expenditure for smart networks and pressure management be considered prudent.³⁹³

Cardno noted that its recommendations should not be interpreted as being prescriptive as to where SA Water should allocate expenditure within the overall program. SA Water should prioritise expenditure between different activities as it obtains better information on the benefits and costs of the options at its disposal.³⁹⁴

³⁸⁶ Technical Regulator, p.1

³⁸⁷ Consumers SA, p.1

³⁸⁸ EWOSA, p. 4.

³⁸⁹ SACOSS, p. 17.

³⁹⁰ Cardno, p. 78 and pp. C1-C4.

³⁹¹ Cardno, p. C1.

³⁹² Cardno, p. 79.

³⁹³ Cardno, p. 80 and p. C4.

³⁹⁴ Cardno, p. C4.

Any other relevant considerations?

In 2019, SA Water's board engaged AMCL, a consultancy endorsed by the IAM,³⁹⁵ to conduct an independent review into SA Water's approach to water main management. The objective of the AMCL review was to assess and identify how SA Water's asset management and operational approach aligns with international leading practice, and to identify opportunities for improvement.

The AMCL report examined 24 capability areas, assessing seven as leading, 15 as typical, and identified two areas where SA Water's approach did not compare favourably with its peers. These areas were resource management and investment optimisation.

AMCL commented that SA Water's resources are not managed strategically, with resource numbers not being aligned to forecast work volumes and poor planning of work leading to inefficient use of resources. Further, AMCL identified misalignment between decision making and budget accountability, with a focus on meeting the Commission's targets, rather than delivering efficiently.

There were further issues identified around the measurement of utilisation of Allwater work crews, and variations in training and competencies, driven by utilising a mix of unionised and non-unionised staff.

On investment optimisation, AMCL identified that SA Water had made '*significant assumptions and some errors*'³⁹⁶ in the development of its draft business case for the SAW RD20 period. AMCL identified the need for the business case process to include more robust challenge and assurance, to ensure '*line of sight*' is maintained with stakeholder requirements. In particular, AMCL noted that incorrect communication had resulted in the business case including funding for improvements to service (a reduction in the number of customers experiencing three or more unplanned supply interruptions), when the outcome of the willingness to pay studies was to reject these improvements in service.

It further identified opportunities to improve business cases by considering the full value of the total community impact (for example, total customer minutes off supply and impact on road users), and flagged the potential to move to using forward-looking asset deterioration models, to improve the forecasting of asset lives and mains break predictions.

The AMCL report did not, however, provide any specific information on the appropriate future levels of mains replacement, or other network management activities.

Commission's Consideration

The Commission has two central concerns with this program. First, that it is designed to deliver an improved level of service and, second, that it is focused on managing the water network to reduce the number of worst-served customers.

The Commission's view is that an improved level of water network reliability is not supported by customers, as discussed in Chapter 7. This concern is also documented in the AMCL report, which noted AMCL's concerns with SA Water seeking capital expenditure for improvements in service, rather than seeking to maintain levels of service.

The CNC and SACOSS were also concerned that the proposed level of mains replacement capital expenditure is too high.

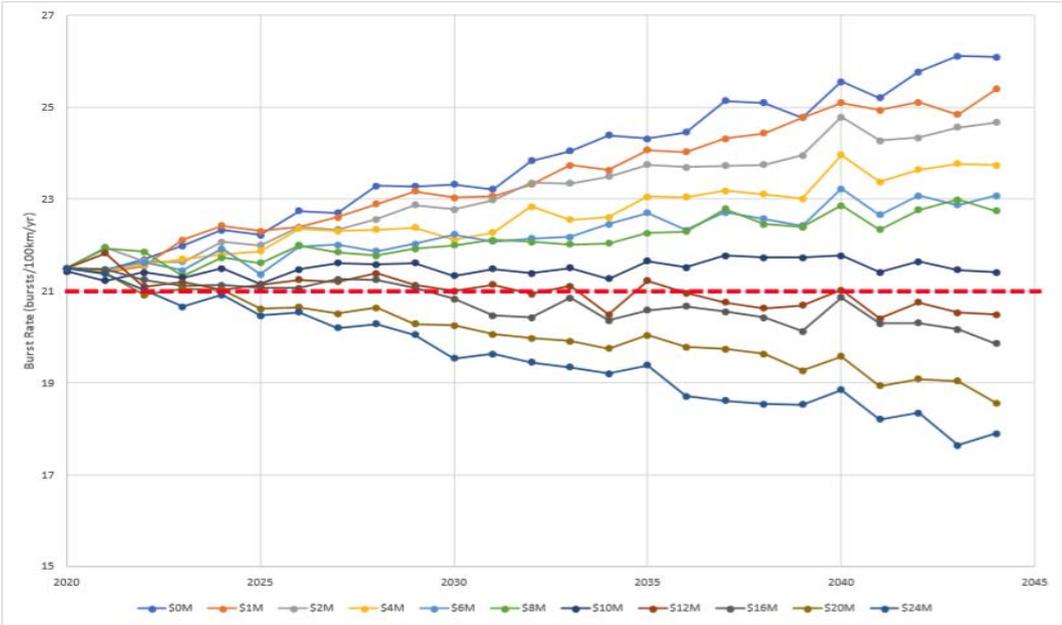
³⁹⁵ The IAM is an international professional body for asset management professionals. SA Water has been working to implement an asset management system that aligns with the IAM Framework, which draws on ISO55000. Refer <https://theiam.org/>

³⁹⁶ AMCL p. 46.

Where SA Water chooses to direct its expenditure on maintaining water network reliability will depend on its customer’s preferences for various aspects of reliability (for example, number of worst served customers, overall incidence of interruptions, or impact on traffic). Given the Commission’s draft decision to require further service standards that address these other aspects of water network reliability, SA Water may need to reconsider where expenditure is directed.

In order to confirm the level of mains replacement required to maintain network performance, the Commission has considered the output from SA Water’s Pipeline Asset and Risk Management System (PARMS) models, which inform the proposed mains replacement program. An extract of model output, predicting metropolitan mains burst rates at varying rates of annual mains replacement investment, is shown in Figure A3.1.

Figure A3.1: Predicted failure rates for metro for different levels of annual investment

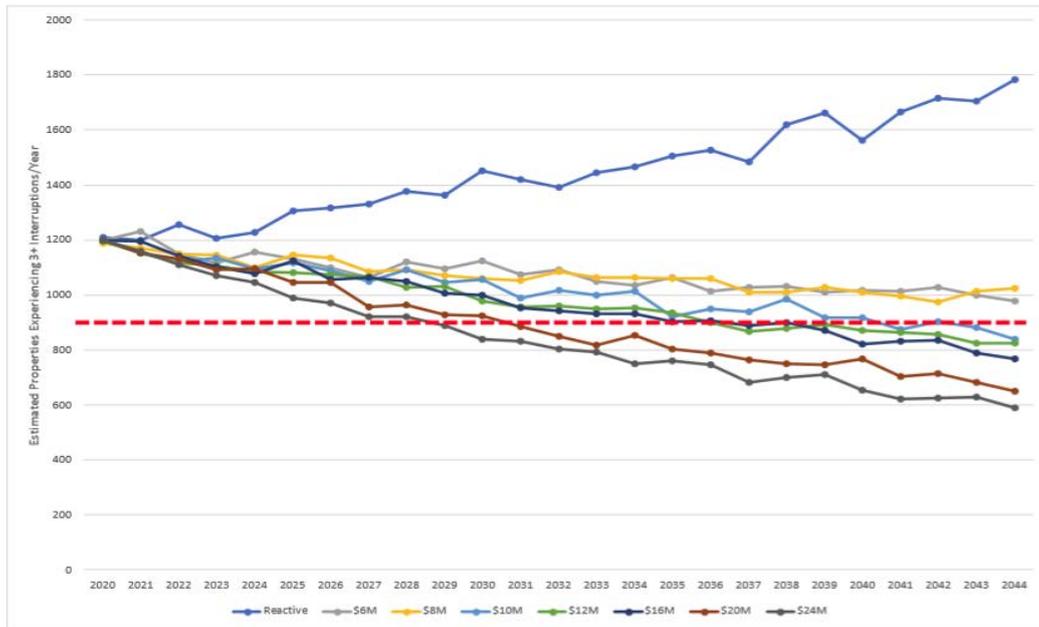


NB: Red Line is SA Water’s Metro Target

SA Water has proposed an annual capital expenditure of \$16.0 million for metropolitan water mains replacement (dark grey line). As shown in Figure A3.1, this would drive a forecast improvement in mains burst rates. A level of capital expenditure of \$10.0 million per annum is sufficient to maintain the current burst rate (dark blue line).

The PARMS output also predicts the number of properties experiencing three or more unplanned interruptions in a year, at varying rates of annual mains replacement capital expenditure, as shown in Figure A3.2.

Figure A3.2: Predicted properties experiencing 3 or more unplanned interruptions per year (metro) for different levels of annual investment



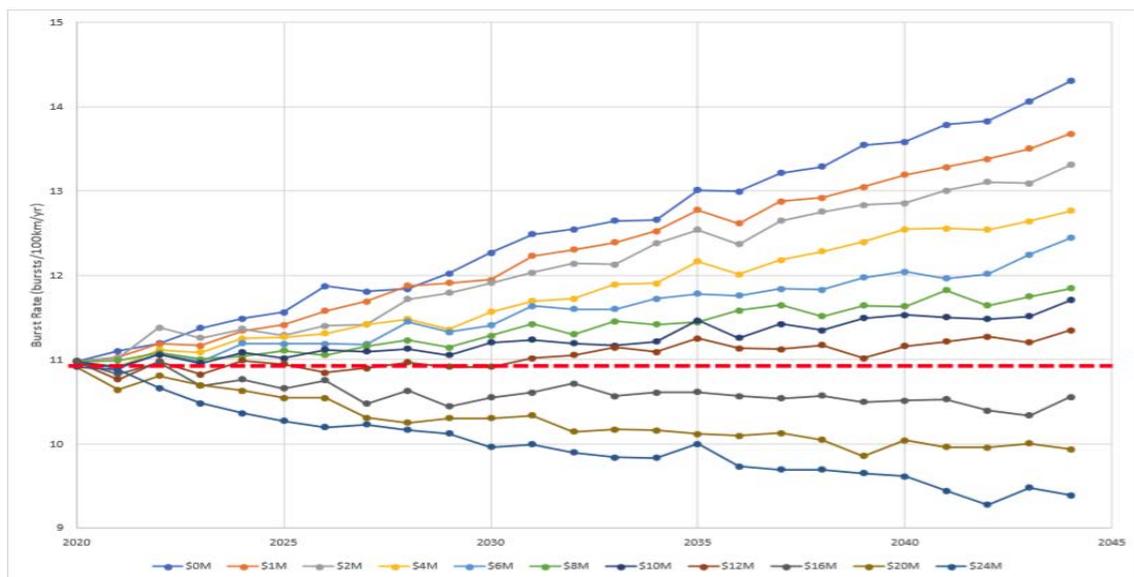
NB: Red Line is SA Water's Metro Target

As can be observed from Figure A3.2, annual capital expenditure of \$10.0 million, while maintaining the burst rate, is sufficient to drive an improvement over time in the number of metropolitan customers experiencing three or more unplanned interruptions in a year (light blue line).

Therefore, the Commission's draft decision is to reduce the proposed level of metropolitan mains replacement capital expenditure from \$16.0 million per annum to \$10.0 million per annum, a reduction over the SAW RD20 period of \$24.0 million.

The Commission also reviewed similar PARMs data for mains replacement in country areas, as shown in Figure A3.3 and Figure A3.4 below.

Figure A3.3: Predicted failure rates for country for different levels of annual investment



As can be observed from Figure A3.3, SA Water’s proposed annual capital expenditure of \$12.0 million for country water mains replacement (brown line) is sufficient to maintain the country mains burst rate until beyond 2030, and is therefore an appropriate figure for the SAW RD20 period.

Figure A3.4: Predicted properties experiencing 3 or more unplanned interruptions per year (country) for different levels of annual investment

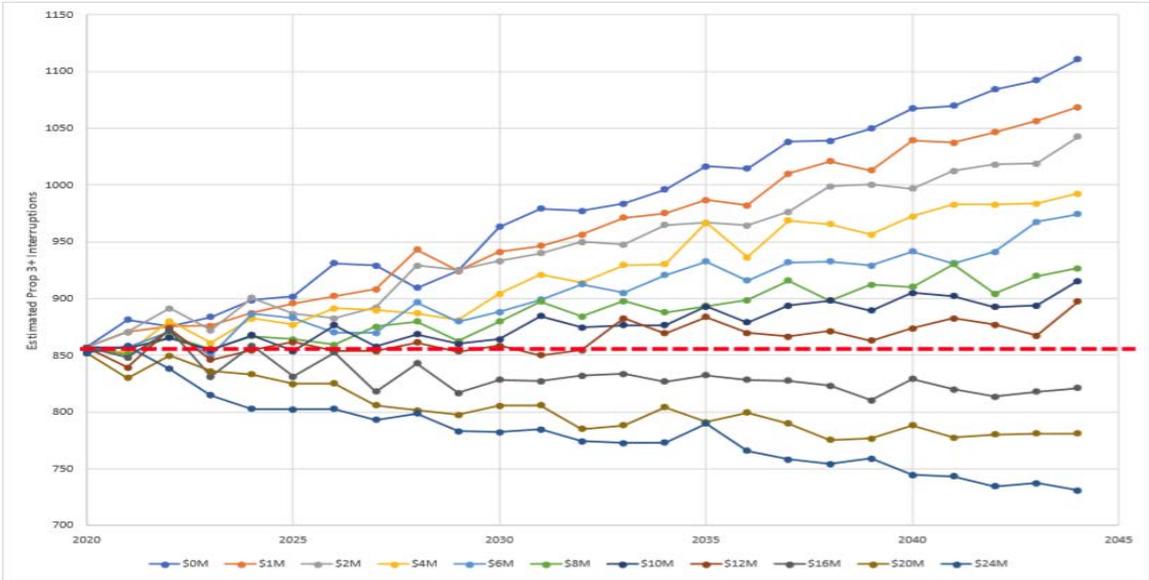


Figure A3.4 also confirms that annual capital expenditure of \$12.0 million for country water mains replacement is sufficient to maintain the number of country customers experiencing three or more unplanned interruptions in a year until beyond 2030 (brown line).

In considering the other elements of the reticulated mains network management program, the Commission accepts Cardno’s recommended adjustment of a \$13.2 million reduction to the capital expenditure for the works programmes for smart networks and pressure management. This is on the basis that SA Water should be more cautious in pursuing smart networks and pressure management initiatives until their benefits are known and able to be quantified to the extent necessary to justify and prioritise a more ambitious work program of the type proposed.

The Commission notes that many of the resource management issues that AMCL identified relate to the Allwater contract. The Commission notes that SA Water has chosen not to extend the Allwater contract beyond its current term (which ends on 30 June 2021), and will implement a revised contracting strategy going forward, which should enable it to address many of the identified issues and drive business efficiencies, both in capital expenditure and operating expenditure. Further discussion on this issue is provided in section A3.5.3.5.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will continue to monitor water network reliability. This monitoring will complement the work undertaken by the Technical Regulator under SA Water’s SRMTMP.

The Commission will introduce new service standards relating to water network reliability, including the worst served customer service standard proposed by SA Water, and a further service standard that relates to overall incidence of water network interruptions. These will be included in the revised Code.

The Commission expects that for the reticulated mains network management program, as with each of its programs and projects, SA Water will document capital and operating expenditure, the outputs that expenditure delivers, and the outcomes that expenditure achieves. This documentation is required for sound asset management.

There is scope for SA Water to improve how it documents the benefits of expenditure. As noted by Cardno, during SAW RD20 there would be benefit in SA Water:

'providing a more focused benefit realisation framework that distinguishes between outputs and outcomes and has a more defined link to the asset management objectives and service standards'.³⁹⁷

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation, as described above, to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.5.2.2 Water - Morgan to Whyalla Pipeline No. 1 Works

The draft decision is that \$61.9 million is a prudent and efficient amount to be included in SAW RD20 for renewal works on the Morgan to Whyalla Pipeline No. 1. This is the same amount as proposed by SA Water. There was no material capital expenditure in this area during SAW RD16.

This funding will allow approximately 14 kilometres of the pipeline to be renewed during the SAW RD20 period.

What has SA Water proposed?

SA Water proposed capital expenditure of \$61.9 million during SAW RD20 to renew approximately 14 km (plus some valve ancillaries) of the Morgan to Whyalla Pipeline No. 1. This pipeline (total length 358 km) was constructed in the 1940s, is largely above ground, and is one of two water supply pipelines from the River Murray at Morgan to the Upper Spencer Gulf region. Recent condition assessments have identified the need to renew and upgrade sections of the pipeline, due to the deteriorating condition of a limited number of sections.

The major driver of the works is to ensure the ongoing reliability of water supplies to townships and a number of large industrial users in the region, including Liberty Steel, which is SA Water's largest single customer.

SA Water has a technical level of service requirement for major pipelines of a failure rate of less than four failures per 100 km per year. The section of pipe (section three) where planned works are focussed during the SAW RD20 period has consistently exceeded this failure rate in recent years.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). This investment intends to reduce the current level of failures on the Morgan to Whyalla Pipeline No. 1 from five to seven failures per 100 km per year over the past five years, to within the technical standard of less than four failures per 100 km per year.

³⁹⁷ Cardno, p. 30.

Is SA Water's proposal supported by the CNC?

The CNC reviewed this project, noting that assessments of pipeline wall thickness meant that some areas of the pipeline needed early attention, and concluding that *'[t]he Committee supports this expenditure'*³⁹⁸.

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this project.

What have other stakeholders said about this issue?

Business SA, through a report prepared by its consultant, Isle Utilities, stated that a viable option may be for SA Water to simply take on more risk of loss of supply, and suggested that an economic cost benefit test should be undertaken prior to the works being approved.³⁹⁹

SAFRRA queried whether the estimated capital expenditure in the forthcoming regulatory period had been costed correctly, noting that the planned program of works will extend into other regulatory periods.⁴⁰⁰

What evidence has Cardno provided on this issue?

Cardno noted that thorough condition assessments had been carried out, covering the full length of the pipe and, based on the results of these, it considered the proposed works to be prudent. Further, Cardno also noted that detailed options analysis had been performed, and that the lowest lifecycle cost option had been selected. Based on an assessment of the proposed unit costs of the planned works, Cardno concluded that the forecast capital expenditure is efficient.⁴⁰¹

Any other relevant considerations?

SA Water has a longer term plan to renew further sections of the Morgan to Whyalla Pipeline over the next 40 years, at an estimated cost of \$686 million. This plan assumes that no other source of supply (for example, local desalination) becomes a more economic option.

Commission's Considerations

The Commission notes that the section of pipeline where work is planned over the SAW RD20 period (that is, section three from Baroota to Port Augusta) is likely to be required into the longer term under any future supply scenario. Further, the works planned for the SAW RD20 period are targeted to specific sections of pipeline with confirmed condition issues. These works are, therefore, considered prudent and do not bind SA Water in terms of its long term strategy for water supply to the Upper Spencer Gulf region.

The Commission is persuaded by the evidence from Cardno that detailed options analysis has been undertaken and that this is the lowest lifecycle cost, and that the forecast costs are efficient.

The Commission notes that no change to the current level of service has been proposed or tested, so the general requirement is that average historical levels be maintained. Further, we note that typically one in every four pipeline failures requires a mains shutdown to complete the repair, and that this has caused disruption to the water supply to large industrial users in the region on a number of occasions over the past 18 months.

³⁹⁸ Report of Independent Chair of the CNC, pp. 70-71.

³⁹⁹ Business SA, p. 12.

⁴⁰⁰ SAFRRA, p. 4.

⁴⁰¹ Cardno, p. 82, C18-C20.

Taking account of all of the above, the Commission considers that the capital expenditure in this area proposed for SAW RD20 is prudent and efficient.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, ongoing reliability of water supplies), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.5.2.3 Sewer - Mains Renewal - Wastewater Network

The draft decision is that \$45.1 million is a prudent and efficient amount to be included in SAW RD20 for renewal works on the reticulated sewer network. The allowed expenditure represents a \$0.8 million (two percent) reduction on the \$45.9 million spent on sewer renewal works in SAW RD16, and a \$22.5 million (33 percent) reduction to the amount proposed by SA Water for SAW RD20. This funding will allow approximately 60 kilometres of the sewer network to be renewed during the SAW RD20 period.

The Commission is proposing to introduce additional service standards to monitor sewerage network reliability outcomes.

What has SA Water proposed?

SA Water proposed capital expenditure of \$67.6 million during SAW RD20 in a program of work to renew approximately 89 kilometres of reticulated sewer mains within its wastewater network. This comprises \$55.2 million for sewer mains renewals, \$8.0 million for third party works on sewer mains, \$2.5 million for rising main renewals, and \$1.9 million for recycled water mains renewals, and is an increase of \$21.7 million over the forecast for the SAW RD16 period.

This program aims to maintain the serviceability of the sewer network by continuing the current practice of relining pipes rather than replacing assets after they have collapsed and failed, with all mains that have been assessed to be in 'poor' or 'very poor' condition (also known as condition grades 4 and 5 out of 5) included in the program for renewal.

SA Water has proposed two new performance standards in this area:

- ▶ sewer overflow frequency: target <29 repeat customer (internal) wastewater overflows in a five year period (suggesting its current performance is <32), and
- ▶ internal sewer overflows: target <190 (suggesting its current performance is <180).

This program is a 47 percent increase on the amount spent on this program in SAW RD16.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this program. However, three matters where general guidance was provided are relevant to its assessment.

First, guidance was provided on the need for SA Water to demonstrate that its planned capital expenditure is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

The two new customer-focused sewer network reliability service standards ‘*number of customers experiencing an internal sewer overflow in a year*’ and ‘*the number of customers experiencing more than one internal sewer overflow every five years*’, combined with the supporting technical levels of service measures provide a clear line of sight for the outcomes being sought through this capital expenditure. However, the targets appear to be based on a proposal to improve service, rather than maintain service.

Second, guidance was provided that evidence from customer engagement would be required to support expenditure proposals designed to improve levels of service, including evidence drawn from the results of willingness to pay research (Guidance Paper 3).

SA Water included three aspects of sewer network reliability in its initial willingness to pay research (the What Matters to You survey). SA Water compared the amount customers were willing to pay with delivery costs. It found that customers were:

- ▶ not willing to pay enough to cover the costs of reducing the number of sewer chokes per year below the current level, and
- ▶ not willing to pay enough to cover the costs of reducing the total number of internal sewerage overflows below current levels.

This capital expenditure proposal appears to be designed to improve current service levels by reducing the number of internal sewerage overflows, and the number of environmental overflows. However, SA Water’s willingness to pay research only supports a reduction of overflows to the environment.

Is SA Water’s proposal supported by the CNC?

The CNC noted, but did not review this capital expenditure.⁴⁰²

How well does SA Water’s proposal meet the Regulators Working Group requirements?

The EPA submission was supportive of the proposed capital expenditure to reduce environmental wastewater overflows. The EPA does not licence SA Water’s sewer network and pumping infrastructure but SA Water does have general environmental duties under the Environment Protection Act 1993, as well as more defined obligations to manage the sewer network to ensure overflows are minimised under the *Environment Protection (Water Quality) Policy 2015*. On that basis, the EPA supports, but does not specifically require, the proposed capital expenditure of \$31 million to reduce environmental wastewater overflows.⁴⁰³

What have other stakeholders said about this issue?

Uniting Communities stated that the overall proposed level of sewerage capital expenditure was:

‘acceptable and reflective of the merit good aspects of sewerage services and reflective of the need for further investment to maintain effective functioning of sewerage services’⁴⁰⁴.

What evidence has Cardno provided on this issue?

Cardno noted that the magnitude of the proposed expenditure program is based on renewing all pipe sections known or estimated to be in ‘poor’ or ‘very poor’ condition during the SAW RD20 period, without clear evidence that the consequences of failure of these pipes had been adequately considered.⁴⁰⁵

⁴⁰² Report of Independent Chair of the CNC, p.76.

⁴⁰³ EPA, p. 4.

⁴⁰⁴ Uniting Communities, p. 21.

⁴⁰⁵ Cardno, p. 81 and pp. C9-C11.

Cardno examined SA Water's Wastewater Gravity Main Decision Support Tool, which is used to prioritise renewals *within* the overall program. While Cardno found the tool to be broadly sound, it noted that the risk scoring for the 'consequence of failure' for specific sections of pipe identified for renewal within the overall program needed further refinement. It suggested that good practice is to introduce multiple variables into the scoring of consequence:

*'Diameter is a useful starting point as a proxy for population served. Other factors typically used by other utilities to assess the consequence of failure of wastewater mains include proximity to environmentally sensitive receptors such as waterways and the proximity to public spaces where public health may be impacted.'*⁴⁰⁶

Cardno noted that SA Water has acknowledged the need for further refinements to its risk-based approach, noting its intention to move towards more sophisticated consequence scoring in the future in its approach document for managing wastewater mains.

Cardno suggested that SA Water's current strategy is not appropriate, as it does not establish the risk threshold for the assets or allow for the determination of the optimal intervention timing based on the varying criticality of pipes within the broader proposed program.⁴⁰⁷ For this reason, Cardno was not convinced that SA Water is able to satisfactorily balance cost and risk, or reliably enhance the performance of the sewerage network.

Given this, and noting that there has been an improvement in sewer main performance in the current regulatory period (as measured by sewer main breaks and chokes per 100 kilometres), Cardno considered that a prudent level of capital expenditure for the SAW RD20 period is line with that undertaken in the current period, at \$46.0 million. Cardno noted that an improved understanding of risk in this asset class may lead to further improvements in performance (all else being equal) in the SAW RD20 period, without the need for a ramp-up in capital expenditure.⁴⁰⁸

On cost efficiency, Cardno suggested that, given the routine and repeatable nature of this work, and that it is an area where technology gains are evident, a five percent efficiency adjustment should be applied to the program (rather than the three percent assumed by SA Water).⁴⁰⁹ This reduces the recommended level of SAW RD20 capital expenditure in this area by a further \$0.9 million, to \$45.1 million.

Any other relevant considerations?

There are no further relevant considerations.

Commission's Considerations

The Commission notes that there was customer support, through willingness to pay studies, for some improvement in the level of sewage overflows to the environment.

However, there is not customer willingness to pay to reduce internal overflows, or sewer network chokes. This is not reflected in the proposal.

The Commission's draft decision to require a further sewer network reliability service standard for sewer overflows to the environment (as discussed in Chapter 6) will assist SA Water to be clearer about the focus of this expenditure. The Commission expects SA Water to maintain (rather than improve) sewer network reliability, but to pursue improvements in the number of environmental sewer overflows – this is what SA Water's customer engagement supports. Incorporating a specific service standard on this matter will assist SA Water to focus its expenditure.

⁴⁰⁶ Cardno, p. C10.

⁴⁰⁷ Cardno, p. 81 and p. C11.

⁴⁰⁸ Cardno, p. 81 and p. C11.

⁴⁰⁹ Cardno, p. C12.

However, the Commission is concerned that SA Water is not currently able to adequately factor 'consequence of failure' into its sewer main risk scores. This may lead to sub-optimal decisions around which mains are targeted for renewal, though it is noted that all mains within the proposed program are known or estimated to be in condition grade 4 or 5 (out of 5). The application of more sophisticated consequence scoring in SAW RD20 should assist in improving the targeting of future sewer main replacement works.

It is also important to note that there has been some improvement in sewer mains performance over the SAW RD16 period, at a level of renewal expenditure well below that proposed for SAW RD20.

Taking all of these factors into account, the Commission's draft decision is to maintain sewer mains capital expenditure for SAW RD20 in line with that of SAW RD16. Enhancements to the risk elements of the Wastewater Gravity Main Decision Support Tool, to allow better targeting of mains for renewal, should be in place before any increase in the sewer mains replacement program is sought.

In doing so, the Commission notes Cardno's evidence on cost efficiency, and the scope for further efficiency in this work area.

The draft decision is that \$45.1 million is a prudent and efficient capital expenditure amount to be included in SAW RD20 for reticulated sewer mains renewals, a reduction of \$22.5 million from SA Water's proposal. This is a \$0.8 million (two percent) decrease on expenditure in SAW RD16.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will continue to monitor sewer network reliability. This monitoring will complement the work undertaken by the Technical Regulator under SA Water's SRMTMP.

The Commission will introduce new service standards relating to water network reliability, including the two proposed by SA Water, and a further service standard that relates to sewerage overflows to the environment. These will be included in the revised Code.

The Commission expects that for the wastewater network management program, as with each of its programs and projects, SA Water will document capital and operating expenditure, the outputs that expenditure delivers, and the outcomes that expenditure achieves. This documentation is required for sound asset management.

There is scope for SA Water to improve how it documents the benefits of expenditure. As noted by Cardno, during SAW RD20 there would be benefit in SA Water:

'providing a more focused benefit realisation framework that distinguishes between outputs and outcomes and has a more defined link to the asset management objectives and service standards'.⁴¹⁰

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation, as described above, to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

⁴¹⁰ Cardno, p. 30.

A3.5.2.4 Water - Storage Tanks Renewal Reliability Program

The draft decision is that \$13.9 million is a prudent and efficient capital expenditure amount to be included in RD20 for the Water Storage Tanks Renewal Reliability program. The allowed expenditure represents a \$5.8 million (29 percent) reduction to the amount proposed by SA Water for SAW RD20.

The adjustment reflects that SA Water appears to have overestimated the risks relating to water storage tanks. SA Water should inspect the remainder of its water storage tanks during SAW RD20, to determine a complete picture of the risks associated with these assets. Following this, a revised program of works should be established to mitigate the better understanding of the risks to supply.

What has SA Water proposed?

SA Water proposed to invest \$19.7 million during SAW RD20 to upgrade and improve the condition of water storage tanks through its 'Water Storage Tanks Renewal Reliability' program.

SA Water has approximately 480 water storage tanks currently in use. Of these, SA Water has identified that 46 percent currently comply with its technical level of service (that is, are assessed as having a condition grade of at least three out of five). It has identified that 20 percent of tanks do not currently comply with the technical level of service, and does not have data for the remaining 34 percent.

This program aims to ensure the ongoing reliability of the water supply network, and contribute towards reducing the number of customers experiencing three or more unplanned interruptions in a 12 month period.

The reviewed program is a subset of a wider Water Network Structures program. For the wider program, the proposed SAW RD20 capital expenditure is \$57.3 million, which is \$20.5 million (26 percent) below the amount forecast to be spent in SAW RD16.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this program of work.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). This investment will be measured against the 'worst served customer' measure outlined above and the technical level of service measure that '100% of water storage tanks meet condition grade criteria to ensure water reliability'.

Is SA Water's proposal supported by the CNC?

The CNC did not review this capital expenditure, though it noted that \$172 million was included in RBP for water network facility renewals (including water tank renewals), and commented that the Commission may wish to explore this planned capital expenditure further.⁴¹¹

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this program of work.

What have other stakeholders said about this issue?

None of the submissions received in response to the RBP made any specific comments on this program of work.

⁴¹¹ Report of Independent Chair of the CNC, p. 71.

What evidence has Cardno provided on this issue?

Cardno reviewed SA Water's structures program, which included all planned works on water storage tanks, ahead of SAW RD16. It also reviewed one project – the tank structure renewal at Hope Valley – as part of its ex-post review of SAW RD16 capital expenditure projects.

In its 2016 report, Cardno identified and discussed the importance for the structures program of obtaining condition information, assessing the likelihood and consequence of asset failure, and developing operational strategies to mitigate risks. It recommended that SA Water address these matters during the SAW RD16 period.⁴¹²

In its report for SAW RD20, Cardno identified and expressed concern that approximately 35 percent of water storage tanks remain uninspected and that, during SAW RD16, there was a 26 percent underspend in this area.⁴¹³

Cardno concluded that SA Water overstated the level of risk related to these assets at SAW RD16. This is because of the level of underspend during SAW RD16, the failure to document a complete picture of the risks associated with these assets during SAW RD16, and the extent of delays to the works to the water storage tank at Hope Valley (examined in detail as part of the SAW RD16 ex-post review).

On the basis of the historic overstatement of risk, Cardno has recommended that the prudent level of capital expenditure for the SAW RD20 period be reduced by \$5.8 million.

Cardno reviewed both the solutions development process, and how costs are estimated for planned works. These processes were found to be sound and logical, and likely to deliver efficient cost forecasts.

Any other relevant considerations?

There are no further relevant considerations.

Commission's Considerations

The Commission accepts Cardno's evidence that SA Water needs to better demonstrate the actual level of risk across its portfolio and its understanding of risk, particularly its understanding of the potential for operational contingencies to mitigate these risks, and expects SA Water to undertake this task during SAW RD20.

The Commission accepts that an adjustment of \$5.8 million should be made to this program of works, to reflect that SA Water appears to have overstated the level of risk around these assets.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes that expenditure achieves (in this case, ongoing reliability of water supplies), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

⁴¹² Cardno, *Review of capital and operating expenditure plans of SA Water*, January 2016, p. 98, available at <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016ConsultantReport-CardnoAtkins.pdf.aspx?Embed=Y>.

⁴¹³ Cardno, pp. 81-82 and pp. C13-C17.

A3.5.3 Operating Expenditure

The draft decision is that an average of \$4.2 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operational expenditure associated with initiatives to sustain services.

This reflects a 74 percent, or \$12.2 million adjustment to SA Water's proposed additional operating expenditure of \$16.4 million per annum.

The draft decision is that an average of \$4.2 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operational expenditure associated with initiatives to sustain services. SA Water's proposal is for an average additional \$16.4 million per annum of operating expenditure across SAW RD20 to fund programs related to sustaining services.⁴¹⁴

The draft decision amount of \$4.2 million per annum is comprised of the amounts shown below (shown against SA Water proposed amounts):

- ▶ Adelaide Desalination Plant contract - \$2.4 million (\$4.4 million)
- ▶ Asset investment operating costs - \$0 million (\$4.1 million)
- ▶ Operating expenditure to support SAW RD16 IT capital investment - \$0.5 million (\$3.2 million)
- ▶ Labour cost increases - \$0 million (\$2.1 million)
- ▶ Technical training - \$0.1 million (\$1.0 million)
- ▶ IT licencing costs above inflation - \$0.6 million (\$0.6 million)
- ▶ Water network management - \$0 million (\$0.4 million), and
- ▶ Operating expenditure to support IT capital investment - \$0.4 million (\$0.4 million).

These are discussed below, with the exception of operating expenditure to support SAW RD16 IT capital investment, IT licencing costs above inflation, and operating expenditure to support IT capital investment, which are discussed in section A3.8.3.

A3.5.3.1 Adelaide Desalination Plant contract

What has SA Water proposed?

SA Water proposed an average additional \$4.4 million per annum of operational expenditure for increased costs associated with operating and maintaining the Adelaide Desalination Plant (ADP).

The following two elements make up approximately half of the proposal each:

- ▶ higher maintenance costs due to aging ADP assets, and
- ▶ an increase in the cost of energy (specifically the cost of buying RECs) to operate the ADP.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

⁴¹⁴ SA Water, *RBP*, p. 28.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4). SA Water did not provide a clear line of sight in relation to the proposal for additional expenditure to fund increasing energy costs.

Is SA Water's proposal supported by the CNC?

With the information provided to it at the time, the CNC accepted that the expenditure was unavoidable.⁴¹⁵

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this program of work.

What have other stakeholders said about this issue?

No submissions were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno recommended accepting the proposed increase for increased preventative maintenance on the basis that the ADP is aging, and would reasonably require additional operating expenditure to maintain. However, it did not consider the evidence provided by SA Water in relation to the increase in energy costs to be robust. Accordingly, Cardno's view was that the Commission should only accept the additional operating expenditure associated with increased maintenance costs.⁴¹⁶

Commission's consideration

The draft decision is an average additional \$2.4 million per annum of operational expenditure is a prudent and efficient additional amount for the operations and maintenance of the ADP during SAW RD20.

The ADP is subject to a federal funding agreement that requires 100 percent of its electricity to be offset by accredited Green Power RECs. Until now, SA Water has met this requirement through an electricity contract with AGL, which required SA Water to buy a minimum number of RECs per year at a specified price. Under the AGL contract, both the price and the number of RECs SA Water were required to buy were forecast to rise in SAW RD20. These contractual obligations would have materially increased the ADP energy costs over SAW RD20.

SA Water's proposal for additional operating expenditure to run the ADP does not appear to take into account the fact that it terminated the AGL contract, effective June 2020.

As a consequence of that termination, from the start of the new regulatory period in July 2020 SA Water will be able to limit its purchases to only the number of RECs required under the federal funding agreement, and at market prices.

The number of RECs SA Water must purchase under its federal funding agreement for the ADP will increase over SAW RD20; however, this increase is significantly less than that which had been required under the AGL contract. As SA Water will be purchasing RECs from the market, the cost associated with the required increase in RECs will not be significant (approximately 0.5 percent of SA Water's total forecast electricity costs). That cost has been allowed for in the proposed operational expenditure allowance for electricity over SAW RD20.

⁴¹⁵ Report of Independent Chair of the CNC, p. 56.

⁴¹⁶ Cardno, p. 57.

As such, the draft decision removes the additional expenditure associated with SA Water purchasing additional RECs (beyond those it needs to fulfil its federal funding agreement obligations) at a higher price during SAW RD20.

What is the Commission proposing to monitor throughout the SAW RD20 period?

No specific monitoring is proposed for this initiative. However, the Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, ongoing reliability of the ADP), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.5.3.2 Asset investment operating costs

What has SA Water proposed?

SA Water proposed an average additional \$4.1 million per annum of operational expenditure for a range of programs to sustain its network and ancillary assets:

► **Prioritised investigations and maintenance of major non-pipeline assets - \$3.2 million**

This additional operating expenditure is proposed to fund additional inspections and major maintenance on SA Water's water infrastructure to maintain service levels and make better investment decisions.

► **Maintenance on ancillaries in the sewerage network - \$0.5 million**

This additional operating expenditure is proposed to support a proposed \$79 million capital investment across SAW RD20 to renew sewer networks and facilities, to reduce blockages and risk of collapse.

► **Condition investigations across pumping mains - \$0.2 million**

This additional operating expenditure is proposed to support a \$128 million capital investment in SA Water's major pipelines and trunk mains for renewals.

► **Major pipeline ancillary asset refurbishment - \$0.2 million**

This additional operating expenditure is proposed to support a \$128 million capital investment in SA Water's major pipelines and trunk mains for renewals.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

There is a lack of sufficient evidence supporting these expenditure profiles and no line of sight between proposed expenditure and anticipated outcomes and outputs.

Is SA Water's proposal supported by the CNC?

The CNC did not challenge the need for this expenditure, noting that the proposed inspections and maintenance of assets ancillary to the pipelines and inspections of wastewater pumping mains currently have limited or no inspections and that failures would cause service disruptions.⁴¹⁷

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this program of work.

What have other stakeholders said about this issue?

No submissions were received on the operating expenditure component of these programs of work.

What evidence has Cardno provided on this issue?

Cardno noted that these operational expenditure increases were, in general, not supported by detailed business cases or alternative justifications, and were therefore difficult to review with confidence.⁴¹⁸ It advised that SA Water had not been able to provide sufficient evidence to justify increases to its current levels of expenditure, and suggested that these activities did not appear to be new or additional. Rather, SA Water's existing operating expenditure should be reprioritised to accommodate the required activities.⁴¹⁹

Commission's consideration

The draft decision is that insufficient evidence has been provided to support the proposal for additional operating expenditure for asset investment initiatives to sustain services to customers during SAW RD20.

SA Water's asset management plans demonstrate that SA Water is making progress on embedding improved asset management methodologies, but the Commission has not been able to identify sufficient evidence to support the proposed additional operating expenditure.

The Commission understands that additional operating expenditure for investigations and maintenance could lead to enhanced asset management practices, including improved asset condition, and more timely maintenance that will increase asset life and decrease the risk of service disruption. However, SA Water has not clearly identified the benefits of this specific expenditure, nor has it outlined what activities on what assets would be funded by this proposal. As such, a clear line of sight between the expenditure and the proposed outcomes and benefits to customers has not been presented.

Additionally, without having received from SA Water an explanation as to why these works have not previously been undertaken, and why the existing operating expenditure for investigation and maintenance cannot be reprioritised to deliver this program of works, the case for this proposed additional expenditure has not been made out. A notable exception is the business case for SA Water's proposed wastewater network overflows management program, which provides clear and detailed information to support the business case in that area.

The Commission accepts Cardno's evidence that SA Water has not clearly aligned the proposed activities under this proposed asset investment with an associated rationale and specific explanation or justification. Without further evidence, the Commission considers that expenditure for these activities should be found within SA Water's existing allowance through reprioritisation.

⁴¹⁷ Report of Independent Chair of the CNC, p.55.

⁴¹⁸ Cardno, p. 55.

⁴¹⁹ Cardno, p. 56.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, ongoing reliability of water supplies), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.5.3.3 Labour cost increases

What has SA Water proposed?

SA Water proposed an average additional \$2.2 million per annum of operational expenditure to cover the costs of providing wage increases above the CPI for its staff. This proposal applies to all internal employees.

To support its proposal, SA Water provided forecasts from the RBA and Mercer Consulting of the WPI exceeding CPI over the SAW RD20 period.

SA Water's proposal has two underlying drivers:

- ▶ in the renegotiation of its enterprise bargaining agreement, SA Water anticipates strong argument for an above CPI wage increase to compensate employees for the forecast labour productivity growth (demonstrated by the forecast gap between WPI and CPI), and
- ▶ offering above-CPI wage increase is key to attracting and retaining talent, improving internal Engagement and Culture indexes, and increasing labour productivity.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this proposal.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

SA Water provided a relatively clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC noted that the increase would consume 50 percent of the proposed efficiency dividend, even though none appeared to be attributable to workforce productivity growth.⁴²⁰

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this program of work.

What have other stakeholders said about this issue?

Uniting Communities suggested that SA Water's salary increases should be kept in line with those of the majority of its customers and so be no greater than CPI in SAW RD20.⁴²¹

⁴²⁰ Report of Independent Chair of the CNC, pp. 55-56.

⁴²¹ Uniting Communities, p. 20.

What evidence has Cardno provided on this issue?

Cardno's recommendation was that above inflationary salary increases should be self-funded through productivity gains.⁴²²

Commission's consideration

The draft decision is that no additional operational expenditure is required to allow SA Water to manage its labour costs in SAW RD20. This is consistent with the Commission's decision in SAW RD16, as SA Water has not provided any new evidence to suggest that it is unreasonable to expect an efficient business to manage its total labour costs within the CPI envelope, with any above CPI wage rises paying for themselves in productivity gains.

SA Water's costs are controllable

Labour costs are the single largest cost line of SA Water's normalised base year operating expenditure at \$122 million, which is 26 percent of its total controllable operating expenditure.

There are two key components to SA Water's labour costs:

- ▶ the price of labour (wages and associated on costs such as superannuation, leave and personal injuries insurance), and
- ▶ the quantity of people employed (or hours worked).

SA Water's total labour costs are a function of these two factors, and to a large extent, the effect of any labour productivity. SA Water should be able to adjust these elements to ensure that total labour costs are held within the limits of the CPI envelope. SA Water's ability to pay above CPI wages and stay within its labour cost allowance will depend on how effectively it incentivises labour force productivity.

Productivity and the efficient price of labour

SA Water has stated that its labour prices have historically risen at a rate higher than the CPI and has pointed to evidence that wages, through the WPI, have done the same. The Commission accepts this argument is persuasive over the long term.

It considers that, in the long term, this is due to the fact the growth in the price of labour can be expected to reflect growth in consumer prices and growth in labour productivity. This is because workers expect compensation for price inflation, and competition for labour can result in workers receiving a share of improvements in their own productivity. The Commission acknowledges that this is a common explanation cited for why indicators of wages growth, such as the WPI, often exceed consumer price growth. Indeed, SA Water's Enterprise Bargaining Agreements have historically produced wages that exceeded CPI outcomes.

However, in the short run, the Commission considers that the growth in the price of labour can be expected to vary with, among other things, economic conditions (namely spare capacity in the labour market), short and long term inflation expectations, and bargaining power. Accordingly, while the gap between WPI and CPI may be indicative of labour productivity growth, it may at times reflect other factors. For instance, slower economic growth and spare capacity in the labour market may limit real wage demands in wage bargaining.

There is evidence that SA Water is effective at achieving these productivity gains over the longer term. Over the previous and current periods, it has managed its workforce within the CPI envelope despite growth in its full time employee numbers. For example, SA Water's annual reports show relatively stable

⁴²² Cardno, p. 60.

outcomes for labour costs over the previous and current regulatory periods.⁴²³ Additionally, since 2014, SA Water's Enterprise Bargaining Agreements have included wage increases of between two and three percent, which is on average 0.6 percent per annum above CPI.

SA Water has demonstrated that it is able to manage its labour costs in a manner that meets employee and market expectations within the CPI envelope. The Commission considers that it is in the long-term interests of consumers that SA Water continue to be incentivised to manage its controllable labour costs within CPI. By driving labour force productivity over the longer term, SA Water will continue to have the capacity to pay above CPI wages to attract and retain talent, and improve employee engagement.

To address the potential for 'double counting' efficiencies, the Commission has removed SA Water's efficient base year labour costs from the calculation of the 0.5 percent ongoing efficiency target for operational expenditure.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance.

A3.5.3.4 Technical training

What has SA Water proposed?

SA Water proposed an average additional \$1 million per annum of operational expenditure to improve the management and delivery of technical training and assessment across all operational areas (approximately 400 staff).

SA Water's technical training proposal involves:

- ▶ establishing a Technical Training Centre of Excellence internal to SA Water
- ▶ undertaking an initial audit of current training gaps and risks
- ▶ developing an Integrated Operational Technical Capability Framework, and
- ▶ developing and delivering a range of internal training.

The majority of the additional operating expenditure relates to funding for eight full-time employee (equivalents) to deliver this training via the Technical Training Centre of Excellence. The training delivered would be additional to the current technical training program, which relies largely on Registered Training Organisations to deliver the 'National Water Package' modules to SA Water employees.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was, however, provided on the need for SA Water to demonstrate that its planned investment is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

SA Water provided a relatively clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

⁴²³ SA Water's annual reports are available at <https://www.sawater.com.au/about-us/annual-reports>

Is SA Water's proposal supported by the CNC?

The CNC was sceptical about the efficiency of this proposal, specifically of the need to employ an average of an extra eight full-time employee (equivalents). However, the CNC also put the view that it lacks the specialist knowledge to challenge this number.⁴²⁴

The CNC accepted the proposal on the understanding that there should be savings in operational expenditure from fewer injuries and greater productivity, the benefits of which will flow through to customers.⁴²⁵

How well does SA Water's proposal meet the Regulators Working Group requirements?

None of the members of the Regulators Working Group provided any specific comments on this program of work.

What have other stakeholders said about this issue?

No submissions were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno was of the view that SA Water had not provided a robust justification for this scale of increase in training expenditure per capita, noting that it is targeted at 376 field personnel, and it had not identified or quantified the productivity benefits that it expected to arise from this program.

Cardno recommended no net increase to SA Water's technical training costs, as the program should either pay for itself through identifiable and quantifiable productivity gains elsewhere in the business or be reprioritised within the current training budget.⁴²⁶

Commission's consideration

The draft decision is that an average additional \$0.15 million per annum of operational expenditure should be sufficient to allow for targeted technical training for field staff during SAW RD20.

The Commission does not consider the initiative to be efficient in its current form, but expects that an average additional \$0.15 million per annum would allow SA Water to conduct a key aspect of this program.

- ▶ There are three tiers for the proposed training program:
- ▶ Tier 1 training deals with identified high-risk standard operating procedures (SOPs)
- ▶ Tier 2 is proposed to develop training on core technical activity SOPs, and
- ▶ Tier 3 training is focused on site specific SOPs.

The additional expenditure will allow for only Tier 1 training to proceed but not Tier 2 or Tier 3.

SA Water stated that it is undertaking a pilot in 2019-20 (Phase 1), at a cost of \$1 million, that will develop the integrated technical capability framework, and develop and deliver training to the Customer Field Service Group (155 staff) on Tier 1 - high risk activity SOPs. As this program of training will have largely been established prior to SAW RD20, the Commission considers the roll-out of training on high risk activity SOPs should be continued and extended to the rest of the field services group (an additional 220 staff) during Phase 2 in 2020-21.

⁴²⁴ Report of Independent Chair of the CNC, p. 55.

⁴²⁵ Report of Independent Chair of the CNC, p. 55.

⁴²⁶ Cardno, p. 60.

This training would require an investment to initially develop and deliver before becoming embedded into SA Water's business as usual safety and compliance training program. Accordingly, the Commission has assumed an amount of \$0.35 million for 2020-21 to supplement the existing technical training budget for that year and for two additional FTEs to conclude developing the training and to support and deliver the training. As the training program should be fully developed by 2022-23, the Commission expects \$0.2 million for that year would be sufficient to support two FTEs to conclude the initial delivery and embed this training into SA Water's existing safety and compliance training program.

The Commission considers this investment prudent and efficient, as it should have a direct impact on reducing SA Water's current and future incident rates across safety, water quality and the environment, and improve SA Water's legal and regulatory compliance.

What is the Commission proposing to monitor throughout the SAW RD20 period?

There is scope for SA Water to improve how it documents the benefits of expenditure. What is needed is clear documentation of the outputs that expenditure delivers, and the outcomes that expenditure achieves (for customers, efficiency dividends).

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation, as described above, to be available to support an ex-post review of all expenditure projects and programs at the end of SAW RD20.

For this program, the Commission would expect to see evidence that this expenditure has assisted SA Water meet its reduced lost time and safety incident targets across SAW RD20.

A3.5.3.5 Water network management

What has SA Water proposed?

SA Water proposed an average additional \$0.4 million per annum of operational expenditure for water network management. This expenditure is to support a total capital expenditure of \$144 million over SAW RD20 on SA Water's reticulated mains network management program.

A description of the proposed program of capital expenditure and its outcomes is provided at A3.5.2.1.

How well does SA Water's proposal meet our guidance on this issue?

An assessment is provided at A3.5.2.1.

Is SA Water's proposal supported by the CNC?

The CNC did not specifically comment on the operational expenditure component of this proposed program of works.

However, as stated in A3.5.2.1, the CNC was sceptical of the proposed level of capital expenditure on mains replacement. It was, however, supportive of the proposed works on smart networks, pressure management, and valve installations.⁴²⁷

How well does SA Water's proposal meet the Regulators Working Group requirements?

There were no specific comments on the operational expenditure component of this proposed program of works.

⁴²⁷ Report of Independent Chair of the CNC, pp.68-70.

However, as stated in A3.5.2.1, the Technical Regulator submitted that it was supportive of smart network infrastructure, and considered increasing the number of valves in the network and undertaking pressure management trials to be worthwhile.⁴²⁸

What have other stakeholders said about this issue?

Several submissions were received from stakeholders in relation to the significant capital investment program of works associated with this operating expenditure; these are summarised in A3.5.2.1.

There were no specific submissions on the operating expenditure component.

What evidence has Cardno provided on this issue?

Cardno reviewed both the proposed capital and operating expenditure for this proposal; its recommendation in relation to the capital expenditure proposal is provided in A3.5.2.1.

In relation to operating expenditure, Cardno recommended that no net increase to operating expenditure be allowed, as this kind of activity should be considered business-as-usual.⁴²⁹

Commission's consideration

Taking account of Cardno's evidence, the draft decision is that the proposed additional operating expenditure to support the reticulated water mains network management program is not prudent and efficient.

Further, the Commission notes that SA Water's \$144 million capital expenditure business case for the water reticulation network management program identifies an average \$0.15 million operational expenditure saving per annum, which appears to be inconsistent with this proposal to increase average additional operational expenditure by \$0.4 million per annum for this program of works.

As detailed in A3.5.2.1, the Commission has reduced the capital expenditure for this program to a level to 'maintain' the current level of service for metropolitan water customers, rather than 'improve' the level of service, as proposed by SA Water. The \$0.15 million annual operating expenditure savings identified in the business case relate to a reduction in mains repairs, as a result of the proposed improved level of service. Consistent with funding a capital program to a 'maintain' level of service, the Commission has not made any adjustment to operating expenditure related to this program.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor a range of factors associated with the related capital investment program; these are outlined in A3.5.2.1.

A3.6 SAW RD20 expenditure for improving services

The draft decision is that \$164.6 million⁴³⁰ is a prudent and efficient amount to be included in SAW RD20 for capital expenditure to improve services. This represents a 47 percent increase on the \$112.3 million of capital expenditure to improve services in SAW RD16.

Further, the draft decision is that an average of \$5.9 million per annum is a prudent and efficient amount to be included in SAW RD20 for operating expenditure associated with initiatives to improve services. This operating expenditure is in addition to the existing operating expenditure included in SA Water's normalised base year.

⁴²⁸ Technical Regulator.

⁴²⁹ Cardno, p. 60.

⁴³⁰ Before the application of catch-up and continuing efficiencies

The draft decision reflects a \$113.9 million adjustment to SA Water's proposed capital expenditure to improve services of \$278.5 million, and a \$2.4 million adjustment to SA Water's proposed additional operating expenditure of \$8.3 million per annum.

A3.6.1 Introduction

SA Water characterises investments to improve services as those '*customers told us they would like, and are willing to pay for.*' SA Water supports its proposals under this driver with results of customer willingness to pay research.⁴³¹

In SAW RD16, SA Water's capital expenditure to improve services was \$112.3 million. Operating expenditure for this purpose was included in the efficient base year. In total, SA Water propose \$278.5 million of capital expenditure and an additional \$33 million (or an average \$8.3 million per annum) of operating expenditure in SAW RD20 period to improve services.

The Commission has assessed SA Water's proposal by examining a sample of capital expenditure initiatives, which together represent \$194.7 million (70 percent) of proposed expenditure. This section presents assessments of four of these initiatives (with IT capital expenditure to deliver improvements to customers discussed in section A3.8.2), before discussing operating expenditure.

A3.6.2 Capital expenditure

A3.6.2.1 Metropolitan water quality improvements

The draft decision is that \$80.8 million is a prudent and efficient amount to be included in SAW RD20 for the metropolitan water quality projects. This is 77 percent more for water quality improvements than was spent in SAW RD16).⁴³²

SA Water proposed \$122.2 million of capital expenditure for metropolitan water quality improvements. A \$41.4 million adjustment has been made to reflect the Commission's decision, that it is prudent to undertake the works over six years, rather than four.

The stated key driver for this increased level of investment is responding to customer willingness to pay for improved service. Accordingly, it is important for SA Water to undertake further work to establish the baseline performance from both a technical/scientific analysis of the water produced and how it is intending to accurately monitor and measure customer perceptions of water quality directly attributable to this investment.

What has SA Water proposed?

SA Water proposed to invest \$122.2 million during SAW RD20 to improve metropolitan water quality. It is comprised of two interrelated projects: Happy Valley water treatment plant upgrades (\$68.6 million) and introduction of chloramination (\$53.6 million), to be delivered over four years and completed by the end of SAW RD20.

⁴³¹ SA Water, *RBP*, p. 31.

⁴³² The amount allowed for SAW RD20 includes \$81 million for metropolitan water quality improvements, \$14 million for managing water quality at reservoirs, and \$8 million for smaller improvements. The total amount spent on water quality improvements in SAW RD16 was \$58 million, which included metropolitan and regional expenditure across source water, treatment plants and networks.

The objective of this program is to improve the taste of drinking water in metropolitan Adelaide by changing current disinfection and filtration practices, with a particular focus on improving customers' perceptions of water quality, noting that while 80 percent of its metropolitan Adelaide customers drink mains water, only 49 percent are satisfied with its taste, citing the chlorine, earthy or musty taste as the main issues.

At the Happy Valley water treatment plant, SA Water proposed to change its disinfection practices and filtration practices. This will address the impact of algae on water aesthetics (which primarily affects taste).

Chloramination is a disinfection technique that is an alternative to chlorine disinfection. It improves the taste and odour of water and has public health benefits (primarily related to maintaining disinfection to the ends of network). Its introduction involves works at the five major water treatment plants in Adelaide.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

Broadly, SA Water's proposal meets the Commission's guidance. It is supported by the results of customer willingness to pay research, with the majority of customers accepting project costs. Its outputs and outcomes are related to the SEM 'customer perception of overall quality of water' and the associated technical level of service measures.

However, the exact outputs of each project (impact on the technical level of services, the various water aesthetics parameters), and exact expected outcome (impact on customer perception of water quality) are not specified, nor is a related service standard proposed for inclusion in the Code.

Is SA Water's proposal supported by the CNC?

The CNC's view was that both parts of the proposal should be undertaken together to achieve efficiencies, but noted that commenting on staging to reduce the impact in SAW RD20 was beyond its expertise.⁴³³

The CNC also outlined concerns regarding of the use of willingness to pay research to establish customer support, and was critical of its results being used to justify projects without further consultation.⁴³⁴

How well does SA Water's proposal meet the Regulators Working Group requirements?

SA Health supports the introduction of chloramination to metropolitan Adelaide as a reasonable measure to improve drinking water safety. Chloramination will ensure disinfection is maintained at the ends of the network, which reduces risks to public health. It is recommended by the ADWG. However, SA Health does not mandate introduction of chloramination.

What have other stakeholders said about this issue?

Business SA did not think this capital expenditure is justified, particularly in the absence of specific demand from SA Health. Its view was that major capital projects to further improve water quality in metropolitan Adelaide are unnecessary in light of high water prices.⁴³⁵

⁴³³ Report of Independent Chair of the CNC, p. 62.

⁴³⁴ Report of Independent Chair of the CNC, pp. 35-37.

⁴³⁵ Business SA, p. 2 and p. 14.

Consumers SA supported the change to chloramination for disinfection.⁴³⁶

SACOSS asked that in assessing the proposed Happy Valley water treatment plant upgrade, the Commission evaluate the level of complaints about the aesthetics of water supplied by that plant, and the level and significance of cost savings from completing the two projects together, rather than postponing the Happy Valley upgrades.⁴³⁷

Uniting Communities noted that the elements of this capital expenditure associated with improved disinfection of water are appropriate, but that the \$50 million of expenditure at Happy Valley to improve water aesthetics:

*'is in the nice to do not necessary to do category and so could be removed from the capital expenditure budget to reduce costs to bill paying customers.'*⁴³⁸

What evidence has Cardno provided on this issue?

Cardno has recommended an adjustment to reduce the capital expenditure for this program of works by \$41.4 million.⁴³⁹ This recommended adjustment relates only to the timing for this program. It has recommended that it is prudent for SA Water to deliver these works across six years rather than the four proposed, to enable it to better learn from and overcome the technical challenges expected from a rollout of this size. It would also allow SA Water to be able to better define the benefits to be achieved and to document how these benefits have actually been realised.⁴⁴⁰

Cardno considers that the proposed costs are based on the best available information at this time, but that efficient costs will only become clear following a procurement process.⁴⁴¹

However, Cardno's recommendation also confirms that SA Water is already exceeding some of the requirements of the drinking water guidelines and that it is important for SA Water to revisit its interpretation of the guidelines relating to aesthetic parameters and establish a scientific basis for the pre and post position for investment. It suggests that SA Water's intention to undertake focused customer surveys before and after the investment, alongside water quality testing, is important for documenting the benefits of this program.⁴⁴²

With regard to whether or not the two parts of this project should be undertaken together, Cardno considers that the Happy Valley water treatment plant upgrade has some disinfection benefits, and so will make the chloramination task easier. It will mean there is no need to install a chlorine contact tank (at an indicative cost of \$5 million - \$20 million), and that the ongoing chemical dosing operating expenditure of chloramination will be lower. Pursuing the Happy Valley water treatment plant upgrade reduces the cost of introducing chloramination.⁴⁴³

Any other relevant considerations?

There are no further relevant considerations.

Commission's Consideration

Support for undertaking this program is mixed. There is some support for undertaking each component of the project and there are some benefits to pursuing the components at the same time.

⁴³⁶ Consumers SA, p. 2.

⁴³⁷ SACOSS, p. 12.

⁴³⁸ Uniting Communities, p. 22.

⁴³⁹ Cardno, p. 87 and pp. C31-C37.

⁴⁴⁰ Cardno, p. C35.

⁴⁴¹ Cardno, p. C36.

⁴⁴² Cardno, p. C32.

⁴⁴³ Cardno, p. 87 and pp. C35-C36.

While this investment is not required to meet the requirements of the ADWG, it is expected to provide wider public health and environmental benefits. There is clear support for introducing chloramination from SA Health, the CNC, and Consumers SA. However, aesthetic improvements that do not have public health benefits are not supported by SACOSS, Business SA or Uniting Communities. These reservations need to be considered alongside the results of the willingness to pay research which showed that the majority of customers are willing to pay for the costs of the metropolitan water quality projects (\$124 million) to improve the taste of drinking water.⁴⁴⁴

On balance, the Commission is proposing to accept that both elements of the metropolitan water quality program are prudent and efficient, subject to the adjustments recommended by Cardno to extend the rollout of the program across six years rather than four. Cardno's reflections on the use of the asset management system to affect outcomes it cannot reasonably control is also of relevance to this program.

At this point in time, SA Water has not adequately described the scientifically-measurable aesthetic improvements it is expecting to achieve through this program as distinct from the goal of achieving an improvement in customer perceptions of water quality. The latter is considered particularly important, as it is a key driver for this investment, and it will be difficult for SA Water to demonstrate how a change in customer perceptions of water quality, (whether up or down) is directly associated with this investment.

For example, SA Water has advised that there have been 702 complaints about earthy or musty water in Adelaide over the last five years, which are linked with algal outbreaks (which affect water aesthetics). However, the extent to which these complaints were linked to scientifically-measurable issues with the quality of the water, as opposed to customer perceptions about the quality of the water, are unclear.

The Commission will require SA Water to do further work to establish the pre-investment baseline for drinking water quality performance on both of these measures to allow for better tracking of the impact of this investment. This is considered important, as the stated key driver for this increased level of investment is responding to customer willingness to pay for improved service, which SA Water would reasonably accept it must be accountable to its customers for delivering.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor aesthetic improvements with respect to the scientifically-measurable technical outputs from customer perceptions of water quality, with the latter being a strong driver of SA Water's proposed investment in this area. This monitoring will complement the work already undertaken by SA Health to monitor public health impacts.

Further, the Commission proposes to require that SA Water develop, consult on, and propose a service standard for inclusion in the Code that relates to water aesthetics.

A3.6.2.2 Upgrades to non-potable water supplies

The draft decision is that it is not prudent to include an amount in SAW RD20 for upgrades to non-potable water supplies. SA Water proposed \$37.7 million of capital expenditure to upgrade non-potable water supply for 340 properties.

The Commission shares the concerns raised by the CNC, and echoed by SACOSS, that the extent of SA Water's obligation to supply, and the broader matters of where and how potable water supplies are provided and funded, are matters of South Australian Government policy.

⁴⁴⁴ Marsden Jacobs Associates, *SA Water customer willingness to pay survey*, May 2019, included as Appendix C to SA Water's RBP.

If required, in order to be consistent with Government policy, the Commission will reconsider expenditure proposals for upgrading non-potable supplies during SAW RD20.

What has SA Water proposed?

SA Water has proposed upgrades to provide potable water supply at 340 properties across 19 systems that currently have a non-potable water supply. Seventeen of these systems are in the upper north of South Australia. The initial focus is on northern railway towns, with the remaining 310 properties to be addressed during SAW RD24.

SA Water identified a range of options for providing upgrades, which include: water carting and storage, extension of pipelines, desalination, and point of use treatment. It stated that the selection of which properties to upgrade has been informed by multi-criteria analysis, conducted in September 2019, and that the analysis considered water quality impact, rainwater availability, water security, community resources, economic potential, current cost of water and cost of upgrades.

How well does SA Water's proposal meet our guidance on this issue?

In October 2018, the Commission provided guidance on the nature of evidence needed to support expenditure designed to improve services in response to customer demand. That guidance included the use of willingness to pay research (Guidance Paper 3). SA Water included upgrades to non-potable supplies in both stages of its willingness to pay research to inform SAW RD20. That research found the majority of customers surveyed would accept project costs of \$37 million to upgrade supplies for 340 properties.

Is SA Water's proposal supported by the CNC?

The CNC is opposed to this expenditure proposal. It considers that the supply of potable water to people living in areas where SA Water does not currently supply potable water is a matter for South Australian Government policy, and a project that should be funded by South Australian Government.⁴⁴⁵ Its view is that:

*'what is required is a considered approach by the Government to this issue and an orderly set of priorities, rather than for SA Water to be pushing ahead with a partial solution at very considerable aggregate cost to its customers and no cost to the Government, but with every possibility that expectations will be raised in other locations across the State currently not served by SA Water.'*⁴⁴⁶

Further, the CNC's view on SA Water's willingness to pay research, used to establish that the majority of customers would accept the cost of \$37 million to upgrade non-potable supplies, is that:

*'[t]he wrong people have been asked what they would be prepared to pay and, in any case, the issue would be better addressed by presenting customers with the full context and an opportunity to consider other options.'*⁴⁴⁷

How well does SA Water's proposal meet the Regulators Working Group requirements?

As these supplies are identified as non-potable, SA Water is not required to meet SA Health's minimum regulatory requirements for drinking water under the Safe Drinking Water Act 2011. SA Health allows SA Water to continue to supply these systems on the basis that there are regular notices and advice to customers that the water is not of drinking water quality.

⁴⁴⁵ Report of Independent Chair of the CNC, pp. 66-67.

⁴⁴⁶ Report of Independent Chair of the CNC, pp. 66-67.

⁴⁴⁷ Report of Independent Chair of the CNC, pp. 64.

There is no obligation for SA Water to upgrade non-potable supplies. Its only obligation is to maintain the current level of service (as set out in the Water Industry Act section 18(6)(a)).

What have other stakeholders said about this issue?

Business SA did not support this proposed expenditure. Its view is that:

'[w]hile there may be merit in reducing prices to customers who are not receiving potable quality water, expenditure of this quantum may not be the most efficient way to achieve the desired result and Isle Utilities [consulting to Business SA] has raised concerns around significant uncertainty regarding customer's willingness to subsidise this project'.⁴⁴⁸

Consumers SA had the view that customers who receive a non-potable supply should not pay the same amount as other SA Water drinking water customers, either through a rebate or for the cost of buying potable water to be subsidised.⁴⁴⁹

SACOSS agreed with the CNC that a considered approach by the South Australian Government is required, rather than a partial response at a considerable cost to customers. It was concerned that:

'SA Water's 'partial solution' to this broader complex issue, which is being driven solely by customer priorities identified by SA Water, may lead to further inequities in water supply in regional and remote South Australia'. It recommended that the Commission 'liaise with experts, Government and SA Water to investigate alternative approaches to addressing this pressing issue'.⁴⁵⁰

Uniting Communities did not support this proposed expenditure as presented. Its view was that:

'more direct engagement with the impacted customers about effective and efficient solutions to the actual issues they confront would more likely reduce the costs to be shared by all customers. We cannot support this proposal as presented'.⁴⁵¹

What evidence has Cardno provided on this issue?

This project was not included in the sample of SAW RD20 capital expenditure proposals that Cardno examined.

Any other relevant considerations?

Properties connected directly with the trunk mains that supply Adelaide with River Murray water have received non-potable water since SA Water stopped disinfection near the River Murray, and replaced it with treatment close to Adelaide in the late 1990s and early 2000s. Prior to that, they received potable water.

Following consultation, approximately 350 of these properties received compensation from SA Water for this change in service level. Details of that compensation have been provided to the Commission.

Commission's Consideration

The Commission notes that, through its willingness to pay research, SA Water has established broad customer support for a program of work to improve the quality of water provided for remote South Australian communities.

⁴⁴⁸ Business SA, p. 2.

⁴⁴⁹ Business SA, p. 2.

⁴⁵⁰ SACOSS, p. 14.

⁴⁵¹ Uniting Communities, p. 22.

However, the Commission notes that there was broad opposition for this proposal from stakeholders, over issues of both cost, and wider public policy considerations. Notably, concerns were raised by the CNC, and echoed by SACOSS, that the extent of SA Water's obligation to supply, and the broader matters of where and how potable water supplies are provided, and funded, are matters of South Australian Government policy that are likely to require wider consideration.

The Commission agrees that these are matters of South Australian Government policy, and will, where appropriate, liaise with the South Australian Government to help inform policy development regarding SA Water's obligation to supply, and where and how potable water supplies are provided and funded.

The Commission considers that, in its current form, this program proposes a partial solution that provides limited incremental benefits to a small number of customers at a very high cost per directly-benefitting customer.

Having regard to these considerations, the draft decision is to remove the \$37.7 million for upgrades to non-potable supplies.

If required, in order to be consistent with South Australian Government policy, the Commission will reconsider expenditure proposals for upgrading non-potable supplies during SAW RD20, using the contingent project review mechanism described in Chapter 4.

What is the Commission proposing to monitor throughout the SAW RD20 period?

No specific monitoring proposed.

A3.6.2.3 Regional water quality improvement program

The draft decision is to remove the \$24.8 million proposed for the regional water quality improvement program because SA Water has not established that it is prudent.

While the program and level of expenditure are broadly supported by customers, SA Water has not established a long-term program for regional water aesthetic upgrades (the need for which was identified at SAW RD16), or a clear line of sight between its proposed infrastructure projects and the improvements customers should expect.

Therefore, the draft decision is to allow expenditure for development of that long-term plan (with the amount to be determined), and place the regional water quality improvement program on a 'contingent project' list, with its progression contingent on finalisation of that long-term plan, and establishment of a clear line of sight.

What has SA Water proposed?

SA Water has proposed capital expenditure of \$24.8 million during SAW RD20 to improve water aesthetics in regional towns. The expenditure covers the connection of Melrose, Wilmington and Quorn with supply from the River Murray at Booleroo via a 90 kilometre pipeline; construction of a desalination plant at Naracoorte; and, minor improvements at Swan Reach, Morgan, Nangwarry and Cadell.

Through these improvements, SA Water aims to address the low level of satisfaction with drinking water quality that exists in some regional towns, noting that while 61 percent of its regional customers drink mains water, only 75 percent are satisfied with its taste. Further, it aims to improve its performance against its SEM '*customer perception of overall quality of water*' (to 80 percent satisfaction by 2028, an improvement on the current 70 percent).

The proposed capital works will result in changes to various aesthetic properties of drinking water. The full range of properties, and the parameters that define what is tolerable, are set out in the ADWG.

How well does SA Water's proposal meet our guidance on this issue?

Guidance Papers

In October 2018, the Commission provided guidance on the nature of evidence needed to support expenditure designed to improve services in response to customer demand. That guidance included the use of willingness to pay research (Guidance Paper 3).

SA Water included regional water quality improvements in both stages of its willingness to pay research to inform SAW RD20. That research found the majority of customers would accept project costs of \$25 million to improve water aesthetics in three regional towns.

Guidance Paper 3 also discussed establishing service standards to reflect improvements customers value and are willing to pay for, and to act as a reference point in planning expenditure. SA Water has not proposed a service standard that relates to discretionary improvements to water quality.

Guidance Paper 4 provided advice on documenting the link between expenditure, project outputs and project outcomes, as part of effective asset management. The business case for this project does not document the impact various infrastructure (the pipeline extension and desalination plant) will have on the various aesthetic properties of water set out in the ADWG, nor the expected impact on customer perception of water quality.

Advice in SAW RD16

In SAW RD16, the Commission decided that SA Water should identify, define and prioritise potential regional water quality projects, and undertake a high priority project SAW RD16. It included \$10.1 million in its expenditure benchmark for that high priority project, which was ultimately spent on improving water quality in Orroroo (at a forecast total cost of \$11.2 million).

The Commission specified that SA Water should produce a long-term program for regional water quality improvement works based on prioritisation that considered matters such as cost (total and per beneficiary), level of local and wider community support, consideration of all supply options including non-potable options.⁴⁵²

SA Water subsequently provided this prioritisation in the form of a multi-criteria analysis tool, which confirmed that Orroroo was the highest ranking project regardless of the weighting given to any of the individual criteria. The ranking for the next projects was less clear. The Commission suggested there were opportunities for SA Water to refine the criteria and weightings through customer engagement before being locked in as a long-term plan. Despite the current proposal, SA Water has not yet completed this further work.

Is SA Water's proposal supported by the CNC?

The CNC does not support the proposal to spend \$24.8 million on improvements to water aesthetics in regional South Australia. It has two main concerns: the lack of a longer term plan of where improvements will be made and at what cost; and, the lack of consultation with those who will benefit directly.

⁴⁵² Commission, *SA Water Regulatory Determination 2016*, June 2016, p. 108, available at <https://www.escosa.sa.gov.au/ArticleDocuments/334/20160606-Water-SAWaterRegulatoryDetermination2016FinalReport.pdf.aspx?Embed=Y>.

The CNC recommends that SA Water develop such a longer term plan. It noted that:

*'[i]t cannot simply be assumed that customers will be prepared to meet the cost of transporting high quality water to anywhere in the State, and the practice of staging the cost over several regulatory periods is not transparent.'*⁴⁵³

On lack of consultation with those directly affected, the CNC noted that:

*'we have been presented with no information about consultation with the communities affected by these proposals and so have no impression of the value they would place on an improved water supply.'*⁴⁵⁴

The CNC's view on SA Water's willingness to pay research, which found the majority of customers would accept the cost of \$25 million, was that:

*'[t]he wrong people have been asked what they would be prepared to pay and, in any case, the issue would be better addressed by presenting customers with the full context and an opportunity to consider other options.'*⁴⁵⁵

Despite not accepting the specific expenditure of \$24.8 million, the CNC:

*'accepts that these particular locations are an appropriate focus for improvements in their water supply and that money should be spent on them in the forthcoming regulatory period.'*⁴⁵⁶

How well does SA Water's proposal meet the Regulators Working Group requirements?

Improving water aesthetics has a secondary benefit of reducing public health risks. However, the regional water supplies included in this proposal already meet SA Health drinking water minimum regulatory requirements. The proposed improvements would exceed those requirements.

What have other stakeholders said about this issue?

Business SA noted that *'quantitative analysis techniques to inform a regulated business' understanding of its customers' willingness to pay for different service attributes is best practice'*, but that the importance of question and survey design and its potential effect on results.⁴⁵⁷

SACOSS considered that the Commission should:

*'consider the overall cost of such a project for all rural areas together, rather than the costs of just the towns to be addressed during 2020-24, providing a holistic sense of the total cost and cost-benefit.'*⁴⁵⁸

Further, SACOSS considered that:

*'[i]n determining whether capital projects should proceed, [willingness to pay] surveys should be accorded minimal weight by [the Commission], with a greater weight being placed on the direct utility benefits of the project.'*⁴⁵⁹

⁴⁵³ Report of Independent Chair of the CNC, p. 64.

⁴⁵⁴ Report of Independent Chair of the CNC, p. 64.

⁴⁵⁵ Report of Independent Chair of the CNC, p. 64.

⁴⁵⁶ Report of Independent Chair of the CNC, p. 64.

⁴⁵⁷ Business SA, p. 4.

⁴⁵⁸ SACOSS, p. 33.

⁴⁵⁹ SACOSS, p. 33.

What evidence has Cardno provided on this issue?

This project was not included in the sample of SAW RD20 capital expenditure proposals that Cardno examined.

Any other relevant considerations?

There are no further relevant considerations.

Commission's Consideration

SA Water has demonstrated that this level of expenditure (\$25 million) on improving regional water aesthetics is broadly supported by customers.

However, SA Water has not established a long-term program for regional water aesthetic upgrades (the need for which was identified at SAW RD16), or a clear line of sight between its proposed infrastructure projects and the improvements customers should expect.

Therefore, the draft decision is to allow expenditure for development of that long-term plan (with the amount to be determined), and place the regional water quality improvement program on a '*contingent project*' list, with its progression contingent on development of this long-term plan, and establishment of a clear link between outputs and outcomes.

Further work is required to develop the multi-criteria analysis SA Water submitted to the Commission in December 2016 in to a long-term program for regional water aesthetics. That work includes:

- ▶ identifying and including all systems that are candidates for upgrades (SA Water has indicated there are approximately 30; ten were included in the 2016 multi-criteria analysis)
- ▶ further development of the prioritisation criteria (for example, further consideration of whether communities with non-potable supply, or those without secure supply), and,
- ▶ further consultation on those criteria and their weightings (both with those who will benefit directly, and with the broader customer base across which the cost of improvements will be spread).
- ▶ A revised multi-criteria analysis that addresses the above points will respond to concerns raised by the CNC, Business SA, and SACOSS.

The clear line of sight should document links between infrastructure projects designed to deliver water quality improvements, their impact on the various aesthetic properties of water set out in the ADWG, and the expected impact on customer perception of water quality.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor aesthetic improvements with respect to the scientifically measurable technical outputs from customer perceptions of water quality, with the latter being a strong driver of SA Water's proposed investment in this area. This monitoring will complement the work already undertaken by SA Health to monitor public health impacts.

Further, the Commission proposes to require that SA Water develop, consult on, and propose a service standard for inclusion in the Code that relates to water aesthetics.

In the case that SA Water decides to progress this proposal as a contingent project during SAW RD20, the Commission expects documentation of a long-term program for regional water aesthetics, and a clear line of sight between proposed infrastructure works and outcomes for customers.

A3.6.2.4 Glenelg to Adelaide Parklands (GAP expansion) recycled water network expansion

The draft decision is to remove the \$10.0 million of new capital expenditure proposed for the GAP expansion because it is neither prudent nor efficient.

SA Water has demonstrated that this level of expenditure on providing recycled water for public open spaces is broadly supported by customers. However, SA Water has not demonstrated firm demand for the proposed recycled water services, nor a specific EPA requirement.

Therefore, the draft decision is to place the GAP expansion on a 'contingent project' list, with its progression contingent on either firm demand from recycled water customers, or a specific regulatory requirement.

What has SA Water proposed?

SA Water proposed to invest \$10.0 million of new capital expenditure in SAW RD20 to expand the recycled water mains and reticulation systems fed by water from the Glenelg Wastewater Treatment Plant (WWTP) to serve a development at Tonsley.

SA Water has proposed the GAP expansion to satisfy customer preferences for increased use of recycled water to irrigate public spaces, and to improve the quality of effluent discharged to the Gulf of St Vincent.

SA Water has indicated it plans to invest \$115 million beyond SAW RD20 to further the GAP expansion, investigate providing free recycled water to Councils, and further reduce environmental impact.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was provided on the nature of evidence needed to support projects driven by customers (Guidance Paper 3). SA Water's proposal meets this guidance. Customer willingness to pay research conducted to support the RBP demonstrated that the majority of customers would accept project costs of \$11 million to increase the amount of recycled water available through the GAP scheme by 300 megalitres per year.

Is SA Water's proposal supported by the CNC?

The CNC noted that:

'[t]his expenditure is dependent upon the option to recycle being a more cost-effective solution than greater treatment followed by discharge to the Gulf. The outcome hinges on finding customers for the treated wastewater'.⁴⁶⁰

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA places requirements on the quality of effluent that SA Water is able to discharge to the Gulf of St Vincent. Those requirements are set out in EIPs for each metropolitan WWTP. The requirement is for the metropolitan WWTPs to meet combined nutrient load target for discharge by 2030. There is a possibility that the load target may be amended to reflect results of recent research, but this has not yet occurred.

⁴⁶⁰ Report of Independent Chair of the CNC, p. 74.

In its submission to the RBP, the EPA advocated for use of recycled wastewater from WWTPs, because it can *'assist to avoid discharge to surface and ground waters and provides an environmental and economic benefit if undertaken sustainably'*.⁴⁶¹

On the GAP expansion, the EPA noted that:

*'... [a]s there is smaller scope for achieving the EIP targets from Glenelg plant without significant investment in operational and infrastructure improvements, expansion of the scheme will be key to delivering on compliance for the EIP, and again is supported by the EPA. The scheme is important, not only for the reduction of harm to the Gulf and increased use of a precious resource, it also delivers recycled water to the metropolitan area, and can demonstrate to the wider Adelaide community the value of the use of this water.'*⁴⁶²

What have other stakeholders said about this issue?

The Conservation Council SA has called on SA Water to *'further articulate its role in providing environmental benefits through wastewater reuse and disposal, and the impact of stormwater on sea grass loss'*.⁴⁶³

What evidence has Cardno provided on this issue?

Cardno's recommendation is that this expenditure is neither prudent nor efficient for two reasons. First, there is no demonstrated demand for recycled water to support the expansion to Tonsley Park on which the regulatory submission has been based. Second, regulatory requirements for higher quality effluent have yet to be implemented. The preliminary financial analysis undertaken for this expansion concluded that it is not financially viable.⁴⁶⁴

Any other relevant considerations?

In October 2019, guidance was provided on treatment of unforeseen capital expenditure that arises during a regulatory period (Guidance Paper 8). Specifically, the Commission is proposing to introduce an intra-period review mechanism from 1 July 2020 to allow for review and potential inclusion of expenditure in revenue caps.

Commission's Consideration

The Commission considers that the costs of providing additional recycled water should be met by those using recycled water (as per the pricing principles for excluded services), and by sewerage customers (to the extent that recycling water is the lowest cost option for disposal). SA Water has not documented the income expected from recycled water customers, nor that the GAP expansion is the lowest cost option of wastewater treatment.

While SA Water has demonstrated that this level of expenditure on providing additional recycled water is broadly supported by customers, it has not demonstrated firm demand from potential customers of the planned GAP expansion, nor that this would be the lowest cost option for disposal of wastewater. Accordingly, the Commission does not consider this project to be prudent.

Further, while the project has the support of the EPA, it is not underpinned by any current regulatory requirement.

⁴⁶¹ EPA, p. 6.

⁴⁶² EPA, p. 6.

⁴⁶³ Conservation Council SA, *Submission to SA Water RBP*, December 2019, available at <https://www.escosa.sa.gov.au/ArticleDocuments/21453/20200116-Water-SAWRD20-SAWaterBusinessProposal2020-Submission-ConservationCouncil.pdf.aspx?Embed=Y>.

⁴⁶⁴ Cardno, pp. 86 and pp. C28-C30.

Therefore, the draft decision is to place the GAP expansion on a contingent project list, with its progression contingent on either firm demand from recycled water customers, or a specific regulatory requirement. The intra-period review mechanism will provide, if the need arises, for review of whether the proposed expenditure is prudent and efficient.

What is the Commission proposing to monitor throughout the SAW RD20 period?

In the case that SA Water decides to progress a contingent project during SAW RD20, the Commission expects documentation of firm demand from potential customers, and/or evidence of a specific regulatory requirement.

A3.6.3 Operating expenditure

The draft decision is that an average of \$5.8 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives to improve services.

This reflects a 29 percent, or \$2.5 million per annum average, adjustment to SA Water's proposed additional operating expenditure of \$8.3 million per annum.

The draft decision is that an average of \$5.8 million per annum a prudent and efficient amount to be included in SAW RD20 for additional operational expenditure associated with initiatives to improve services. SA Water's proposal is for an average additional \$8.3 million per annum of operating expenditure across SAW RD20 to fund programs related to improving services.⁴⁶⁵

The draft decision amount of \$5.8 million per annum is comprised of the amounts shown below (shown against SA Water proposed amounts):

- ▶ Asset investment operating costs - \$2.2 million (3.7 million)
- ▶ IT investment operating costs - \$3.3 million (\$3.3 million)
- ▶ Regional community support - \$0.3 million (\$0.7 million)
- ▶ GAP expansion - \$0 million (\$0.1 million)
- ▶ Reconciliation action plan - \$0 million (\$0.3 million), and
- ▶ GIS data quality improvements - \$0 million (\$0.1 million).

These are discussed below, with the exception of IT investment operating costs which are discussed in A3.8.

A3.6.3.1 Asset investment operating costs

What has SA Water proposed?

SA Water proposed an average additional \$3.6 million per annum of operational expenditure across four programs of work that are associated with capital expenditure programs.

⁴⁶⁵ SA Water, *RBP*, p. 32.

That operating expenditure is as follows:

- ▶ \$2.2 million associated with a mains cleaning program to support the \$31 million expenditure to reduce wastewater overflows, and
- ▶ \$1.5 million associated with the three water quality improvement programs (see sections A3.6.2.1, A3.6.2.2 and A3.6.2.3).

SA Water has proposed additional operating expenditure to undertake more preventative maintenance on its sewerage mains to improve current service levels by reducing the number of overflows of sewage to the environment. The primary focus of this program is to undertake an increased level of pipe cleaning and remove incursions from tree roots, drawing on information obtained through trial projects in 'hotspot locations'. It will contribute to the technical level of service measure of the '*number of wastewater overflows to the environment*'. SA Water states that the improved service levels were supported by its willingness to pay research, which found that customers were willing to pay enough to cover the costs of reducing the total number of sewerage overflows to the environment.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this program. However, three matters where general guidance was provided are relevant to its assessment.

First, guidance was provided on the need for SA Water to demonstrate that its planned expenditure is both prudent and efficient, and to establish a clear line of sight between proposed expenditure and its anticipated outputs and outcomes (Guidance Paper 4).

Second, guidance was provided that evidence from customer engagement would be required to support expenditure proposals designed to improve levels of service, including evidence drawn from the results of willingness to pay research (Guidance Paper 3).

SA Water included three aspects of sewer network reliability in its initial willingness to pay research (the What Matters to You survey). SA Water compared the amount customers were willing to pay with delivery costs. It found that customers were:

- ▶ not willing to pay enough to cover the costs of reducing the number of sewer chokes per year below the current level
- ▶ not willing to pay enough to cover the costs of reducing the total number of internal sewerage overflows below current levels, and
- ▶ willing to pay enough to cover the costs of reducing the total number of sewerage overflows to the environment from current levels to 60 overflows per year.

SA Water went on to test whether the actual cost of \$31 million to reduce sewer overflows to the environment by 20 percent was acceptable to its customers (in its Would You Invest In This survey). The cost was acceptable to the majority of customers.

This operating expenditure proposal has been designed to improve current service levels by reducing the number of environmental overflows.

Is SA Water's proposal supported by the CNC?

The CNC considered that the mains cleaning program is likely to be of material assistance in achieving SA Water's targets for reductions in external and internal overflows, which it considered to be well supported by customers.⁴⁶⁶

⁴⁶⁶ Report of Independent Chair of the CNC, p. 58.

The CNC views on the water quality improvement programs are set out in sections A3.6.2.1, A3.6.2.2 and A3.6.2.3.

How well does SA Water's proposal meet the Regulators Working Group requirements?

The EPA submission was supportive of the proposed capital expenditure to reduce environmental wastewater overflows. The EPA does not licence SA Water's sewer network and pumping infrastructure but SA Water does have general environmental duties under the Environment Protection Act 1993, as well as more defined obligations to manage the sewer network to ensure overflows are minimised under the *Environment Protection (Water Quality) Policy 2015*. On that basis, the EPA supports, but does not specifically require, the proposed capital expenditure of \$31 million to reduce environmental wastewater overflows.⁴⁶⁷

See sections A3.6.2.1, A3.6.2.2 and A3.6.2.3 for discussion of the capital expenditure on water quality improvement programs.

What have other stakeholders said about this issue?

See section A3.5.2.3 and sections A3.6.2.1, A3.6.2.2 and A3.6.2.3.

What evidence has Cardno provided on this issue?

Cardno observed that there has been a deterioration in Type 1 and Type 2 overflows from sewers⁴⁶⁸ and consider SA Water's approach of making capital investments to reline pipes before failure occurs (discussed further in section 7.8.2 and A3.5.2.3) to be a prudent way to manage this issue. It also recommended accepting SA Water's proposed operating expenditure increase to undertake additional mains cleaning to further improve service outcomes.⁴⁶⁹

See sections A3.6.2.1, A3.6.2.2 and A3.6.2.3 for discussion of the capital expenditure on water quality improvement programs.

Commission's consideration

The draft decision is that the average additional \$2.2 million per annum to support reducing environmental overflows is prudent and efficient additional expenditure. The associated capital expenditure is discussed in section A3.5.2.3.

However, the average additional \$1.5 million per annum of operational expenditure for water quality improvements is not considered to be prudent. This reflects the Commission's determination on capital expenditure for upgrades to non-potable water supplies, and improving regional water aesthetics (see sections A3.6.2.2 and A3.6.2.3). It further reflects the Commission's decision to stage metropolitan water quality improvements over six years instead of four (see section A3.6.2.1). Staging over this longer period should allow for existing budgets to be reprioritised to accommodate the operating expenditure.

What is the Commission proposing to monitor throughout the SAW RD20 period?

See section A3.5.2.3 and sections A3.6.2.1, A3.6.2.2 and A3.6.2.3.

⁴⁶⁷ EPA, p. 4.

⁴⁶⁸ Cardno, pp. 71-72 and B12-B15.

⁴⁶⁹ Cardno, pp. 55-56.

A3.6.3.2 Regional community support

What has SA Water proposed?

SA Water proposed an average additional \$0.7 million per annum of operational expenditure to extend the level of support for SA Water's regional customers.

Currently, SA Water's regional teams provide support and advice to regional customers and communities who are affected by loss of service, property damage, and in some emergency circumstances, provide temporary water supply. SA Water proposed to bring its regional support program more into line with its metropolitan community support program, implemented in 2016, without seeking to match it.

Under SA Water's proposal, improvements to regional support activities would include:

- ▶ providing support and assistance to customers experiencing four-hour outages, as provided in the metropolitan area, rather than only customers experiencing six-hour outages (current practice), and
- ▶ providing temporary drinking water in all instances where there is a service outage for four hours or more, rather than only in emergency circumstances.

The business case suggested that the initiative required an additional four full-time employees and an on-call allowance for ten staff, along with the use of five vans and five trailers.

SA Water stated that its willingness to pay research demonstrated that customers are willing to pay up to \$5.7 million for this increased level of service per annum, which is significantly less than the cost of this proposal.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

SA Water provided a clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC stated that the initiative should not be implemented without more consultation with regional customers and stakeholders, and that other options should be explored. These other options include potentially working with Country Fire Service and State Emergency Service volunteers and organisations like the Country Woman's Association, with the aim of achieving the same outcome at lower cost, or a greater and more widespread outcome at the same cost.⁴⁷⁰

How well does SA Water's proposal meet the Regulators Working Group requirements?

The Regulators Working Group did not identify any requirements in this area.

What have other stakeholders said about this issue?

Uniting Communities suggested that there could be lower cost options to achieve the goals of this program that could be developed with greater, open engagement with communities.⁴⁷¹

⁴⁷⁰ Report of Independent Chair of the CNC, p. 58.

⁴⁷¹ Uniting Communities, pp. 3, 22.

What evidence has Cardno provided on this issue?

Cardno recommended allowing this operational expenditure increase as it is expected to improve service to customers. However, Cardno strongly recommended that SA Water devise a means to robustly measure the impact of this initiative.⁴⁷²

Commission's consideration

The Commission supports the extension of improved services to regional customers and communities, and appreciates that SA Water customers may be willing to pay more for these services to be extended.

However, the Commission considers the cost of this proposal, taking into account the proposed benefits, is too high. SA Water stated that, on average, there are 220 'events' affecting 150 properties in regional areas that this proposal would address. Based on SA Water's proposal for an additional \$0.7 million per annum to deliver the proposed service improvement, the average cost of providing this additional assistance is estimated to be \$3,195 per event.

The Commission considers that, as identified by the CNC and Uniting Communities, the initiative may be delivered more efficiently through a partnership between SA Water and local community groups.

Therefore, the Commission has made a draft decision that \$0.3 million is a prudent and efficient amount for regional community support. This would cover the estimated cost of cask water requirements and a small amount of additional staffing and resourcing.

The Commission acknowledges SA Water's early engagement activity with the Regional Communities Consultative Council and encourages SA Water to continue to work in developing regional delivery partnerships to create the most efficient model of delivery. The Commission also supports SA Water's intention to provide its regional customers with the opportunity to shape what this service will look like prior to implementation.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation on the outcomes this expenditure achieves (in this case, support for regional customers who experience outages), to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.6.3.3 Reconciliation action plan

What has SA Water proposed?

SA Water proposed an average additional \$0.3 million per annum of operational expenditure to develop and deliver a new reconciliation action plan and undertake higher levels of engagement with Aboriginal communities.

SA Water proposed an additional two FTEs to support a specialised undergraduate and graduate program for Aboriginal and Torres Strait Islander tertiary students to work in SA Water. Its ultimate aim is to achieve Aboriginal and Torres Strait Islander representation in leadership positions, and 4.5 percent Aboriginal and Torres Strait Islander representation in the SA Water workforce.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

⁴⁷² Cardno, p. 60.

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

SA Water provided a clear line of sight between the proposed expenditure and its anticipated outputs and outcomes.

Is SA Water's proposal supported by the CNC?

The CNC considers this initiative would be supported by customers.⁴⁷³

How well does SA Water's proposal meet the Regulators Working Group requirements?

The Regulators Working Group has not identified any requirements in this area.

What have other stakeholders said about this issue?

No submissions addressed this proposal.

What evidence has Cardno provided on this issue?

Cardno advised that this kind of activity should be part of SA Water's business-as-usual operational expenditure. Cardno stated that:

*'in the absence of a new obligation or significant change in circumstance, simply identifying new activities is not in itself a justification for an increase in total operating expenditure.'*⁴⁷⁴

Commission's consideration

The draft decision is that no additional operational expenditure will be allowed for this initiative. The Commission considers that activities related to the reconciliation action plan should be funded through reprioritisation of SA Water's existing operating expenditure allowance.

What is the Commission proposing to monitor throughout the SAW RD20 period?

Not applicable, as this expenditure is not included in the draft determination.

A3.6.3.4 GAP Recycled water expansion

What has SA Water proposed?

SA Water proposed an average additional \$0.1 million per annum of operational expenditure to support the expansion of its water recycling portfolio through three categories of projects over the long term:

- ▶ investigations for additional reuse opportunities, free water for local councils for open space usage and expansion of the existing Glenelg Adelaide Pipeline
- ▶ investigations on how reuse will assist SA Water in meeting its compliance obligations, and
- ▶ comprehensive recycled water network dynamic modelling.

SA Water's proposed recycled water expansion program involves \$11.5 million of capital expenditure over the SAW RD20 period, and a further \$115 million between 2024 and 2046. The operating expenditure associated with this proposal over the SAW RD20 period, of an average additional \$0.1 million per annum, is largely to support the proposed \$10 million capital expenditure to expand the Glenelg to Adelaide Parklands recycled water network south to a new residential development at Tonsley Park.

⁴⁷³ Report of Independent Chair of the CNC, p. 57.

⁴⁷⁴ Cardno, p. 60.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.6.2.4.

Is SA Water's proposal supported by the CNC?

See section A3.6.2.4.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.6.2.4.

What have other stakeholders said about this issue?

See section A3.6.2.4.

What evidence has Cardno provided on this issue?

See section A3.6.2.4.

Commission's consideration

As per discussion in section A3.6.2.4, the draft decision is to place the GAP expansion on a contingent project list, with its progression contingent on either firm demand from recycled water customers, or a specific regulatory requirement. The intra-period review mechanism will provide, if the need arises, for review of whether the proposed expenditure is prudent and efficient. This will include required capital and operating expenditure.

What is the Commission proposing to monitor throughout the SAW RD20 period?

See section A3.6.2.4.

A3.6.3.5 GIS data improvement

What has SA Water proposed?

SA Water proposed an average additional \$0.1 million per annum of operational expenditure to upgrade GIS data.

This proposal results from a review undertaken by SA Water that identified up to 30 percent of its 700,000 service points may not be accurately represented, resulting in inefficiencies in locating them when necessary. The inaccuracies are the result of legacy GIS data quality issues, and other system upgrades, that may potentially affects SA Water's outage management and customer notification activities. SA Water plans to initially focus on key customers such as hospitals, schools, businesses and high volume customers.

How well does SA Water's proposal meet our guidance on this issue?

No specific guidance was provided in relation to this project.

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

Is SA Water's proposal supported by the CNC?

The CNC accepted the need for this improvement.⁴⁷⁵

⁴⁷⁵ Report of Independent Chair of the CNC, p. 58.

How well does SA Water's proposal meet the Regulators Working Group requirements?

The Regulators Working Group have not identified any requirements in this area.

What have other stakeholders said about this issue?

No submissions were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno advised that this kind of activity should be part of SA Water's business-as-usual operational expenditure.⁴⁷⁶

Commission's consideration

The draft decision is that no additional operational expenditure will be allowed for this initiative on the basis it should be undertaken as a business-as-usual activity. If this proposal will, as SA Water identifies, address inefficiencies, current budgets should be reprioritised so it can be implemented.

What is the Commission proposing to monitor throughout the SAW RD20 period?

Not applicable, as this expenditure is not included in the draft determination.

A3.7 SAW RD20 expenditure to enable growth

The draft decision is that \$145.0 million⁴⁷⁷ is a prudent and efficient amount to be included in SAW RD20 for capital expenditure to respond to growth. This represents a 25 percent increase on the \$115.6 million capital expenditure to respond to growth in SAW RD16.

Further, the draft decision is that an average of \$1.0 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with initiatives that respond to growth. This operating expenditure is in addition to the existing operating expenditure included in SA Water's normalised base year.

The capital expenditure draft decision amount is 24 percent (\$45.7 million) less than the amount proposed by SA Water, and the additional operating expenditure amount of \$1.0 million is 70 percent lower than the \$3.4 million proposed by SA Water.

A3.7.1 Introduction

SA Water describes costs under this driver as investments associated with servicing new water and sewerage customers or increasing the services available to existing customers.⁴⁷⁸

In SAW RD16, SA Water's capital expenditure to respond to growth was \$115.6 million, and operating expenditure for this purpose was included in the efficient base year. In total, SA Water proposed \$190.7 million of capital expenditure and an additional \$13.5 million (or an average \$3.4 million per annum) of operating expenditure in SAW RD20 to respond to growth.

⁴⁷⁶ Cardno, p. 60.

⁴⁷⁷ Before the application of catch-up and continuing efficiencies.

⁴⁷⁸ SA Water, *RBP*, p. 21.

A3.7.2 Capital expenditure

The draft decision is that \$145.0 million is a prudent and efficient amount to be included in SAW RD20 for capital expenditure to meet external obligations. This is \$45.7 million less than that proposed by SA Water.

None of the capital expenditure initiatives SA Water proposed under this investment driver were included in the sample examined by Cardno. However, two of the capital expenditure projects proposed by SA Water under this investment driver were not considered prudent and efficient by the Commission, and are therefore excluded from the draft determination.

These two projects are the:

- ▶ Upper Spencer Gulf capacity upgrade - \$22.8 million, and
- ▶ Kangaroo Island desalination plant - \$22.8 million.

Both of these proposed projects are driven by anticipated future water demand in each localised region. However, the Commission understands SA Water has not yet completed final contract negotiations with the proposed major customers for the additional water, and that the outcome of these negotiations will directly affect the viability of these projects.

Accordingly, the draft decision for both projects is that they will be treated as contingent projects until sufficient evidence is provided to substantiate the proposition that the demand required to make these projects prudent and efficient is firm.

A3.7.3 Operating expenditure

The draft decision is that an average of \$1.0 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operational expenditure associated with initiatives to enable growth.

This reflects a 70 percent reduction, or \$2.4 million adjustment to SA Water's proposed additional operating expenditure of \$3.4 million per annum.

SA Water proposed an average additional \$3.4 million per annum of operational expenditure to fund initiatives that enable growth.

The draft decision amount of \$5.8 million per annum is comprised of the amounts shown below (shown against SA Water proposed amounts):

- ▶ Upper Spencer Gulf capacity upgrade - \$0 million (\$1.6 million).
- ▶ Network growth - \$1.0 million (\$1.0 million)
- ▶ Kangaroo Island desalination plant - \$0 million (\$0.8 million).

A3.7.3.1 Upper Spencer Gulf capacity upgrade

What has SA Water proposed?

SA Water proposed an average additional \$1.6 million per annum of operational expenditure related to additional operating and maintenance costs associated with a proposed 2GL per year capacity upgrade to water supply in the Upper Spencer Gulf by 2021-22.

The project will require a \$22.8 million capital expenditure investment in SAW RD20 to build two new booster pump stations, an additional 9ML storage facility at Baroota and improve maintenance on the Morgan to Whyalla Pipeline. SA Water stated this project is required on the basis of increased growth within the Northern Water Supply System region, which will leave it with insufficient capacity to meet demand by 2020-21.

SA Water stated that this increased demand is driven by significant economic development in the region, proposed and underway, which will drive an opportunity to increase revenue by greater than \$22.8 million over the next two business periods. As such, SA Water proposed that this investment will deliver revenue exceeding the investment costs over the next two regulatory determination periods.

How well does SA Water's proposal meet our guidance on this issue?

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

This project is dependent on an expectation that additional revenue will be generated from an increase in demand as a result of economic development in the region, primarily from one large customer. However, SA Water has not provided evidence that this demand is certain or firm.

Is SA Water's proposal supported by the CNC?

The CNC did not comment specifically on this proposed expenditure.

How well does SA Water's proposal meet the Regulators Working Group requirements?

Regulators Working Group members had no specific requirements for this proposal.

What have other stakeholders said about this issue?

No submission were received on this proposal.

What evidence has Cardno provided on this issue?

This project was not in the sample of capital expenditure projects Cardno reviewed and so it did not have details underlying the proposed operating expenditure increase; however, it noted that it was contingent on customer contracts being in place.⁴⁷⁹

Cardno also noted that the increase in operating expenditure (\$2.7 million per year in 2022-23) seemed high given the scale of scheme, as it would be associated with very large increases in pumping or new assets out of proportion to the \$23M capital expenditure.⁴⁸⁰ Accordingly, Cardno recommended allowing a smaller increase of approximately \$0.5 million per year if the scheme proceeds based on its expert judgement in the absence of data.⁴⁸¹

Commission's consideration

The Commission notes that SA Water has not yet completed final contract negotiations with the proposed major customers for the additional water, and that the outcome of these negotiations will directly affect the viability of this project.

Accordingly, the draft decision is that the initiative will be treated as a contingent project until sufficient evidence is provided to substantiate the proposition that the demand required to make this project prudent and efficient is firm.⁴⁸²

⁴⁷⁹ Cardno, p. 56.

⁴⁸⁰ Cardno, p. 56.

⁴⁸¹ Cardno, p. 56.

What is the Commission proposing to monitor throughout the SAW RD20 period?

If SA Water demonstrates that this project is prudent and efficient, the Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance.

For instance, if the project goes ahead, the Commission would expect project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.7.3.2 Network growth

What has SA Water proposed?

SA Water proposed an average additional \$1.0 million per annum of operational expenditure related to a \$70 million capital expenditure investment to grow SA Water's sewerage network.

The additional operating expenditure will assist SA Water to provide services to new customers prior to implementation of new sewer infrastructure in growth areas. Once the infrastructure is in place, the operating expenditure will support its ongoing operation.

How well does SA Water's proposal meet our guidance on this issue?

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

Minimal information was provided by SA Water on the requirements for this additional operating expenditure, but, in general, evidence provided by SA Water on its demand predictions based on natural growth were sufficient.

Is SA Water's proposal supported by the CNC?

The CNC accepted the need for additional expenditure related to providing sewer services in growth areas.⁴⁸³

How well does SA Water's proposal meet the Regulators Working Group requirements?

Regulators Working Group members had no specific requirements for this proposal.

What have other stakeholders said about this issue?

No submission were received on this proposal.

What evidence has Cardno provided on this issue?

Cardno considered SA Water's approach to planning for growth through its review of SA Water's asset management planning, and determined '*the approach is sound*'.⁴⁸⁴ However, Cardno did not consider specific growth driven projects in detail.⁴⁸⁵

Cardno noted that this proposal was not supported by a detailed business case, but recommended allowing this additional expenditure on the basis that growth can lead to higher operating expenditure.⁴⁸⁶

⁴⁸³ Report of Independent Chair of the CNC, p. 59.

⁴⁸⁴ Cardno, p. 23.

⁴⁸⁵ Cardno, p. 23.

⁴⁸⁶ Cardno, p. 56.

Commission's consideration

The Commission accepts Cardno's evidence that SA Water's approach to planning for growth is sound.

The Commission accepts that this expenditure is required to support the delivery of services to SA Water customers in growth areas, and considers it prudent and efficient.

The draft decision is that an average additional \$1 million per annum is prudent and efficient to support enabling growth in sewerage services.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission expects project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.7.3.3 Kangaroo island desalination plant

What has SA Water proposed?

SA Water proposed an average additional \$0.8 million per annum of operational expenditure related to a proposed \$22.8 million capital investment in a desalination plant on Kangaroo Island. SA Water stated that this proposed investment aims to achieve greater water security for Kangaroo Island, and has been developed following engagement with its customers.

SA Water noted that the timing of the investment is dependent on having customer contracts in place that demonstrate sufficient demand to offset the capital upgrades by increasing SA Water's revenue once the plant is operational.

How well does SA Water's proposal meet our guidance on this issue?

Guidance was provided on the nature of evidence needed to support projects driven by customers, and on documentation of project outputs and outcomes (Guidance Paper 3 and Guidance Paper 4).

This project is dependent on an expectation that additional revenue will be generated from an increase in demand as a result of economic development in the region, primarily from one large customer. However, SA Water has not provided evidence that this demand is certain or firm.

Is SA Water's proposal supported by the CNC?

The CNC said that its support for the proposal was conditional upon being convinced that the net cost to customers would be less than waiting until the existing planned implementation date of 2030.⁴⁸⁷

The CNC went on to state that it understands normal growth assumptions indicate the existing water supply capacity in the Middle River system on Kangaroo Island should be adequate for Parndana and Kingscote until 2036 and that the existing desalination plant should be adequate for Penneshaw until 2031.⁴⁸⁸

How well does SA Water's proposal meet the Regulators Working Group requirements?

Regulators Working Group members had no specific requirements for this proposal.

What have other stakeholders said about this issue?

No submissions were received specifically on the operational expenditure for this proposal.

⁴⁸⁷ Report of Independent Chair of the CNC, pp. 51-52.

⁴⁸⁸ Report of Independent Chair of the CNC, pp. 51-52.

However, SACOSS stated that it would not object to the proposal if costs were fully recouped by new customers, however it seemed that SA Water is not yet able to fully mitigate this risk. SACOSS also observed that given demand from other customers is only likely after 2030, the project appears to be ahead of its time. With its proposed link to the golf club development and whether it will proceed, SACOSS considered this would more appropriately be treated as a contingent project and even then only on the basis that if goes ahead, that the project is sized to the level only at which the golf club is willing to support.⁴⁸⁹

What evidence has Cardno provided on this issue?

Cardno considered SA Water's approach to planning for growth through its review of SA Water's asset management planning, and determined '*the approach is sound*'.⁴⁹⁰ However, Cardno did not consider specific growth driven projects in detail.⁴⁹¹

The Kangaroo Island desalination plant proposal was not included in the sample of capital projects for review and while it was not considered in detail, Cardno stated that the investment seems reasonable given the scale of the scheme. Cardno recommend accepting the operating expenditure increase if the proposal proceeds.⁴⁹²

Commission's consideration

The Commission notes that SA Water has not yet completed final contract negotiations with the proposed major customers for the additional water, and that the outcome of these negotiations will directly affect the viability of the project.

Accordingly, the draft decision is that the initiative will be treated as a contingent project until sufficient evidence is provided to substantiate the proposition that the demand required to make this project prudent and efficient is firm.

What is the Commission proposing to monitor throughout the SAW RD20 period?

If SA Water demonstrate that this project is prudent and efficient, the Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance.

For instance, if the project goes ahead, the Commission would expect project-specific documentation on the outcomes this expenditure achieves to be available to support an ex-post review of a sample of projects and programs at the end of SAW RD20.

A3.8 SAW RD20 expenditure for IT

The draft decision is that \$133.9 million⁴⁹³ is a prudent and efficient amount to be included in SAW RD20 for capital expenditure on IT. This represents a four percent increase on the \$128.4 million of IT capital expenditure in SAW RD16.

Further, the draft decision is that an average of \$6.6 million per annum is a prudent and efficient amount to be included in SAW RD20 for operating expenditure associated with IT initiatives. This operating expenditure is in addition to the existing operating expenditure included in SA Water's normalised base year.

⁴⁸⁹ SACOSS, p. 20.

⁴⁹⁰ Cardno, p. 23.

⁴⁹¹ Cardno, p. 23.

⁴⁹² Cardno, p. 56.

⁴⁹³ Before the application of catch-up and continuing efficiencies.

The draft decision reflects a \$9.6 million adjustment to SA Water's proposed IT capital expenditure of \$143 million, and a \$2.7 million per annum adjustment to SA Water's proposed additional IT operating expenditure of \$9.3 million per annum.

A3.8.1 Introduction

SA Water characterised its IT related expenditure as work to *'meet mandatory requirements as well as delivering improved services and efficiencies'*.⁴⁹⁴

In SAW RD16, SA Water's IT capital expenditure was \$128.4 million. IT operating expenditure was included in the efficient base year.

For SAW RD20, SA Water proposed IT capital expenditure of \$143.5 million, and additional IT operating expenditure of \$37 million (\$9.3 million per annum, on average). This section discusses how the Commission has assessed SA Water's proposal and arrived at its draft decision.

Note that in section A3.9, IT expenditure is disaggregated and into the driver it supports (external obligation, sustain service, improve service, enable growth, or efficiency).

A3.8.2 Capital expenditure

The draft decision is that \$133.9 million is a prudent and efficient amount to be included in SAW RD20 for capital expenditure on IT. This represents a four percent increase on the \$128.4 million of IT capital expenditure in SAW RD16.

SA Water proposed IT capital expenditure of \$143.5 million. A \$9.6 million adjustment has been made because SA Water has not sufficiently considered alternative options, or applied sufficient challenge, to the asset refresh and resilience component of its proposed IT risk management works.

The Commission requires that SA Water improve its documentation of the actual outturn efficiencies delivered by IT capital expenditure, and its documentation of other benefits and efficiencies enabled by IT capital expenditure, to allow it to be transparent about the *'cost neutral'* position of its overall IT program.

The Commission will conduct an ex-post review of all IT capital expenditure at the end of SAW RD20 to ensure improvements in documenting actual outturn efficiencies have been made.

SA Water proposed IT capital expenditure of \$143.5 million across seven program areas:

- ▶ IT risk management (\$57.8 million, including for refreshing hardware and software, and managing cyber security).
- ▶ Digital presence (\$26.3 million, including on the CRM and digital communications channels).
- ▶ Integrated operations (\$16.4 million, including information management to enable better decision making).
- ▶ Workforce collaboration and mobility (\$13.7 million, including work allocation and administrative tools).
- ▶ Corporate systems (\$13.8 million, including for improvements to the billing system, procurement, and energy management).

⁴⁹⁴ SA Water, *RBP*, p. 36.

- ▶ Data intelligence and integration (\$9.3 million, including for record keeping, data management and security).
- ▶ Smart infrastructure (\$6.2 million, including sensors on infrastructure to assess condition and identify issues, and automated dispatch).

While not included with its publicly available supporting documentation, SA Water provided business cases for each program to the Commission.

SA Water supported its proposal with two pieces of analysis from KPMG. First, an assessment of its IT Plan, which KPMG found to be prudent and efficient (a summary was included as Appendix M to the RBP, and a full version of this report was provided to the Commission). Second, KPMG benchmarked SA Water's IT expenditure, and found it to be consistent with comparable entities (this report is included as Appendix L to the RBP).

How well does SA Water's proposal meet our guidance on this issue?

Guidance papers

In October 2018, the Commission provided guidance on the nature of evidence needed to support expenditure designed to improve services in response to customer demand. That guidance included the use of willingness to pay research (Guidance Paper 3).

Approximately one-third of the proposed IT capital expenditure is planned to improve services, however, none of the 19 areas tested in willingness to pay research relate directly to the IT capital expenditure proposals.

For example, the digital presence program (\$26.3 million) includes investment in the CRM which SA Water stated will *'improve our ability to resolve issues the first time customers contact us, one of our new service standards'*. However, SA Water has not sought to link the costs of improvements with its proposed service standards (for example, customer satisfaction and first contact resolution). Further, the separate business case supporting the introduction of 'first contact resolution' stated that this service standard will have no net cost increase because costs will be met by reducing the telephone responsiveness service level.

Guidance Paper 4 provided advice on documenting the link between expenditure, project outputs and project outcomes, as part of effective asset management. The business cases for IT capital expenditure projects have general, high-level descriptions of expected outcomes.

SAW RD16

Actual IT capital expenditure in SAW RD16 was 57 percent higher than in previous years. The increase was driven by investments targeting cost efficiencies, as well as improving service to customers.⁴⁹⁵

In SAW RD16, the Commission noted that:

*'the potential for efficiency gains resulting from the IS [information services] investment has not been fully explored and may be understated in some programs.'*⁴⁹⁶

⁴⁹⁵ Cardno, p. 93.

⁴⁹⁶ Commission, SAW RD16, p. 109.

Cardno examined efficiency gains in its 2020 ex-post review of three SAW RD16 information system initiatives and found that:

*'...SA Water has committed to operating expenditure savings which generate a positive net present value on the capital expenditure. These savings have been committed top-down, not quantified based on a bottom-up evaluation of the initiatives.'*⁴⁹⁷

However, this 'top-down' approach to making commitments to embed expected efficiencies means that if efficiency gains exceed expectations, they will not be documented. It also means that if they are less than expected, expenditure will need to be reprioritised, creating pressure elsewhere, which is also difficult to track. There remains an issue with documenting actual, outturn efficiencies.

Is SA Water's proposal supported by the CNC?

The CNC advised that it does not have the technical skills to comment on whether the various IT capital expenditure proposals are justified, but found: *'nothing in the SA Water proposal to which there is an obvious objection'*.⁴⁹⁸ However, it also noted that SA Water's is undertaking more IT capital expenditure than its peers, and is proposing a further increase.

The CNC noted that SA Water proposed operational expenditure *'attributable to delivering new digital capabilities that will improve water and wastewater services to customers'*, and that if the capital expenditure component of the proposals were approved, *'these costs would also need to be incurred.'*⁴⁹⁹

How well does SA Water's proposal meet the Regulators Working Group requirements?

Regulators Working Group members have no specific requirements for the IT program.

What have other stakeholders said about this issue?

Business SA commissioned Isle Utilities to advise it on SA Water's RBP. Isle Utilities identified issues with the benchmarking undertaken by KPMG to support the IT capital expenditure proposal. Specifically that the amount: *'... is upwardly biased by the inclusion of electricity utility companies which have faced significant IT related increases due to increasing penetration of smart meters'*.⁵⁰⁰ Further, it found the wide benchmarking ranges (between \$1.70 to \$83.20 per customer), potentially created by including comparator businesses with different underlying cost structures are *'driving up the median and potentially distorting the comparative analysis in SA Water's favour.'*⁵⁰¹

EWOSA supported expenditure on digital metering, and on providing customers with the option of paying bills monthly. It noted *'this is an important means of managing financial pressures and has been utilised in the energy sector for some time.'* However, it was cautious about increasing expenditure amongst utilities on customer relationship management systems and encouraged the Commission to benchmark that proposed expenditure.⁵⁰²

SACOSS questioned whether SA Water's IT expenditure is justified considering it delivers less in savings than it incurs in costs. SACOSS recommended that the Commission consider whether there is greater scope for IT-related savings to be identified given the extensive IT program, and the resulting improvements in technology that would support operational staff and activities.⁵⁰³

⁴⁹⁷ Cardno, p. 74.

⁴⁹⁸ Report of Independent Chair of the CNC, p. 80.

⁴⁹⁹ Report of Independent Chair of the CNC, p. 68.

⁵⁰⁰ Business SA, p. 2.

⁵⁰¹ Business SA, p. 2.

⁵⁰² EWOSA, p. 4.

⁵⁰³ SACOSS, pp.21-22, 24.

SACOSS is concerned that where expenditure is aimed at efficiency, the benefits are clearly documented:

*'SA Water has not identified significant and clear savings in capital expenditure arising from this IT expenditure, despite most of the expenditure being aimed at efficiency and process improvement rather than maintenance of business as usual or a defensive posture against cyber-attacks. For example, extending asset lives through better condition monitoring should deliver a significant saving across SA Water's regulated asset base. Alternatively, if it does not result in identified savings, then the condition monitoring program should not proceed. A similar position could be adopted for the programs to reduce or integrate legacy systems, improve workforce collaboration and mobility, and provide a single platform for customer information.'*⁵⁰⁴

SACOSS further submitted that the identified savings of IT capital expenditure should be reflected in cost adjustments elsewhere, and:

*'should at a minimum exceed the IT costs of the projects [as] it would not make sense to pursue greater efficiencies from IT programs unless those efficiencies can be identified in advance with a reasonable degree of confidence and are in excess of their costs.'*⁵⁰⁵

Uniting Communities did not support the full \$143.5 million proposal. It is concerned that costs have escalated in the last decade, and encouraged the Commission to consider the necessity of each component. It noted that:

*'[f]or IT cost proposals, we are not convinced that all of the IT expenditure proposed by SA Water is absolutely necessary, and consequently some expenditure that is proposed may be in the interests of some customers, but not necessarily in the best interests of all customers.'*⁵⁰⁶

Uniting Communities submitted there is a lack of clarity around IT investment. It suggested the following principles for considering the merits of the \$143.5 million proposal: that there are clearly outlined and explained benefits to consumers; transparent ex-post review of IT expenditure against initial value propositions; and, consideration of a range of suppliers.⁵⁰⁷

What evidence has Cardno provided on this issue?

Cardno analysed SA Water's capital expenditure on IT since 2013-14 and found it has '*steadily and substantially*' increased. In SAW RD16, actual expenditure was 57 percent more than in previous years, and SA Water's proposed expenditure for SAW RD20 represents a 12 percent increase on SAW RD16 expenditure.⁵⁰⁸

Cardno's analysis found that when SA Water's SAW RD20 proposal is analysed by driver, much of the increase arises from projects designed to improve efficiency:

- ▶ Efficiency accounts for 25 percent of proposed expenditure, and most of the proposed change (the proposal is an 88 percent increase on SAW RD16).
- ▶ Maintain service and improve service account for the largest portion of proposed expenditure, though a modest amount of the proposed change (the proposal is for expenditure six and four percent above the ten-year trend, respectively).

⁵⁰⁴ SACOSS, p. 22.

⁵⁰⁵ SACOSS, p. 22.

⁵⁰⁶ Uniting Communities, p. 24.

⁵⁰⁷ Uniting Communities, pp. 22 -23.

⁵⁰⁸ Cardno, pp. 83-86.

- ▶ External obligations account for a minor portion of proposed expenditure, and that expenditure in this area has been fairly steady over time.

Cardno sampled specific expenditure items within the IT program, together worth \$87.9 million, 61 percent of the total proposed expenditure, and found each to be prudent. These were: integrated operations (\$16.4 million), workforce collaboration and mobility (\$13.7 million), and IT risk management (\$57.8 million).

However, Cardno noted the challenge of tracking the outputs and outcomes of IT expenditure, and also in assessing whether proposed expenditure is efficient, given SA Water's approach to designing its proposals. SA Water avoids locking in exact solutions too early, so it can take advantage of new and emerging technologies. Cardno found the governance framework around this to be appropriate, but that 'the benefits realisation approach needs to be robust and fully implemented for SAW RD20 to provide assurance that the expected benefits (including risk mitigation and efficiency savings) are realised.'⁵⁰⁹

Cardno further noted that SA Water acknowledges the importance of this.

In considering expenditure adjustments, Cardno recommended that the IT risk management program be reduced by \$9.6 million, because there is scope to deliver the objectives at a lower cost, through:

*'greater challenge to the program needs and timing (including through benefits realisation), a more complete approach to risk assessment of the activities proposed and through further development of solutions to identify the most cost effective option.'*⁵¹⁰

Cardno recommended:

*'accepting SA Water's proposed SAW RD20 operating expenditure increases while also incorporating the operating expenditure savings to reflect the neutral operating expenditure impact that they have projected.'*⁵¹¹

Any other relevant considerations?

There are no further relevant considerations.

Commission's considerations

Efficient level of expenditure

With regards to adjustments to the SAW RD20 IT capital expenditure proposal, the Commission accepts Cardno's evidence to adjust the capital expenditure allowed for the IT risk management program by \$9.6 million. This brings the total capital expenditure allowed to \$133.9 million.

Further efficiencies have been challenging to discern because SA Water's IT planning process avoids locking in exact solutions too early (to take advantage of new and emerging technologies). Benchmarking could assist, though the weaknesses of the KPMG work, as outlined by Business SA, limit its usefulness.

Therefore, the Commission undertakes to, ahead of SAW RD24, seek its own independent benchmarking of IT capital expenditure costs, using suitable comparator businesses with underlying cost structures similar to SA Water.

⁵⁰⁹ Cardno, p. 85.

⁵¹⁰ Cardno, p. 85.

⁵¹¹ Cardno, p. 58.

Documenting outputs and outcomes

The Commission is concerned that the expected outcomes of SA Water's proposed IT capital expenditure, particularly in relation to efficiencies and improvements for customers, are not clearly defined. This makes it hard to assess whether each project is worthwhile. That is, whether project costs are justified by the value customers place on a service improvement, or the value of a process efficiency.

There is scope for SA Water to improve how it documents the outputs and outcomes of IT capital expenditure: of expected outputs and outcomes, their value, and whether they are ultimately realised. The Commission requires SA Water to improve this documentation.

For example, where the purpose of a project is to improve service levels (the case for one-third of IT capital expenditure proposals), customer support should be clearly evidenced. This should be through specific customer engagement efforts, which present the costs of delivering improvements to customers for their consideration. SA Water should not assume that customers want continuous improvements. Further, SA Water should establish measures that will clearly identify whether outcomes are delivered.

Where the purpose of a project is to achieve efficiencies, SA Water must be confident of the expected efficiencies, and that they justify expenditure. As expressed by SACOSS, the expected efficiencies should at a minimum, exceed the costs of the project.⁵¹² As each project is delivered, its outturn efficiencies must be quantified, and included in the documentation of project benefits.

The Commission requires SA Water to improve its documentation of the outputs and outcomes that are expected from each IT capital expenditure project, and make that documentation available for an IT-specific ex-post review which will begin in 2023.

What is the Commission proposing to monitor throughout the SAW RD20 period?

The Commission will monitor, through its routine reporting, SA Water's overall expenditure and performance. The Commission also expects project-specific documentation, as described above, to be available to support an ex-post review of all IT capital expenditure projects and programs at the end of SAW RD20.

A3.8.3 Operating expenditure

The draft decision is that an average of \$6.6 million per annum is a prudent and efficient amount to be included in SAW RD20 for additional operating expenditure associated with IT initiatives.

This reflects a 40 percent, or \$2.7 million per annum average, adjustment to SA Water's proposed additional IT operating expenditure of \$9.3 million per annum.

The adjustment is the result of reducing the proposed increase in operating expenditure related to IT investment in SAW RD16 from \$3.2 million to \$0.5 million.

SA Water's proposal of \$9.3 million per annum additional operating expenditure associated with IT initiatives includes \$1.8 million for initiatives related to meeting external obligations, \$3.3 million for new IT initiatives aimed at improving services, and \$4.2 million to sustain current IT initiatives.

⁵¹² SACOSS, p. 22.

A3.8.3.1 Sustain

SA Water proposed \$4.2 million per annum additional operational expenditure to support IT investment to sustain services to customers:

- ▶ \$3.2 million to meet costs of investments made through the SAW RD16 capital program
- ▶ \$0.6 million per annum for higher IT licensing costs, and
- ▶ \$0.4 million per annum or costs related to new IT investment capital expenditure programs to sustain its services.

The proposals are discussed in more detail below.

Additional operating expenditure to support IT investments made in SAW RD16

SA Water proposed a \$3.2 million per annum average additional operational expenditure to support ongoing costs associated with investments made in the SAW RD16 IT capital program.

SA Water stated that this additional operational expenditure is offset by \$11.4 million of business operational expenditure savings that were derived and committed to by the business at the start of SAW RD16 and are embedded in the base year.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.8.2.

Is SA Water's proposal supported by the CNC?

See section A3.8.2.

The CNC noted that SA Water's SAW RD16 IT initiatives have proved to have higher support costs than anticipated. The CNC suggested that these additional costs be allowed, subject to SA Water meeting its overall operating expenditure targets for SAW RD16.⁵¹³

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.8.2.

What have other stakeholders said about this issue?

See section A3.8.2.

What evidence has Cardno provided on this issue?

See section A3.8.2.

Cardno noted that '*SA Water has not provided robust justification for a near-doubling of IT operating expenditure relative to the base year and we have not recommended allowing for this increase,*'⁵¹⁴ and on that basis recommended not accepting the average additional \$3.2 million per annum of operating expenditure.

Commission's consideration

The draft decision is that an average additional \$0.5 million per annum of operational expenditure to support the SAW RD16 IT capital programs implemented is a prudent and efficient amount to be included in SAW RD20.

⁵¹³ Report of Independent Chair of the CNC, p.56.

⁵¹⁴ Cardno, p. 58.

SA Water's proposal for an average additional \$3.2 million per annum appears to be in addition to the \$2.8 million of operational expenditure that is embedded in the base year to support these IT programs. Consequently, if this additional operational expenditure is accepted, the anticipated operating costs associated with the SAW RD16 IT program will have doubled from \$3.2 million in 2019-20 to an average of \$6.0 million per annum across SAW RD20 (\$2.8 million in the base year and an average of \$3.2 million of additional operating expenditure per annum over SAW RD20).

The business case for additional operating expenditure to support the SAW RD16 IT program is not sufficiently clear as to why the proposed costs associated with the capital program have almost doubled as compared to current levels.

While SA Water stated the increasing costs related to the SAW RD16 IT capital program are being driven by higher initial operating costs associated with the use of Software as a Service solutions, and the transformation of SA Water to a digital utility, it is not clear why these underlying drivers have doubled the cost of supporting the delivery of the SAW RD16 IT program.

SA Water did not identify any further operating savings or efficiencies, aside from those generated in SAW RD16 and already embedded in the base year, to be driven by this additional operating expenditure. Accordingly, the Commission does not consider this additional operating expenditure to be prudent and efficient.

However, the SAW RD16 final determination included an expected peak operating expenditure for the SAW RD16 IT program of \$3.2 million in 2019-20, which has not been fully included in the base year (\$2.8 million is included in the base year). As these programs are ongoing, the Commission accepts an average additional \$0.5 million per annum of operating expenditure to be prudent and efficient. This will bring the \$2.8 million per annum embedded in the base year up to the previously anticipated, and allowed, level of \$3.2 million per annum.

Additional operating expenditure to meet increases in IT licensing costs above inflation

SA Water proposed an average additional \$0.6 million per annum of operational expenditure for higher IT licensing costs that are forecast during SAW RD20, driven by more devices being made available to field staff and above CPI increases in licensing costs for existing applications.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.8.2.

Is SA Water's proposal supported by the CNC?

See section A3.8.2.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.8.2.

What have other stakeholders said about this issue?

See section A3.8.2.

What evidence has Cardno provided on this issue?

See section A3.8.2.

Further, Cardno stated that SA Water had provided reasonable explanation for the proposed increases and recommended allowing them.⁵¹⁵

⁵¹⁵ Cardno, p. 59.

Commission's consideration

The draft decision is that an average additional \$0.6 million per annum of operational expenditure is appropriate to meet higher IT licensing costs during SAW RD20.

SA Water has stated that licensing costs supporting its critical IT systems are increasing at a rate above inflation. These IT systems use software that runs a significant proportion of SA Water's core functionality, including Microsoft software, which supports all day to day applications used by staff, including database management and Maximo software, which is SA Water's key asset/works management and field functionality software. SA Water has provided evidence, including quotes from Maximo and Microsoft, that its licensing costs over SAW RD20 will increase by 10 percent per annum.

The Commission's draft decision is to allow this increase on the basis that SA Water is increasingly a digital organisation, which relies on IT systems to support service delivery to its customers, for which licensing costs are largely out of its control.

Additional operating expenditure to support roll-out of digital presence strategy

SA Water proposed an average additional \$0.4 million per annum of operational expenditure for costs related to new IT investment capital expenditure programs to sustain its services. The additional operational expenditure was proposed to support the implementation of a new capital expenditure program designed to continue implementation of its digital presence strategy.

SA Water has been implementing its digital presence strategy since 2014, and has been focussed on:

- ▶ transforming its website
- ▶ providing e-billing and improved payment channels
- ▶ establishing customer self service facilities, and
- ▶ providing online fault reporting capabilities.

SA Water intends to continue the strategy across SAW RD20 by addressing customer relationship management capabilities, investing in existing digital channels, and establishing a central digital media asset management application.

SA Water expects business savings driven by its IT investment over SAW RD20 will result in that investment being almost 'operating expenditure neutral'.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.8.2.

Is SA Water's proposal supported by the CNC?

See section A3.8.2.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.8.2.

What have other stakeholders said about this issue?

See section A3.8.2.

What evidence has Cardno provided on this issue?

See section A3.8.2.

Further, Cardno recommended:

'accepting SA Water's proposed RD20 operating expenditure increases while also incorporating the operating expenditure savings to reflect the neutral operating expenditure impact that they have projected'.⁵¹⁶

Commission's consideration

The draft decision is that an average additional \$0.4 million per annum for operational expenditure associated with this initiative is prudent and efficient, noting its decision on the capital expenditure elements of these initiatives (discussed above).

However, the Commission is of the view that IT investment should be 'operating expenditure neutral'. So as SA Water is accountable for delivering the business savings it expects to make, the Commission has embedded an equivalent amount of IT-led business savings into the draft determination.

This will provide for savings being passed on to SA Water customers transparently. Stakeholders and the Commission require improved reporting associated with IT initiatives, outcomes and consumer benefits. The Commission expects that SA Water will improve its benefits realisation tracking for IT investment during SAW RD20.

A3.8.3.2 Improve

Operating expenditure to support IT investment to 'improve' services

SA Water proposed an average additional \$3.3 million per annum of operational expenditure related to IT initiatives to improve services to customers. These initiatives are: improving workforce collaboration and mobility, integrating operations, implementing smart infrastructure, and improving data analytics.

SA Water identifies a range of customer benefits from these programs, including: faster response rates to network issues and reducing the length of temporary interruptions, reducing treatments cost and improving the taste of water, improved service times through more efficient allocation of work, and maximising the benefits from other digital capability investments.

SA Water expects business savings driven by its IT investment over SAW RD20 will result in that investment being almost 'operating expenditure neutral'.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.8.2.

Is SA Water's proposal supported by the CNC?

See section A3.8.2.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.8.2.

What have other stakeholders said about this issue?

See section A3.8.2.

⁵¹⁶ Cardno, p. 58.

Commission's consideration

The draft decision is that an average additional \$3.3 million per annum operational expenditure associated with IT initiatives to improve service is prudent and efficient, noting its decision on the capital expenditure elements of these initiatives.

However, the Commission is of the view that IT investment should be 'operating expenditure neutral'. So as SA Water is accountable for delivering the business savings it expects to make, the Commission has embedded an equivalent amount of IT-led business savings into the draft determination.

This will provide for savings being passed on to SA Water customers transparently. Stakeholders and the Commission require improved reporting associated with IT initiatives, outcomes and consumer benefits. The Commission expects that SA Water will improve its benefits realisation tracking for IT investment during SAW RD20.

A3.8.3.3 External obligations

Operating expenditure to support IT investment to meet external obligations

SA Water proposed an average additional operational expenditure of \$1.8 million per annum for IT capital expenditure programs to meet external obligations. These relate to:

- ▶ Risk management: upgrading systems that will become non-compliant over SAW RD20, upgrading strategic sourcing systems, upgrading risk management systems, and enhancing SA Water's billing systems.
- ▶ Corporate systems: refreshing assets to ensure SA Water's underlying asset infrastructure can continue to support its business applications, upgrading cyber security, and improving IT resilience.
- ▶ Maintaining compliance with Australian Energy Market Operator requirements, to allow SA Water to continue trading on the national energy market, improve commercial decision making, improve data quality, and improve tracking of supplier performance.
- ▶ Minimising function and performance disruption, maintaining an acceptable risk profile, and ensuring SA Water can continue to provide its critical services to the South Australian Community.

SA Water expects business savings driven by its IT investment over SAW RD20 will result in that investment being almost 'operating expenditure neutral'.

How well does SA Water's proposal meet our guidance on this issue?

See section A3.8.2.

Is SA Water's proposal supported by the CNC?

See section A3.8.2.

How well does SA Water's proposal meet the Regulators Working Group requirements?

See section A3.8.2.

What have other stakeholders said about this issue?

See section A3.8.2.

Commission's consideration

The draft decision is that an average additional operational expenditure of \$1.8 million per annum related to IT capital expenditure programs to meet external obligations is prudent and efficient.

However, the Commission is of the view that IT investment should be 'operating expenditure neutral'. So as SA Water is accountable for delivering the business savings it expects to make, the Commission has embedded an equivalent amount of IT-led business savings into the draft determination.

Requiring these as a specific and identified IT-led business savings (as opposed to allowing these savings to contribute to the general efficiency target, as proposed by SA Water) will provide for these savings are achieved and passed on to SA Water customers transparently.

With continued, significant investment in IT, stakeholders and the Commission require improved reporting associated with IT initiatives, outcomes and consumer benefits. The Commission expects that SA Water will improve its benefits realisation tracking for IT investment during SAW RD20.

A3.9 Summary of draft decision

This section summarises the impact of the Commission's draft decision on capital and operating expenditure for SAW RD20.

Table A3.3: Summary of the Commission's draft decision on capital expenditure for SAW RD20, relative to SA Water's RBP (\$Dec18, million)

Item description	2020-21	2021-22	2022-23	2023-24	SAW RD20 total
SA Water RBP	527.6	394.3	466.4	453.8	1842.0
Not include ZCEF (Not a retail service)	-103.7	0.0	0.0	0.0	-103.7
<u>SAW RD16 ex-post</u>					
Water reticulation mains replacement	5.5	5.5	5.5	5.5	22.0
<u>SAW RD20 RBP sample adjustments</u>					
Water Quality - Happy Valley WTP and Chloramine	-10.4	-10.4	-10.4	-10.4	-41.4
Non-potable water (340 of 650 properties)	-9.4	-9.4	-9.4	-9.4	-37.7
Regional Towns (Aesthetics)	-6.2	-6.2	-6.2	-6.2	-24.8
Kangaroo Island Desalination Plant	-22.8				-22.8
Morgan System (Upper Spencer Gulf) augmentation	-22.8				-22.8
Wastewater mains management program	7.7	-7.6	-11.3	-11.3	-22.5
Water reticulation mains management program	-9.3	-9.3	-9.3	-9.3	-37.2
Glenelg Adelaide Parklands recycled water expansion	-1.5	-2.5	-3.0	-3.0	-10.0

Item description	2020-21	2021-22	2022-23	2023-24	SAW RD20 total
IT program (standard asset refresh is 37 percent of all IT expenditure)	-2.4	-2.4	-2.4	-2.4	-9.6
Structures - water networks	-1.5	-1.5	-1.5	-1.5	-5.8
Subtotal (before efficiency targets applied)	350.7	350.5	418.5	405.8	1525.6
Continuing efficiency - applied to entire program (0.5 percent)	-1.7	-3.5	-6.3	-8.1	-19.7
Catch-up efficiency - applied to expenditure not in sample (1.5 percent)	-4.6	-5.1	-10.9	-13.8	-34.4
Total SAW RD20 draft decision	344.4	341.9	401.3	383.9	1471.5

Table A3.4: Summary of the Commission's draft decision on capital expenditure for SAW RD20, by investment driver (\$Dec18, million)

\$m(Dec18)	RBP submission	Project / program adjustments	Before Efficiencies	Continuing Efficiencies	Catch-up Efficiencies	Draft Decision
SAW RD20 period net capex by driver						
External Obligation	364.4	0	364.4	-4.7	-8.2	351.5
Sustain Service	868.4	-53.1	815.3	-10.5	-18.4	786.4
Improve Service	382.2	-217.6	164.6	-2.1	-3.7	158.8
Growth	190.7	-45.7	145.0	-1.9	-3.3	139.8
Efficiency	36.3	0	36.3	-0.5	-0.8	35.1
Proposed SAW RD20 net capex	1842.0	-316.4	1525.6	-19.7	-34.4	1471.5

Table A3.5: Summary of the Commission's draft decision on operational expenditure for SAW RD20, relative to SA Water's RBP (\$Dec18, million)

Item description	2020-21	2021-22	2022-23	2023-24	SAW RD20 total
SA Water RBP efficient base year	479	479	479	479	1917
Draft decision adjustment	-20.3	-20.3	-20.3	-20.3	-81
Electricity adjustment	-5.4	-10.3	-9.7	-9.7	-35.0
SA Water RBP additional operating expenditure	19.8	38.5	49.3	54.7	162.3
<u>Growth – draft decision adjustments</u>					
Asset investment operating costs					
Kangaroo Island desalination	0	-1.1	-1.1	-1.1	-3.3
Upper Spencer Gulf capacity upgrade	0	-2.2	-2.7	-1.5	-6.4
<u>External obligations - draft decision adjustments</u>					
Asset investment operating costs	-1.2	-1.2	-1.2	-1.2	-4.8
Water industry licence fee reduction					
Northern Adelaide Irrigation Scheme					
Eyre Peninsula Desalination		-1.6	-1.6	-1.6	-4.8
Safety (property portfolio)	-0.2	-0.2	-0.2	-0.2	-0.8
Environmental improvement plans (incl. recycling)					
<u>Improve - draft decision adjustments</u>					
Asset investment operating costs		-0.7	-2.5	-3.4	-6.6
Recycled water expansion	-0.1	-0.1	-0.1	-0.1	-0.4
Reconciliation Action Plan	-0.3	-0.3	-0.3	-0.3	-1.2
GIS Data Quality Improvement	-0.2	-0.2	-0.2	-0.2	-0.8
Regional community support	-0.4	-0.4	-0.4	-0.4	-1.6
<u>Sustain - draft decision adjustments</u>					
Water network management	-0.4	-0.4	-0.4	-0.4	-1.6
Asset investment operating costs	-1.9	-3.2	-5.6	-5.8	-16.5
Adelaide desalination plant contract	-1.3	-2.4	-2.1	-2.2	-8.0

Item description	2020-21	2021-22	2022-23	2023-24	SAW RD20 total
Wage increases	-1.2	-1.8	-2.5	-3.1	-8.6
Technical training	-0.7	-0.8	-1.0	-1.0	-3.5
<u>IT - draft decision adjustments</u>					
IT operating cost uplift (current capital program)	-1.7	-3	-2.6	-2.7	-10
IT licencing cost above inflation					
IT investment operating costs (Sustain)					
IT investment operating costs (Improve)					
IT investment operating costs (External obligations)					
IT investment operating costs (Growth)					
<i>Subtotal (before savings and efficiency targets applied)</i>	<i>463.2</i>	<i>467.4</i>	<i>474.1</i>	<i>478.7</i>	<i>1883.3</i>
SA Water RBP proposed savings and efficiencies	-53.3	-55.7	-57.4	-57.7	-224.1
Energy savings (including revenue) (ZCEF 'add back')	46.5	47.2	47.2	45.8	186.7
0.5% ongoing efficiency			0.1		0.0
Procurement contract savings	-1.3	-1.2	-1.2	-1.2	-4.9
IT led business savings	-1.5	-4.0	-7.0	-9.9	-22.4
Metropolitan service delivery efficiencies (Allwater)		-5.4	-5.4	-5.4	-16.2
Total SAW RD20 draft decision	453.5	448.3	450.4	450.4	1802.6

Table A3.6: Summary of the Commission's draft decision on additional operational expenditure for SAW RD20, by investment driver (\$Dec18, million)

Investment driver	Additional operating expenditure (opex)						
	2020-21	2021-22	2022-23	2023-24	SA Water RBP additional opex by driver	Draft decision adjustment	Draft decision additional opex by driver
External responsibilities	4.1	12.3	15.8	18	50	-10	40
Sustain services	11.5	15.6	18.7	19.9	65.6	-48.9	16.7
Improve services	3.8	6.5	10.0	12.6	32.9	-9.7	23.2
Enabling growth	0.4	4.0	4.9	4.1	13.4	-9.5	4
SA Water RBP additional opex by year	19.1	37.8	48.6	54.0	159.5		
Draft decision adjustments	-9.3	-18.7	-23.3	-24.2	-75.5		
Draft decision additional opex by year	9.8	19.1	25.3	29.8	84		

Appendix 4 The cost of funding and using assets

This attachment provides supporting information and analysis in relation to several issues:

- ▶ risk-free rates
- ▶ long-term inflation expectations
- ▶ the market risk premium, and
- ▶ annual updates to the rate of return.

The sections below include detailed and technical responses to various submissions.

A4.1 Structure of this technical appendix

- ▶ Section A4.2 outlines the Commission's rate of return principles.
- ▶ Section A4.3 explains negative real risk-free rates.
- ▶ Section A4.4 discusses rate of returns methodologies across jurisdictions.
- ▶ Section A4.5 reviews SA Water's proposal for long-term inflation expectations.
- ▶ Section A4.6 discusses market and survey based approaches to estimating long-term inflation expectations.
- ▶ Section A4.7 outlines responses to claims regarding the risk-free rate and long-term inflation expectations.
- ▶ Section A4.8 discusses evidence surrounding the market risk premium.
- ▶ Section A4.9 discusses the sensitivity of the glide path approach to long-term inflation expectations.
- ▶ Section A4.10 presents a worked example of the annual update approach (using example values from the SAW RD16 period).

A4.2 Rate of return principles

In making SAW RD16, the Commission developed the following principles for determining the regulatory rate of return for a benchmark efficient firm.

- ▶ General principle: The rate of return should reflect the prudent and efficient financing strategy of an incumbent large water utility, which minimises expected costs in the long term, on a risk-adjusted basis.
- ▶ Supporting principle 1: The rate of return should reflect a long-term obligation on the utility to provide reliable and secure water and sewerage services to consumers. It should not solely reflect the new entrant cost of capital.
- ▶ Supporting principle 2: The rate of return should provide an incentive for SA Water to incur prudent and efficient investment in regulated assets and financing costs.
- ▶ Supporting principle 3: The approach to setting the regulatory rate of return should be based on consistent principles over time and should be predictable. It should change only to reflect material changes in evidence or regulatory practice.

- ▶ Supporting principle 4: The assumed prudent financing strategy should not depend on the ownership of the regulated business (that is, the approach is indifferent to whether the entity is in Government or private ownership).

The principles are consistent with and give effect to the requirements of the ESC Act and the WI Act in the determination of the lowest sustainable cost of delivering drinking water and sewerage services and protecting consumers' long-term interests.

A4.3 Negative real risk-free rates are not unprecedented

SA Water claimed that a negative real risk-free rate (calculated based on market rates and a measure of long-term inflation expectations within the RBA's 2 to 3 percent range) is illogical and that it is inappropriate for use in a regulatory determination. SA Water stated that:

*'The market rate of the 10-year CGB (nominal) was 1.32 per cent as at June 2019 (Figure E.3) and using an inflation estimate of 2.45 per cent (current ESCOSA inflation estimation method) implies the real (excluding inflation) risk-free interest rate for the 2020-24 regulatory period is negative 1.10 per cent which is not logical.'*⁵¹⁷

Similar claims regarding a negative real risk-free rate have been made by regulated water businesses in the United Kingdom.⁵¹⁸

A real risk-free rate is an unobserved variable. It represents the nominal risk-free rate adjusted for inflation expectations.

Over the long-term, a real risk-free rate may be argued to approximate the long-term potential growth rate of the economy.⁵¹⁹ However, this is a theoretical long-run proposition with an abstract timeframe; it is not commonly applied in regulatory determinations.⁵²⁰ International studies as well as some international regulators have found that a negative real risk-free rate is not inconsistent with economic theory.⁵²¹

⁵¹⁷ SA Water, *RBP*, Appendix E, p. 5.

⁵¹⁸ Ofwat, *PR19 final determinations: Allowed return on capital technical appendix*, December 2019, p. 34, available at: <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/PR19-final-determinations-Allowed-return-on-capital-technical-appendix.pdf>.

⁵¹⁹ d'Arvisenet, *The dynamics of real interest rates, monetary policy and its limits*, Economic Research BNP Paribas, May 2016, p. 11, available at: <https://economic-research.bnpparibas.com/Views/DisplayPublication.aspx?type=document&IdPdf=28823>. As stated by the Deputy Governor of the RBA Dr Guy Debelle in 2015, '*ultimately the risk-free yield should be something that approximates the growth rate of the economy*'; see Debelle, *Bond Market Liquidity, Long-term Rates and China*, Actuaries Institute *Banking on Change* seminar, 2015, available at: <https://www.rba.gov.au/speeches/2015/sp-ag-2015-09-16.html>.

⁵²⁰ There have been exceptions. For example, a few economic regulators in overseas economies have used estimates of an equilibrium interest rate to measure the risk-free rate. See Europe Economics, *The cost of capital for the water sector at PR19*, footnote 14, pp. 21-22, 17 July 2019, available at: <https://www.ofwat.gov.uk/wp-content/uploads/2019/07/Europe-Economics-The-Cost-of-Capital-for-the-Water-Sector-at-PR19.pdf>.

⁵²¹ Ofwat, pp. 34-35; Europe Economics, *The allowed return on capital for the water sector at PR19*, December 2019, pp. 11-16, available at: <https://www.ofwat.gov.uk/wp-content/uploads/2019/12/Europe-Economics-%E2%80%93-The-Allowed-Return-on-Capital-for-the-Water-Sector-at-PR19-%E2%80%93-Final-Advice-December-2019.pdf>; and Wright, Burns, Mason and Pickford, *Estimating the cost of capital for implementation of price controls by UK regulators*, March 2018, pp. 35-36, available at: <http://www.bbk.ac.uk/ems/faculty/wright/wrightburnsmasonpickford2018.pdf>.

The yield on 10-year CGS is typically considered a proxy for the nominal risk-free rate by regulators,⁵²² investment practitioners⁵²³ and public sector agencies in Australia.⁵²⁴ It provides an observed price signal for comparison investments regardless of whether that signal is positive or negative.

The presence of negative nominal and real yields on government and corporate securities in economies in Europe is further evidence counter to the claim that negative real yields are an impossibility.⁵²⁵ So, too, is the fact that the real yield observed on 10-year inflation-indexed CGS was negative over the second half of 2019 (as shown by SA Water in its RBP, and by Frontier Economics).⁵²⁶

The use of a negative real risk-free rate in a regulatory determination is not unprecedented. Negative real yields have recently been included (or implied) in regulatory determinations in some Australian and overseas jurisdictions. For example, the AER used an implied real risk free rate of -1.18 percent in its October 2019 draft decision on SA Power Networks' rate of return.⁵²⁷ Ofwat's December 2019 final price determination used an implied real risk free rate of -1.39 to -2.35 percent to calculate ranges for the regulatory rate of return.⁵²⁸

While the current period for nominal yields on government securities may be unusual in nominal terms, it is not necessarily unusual in real terms.⁵²⁹ For instance, real yields on government securities have been estimated to be negative in Australia and other advanced economies in various historical periods including the 1920s to 1930s, 1960s and 1970s (Figure A4.1).⁵³⁰

⁵²² Commission, *Guidance paper 5*, p. 15.

⁵²³ AER, *Rate of return instrument – explanatory statement*, p. 88.

⁵²⁴ RBA, *Why are long-term bond yields so low?*, pp. 27-31.

⁵²⁵ Europe Economics p. 16, and RBA, *Why are long-term bond yields so low?*, pp. 27-31.

⁵²⁶ SA Water, *RBP, Appendix E*, pp. 1-6, and Frontier Economics, p. 62.

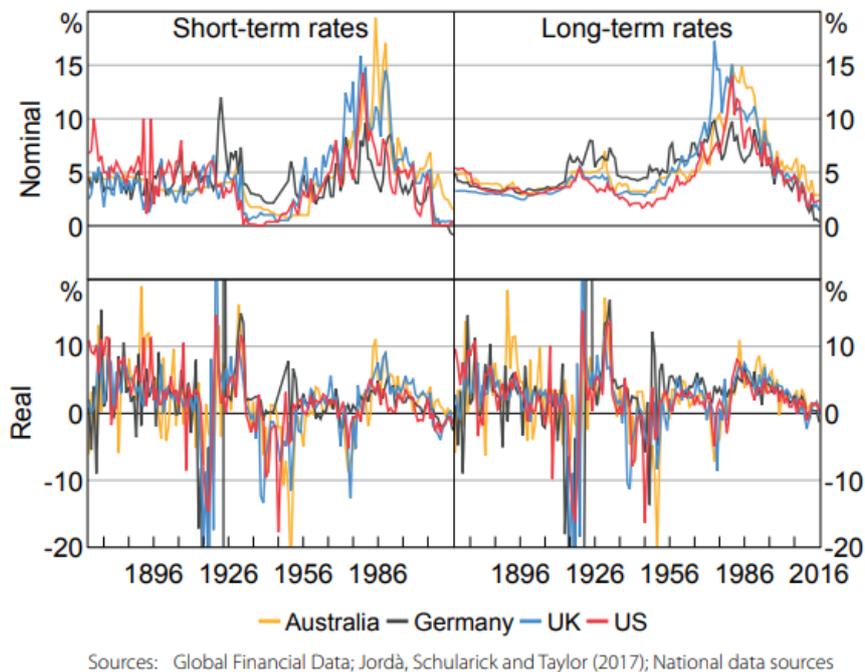
⁵²⁷ AER, *SA Power Networks – Determinations 2020-25 Draft Determination*, October 2019, available at: <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/sa-power-networks-determination-2020-25>.

⁵²⁸ Ofwat, p.4.

⁵²⁹ Lowe, *Some Echoes of Melville, Sir Leslie Melville Lecture*, Canberra, 29 October 2019, available at: <https://www.rba.gov.au/speeches/2019/sp-gov-2019-10-29.html>.

⁵³⁰ Borio and Hofmann, 'Is Monetary Policy Effective When Interest Rates Are Persistently Low?', in *Monetary Policy and Financial Stability in a World of Low Interest Rates*, Proceedings of a Conference Held in Sydney, 2017, p. 60, available at: <https://www.rba.gov.au/publications/conf/2017/pdf/rba-conference-volume-2017.pdf>.

Figure A4.1: Estimated real risk-free rates, research from the Bank of International Settlements⁵³¹



Additionally, SA Water claimed that an assumption of a negative real risk-free rate is not supported by the relationship between the nominal yield on 10-year CGS and actual CPI inflation since 2009, and the current level of inflation expectations embedded in inflation-indexed bonds.

However, it is unclear what theoretical or empirical relationship between the nominal yield on a 10-year CGS and actual CPI inflation SA Water is referring to. Indeed, SACOSS questioned the extent of any relationship between the nominal yield on 10-year CGS and actual CPI inflation since 2009. SACOSS stated that:

'... there is little long-term relationship between inflation rates and bond rates. Figure E.5 in Appendix E of SA Water's Our Plan clearly shows the lack of a relationship between the risk-free rate (green line) and actual inflation (blue line) over the ten years from 2009 to 2019. Examining Figure E.5, inflation has generally been below the risk-free rate, but the gap has been closing, and currently inflation is higher than the risk-free rate as at the end of 2019.'

As explained later in the Appendix, a 10-year government bond is commonly understood as being composed of several unobserved time-varying components, such as expected short-term real yields, expected long-term inflation, and a term premium. The extent of the relationship between nominal 10-year CGS and long-term inflation expectations is ambiguous and depends on various economic and risk factors. The known limitations of inflation-indexed bonds are also discussed later in this Appendix.

In summary, the Commission considers that:

- ▶ a risk-free rate provides an observed price signal for comparison investments regardless of whether it is positive or negative, and
- ▶ real risk-free rates fluctuate with market conditions and can sometimes be negative.

⁵³¹ Borio and Hofmann, p. 60.

A4.4 Rate of return outcomes under the Commission’s methodology are not out of line with other jurisdictions

A4.4.1 Jurisdictions select rate of return methodologies to suit their own requirements

SA Water has put a view that the Commission’s rate of return methodology generates outcomes that differ from other jurisdictions. In particular, SA Water cited higher returns in recent decisions for water companies regulated by the IPART and the Victorian Essential Services Commission (ESCV). Isle Utilities noted that SA Water’s rate of return appears lower than comparable returns in water companies, namely in Victoria and NSW.⁵³²

As a matter of law, regulators must use rate of return methodologies that meet their legislative requirements and objectives. Those requirements and objectives differ by jurisdiction and by industry. For example, some regulators are required by legislation (under the national energy rules) to use a post-tax nominal rate of return while others are not. Further, regulators select parameters based on assessments of, among other things, market risk, firm-level risk and the risk-free rate of return.⁵³³ Accordingly, rates of return should not necessarily be the same across jurisdictions.

As well as this, there can be different underlying methodologies followed by regulators. For example, the ESCV makes regulatory determinations under its PREMO methodology.⁵³⁴ Under PREMO, a higher level of ambition in terms of delivering customer value results in a higher return on equity. SA Water has acknowledged that the ESCV uses a different rate of return methodology to the one followed by the Commission.⁵³⁵

A4.4.2 A comparison suggests that the Commission’s methodology is not out of line with other Australian jurisdictions

As a cross-check, and as outlined in Guidance Paper 5, the Commission’s selection of individual rate of return parameters were compared to other jurisdictions.⁵³⁶ In general, the parameters were broadly similar when compared across jurisdictions. The individual parameter selections from other jurisdictions can be used to estimate *indicative* post-tax real rates of return (Table A4.1). The calculations in the table below have limitations and provide only a high-level, indicative perspective on rates of return.⁵³⁷ Nonetheless, the Commission’s proposed rate of return is generally in line with estimates for many other jurisdictions in Australia.⁵³⁸ This conclusion is supported by the Queensland

⁵³² Business SA, p. 18.

⁵³³ There can be reasonable differences in regulators’ assessments of risks. For example, the choice of the equity beta parameter could vary across industries and regulatory methodologies.

⁵³⁴ PREMO stands for Performance, Risk, Engagement, Management and Outcomes. PREMO links the return on equity allowed in the revenue requirement to the value delivered by a water corporation to its customers. For example, see ESCV, *City West Water final decision, 2018 Water Price Review*, 19 June 2018, p. 3, available at: <https://www.esc.vic.gov.au/sites/default/files/documents/2018-water-price-review-city-west-water-final-decision-20180619.pdf>.

⁵³⁵ SA Water, *Submission on Guidance Papers 6 and 7*, p. 5.

⁵³⁶ Commission, *Guidance Paper 5*, pp. 13-33.

⁵³⁷ Rates of return will be specific to each regulated business and have been estimated using each regulator’s methodology from its most recent determination, which may change in future periods. Where regulators use proprietary information in their WACC estimates, the Commission has substituted that information for publicly available information. The Commission’s estimates may therefore differ to the calculations of each regulator.

⁵³⁸ An exception is that IPART’s latest WACC bi-annual update suggests that the IPART WACC range for water would be: 2.4 percent (lower end), 3.2 percent (mid point) and 4.0 percent (upper end); see IPART, *WACC Biannual Update, February 2020*, available at: <https://www.ipart.nsw.gov.au/Home/Industries/Special-Reviews/Regulatory-policy/WACC/Market-Update/Spreadsheet-Model-WACC-model-February-2020>.

Competition Authority's (QCA) analysis of regulators' rate of return decisions (expressed in nominal terms), released in February 2020,⁵³⁹ which produces results that are consistent with the Commission's analysis.

Table A4.1: Example of indicative real post-tax rates of return as at 6 February 2020

	ESCOSA	AER	ERA	QCA	OTTER	ICRC
WACC (real, post-tax) %	2.71	2.74 ⁵⁴⁰	2.74 ⁵⁴¹	1.91 ⁵⁴²	2.80 ⁵⁴³	2.56 ⁵⁴⁴

Isle Utilities has highlighted that IPART's regulatory rate of return is higher than many other jurisdictions mostly due to the treatment of the risk-free rate (which is calculated as the mid-point between a long and short-term average).⁵⁴⁵ As pointed out by the Commission in Guidance Paper 7, the structural decline in bond yields since 2009 means the use of long-term averages will likely capture out-dated information about risk aversion and potential growth in the Australian economy.⁵⁴⁶ Hence, there are likely to be large, persistent and foreseeable errors from the use of long-term averages to calculate the risk-free rate.⁵⁴⁷ SA Water has acknowledged that the latest market data is likely to be a better predictor of yields.⁵⁴⁸

539 See QCA, *Gladstone Area Board price monitoring 2020-25 Draft report*, page 84

540 The Commission's estimates are informed by Australian Energy Regulator (AER)'s Rate of return instrument, December 2018, which sets a post-tax vanilla WACC with the risk-free rate of interest and cost of debt updated to 6 February 2020. These are: Risk Free Rate - 20 to 60 day average of 10 year CGB; Cost of debt - trailing average approach over 10-years; Market Risk Premium - 6.1%; The 2018 Rate of Return instrument does not include debt raising costs; Debt: Total assets - 60%, Equity beta - 0.6. The Commission has assumed that the transition to a trailing average cost of debt is complete, using the publicly available RBA corporate bond series to 31 Dec 2019.

541 Based on the parameters in the ERA's 2018 Rate of Return Guidelines meeting the requirements of the National Gas Rules. Risk Free Rate - 20-day average of 5-year Risk Free Rate, given by nominal 5-year Commonwealth Government Bonds, Cost of debt - 5-year interest swap rate - 20 days + 10-year Debt Risk Premium (Bloomberg) + Hedging costs + Debt raising costs; Inflation - bond break even rate - 5-year Commonwealth Government Bonds & indexed Commonwealth Government Bonds, 20 business days observations; Market Risk Premium - 6.0%; Debt raising costs 10bps + 11.4bps hedging costs; Debt to total assets - 55%; Equity Beta 0.7

542 Based on settings for the Queensland Competition Authority (QCA) Rural Irrigation price review 2020-24. However, these are subject to change according to the time, and the risk profile of the regulated industry. Risk Free Rate = 10-year Commonwealth Government Bond, 20 days averaging; Cost of debt = (Risk Free Rate + Debt Risk Premium) 'On The Day' approach BBB bonds from RBA & Bloomberg, 20 days averaging; Inflation = 2.38 percent (though QCA's WACC is nominal); Market Risk Premium = 6.5 percent; Debt raising costs - 10.8bps; Debt to total assets - 60%; Equity beta - 0.755

543 Based on settings from the Office of the Tasmanian Economic Regulator' (OTTER)'s 2018 Water and Sewerage Price Determination Investigation Final Report, with interest rates adjusted to be current at 6 Feb 2020. However, these parameters are subject to change for future regulatory periods. Risk Free Rate = Hybrid of 40-days observations and 10-year average; Cost of debt = Risk Free Rate + Debt Risk Premium - Hybrid of 40-days observations and 10-year average; Inflation - 2.5%; Market Risk Premium - 7.4%; Debt-raising costs 10bps; Debt to total assets - 60%; Equity beta - 065

544 Based on setting from the Independent Competition and Regulatory Commission (ICRC) Final report: Regulated water and sewerage services Prices 2018-23, May 2018. Risk Free Rate = Commonwealth Government Bond 40 days average; Cost of debt - 10-year trailing average; Inflation - 2.5%; Market Risk Premium - 6.5%; Debt raising costs 12.5bps; Debt to total assets - 60%; Equity beta - 0.7

545 Business SA, pp. 15-16.

546 Commission, *Guidance Paper 7*, p. 10.

547 Commission, *Guidance Paper 7*, p.10.

548 SA Water, *RBP*, Appendix E, p. 3.

In summary, the Commission considers that the rate of return methodology used in SAW RD20 is appropriate and not sufficiently different to other jurisdictions to justify a change in methodology.

A4.5 SA Water’s proposal for long-term inflation expectations has significant limitations

The Commission’s draft decision is to not change its methodology to that proposed by SA Water’s in relation to estimating long-term inflation expectations. SA Water’s proposal has significant limitations and, if implemented, may lead to price and service outcomes that are not in the long-term interests of customers. Below are the Commission’s considerations.

A4.5.1 What was SA Water’s proposal?⁵⁴⁹

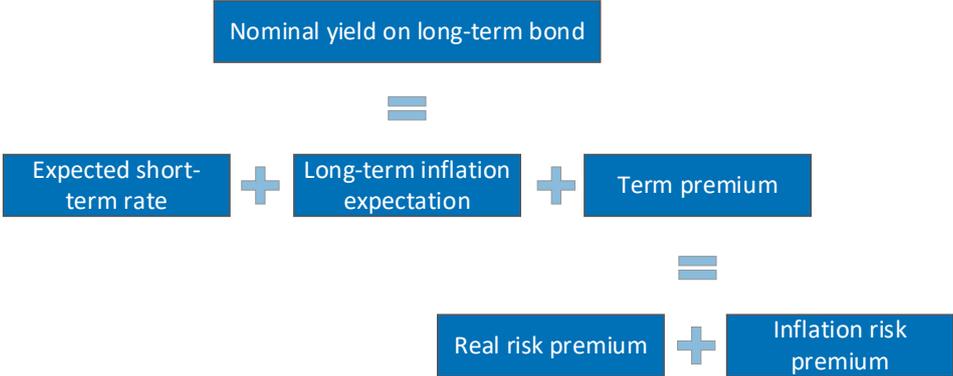
SA Water’s proposed measure of long-term inflation expectations has two components.

- ▶ Part 1 (cap): the 60-day average of nominal yields on 10-year CGS minus 0.15 percentage points is proposed as a ‘cap’ on long-term inflation expectations. Based on data as of 6 February 2020, that cap is binding. This means that the long-term inflation expectation would be estimated as 1.01 percent (calculated as a risk-free rate of 1.16 percent minus 0.15 percent).
- ▶ Part 2: SA Water proposes to use the RBA’s forecast for inflation one-year ahead when the cap (outlined above) is non-binding. There is no specific rationale provided for the use of a one-year ahead forecast of inflation as an indicator of long-term expectations.

A4.5.2 The Commission’s response to proposal part 1 (cap on long-term inflation expectations)

A conceptual weakness of proposal part 1 is that the yield on 10-year CGS is commonly understood as being composed of several unobserved time-varying components, such as expected short-term real yields, expected long-term inflation, and a term premium (the return that investors require to hold a longer-term bond instead of investing in a series of short-term bonds) (see Figure A4.2). Without appropriately accounting for the real yield and term premium, the use of nominal yields as an indicator of investors’ long-term inflation expectations would be inappropriate.

Figure A4.2: Stylised decomposition of a nominal yield on a 10-year government bond⁵⁵⁰



Source: adapted from Vlieghe 2018

⁵⁴⁹ SA Water, *RBP*, Appendix E, pp. 4-6.
⁵⁵⁰ This conceptual framework for understanding nominal bond yields has been explained in various publications. For example, RBA, *Why are long-term bond yields so low?*, pp. 27-31; Clarida, *Monetary Policy, Price Stability, and Equilibrium Bond Yields: Success and Consequences*, speech at the High-Level Conference

The conceptual limitation of proposal part 1 is borne out in two empirical observations.

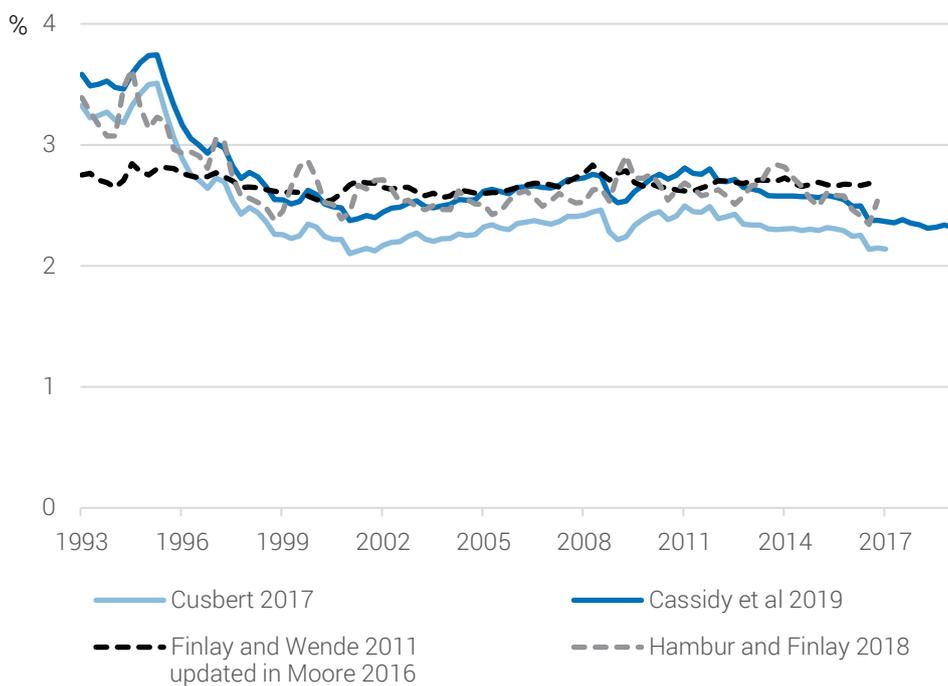
- ▶ The level of nominal yields on 10-year CGS has differed markedly to commonly available indicators of long-term inflation expectations over the past two decades. The difference partly reflects that risk premia in nominal yields are considered to be large and time-varying. The trend decline in nominal yields since 2009 partly reflects that financial markets expect short-term real rates to be much lower on average in the future than they have been in earlier decades.⁵⁵¹ This reflects the trend decline in estimates of the neutral rate of interest in Australia. This, in turn, reflects a decline in the economy's potential growth rate and an increase in risk aversion of households and firms.⁵⁵² SA Water's proposal part 1 does not explicitly account for the various components in yields. It places weight on the period between 2014 and 2018 when nominal yields were within the RBA's 2 to 3 percent target band. While, in theory, the various components in nominal yields (the real yield and term premium) could be completely offsetting, thereby leaving the nominal yield to approximate long-term inflation expectations, there is no guarantee that this would be the case at any point in time.
- ▶ Estimates of long-term inflation expectations in Australia derived in various research studies have tended to lie within the RBA's 2 to 3 percent inflation target band (Figure A4.3). When viewed over a historical period, those research estimates of long-term inflation expectations are different to SA Water's proposal part 1.

on Global Risk, Uncertainty, And Volatility, co-sponsored by the Bank for International Settlements, the Board of Governors of the Federal Reserve System, and the Swiss National Bank, Zurich, Switzerland, available at: <https://www.federalreserve.gov/newsevents/speech/clarida20191112a.htm>; Kim, Walsh and Wei, *Tips from TIPS: Updates and Discussions*, US Board of Governors of the Federal Reserve System, FEDS Notes, May 21 2019, available at: <https://www.federalreserve.gov/econres/notes/feds-notes/tips-from-tips-update-and-discussions-20190521.htm>; and Vlieghe, *The yield curve and QE*. Liquidity risk is not included in the diagram. Investors may demand a liquidity premium to compensate for the risk of market prices moving against them in a substantial way if they try to sell their position. Liquidity premiums are commonly known to exist in inflation-indexed CGS.

⁵⁵¹ Commission, *Guidance Paper 7*, p. 10.

⁵⁵² Commission, *Guidance Paper 7*, p. 10.

Figure A4.3: Long-term inflation expectations in Australia, derived from research studies⁵⁵³



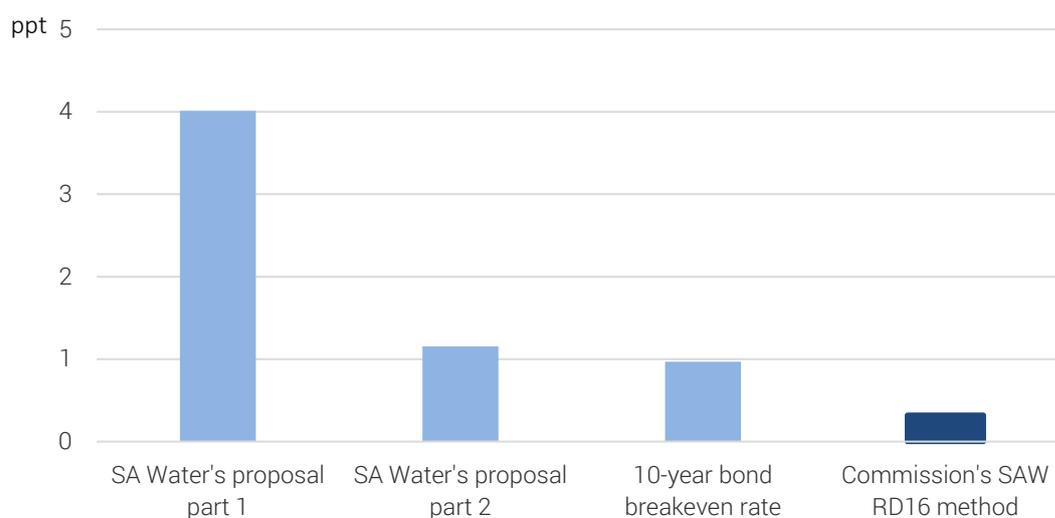
Sources: Commission; RBA

Based on data since 1994 (around the time when inflation targeting was introduced), SA Water’s proposal part 1 would have led to an average forecast error well above those errors observed under other measures of long-term inflation expectations (namely the Commission’s SAW RD16 method, the bond breakeven method and proposal part 2; see Figure A4.4). These types of forecast tests have various limitations,⁵⁵⁴ but may be used by investors when forming expectations about the long-term economic outlook.

⁵⁵³ Hambur and Finlay p. 15; Moore p.26; Cassidy, Rankin, Read and Seibold p. 153; and Cusbert p. 18.

⁵⁵⁴ Limitations include the sample and time period assessed.

Figure A4.4: Forecast error by approach, measured as root mean squared error, 1994 to 2009⁵⁵⁵



Source: Commission

As of February 2020, proposal part 1 implies a long-term inflation expectation of around 1 percent (see bottom row of Table A4.2 below). SACOSS noted the very low level of long-term inflation expectations implied under SA Water's proposal part 1.⁵⁵⁶ Consistent with that comment, the Commission notes that SA Water's proposal is below the majority of available indicators of short-term and long-term inflation expectations. Such an estimate is below the expectations of professional forecasters (who put significant resources into understanding the likely trajectory of inflation) and of the expectations of households and union officials (which are known to provide information on the expectations embedded within wage negotiations, and thereby can influence the actual rate of inflation in the medium to longer term).⁵⁵⁷ The proposal would imply that the RBA has limited, if any, inflation forecasting credibility.

⁵⁵⁵ Data calculated as the root mean squared error of the implied forecast under each method in time (t), compared with the annual average year-ended CPI inflation outcome over the period time t-40 to t. For example, the 10-year bond breakeven rate in the March quarter 1994 would be compared with the annual average CPI outcome over the ten years ending in the December quarter of 2003. The data in the chart is based on data up to September 2019.

⁵⁵⁶ SACOSS, pp. 28-29.

⁵⁵⁷ Ballantyne, Gillitzer, Jacobs and Rankin, *Disagreement about Inflation Expectations, Research Discussion Paper RDP 2016-02*, p. 2, available at: <https://www.rba.gov.au/publications/rdp/2016/pdf/rdp2016-02.pdf>.

Table A4.2: Short-term and long-term inflation expectations are above current estimates from proposal part 1⁵⁵⁸

Observed measures of inflation expectations			
Long-term measures, percent		Short-term measures, percent	
RBA target band	2 - 3	Professional forecasters' expectations 1 year in future	2.0
10 year bond break even	1.5	Professional forecasters' expectations 2 years in future	2.1
10 year inflation swap	~1.5 - 2.0	Survey of union officials' expectations 1 year in future	1.9
Professional forecasters' expectations 6-10 years in future	~2.4 - 2.5	Survey of union officials' expectations 2 years in future	1.8
Union survey of expectations 5-10 years in future	~2 - 2.2	Westpac consumer survey of price expectations 1 year ahead	4.0
SA Water's proposal for long-term inflation expectations as of February 2020 is 1.01 percent			

A4.5.3 Response to proposal part 2 (RBA one-year inflation forecast)

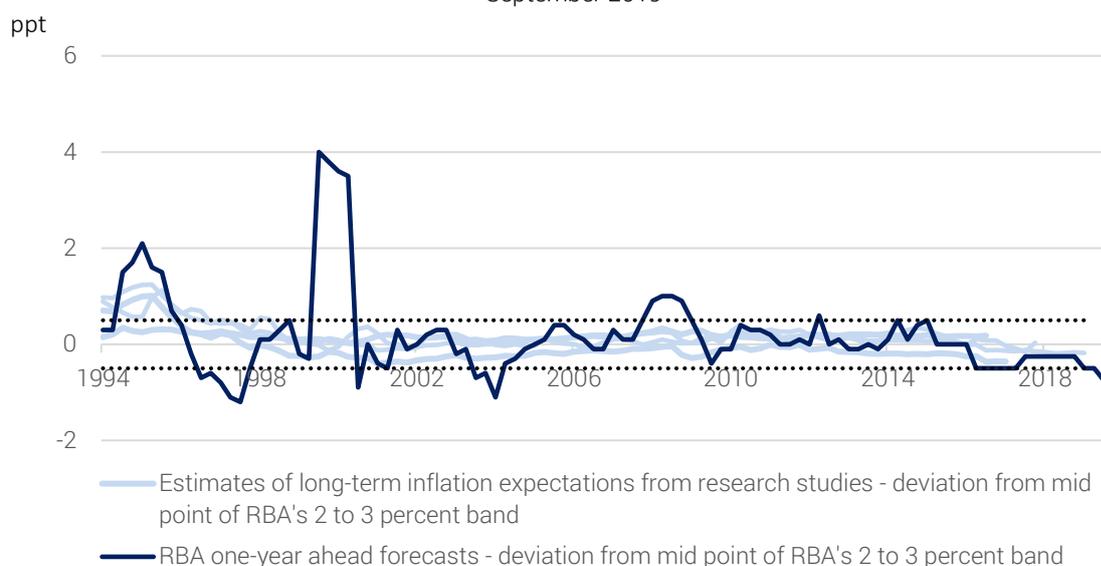
SA Water's proposal part 2 tended to fall within the RBA's 2 to 3 percent target range, according to historical information. Nonetheless, the proposal has two limitations.

First, the RBA's approach to forecasting short-term inflation incorporates various economic factors that are known to determine actual inflation in the short-term and do not necessarily determine long-term inflation expectations. Those economic factors include the amount of spare capacity in the economy, the prices of imported goods and the cost of labour.⁵⁵⁹ This is one reason why RBA one-year ahead forecasts have displayed greater periods of deviation from the mid-point of the target band compared with estimates of long-term inflation expectations from various research studies (see Figure A4.5).

⁵⁵⁸ Data for 10-year inflation swap, professional forecasters' expectations 6-10 years in future and union survey of expectations 5-10 years in future, are estimated from RBA, *November 2019 Statement on Monetary Policy*, p. 66. The rest of the data is from RBA statistical table G3, available at: <https://www.rba.gov.au/statistics/tables/#inflation-expectations>.

⁵⁵⁹ Cassidy et al pp.144-165.

Figure A4.5: Deviation from the mid-point of the RBA's 2 to 3 percent target range, March 1994 to September 2019⁵⁶⁰



Sources: Commission; RBA

This underscores the risk of a temporary event unrelated to long-term expectations being included in the one-year ahead forecast and hence being included in the regulatory determination. For example, a transitory impact on consumer prices, perhaps due to one-off tax change, a severe weather-event or a natural disaster would be included by the RBA in its forecasts of headline inflation. Periods of policy change, namely the years surrounding the introduction of the GST in the late 1990s, coincided with large observed forecast errors. Indicative of this risk, the RBA's one-year ahead forecasts are not used by the RBA itself as an indicator of long-term inflation expectation.⁵⁶¹

Second, while the RBA's forecasts of inflation one-year ahead have tended to lie within the RBA's 2 to 3 percent target range, this does not prove the suitability of the measure. For instance, if inflation expectations are well anchored, and monetary policy levers are effective, then forecasts over a one or two year horizon may be expected to reflect that characteristic and be close to or within the 2 to 3 percent target band.⁵⁶²

Consistent with the two limitations outlined above, Isle Utilities argued that the short-term nature of the RBA's one-year inflation forecast is unreasonable as a measure of long-term inflation expectations in the context of long-term investments and funding requirements.⁵⁶³

⁵⁶⁰ Estimates from research studies are from Hambur and Finlay p. 15; Moore p.26; Cassidy, Rankin, Read and Seibold p. 153; and Cusbert p. 18. The data on the RBA's one-year ahead forecasts are based on the exact RBA forecast data as released up to 2014 and published on the website, available at: <https://www.rba.gov.au/statistics/historical-forecasts.html>; The data on RBA one-year forecasts since 2014 has been extracted from quarterly RBA SMP publications. The RBA forecast data is, where available, for t+4 quarters, where t is the current quarter when the forecast was made.

⁵⁶¹ RBA, *November 2019 Statement on Monetary Policy*, p.66.

⁵⁶² Edey and Stone *A perspective on monetary policy and transparency and communication*, 2004, pp. 95-96, available at: <https://www.rba.gov.au/publications/confs/2004/pdf/edey-stone.pdf>.

⁵⁶³ Business SA p. 18.

Frontier Economics suggested that the use of one-year ahead inflation forecast (using outturn inflation from the previous year, akin to a 'random walk' approach to forecasting inflation) could be used to estimate long-term inflation expectations.⁵⁶⁴ However, Frontier Economics presented no evidence that supports the proposition that investors or consumers would form long-term inflation expectations based purely on the latest CPI inflation outcome. As highlighted above, this approach could raise the risk of a temporary event, unrelated to long-term expectations, being included in the regulatory determination.

Overall, the use of SA Water's proposal part 2 would increase the risk of measurement and conceptual error in the regulatory determination, as would the proposal by Frontier Economics to use outturn inflation from the previous year as an indicator of long-term inflation expectations. The fact that one-year ahead forecasts have historically been within the 2 to 3 percent target band is not, having regard to the matters identified by the Commission above, sufficient justification to accept the proposal.

A4.5.4 Response to the proposal as a whole (viewing parts 1 and 2 in combination)

In addition to the matters outlined above, the Commission also notes limitations when viewing SA Water's proposal as a whole. First, there is a practical inconsistency between proposals part 1 and 2: the low level of inflation expectations implied in part 1 (currently 1.01 percent) implies that the RBA has limited, if any, inflation forecasting credibility. However, at the same time, in proposal part 2, SA Water expressly relies on the RBA's inflation forecasting credibility, as it assumes that investors' long-term inflation expectations are informed by the RBA's one-year forecast.

Second, there is inconsistency between SA Water's proposal and other parts of SA Water's RBP, as well as the South Australian Government's forecasts of inflation. For example, the inflation forecast used by SA Water in its RBP for labour cost growth for the four year regulatory period is around 2 percent,⁵⁶⁵ and the Government's Mid-Year Budget forecasts of Adelaide CPI inflation are 2 percent in financial year 2021-22 and a little above 2 percent in 2022-23.⁵⁶⁶ In contrast, and as noted earlier, SA Water's proposal assumes that investors would expect inflation to be 1.01 percent on average for the next 10 years.

A4.5.5 Summary of the Commission's response to SA Water's proposal

As noted above, the Commission's draft decision is to reject SA Water's proposed method for estimating long-term inflation expectations: the proposed method has significant limitations and, if implemented, may lead to price and service outcomes that are not in the long-term interests of customers.

A4.6 Alternative approaches to estimating long-term inflation expectations

A4.6.1 The long-term bond breakeven rate is not appropriate as a measure of long-term inflation expectations

The Commission's draft decision is that, while the long-term bond break even approach is a plausible methodology in certain circumstances, in the Commission's view the time-varying premiums and biases inherent within it mean that it is not appropriate for use as a measure of long-term inflation expectations in SAW RD20.

⁵⁶⁴ Frontier Economics, pp. 55-56.

⁵⁶⁵ SA Water, *RBP*, p. 29.

⁵⁶⁶ South Australian Government, *Mid-Year Budget Review – 2019-20*, p. 23, available at https://www.treasury.sa.gov.au/_data/assets/pdf_file/0020/131096/Mid-Year-Budget-Review-2019-20.pdf.

The 10-year bond breakeven rate is a market-based measure of long-term inflation expectations. It is calculated as the difference in yields between nominal and inflation-indexed CGS. The key argument in favour of using the bond breakeven rate is based on the notion that investors have large financial resources at stake and strong incentives to form accurate expectations of inflation. However, as highlighted in the Commission’s Guidance Paper 6, two aspects of CGS markets can impede the use of the bond breakeven rate as a pure measure of inflation expectations.

First, the yield on nominal and inflation-indexed CGS includes an inflation risk premium, which is compensation for bearing inflation risk (that is, higher or lower than long-term expected inflation).⁵⁶⁷ Research suggests that the premium can be large, time-varying and at longer-term horizons can account for much of the variation in the bond breakeven rate (Figure A4.6).⁵⁶⁸ This makes it difficult to distinguish between movements due to pure changes in long-term inflation expectations and those associated with the risk premium.

The known time-varying nature of the inflation risk premium is at odds with the claim made by Frontier Economics that the inflation risk premium overestimates the bond break even rate.⁵⁶⁹ This may have been the case – on average and in the past. However, as shown in Guidance Paper 6, there have been periods, in the late 1990s and early 2000s, where inflation risk premiums were estimated to be negative.⁵⁷⁰ As noted in Chapter 8, there is at present arguably more-than-usual uncertainty about the speed of recovery in inflation. This might suggest that inflation risk premiums are low or even negative. This would, in effect, bias the bond break even rate downward, not upward as suggested by Frontier Economics.

Figure A4.6: Example estimates of long-term inflation risk premiums in Australia in the bond breakeven rate⁵⁷¹



Source: Finlay and Wende 2011 updated in Moore 2016

⁵⁶⁷ Finlay and Wende, *Estimating Inflation with a Limited Number of Inflation-indexed Bonds*, 2011, RBA Research Discussion Paper 2011-01, pp. 1-39, available at <https://www.rba.gov.au/publications/rdp/2011/pdf/rdp2011-01.pdf>.
⁵⁶⁸ Finlay and Wende, pp. 15-16. The authors note that their estimates of risk premiums may include liquidity premiums.
⁵⁶⁹ Frontier Economics, p. 57.
⁵⁷⁰ Finlay and Wende, pp. 15-16, and Hambur and Finlay pp. 19-21.
⁵⁷¹ The data in Figure 3 are up to August 2016.

Second, the market for inflation-indexed CGS is relatively small. In 2017-18, annual turnover of nominal CGS was more than twenty times as large as turnover for inflation-indexed CGS.⁵⁷² Investors may therefore demand a liquidity premium (a higher yield on inflation-indexed CGS) to compensate for the risk of market prices moving against them in a substantial way if they try to sell their position. This can downwardly bias the bond breakeven inflation rate.^{573,574} In line with this, some quantity-based metrics suggest that market liquidity for inflation-indexed CGS is relatively low.⁵⁷⁵ In particular, while issuance of inflation-indexed CGS has increased in recent years, traded volume (turnover) has not kept pace with the expansion, suggesting that liquidity in the secondary market may have fallen (Figure A4.7).⁵⁷⁶

The effect of a lack of liquidity in inflation-indexed CGS markets can be most pronounced in times of uncertainty. A number of regulators, including the AER, discontinued the use of the bond breakeven approach following the onset of the global financial crisis.⁵⁷⁷ To the extent that there is more-than-usual uncertainty about the outlook for inflation then, as noted in Chapter 8, this could increase the liquidity premium. That is, the risk of low inflation may mean that there is reduced need for the use of inflation-indexed CGS. The liquidity premium could, in that situation, bias the bond breakeven rate downward. This situation would be in conflict to the claim made by Frontier Economics that *'if anything, the premiums set out above are likely to result in an overestimate of expected inflation'*.⁵⁷⁸

The SACES report did not provide empirical evidence on quantity (for example the ratio of turnover to bonds outstanding) and price (bid-ask spread or market depth) based measures of market liquidity of inflation-indexed CGS. Nor does the Frontier Economics report.

Frontier Economics stated that the liquidity premium is small, citing claims made by other regulated business to the AER's 2017 review of inflation⁵⁷⁹ and a statement from IPART regarding liquidity of inflation-indexed bonds of a term to maturity of 3-5 years.⁵⁸⁰ However, Frontier Economics did not explain and demonstrate the evidence of small liquidity premiums. Further, the term to maturity of the inflation-indexed bonds cited in Frontier Economics' report is not in line with the Commission's draft decision to use a 10-year term to maturity. It is also worth noting that between 1999 and 2019 the liquidity premium on 10-year inflation-indexed bonds in the United States was estimated to have fluctuated between minus 0.5 percentage points and 3 percentage points.⁵⁸¹ This international evidence of the liquidity premium does not appear small.

⁵⁷² Turnover is calculated in value terms and includes all tenors. Data available from the AOFM, available at: <https://aofm.gov.au/statistics/historical-data/secondary-market-turnover/>.

⁵⁷³ Moore pp.27-28.

⁵⁷⁴ The presence of liquidity premiums in inflation-indexed government securities is also evident in international securities markets in the United States. See Christensen and Gilan *TIPS liquidity, breakeven inflation, and inflation expectations*, FRBFS *Economic Letter*, 20 June 2011, available at <https://www.frbsf.org/economic-research/publications/economic-letter/2011/june/tips-liquidity-breakeven-inflation-expectations/>.

⁵⁷⁵ It should be noted that measuring liquidity is not straight-forward, particularly in Australian fixed income markets where secondary activity is not always conducted on electronic markets. See Debelle, *Liquidity in Australian Fixed Income Markets*, address to the 4th Australian Regulatory Summit, 2016, Sydney, 21 June, available at <https://www.rba.gov.au/speeches/2016/sp-ag-2016-06-21.html>.

⁵⁷⁶ The turnover to bonds outstanding ratio is around half the same ratio calculated for nominal CGS in Australia, further reinforcing the risk that liquidity of inflation-indexed CGS could be low; for instance, in 2017-18, the ratio of turnover to bonds outstanding for nominal CGS was approximately 2.5 compared to 1.5 for inflation-indexed CGS.

⁵⁷⁷ AER, *Regulatory treatment of inflation*, 2017, p. 58, available at: <https://www.aer.gov.au/system/files/AER%20-%20Final%20position%20paper%20-%20Regulatory%20treatment%20of%20inflation%20-%20December%202017%20-%20Web%20upload.PDF>.

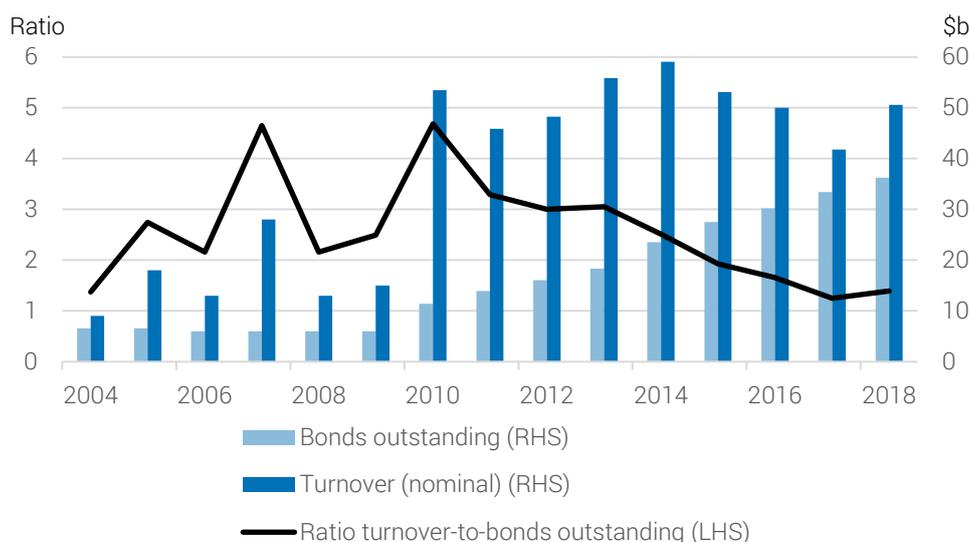
⁵⁷⁸ Frontier Economics, p. 59.

⁵⁷⁹ Frontier Economics, pp. 56-59.

⁵⁸⁰ Frontier Economics, p. 59.

⁵⁸¹ Kim, Walsh and Wei.

Figure A4.7: Stock of outstanding inflation-indexed CGS and annual turnover, all available tenors included



Sources: Australian Office of Financial Management; Commission; RBA

The presence of premiums and biases is likely to be a key reason why the bond breakeven rate has displayed more variability than other measures of long-term inflation expectations, namely inflation swaps and surveys of professional forecasters, and, as shown earlier, would have led to greater forecast error than the Commission’s SAW RD16 approach. At present, most utility regulators do not use the bond breakeven rate as a measure of long-term inflation expectations.⁵⁸² Frontier Economics placed weight on the low level of the 10-year bond break even rate since 2010,⁵⁸³ yet its submission does not address the low forecast accuracy of the bond break even rate that was observed prior to 2010.

SACES submitted that:

- ▶ the bond breakeven rate has fallen over recent years primarily due to lower inflation risk premiums (this is inferred because inflation swap rates, defined below, and bond breakeven rates have fallen by similar magnitudes since 2013), and
- ▶ the inflation risk premium should be incorporated into the measure of long-term inflation expectations (because SA Water should be insured against the inflation risk premium in CGS).⁵⁸⁴

Even if SACES’s first statement is correct (that the bond breakeven rate has fallen over recent years due to inflation risk premiums), this is not supporting evidence for the use of the bond breakeven approach in SAW RD20. Moreover, as discussed below, and as highlighted in Guidance Paper 6, inflation swaps may have time-varying liquidity premiums due to practical liquidity constraints caused by financial regulations binding the users of inflation swaps.⁵⁸⁵ There is, therefore, likely to be no guarantee that the liquidity premiums and inflation risk premiums inherent in these two separately traded financial products (inflation-indexed CGS and inflation swaps) would co-move in a predictable and simultaneous manner.

SACES’s second proposition is equivalent to the argument that the risk-free rate should be free of the inflation risk premium. This issue is discussed in section A4.7.1.

⁵⁸² Commission, *Guidance Paper 6*, pp. 1-14. The current exception is the ERA (WA).

⁵⁸³ Frontier Economics, pp. 56-62.

⁵⁸⁴ SACES, pp. 3-5.

⁵⁸⁵ SACES, pp. 3-5.

In summary, the Commission considers that:

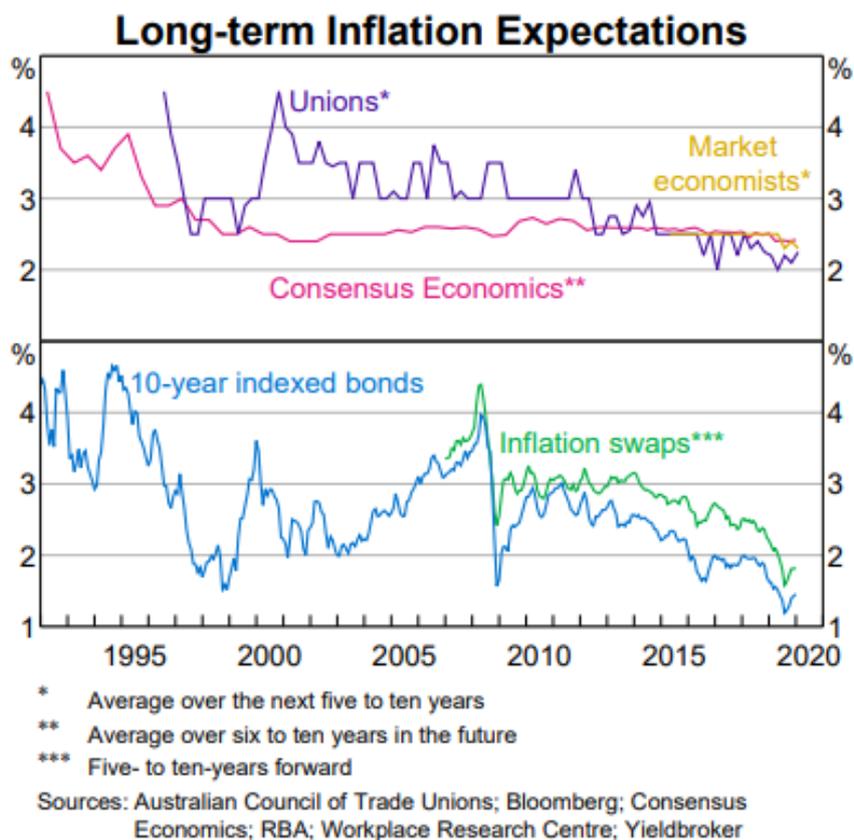
- ▶ premiums and biases mean that the bond breakeven rate is not appropriate for use in SAW RD20, and
- ▶ submissions did not adequately address the known limitations in the bond breakeven rate.

A4.6.2 Long-term inflation swaps are not appropriate as a measure of long-term inflation expectations

The Commission’s draft decision is that the fixed rate of 10-year inflation swaps is not appropriate for use as a measure of long-term inflation expectations in SAW RD20.

The fixed rate on inflation swaps, which is a type of financial derivative product, is another measure of long-term inflation expectations (Figure A4.8). In an inflation swap, one party receives a payment indexed to inflation in exchange for a payment determined by a fixed rate, which is agreed at initiation of the contract but paid at the end.⁵⁸⁶ Users of inflation swaps include pension funds (who use them to hedge long-dated inflation-linked obligations) and infrastructure project providers (who use them to hedge their inflation-linked assets or revenues).⁵⁸⁷

Figure A4.8: Market- and survey-based measures of long-term inflation expectations⁵⁸⁸



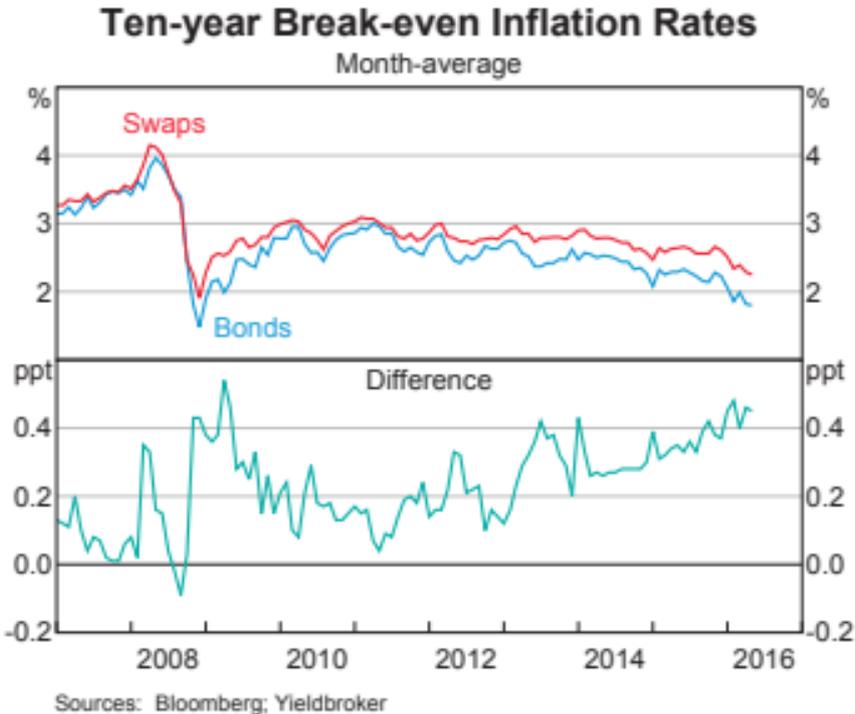
⁵⁸⁶ Moore, pp. 24-25.

⁵⁸⁷ Moore, pp. 24-25.

⁵⁸⁸ RBA, *February 2020 Statement on Monetary Policy*, p. 67.

As with the bond breakeven approach, the key advantage of inflation swaps is that their pricing is determined by markets (where investors should have strong incentives to form accurate expectations for inflation). Also, the supply of inflation swaps is not constrained, so in theory they should be less affected by liquidity premiums.⁵⁸⁹ Figure A4.9 illustrates that the long-term rate of inflation expectations implied from inflation swaps in Australia has tended to be consistently higher than the rate implied by the bond breakeven.⁵⁹⁰

Figure A4.9: Gap between market-based measures of long-term inflation expectations⁵⁹¹



Nonetheless, there are a number of disadvantages in the use of long-term inflation swaps. The market for swaps can lack transparency (with prices and quantities not publicly available)⁵⁹² and, like the bond breakeven rate, includes inflation risk premia that can bias the measure.⁵⁹³ Also, as mentioned above, the users of swaps (for example, financial institutions) are subject to various financial regulations and the RBA has reported that this can act as a practical liquidity constraint.⁵⁹⁴

In addition, the market for inflation swaps has only been in operation in Australia since 2008 and so there is uncertainty about the size of potential biases and further research may be needed to resolve that uncertainty.⁵⁹⁵ In its 2017 review of inflation, the AER noted some of the advantages of the swaps approach, but expressed caution about deriving inflation expectations from inflation swap products.⁵⁹⁶ No Australian utility regulator currently uses this approach.

⁵⁸⁹ Finlay and Olivan, *Extracting information from financial markets*, RBA Bulletin, March quarter 2012, pp. 50-51, available at <https://www.rba.gov.au/publications/bulletin/2012/mar/pdf/bu-0312-6.pdf>.
⁵⁹⁰ The difference between the bond breakeven and swaps measures is sometimes thought of as the upper bound estimate of the liquidity premium present in that particular inflation-indexed bond market; see Christensen and Gilan.
⁵⁹¹ Moore, p.28.
⁵⁹² Moore, pp. 28-30.
⁵⁹³ Finlay and Olivan, pp. 50-52.
⁵⁹⁴ Moore, pp. 28-30.
⁵⁹⁵ Moore, pp. 28-30.
⁵⁹⁶ AER, *Regulatory treatment of inflation*, pp. 55-56.

SACES has noted the advantages of the swaps measure.⁵⁹⁷ So, too, has Frontier Economics.⁵⁹⁸ However, neither of the SACES or Frontier reports address the key limitations of using inflation swaps; discussed both above and in Guidance Paper 6.⁵⁹⁹ The time-varying nature of the inflation risk premium in inflation swaps is also at odds with the statement made by Frontier Economics that the inflation risk premium overestimates the swaps measure.⁶⁰⁰ As noted in Chapter 8, there is more-than-usual uncertainty about the speed of recovery inflation at the moment. This could suggest that inflation risk premiums are low or even negative. This may, in effect, bias the swaps measure downward at the moment.

The Commission considers that there is currently inadequate evidence to support use of inflation swaps to estimate long-term inflation expectations.

A4.6.3 Surveys of professional forecasters are not appropriate as a measure of long-term inflation expectations

The Commission's draft decision is that surveys of professional forecasters' expectations of long-term inflation are not appropriate for measuring long-term inflation expectations in SAW RD20.

The use of surveys of market economists' expectations of average annual inflation over the next five to ten years, such as that published by Consensus Economics, could measure long-term inflation expectations. These surveys are considered in central bank research as a useful way to gauge long-term inflation expectations, as they should be less influenced by temporary economic factors or financial market developments, and because professional forecasters are well informed.⁶⁰¹ The surveys should also react to any de-anchoring of inflation expectations (that is, the measure should capture if long-term inflation expectations were to shift materially for a sustained period).^{602,603}

As noted in Guidance Paper 6, the main limitation of using surveys of professional forecasters is that the data are proprietary and may not be made publicly available. Frontier Economics has highlighted that those survey expectations have been highly persistent.⁶⁰⁴ Yet the persistence of those survey numbers, at around 2.5 percent, arguably indicates that inflation expectations may be well anchored.

Additionally, Frontier Economics has stated that the survey *has '...consistently over estimated outturn inflation over the last five years'*.⁶⁰⁵ However, it did not provide a forecast assessment over the period of inflation targeting in Australia.

In summary, the Commission considers that surveys of professional forecasters' long-term forecasts of inflation are not appropriate for use in SAW RD20 mainly due to the proprietary restrictions of the data. However, the data still serves as a cross-check on the anchor point to be used in the glide path approach to estimating inflation expectations (as explained in Chapter 8).

⁵⁹⁷ SACES, pp. 1-7.

⁵⁹⁸ Frontier Economics, pp. 24-41.

⁵⁹⁹ Commission, *Guidance paper 6*, pp. 13-14.

⁶⁰⁰ Frontier Economics, p. 57.

⁶⁰¹ Ellis, *Re: Regulatory treatment of inflation – inflation expectations*, 5 July 2017, pp. 1-2, available at: <https://www.aer.gov.au/system/files/Letter%20from%20the%20RBA%20to%20AER%20-%2025%20July%202017.pdf>.

⁶⁰² Ellis, pp. 1-2.

⁶⁰³ Research by the AER indicates that following an event that leads to a shift of professional forecasters' long-term inflation expectations, these expectations have tended to return to the mid-point of the target band within two to three years; see AER, *Regulatory treatment of inflation*, p.111-112.

⁶⁰⁴ Frontier Economics, p. 34.

⁶⁰⁵ Frontier Economics, p. 34.

A4.7 Response to claims made regarding the risk-free rate and long-term inflation expectations

The SACES and Frontier Economics submissions made claims regarding the measurement of the risk-free rate, the relationship between long-term inflation expectations and the risk-free rate, and the appropriate manner in which regulators should manage uncertainty about the risk-free rate and long-term inflation expectations. Below are the Commission's considerations of these propositions.

A4.7.1 Measurement of the risk-free rate

SACES argued that the inflation risk premium should be removed when calculating the risk-free rate for the regulatory determination,⁶⁰⁶ as the premium may distort the underlying rate of return from a level that would be appropriate. The proposal was made in the context of the bond breakeven approach.

In theory, a risk-free rate would be free of all risk premiums. As a matter of practice, however, investors, governments and regulators tend to adopt the yield on government securities as a measure of the risk-free rate. As noted earlier, those yields are commonly understood as being composed of several unobserved time-varying components, such as expected short-term real yields, expected long-term inflation, and a term premium.⁶⁰⁷ This term premium can be thought of as being made up of a real risk premium and an inflation risk premium.⁶⁰⁸ Estimates from the Australian Office of Financial Management suggest that at the end of 2019 the term premium in Australia was somewhere between 0.29 percent and -0.99 percent.⁶⁰⁹

The real risk premium and the inflation risk premium may at times be offsetting. As a result, adjusting for one premium but not the other, as proposed by SACES, could in fact add risk. Indeed, research estimates suggest that these two premiums can move in large offsetting directions (Figure A4.10).⁶¹⁰

⁶⁰⁶ SACES, pp. 3-4.

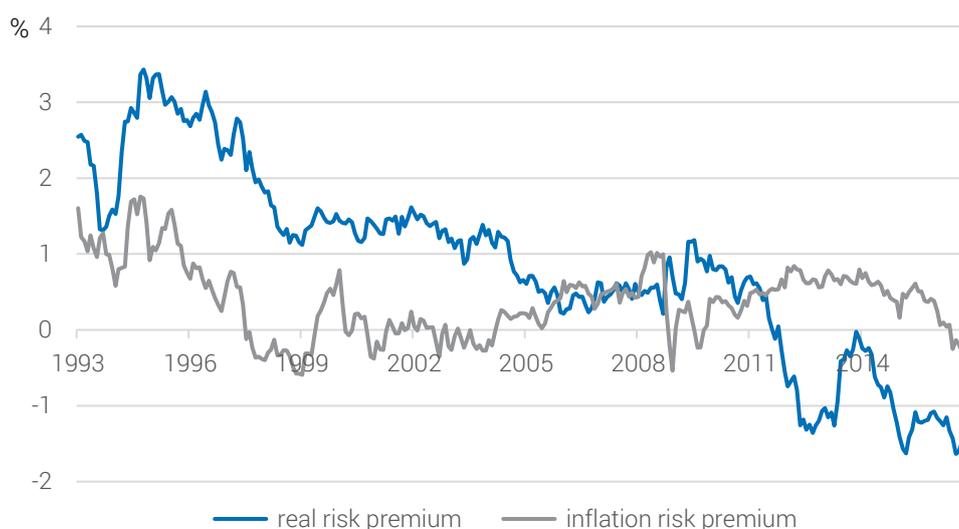
⁶⁰⁷ This conceptual framework for understanding nominal bond yields has been explained in various publications. For example, RBA, *Why are long-term bond yields so low?*, pp. 27-31; Clarida, *Monetary Policy, Price Stability, and Equilibrium Bond Yields: Success and Consequences*, speech at the High-Level Conference on Global Risk, Uncertainty, And Volatility, co-sponsored by the Bank for International Settlements, the Board of Governors of the Federal Reserve System, and the Swiss National Bank, Zurich, Switzerland, available at: <https://www.federalreserve.gov/newsevents/speech/clarida20191112a.htm>; Kim, Walsh and Wei, *Tips from TIPS: Updates and Discussions*, US Board of Governors of the Federal Reserve System, FEDS Notes, May 21 2019, available at: <https://www.federalreserve.gov/econres/notes/feds-notes/tips-from-tips-update-and-discussions-20190521.htm>; and Vlieghe, *The yield curve and QE*.

⁶⁰⁸ Cohen, Hordahl and Xia, *Term premia: models and some stylised facts*, Bank for International Settlements Quarterly Review, September 2018, p. 82, available at: https://www.bis.org/publ/qtrpdf/r_qt1809h.pdf.

⁶⁰⁹ AOFM term premium estimates are available at: <https://www.aofm.gov.au/data-hub>.

⁶¹⁰ Hambur and Finlay, *Affine Endeavour: Estimating a Joint Model of the Nominal and Real Term Structures of Interest Rates in Australia*, 2018, Research Discussion Paper – RDP 2018-02, pp. 19-21, available at: <https://www.rba.gov.au/publications/rdp/2018/pdf/rdp2018-02.pdf>.

Figure A4.10: Estimates of the real risk premium and inflation risk premium in 10-year CGS⁶¹¹



Source: RBA

There are also general limitations in any approach that attempts to remove the unobserved term premium from the risk-free rate.

- ▶ By removing the term premium, the rate of return no longer reflects what would, in practice, be available to those private investors considering the purchase of a government bond.
- ▶ The Commission's approach to the market risk premium (measured as the return on equities over government securities) uses a long-run average that includes historical term premiums. It may be inconsistent to remove the term premium from the risk-free rate but include the term premium when estimating the market risk premium.
- ▶ Estimating the term premium (for subsequent removal from the risk-free rate) requires the use of detailed econometric models. Those models bring their own set of model and estimation risks,⁶¹² and would lower transparency and replicability of the overall approach to estimating the risk-free rate.

When estimates of the term premium were positive, and therefore increased the risk-free rate and lead to a higher nominal return on equity for SA Water, the presence of the premium was not raised nor challenged by SA Water. Stakeholders, such as Uniting Communities,⁶¹³ and the CNC,⁶¹⁴ cautioned against changing the definition of parameters merely because they now generate a low rate of return.

In summary, the Commission considers that:

- ▶ it would be inappropriate to remove the inflation risk premium from the risk-free rate without simultaneously removing the real risk premium, and
- ▶ there would be limitations that arise in attempting to exclude the term premium from the risk-free rate for use in SAW RD20.

⁶¹¹ Hambur and Finlay pp. 19-21.

⁶¹² Cohen, Hordahl and Xia, p. 80-82.

⁶¹³ Uniting Communities, p. 28.

⁶¹⁴ Report of Independent Chair of the CNC, pp. 83-84.

A4.7.2 The extent of the relationship between the risk-free rate and long-term inflation expectations

SACES stated that *[m]ainstream economic theory suggests that there is a positive correlation between inflation expectations and the nominal bond yield*.⁶¹⁵ The claim is accompanied by correlation analysis and is used to suggest that the use of the midpoint of the RBA's 2 to 3 percent target leads to: (1) an estimate of long-term inflation expectations that is currently too high; and (2) volatility of the real regulatory rate of return.

Frontier Economics made a similar suggestion that: *'in the current market conditions, nominal government bond yields are very low. One reason for that is very low inflation expectations*'.⁶¹⁶

There is a range of relevant theoretical and empirical research on inflation expectations and bond yields. This includes research on the term structure of interest rates, including academic term structure of interest rate models that decompose yields into the various components thought to account for its movements,⁶¹⁷ and research about how inflation expectations adjust under monetary policy regimes (including research on the credibility of inflation targeting and central banks' ability to anchor inflation expectations around some target).⁶¹⁸ It is unclear which theory/s and evidence from economic literature SACES and Frontier Economics was referring to. No supporting evidence and literature were provided by either of the parties.

SACES's argument relies on: (1) the correlation between nominal 10-year CGS and 10-year bond breakeven rates (the latter calculated as the difference in yields between nominal and inflation-indexed CGS); and (2) long-term inflation expectations being an unobserved component in 10-year nominal and inflation-indexed CGS. SACES appears to have applied an ordinary least squares regression of the bond breakeven rate on nominal 10-year CGS and, as of September 2019, states that the regression results imply a bond breakeven rate of 1.7.⁶¹⁹

There are, however, limitations in the analysis presented by SACES. While there is some degree of correlation between 10-year CGS and the 10-year bond breakeven rate, the analysis does not disentangle whether or not the correlation reflects movements in inflation risk premiums, liquidity premiums and/or long-term inflation expectations. Nor does the correlation analysis appear to make adjustment for any structural trends that may be observed in the yields. SACES's regression model specification and the data used (for instance, the sample of data and model output) have not been presented in the submission.

In the context of the SACES proposition, Frontier Economics stated that:

'... nominal government bond yields are not the only determinant of inflation expectations, in which case the SACES approach disregards relevant information about inflation expectations in the prevailing market conditions'.⁶²⁰

This statement by Frontier Economics appears inconsistent with its earlier statement that a very low long-term inflation expectations was a reason for the very low nominal government bond yields.⁶²¹

⁶¹⁵ SACES p. 4.

⁶¹⁶ Frontier Economics, p. 15.

⁶¹⁷ For example, see Hambur and Finlay pp. 1-42.

⁶¹⁸ Debelle, *Twenty five years of Inflation Targeting in Australia*, pp. 53-71.

⁶¹⁹ SACES, p. 4.

⁶²⁰ Frontier Economics, p. 60.

⁶²¹ Frontier Economics, p. 15.

In addition, there are more general sources of evidence which stand at odds to the statements made by SACES and Frontier Economics. First, survey-based measures of long-term inflation expectations, namely surveys of the long-term inflation expectations of professional forecasters, have remained stable near the midpoint of the RBA's 2 to 3 percent target band.⁶²² As stated by the RBA in February 2020: *'[l]ong-term survey-based measures of inflation expectations are between 2-2½ percent and remain consistent with the Bank's medium-term inflation target.'*⁶²³ Second, estimates of long-term inflation expectations in Australia from various studies have remained within the RBA's 2 to 3 percent target band over the past 20 years, despite the structural decline in the yield on nominal 10-year CGS.⁶²⁴ Third, in August 2019, the Governor of the RBA claimed that *'... inflation expectations [in Australia] are well anchored'*.⁶²⁵ Finally, research and survey measures in the United States, Europe and the United Kingdom suggests that measures of long-term inflation expectations remained relatively well anchored around inflation targets, despite short-term fluctuations in economic conditions and large movements in nominal bond yields.⁶²⁶

In summary, the Commission considers that the extent of the relationship between nominal 10-year CGS and long-term inflation expectations is ambiguous and depends on various economic and risk factors.

A4.7.3 Regulators' approach to managing uncertainty

SACES stated that consumers of drinking water and sewerage services are likely to be averse to price volatility from the re-setting of the rate of return from one regulatory period to another. It put forward the proposition that regulators should select rate of return parameters to smooth revenues and prices. SACES stated:

*'[c]hanges in the real WACC cause the cost-of-capital building block to increase and decrease in real terms and are potentially a significant source of price volatility... Smoothing the real WACC can contribute tangibly to smoothing the trajectory of water prices.'*⁶²⁷

SACES further stated that: (1) regulators tend to smooth parameters when faced with uncertainty about concepts that can't be measured directly; and (2) a smoothing process is unlikely to be at odds with having cost-reflective revenues.

In the Commission's view, there are several limitations in these propositions.

First, cost-reflective revenues are an important element of economic regulation. Provided that real returns are cost-reflective, then any move away from this approach would impose some costs on consumers. SACES provided no evidence to support its proposition that consumers would value price stability in all circumstances. As the CNC stated *'[i]t seems highly likely to the Committee that customers would prefer price stability to further price increases, but that is not the same as saying they would prefer price stability under all circumstances.'*⁶²⁸

⁶²² RBA, *November 2019 SMP*, p. 66.

⁶²³ RBA, *Statement on Monetary Policy – February 2020*, 2020, p. 67.

⁶²⁴ Hambur and Finlay, p. 16; Cassidy, Rankin, Read and Seibold, *Explaining Low Inflation Using Models*, RBA Bulletin, p. 153, available at: <https://www.rba.gov.au/publications/bulletin/2019/jun/pdf/explaining-low-inflation-using-models.pdf>; Moore, *Measures of Inflation Expectations in Australia*, 2016, RBA Bulletin, p. 27, available at: <https://www.rba.gov.au/publications/bulletin/2016/dec/pdf/rba-bulletin-2016-12-measures-of-inflation-expectations-in-australia.pdf>; and Cusbert, *Estimating the NAIRU and the unemployment gap*, RBA Bulletin, June 2017, p. 18, available at: <https://www.rba.gov.au/publications/bulletin/2017/jun/2.html>.

⁶²⁵ Lowe, *Remarks at Jackson Hole Symposium*, Jackson Hole Symposium, Wyoming, 25 August, 2019, available at: <https://www.rba.gov.au/speeches/2019/sp-gov-2019-08-25.html>.

⁶²⁶ Clarida; Vlieghe, p. 8; Vahey, *Report to the AER on estimating expected inflation*, 2017, p. 10; and Carney, p. 26.

⁶²⁷ SACES, p.5.

⁶²⁸ Report of Independent Chair of the CNC, p. 83.

Price volatility may involve costs to customers, but the key trade-off involved is the risk of large periodic change versus more frequent annual changes. SACES's proposition that consumers dislike large periodic price changes between regulatory periods is arguably supportive of the annual update methodology proposed and explained by the Commission in Chapter 8.

Second, it is not necessarily the case that regulators must 'smooth parameters' to deal with forms of uncertainty. In the face of uncertainty about concepts that cannot be measured directly, economic agencies are known to: (1) rely on multiple sources of information and indicators of the concept; (2) use available empirical economic models to estimate the concept; and (3) be alert to structural forces that can impact on the measurement and estimation of the concept.⁶²⁹ In addition, economic agencies are known to deal with forecast uncertainty by evaluating forecast approaches and, where possible, using multiple forecast models to estimate key variables.⁶³⁰

The Commission has considered and applied these approaches when estimating long-term inflation expectations and assessing forecasts for the risk-free rate. For example, the Commission considered: a range of available indicators of long-term inflation expectations and the risk-free rate; the results of both academic studies and forecast assessments; and possible structural forces that may be impacting on expectations and the risk-free rate.

Third, much of the recent movement in the real rate of return reflects a fall in the nominal risk-free rate. SACES argued that:

*'... the cost recovery concept at hand is of a long-run nature and it is not clear that short run volatility in these prices provides useful price signals to water customers. The Commission should be wary of allowing 'outlier' pricing observations to be built into the maximum allowable revenue calculation.'*⁶³¹

However, it did not provide to the Commission any alternative methodologies for estimating and forecasting the nominal risk-free rate for use in SAW RD20. Guidance Paper 7 highlighted that the latest observations of yields on CGS are likely to be a better predictor of future yields than the use of a long-term average of yields.⁶³² Notably, SA Water acknowledged in its RBP that the latest market data was likely to be a better predictor of yields.⁶³³

In summary, the Commission considers that:

- ▶ there is no evidence to suggest that consumers prefer price stability under all circumstances and any move away from the use of cost-reflective returns would impose costs on consumers, and
- ▶ there are various ways to deal with uncertainty; relying on the 'smoothing' of parameters is not necessarily a common or appropriate approach.

⁶²⁹ Debelle, *Uncertainty*, 7th Warren Hogan Memorial lecture Sydney 26 October 2017, available at: <https://www.rba.gov.au/speeches/2017/sp-dg-2017-10-26.html>.

⁶³⁰ Debelle.

⁶³¹ SACES, p. ii.

⁶³² Commission, *Guidance Paper 7*, pp. 1-13.

⁶³³ SA Water, *RBP, Appendix E*, p. 3.

A4.8 A long-run average approach is a reasonable method of estimating the market risk premium

The market risk premium represents the expected return on equities over CGS. It is effectively a measure of investors' expectations about how much risk there is in the market and of the price that investors place on that risk.⁶³⁴ The Commission estimates a single figure for the market risk premium based on long-run data, to be used as a forecast for the regulatory horizon. That approach assumes that it is difficult to improve upon a long-run average of past returns when making forecasts for the long-term horizon of the additional return investors expect to receive from equities relative to that returned from CGS. The long-run average method was reviewed by the AER in 2018⁶³⁵ and was considered reasonable given that there are few robust alternative methods.⁶³⁶ Several other regulators supported the finding.⁶³⁷

While estimates of the market risk premium used by regulators in Australia are of a broadly similar magnitude, reflecting the similar methods and historical data that tend to be applied, there are some differences. Those differences largely reflect the underlying data sources and averaging methods used, the time periods selected, and any differences in methodologies for estimating the long-term risk free rate of interest. The Commission's selection of 6 percent reflects a consideration of the longest available arithmetic and geometric averages (Table A4.3).

Table A4.3: Long-run estimates of the market risk premium⁶³⁸

	Arithmetic average			Geometric average			
	Brailsford, Handley and Maheswaran (2008) (percent)	NERA (2013) (percent)	Average (percent)	Brailsford, Handley and Maheswaran (2008) (percent)	NERA (2013) (percent)	Average (percent)	RBA (2009) dataset (percent)
1883-2017	6.82	6.47	6.65	5.47	5.12	5.29	n/a
1917-2018	n/a	n/a	n/a	n/a	n/a	n/a	3.9

It is worth noting that, in June 2019, the RBA released a new dataset of historical realised equity returns.⁶³⁹ The 3.9 percent estimate from the RBA dataset (shown in Table A4.3) is lower than other estimates for Australia, due in part to the fact that the RBA dataset implies lower dividend payments in

⁶³⁴ The market risk premium does not relate to specific risks associated with investing in a water utility. Any non-diversifiable risks associated with investing in the benchmark efficient water utility is captured through the equity beta parameter.

⁶³⁵ AER, *Discussion paper – market risk premium, risk free rate averaging period and automatic application of the rate of return*, March 2018, available at: <https://www.aer.gov.au/system/files/AER%20-%20MRP%20Risk%20Free%20Rate%20Averaging%20Period%20and%20Automatic%20Application%20Discussion%20Paper%20-%20March%202018.pdf>;

⁶³⁶ AER, *Rate of return instrument: Explanatory statement*, pp. 220-275.

⁶³⁷ ERA (WA), pp. 178-179, and ICRC, *Final report: regulated water and sewerage services price 2018-2023*, pp. 105-106, available at: https://www.icrc.act.gov.au/_data/assets/pdf_file/0006/1374522/Report-8-of-2019-Water-and-Sewerage-Services-Prices-201920.pdf.

⁶³⁸ ERA (WA), p.180; and Mathews, *A History of Australian Equities*, p. 10.

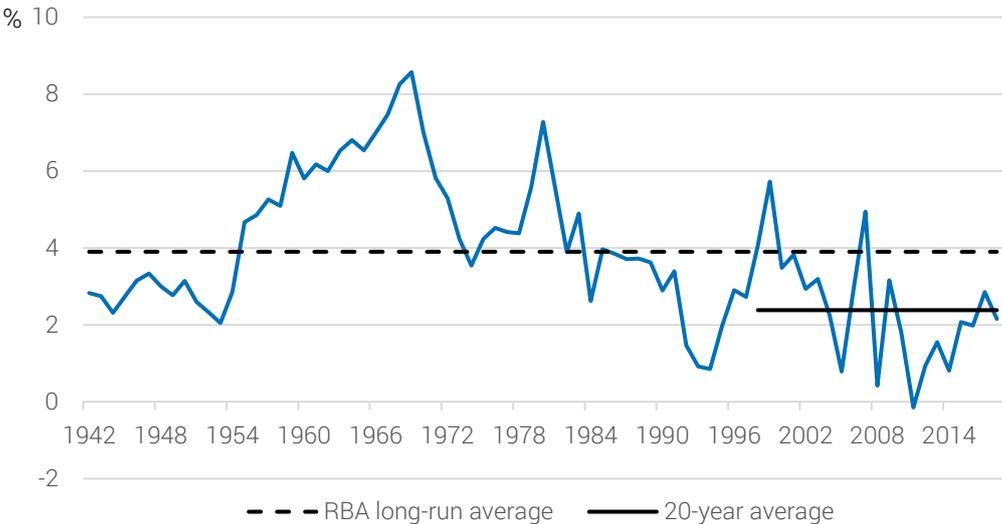
⁶³⁹ Production of the dataset was motivated by the known limitations of available historical data; see Mathews, p. 10. The dataset is based on collected and appropriately weighted data on dividend yields, rather than relying on adjustments to historical yield data, as was the case in the BHM and NERA datasets.

the first half of the 20th century than do other sources. Nonetheless, there are risks in favouring one historical data source over another (given the limitations in constructing historical data series), and placing too much weight on a new dataset that may not yet have been fully reviewed by regulators and regulated businesses. However, as the new dataset is examined over time, regulators' confidence in and information about the dataset will increase, and the data therein may be useful for consideration in future regulatory determinations. The RBA dataset, taken at face value, and after taking into account some potential downward bias from the use of geometric averaging, suggests that the long-run average of historical data could be closer to 5 percent than 6 percent (Figure A4.11).

Limitations of long-run estimates of the market risk premium

The long-run average method has two limitations: (i) estimates may be biased upwards due to structural factors (for example, due to technology change and the liberalisation of financial markets)⁶⁴⁰ and may be highly volatile (limiting credibility⁶⁴¹ and use in forecasting⁶⁴²) (see Figure A4.11; and (ii) the nature of the method is *backward-looking* – yet the market risk premium is an expectations-based concept and there appears to be limited empirical evidence (or theory) to suggest the long-run average of historical realised premiums is the best estimate of the market risk premium.⁶⁴³

Figure A4.11: RBA estimates of realised market risk premiums in Australia based on cumulative 25 year returns, annualised⁶⁴⁴



⁶⁴⁰ This may be due to survivorship bias and structural changes in financial markets (because of high transaction costs and limited opportunities for diversification); see ERA (WA), p.174.

⁶⁴¹ This is based on the finding that the realised market risk premium has historically been estimated to be large and volatile, in the context of standard economic models that describe investor behaviour; see Mehra and Prescott, 'The Equity Premium: A puzzle', *Journal of Monetary Economics*, 15, 1985, pp 145–161.

⁶⁴² High volatility can limit the ability to extrapolate the latest observation for use in forecasting over the regulatory horizon.

⁶⁴³ Some international research supports the long-run average approach. For example, see Duarte and Rosa, *The equity risk premium: a review of models*, Federal Reserve Bank of New York, Staff Report No 714, February 2015, available at: <https://www.newyorkfed.org/research/economists/duarte/medialibrary/8ec5369d89ae45a69752df198f0113f0.ashx>.

⁶⁴⁴ The RBA's calculation in Figure 1 uses 25-year cumulative returns to reflect the long time horizon of an investor. Other research in Australia uses 20-year cumulative returns when calculating the market risk premium and that particular research shows a similar trend to the RBA calculation; see Bianchi, Drew and Walk, *The (un)Predictable Equity Risk Premium*, Challenger Limited, November 2019, p. 16, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2694373.

Alternative methods for calculating the market risk premium were considered

The Commission considered two cross-checks to the estimate of the market risk premium: (1) surveys of investor expectations and (2) market-implied estimates.

First, according to a 2018 survey of investors in Australia by KPMG more than 85 percent of respondents reported a market risk premium of 6.5 percent or below.⁶⁴⁵ This was a similar result to surveys undertaken by KPMG in 2013 and 2015.⁶⁴⁶ The survey results are generally in line with the Commission's current estimate (though it is acknowledged that this is one survey of limited size and there are well-known limitations in survey approaches).⁶⁴⁷

Second, the AER's 2019 annual update for the rate of return publication presents market-implied risk premiums with sensitivity of the results lying between 6 percent and 9½ percent.⁶⁴⁸ The wide-range of market implied estimates largely reflects varying assumptions about real dividend growth in future. Importantly, it highlights the high degree of sensitivity to whatever inputs are used. For that reason, many regulators, including the Commission, use the long-run average of historical realised premiums to be, at any point in time, the best estimate of the market risk premium.

As noted in Chapter 8, Frontier Economics has argued that there is an inconsistency between the use of the historical average of the market risk premium and the latest observation of the yields on CGS. However, alternative market-implied approaches to estimating the market risk premium have known limitations including that the estimates are highly variable and dependent on assumptions regarding future dividend yields. Furthermore, as noted above, the latest observation of the yield on CGS is likely to be the best predictor of future yields over the four-year horizon,⁶⁴⁹ and the Commission considers that it is difficult to improve upon a long-run average of past returns when making forecasts for the long-term horizon of the additional return investors expect to receive from equities relative to that returned from CGS. No evidence was provided by Frontier Economics to suggest that this approach to forecasting is not the case. It is, therefore, not necessarily inconsistent for the Commission to use the latest observation of the yield on CGS and a long-run average of the market risk premium.

The relationship between the market risk premium and the risk-free rate was considered

A key question is whether or not the estimate of the market risk premium is likely to be fixed irrespective of changes in the risk-free rate. Frontier Economics has argued that there is an inverse relationship between the market risk premium and the risk-free rate and that the Commission should '*adopt an approach to estimating the required return on equity that pairs the risk-free rate consistently with the MRP*'.⁶⁵⁰ The suggestion is that the market premium should be higher in a low interest rate environment.

⁶⁴⁵ KPMG p. 11.

⁶⁴⁶ In 2013, approximately 75 percent of respondents used a market risk premium of 6 percent or below. In 2015, approximately 90 percent of respondents used a market risk premium of 6 percent or below; see KPMG, *Australian valuation practices survey 2015*, p. 19, available at: <https://assets.kpmg/content/dam/kpmg/pdf/2015/05/valuation-practices-survey-2015.pdf>.

⁶⁴⁷ Surveyed premiums are known to be sensitive not only to whom the question is directed (including the sample size and type of practitioner) but how it is directed. International studies suggest that surveys have limited predictive power; see Damodoran, *Equity Risk Premiums: Determinants, Estimations and Implications – The 2019 Edition*, April 2019, Stern School of Business, pp. 23-26, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3378246.

⁶⁴⁸ AER, *Rate of return – annual update*, December 2019, pp. 13-16, available at: <https://www.aer.gov.au/system/files/Rate%20of%20return%20annual%20update%20%E2%80%93%20December%202019.pdf>.

⁶⁴⁹ Commission, *Guidance paper 7*, pp. 1-12.

⁶⁵⁰ Frontier Economics, p. 4.

The Commission's current assessment is that, while there is some evidence of an inverse relationship, the magnitude and timing of that relationship is ambiguous. On the one hand, there is some evidence that there is a negative correlation between the two variables. On the other hand, there appears to be mixed evidence after reviewing academic studies, investor surveys and available economic data.

A number of regulated businesses in Australia have advocated that there is a negative relationship between the market risk premium and the risk-free rate.⁶⁵¹ And some international academic research appears to find some relationship in recent years.⁶⁵² However, a review by the AER in 2018 argued that there was no consensus in the academic literature on the direction, magnitude and stability of the relationship.⁶⁵³ The AER's conclusion drew from academic work that suggested that there was no theoretical relationship and that any relationship that may exist is not well enough established over extended periods to form the basis for any regulatory adjustment.⁶⁵⁴

Despite a noticeable decline in the yield on 10-year CGS between 2013 and 2018, there was not an apparent material change in the share of respondents in KPMG's survey of investors that were using a market risk premium greater than 6.5 percent.⁶⁵⁵

The Commission considered the underlying factors that might cause changes in the market risk premium and, accordingly, reviewed related indicators looking for signs of any increase or decrease that might be related to macroeconomic uncertainty or investor risk aversion. The market risk premium is known to depend on the level of certainty about future returns and the degree of investors' dislike towards any uncertainty.⁶⁵⁶ For example, when macroeconomic uncertainty, and hence uncertainty about future equity returns, is elevated, the premium needs to be higher in order to compensate the investor for holding these assets.⁶⁵⁷

Measures of economic policy uncertainty in Australia have risen over the past year.⁶⁵⁸ In an uncertain environment investors may demand compensation through a higher market risk premium. Frontier Economics cited comments made by current and former RBA Governors that risk premiums may generally have increased over recent years.⁶⁵⁹ In contrast, as of 6 February 2020 (when market based parameters were used to calculate the WACC), the spread between the yield on 10-year investment

⁶⁵¹ AER, *Discussion paper – market risk premium, risk free rate averaging period and automatic application of the rate of return*, p. 11.

⁶⁵² See Clarida; and see Borio, Disyata and Rungcharoenkitkul, *Why so low for so long: a long-term view of real interest rates*, paper presented to the American Economists Association conference, 1 December 2019, available at: https://www.aeaweb.org/conference/2020/preliminary?q=eNqrVipOTSxKzICyqgayiosz8_NCKgtSkbhKVqG SrU6SonFxfnJQI6SjlJJalEukOWUX5SZD-SmJFZCxTNzUyGssszUcpAZRQUFOAFTA6Xa2lpcMFkGIT8%2C. Also, some behavioural finance research suggests that so long as higher or lower risk-free rates are used to discount the value of future earnings of shares, then those resulting higher share prices can sometimes reinforce optimistic (higher) investor expectations of returns, and likewise lower share prices can reinforce pessimistic (lower) investor expectations of returns. See Gunn (2019), *Are investors chronically pessimistic?*. Chicago Booth Review, Summer 2009, available at: <https://review.chicagobooth.edu/finance/2019/article/are-investors-chronically-pessimistic>.

⁶⁵³ AER, *Discussion paper – market risk premium, risk free rate averaging period and automatic application of the rate of return*, p. 11.

⁶⁵⁴ AER, *Discussion paper – market risk premium, risk free rate averaging period and automatic application of the rate of return*, p. 11.

⁶⁵⁵ KPMG p. 11.

⁶⁵⁶ Dison and Rattan, *An improved model for understanding equity prices*, 2017, Bank of England Quarterly Bulletin 2017 Q2, p. 93, available at: <https://www.bankofengland.co.uk/quarterly-bulletin/2017/q2/an-improved-model-for-understanding-equity-prices>.

⁶⁵⁷ Elevated macroeconomic uncertainty is estimated to have been one factor behind the rise in the premium during the global financial crisis. So, too, was increased investor risk aversion. See Dison and Rattan, p. 93.

⁶⁵⁸ See https://www.policyuncertainty.com/australia_monthly.html.

⁶⁵⁹ Frontier Economics, pp. 42-51.

grade corporate bonds and the yield on 10-year CGS – known as an indicator of investor risk appetite (for example, the higher the spread, the higher the perceived risk aversion) – remained at relatively low levels.⁶⁶⁰ The US VIX Index, known as an indicator of global financial market volatility, had not reached levels observed in previous periods of financial market turbulence.⁶⁶¹ These indicators suggested that uncertainty may not be that high and investors may not be demanding compensation through a higher market risk premium.

In summary, the Commission, having considered the above matters, has formed the view that the evidence of a relationship between risk-free rates and the market risk premium does not currently appear of sufficient weight to support a move away from the current historical average method.

A4.9 The glide path approach to long-term inflation expectations necessarily involves judgement

As explained in Chapter 8, the Commission’s draft decision is to introduce a glide path to estimating long-term inflation expectations. The glide path approach recognises that there is a degree of uncertainty over the timing of the recovery path for inflation, which may currently be affecting household, business and investor expectations about inflation, while at the same time, the glide path approach recognises that the majority of available evidence suggests that inflation targeting has anchored long-term inflation expectations within the RBA’s 2 to 3 percent target band. Frontier Economics proposed a glide path labelled as option 4 in its submission.⁶⁶²

The Commission’s glide path approach has two elements:

- ▶ using the RBA forecasts of inflation for the next two years (subject to availability), and
- ▶ using the IMF medium-term (five year) inflation projection for Australia and assuming a linear transition from the RBA second-year forecast to the IMF projection for inflation in five years’ time, with the midpoint of the inflation target band assumed for the remainder of the ten year period.

For simplicity, the Commission proposes a linear glide path from the RBA year two forecast to the IMF year five projection. It would then calculate a geometric average of the glide path including the observations of the medium-term anchor.

To test the sensitivity of the approach, alternative approaches were considered (Table A4.3). Those alternative approaches include a ‘slow recovery, where the RBA inflation forecast is extended to the medium-term anchor, or a ‘fast recovery’, moving in year two to the medium-term anchor.

⁶⁶⁰ The corporate bond spread is considered an indicator of risk taking, as increased demand for corporate bonds relative to government bonds reduces the spread and therefore can indicate an investor’s willingness to take risk; see Kent, *The usual transmission – monetary policy and financial conditions*, 2019, address to Finance and Treasury Association, Sydney, available at: <https://www.rba.gov.au/speeches/2019/sp-ag-2019-08-13.html>. The Australian Competition Tribunal has previously suggested that the use of corporate bond spreads is a useful cross-check on movements in the market risk premium; see ERA (WA), p. 182.

⁶⁶¹ Data is available at: <https://fred.stlouisfed.org/series/VIXCLS>.

⁶⁶² Frontier Economics, pp. 62-64.

Table A4.4: Sensitivity analysis of the glide path for long-term inflation expectations

Financial year	Draft position	Sensitivity analysis: two examples	
		Slow recovery (percent)	Fast recovery (percent)
	Glide path (percent)		
2020-21	1.9	1.9	1.9
2021-22	2.00	2.00	2.5
2022-23	2.17	2.00	2.5
2023-24	2.33	2.00	2.5
Medium-term anchor			
2024-25 to 2029-30	Based on IMF projection: 2.5. RBA mid point of target band thereafter	Based on IMF projection: 2.5. RBA mid point of target band thereafter	Based on IMF projection: 2.5. RBA mid point of target band thereafter
Geometric average (percent)	2.33	2.27	2.43

Sources: RBA; IMF; Commission

The 'slow recovery' scenario assumes the extreme scenario that the inflation outlook remains flat. The 'fast recovery' scenario assumes that inflation recovers quickly. The fast recovery is in line with the Commission's approach used in SAW RD16 (which was, as explained in Guidance Paper 6, supported by RBA research that showed that a 2.5 percent forecast (the mid-point of the target band) was found to be about as accurate a guide as an RBA or professional forecast).⁶⁶³ The maximum difference under these two scenarios is approximately 16 basis points.

Various glide paths could be used.⁶⁶⁴ The Commission's draft decision for a linear path is made for reasons of simplicity, transparency and replicability. Frontier Economics presented five alternative glide paths. Each has advantages and disadvantages. These are listed below (see Table A4.4).

⁶⁶³ Tulip and Wallace, *Estimates of Uncertainty around the RBA's Forecasts*, 2012, RBA Research Discussion Paper 2012-07, pp.12-13, available at <https://www.rba.gov.au/publications/rdp/2012/pdf/rdp2012-07.pdf>.

⁶⁶⁴ Frontier Economics, pp. 62-64.

Table A4.5: Glide path options

Glide path proposed	Length and speed of glide path	Anchor point to glide path	Advantages and imitations
Commission's draft decision			
RBA two years of inflation forecasts, linear glide path to IMF medium-term projection	5 years	IMF medium-term projection	Simple, transparent and replicable. IMF is an independent and credible institution and the projection would be publicly available
Frontier's suggestions			
3-year glide path	3 years	Mid point of RBA target band	Simple approach, but the reason for the speed of recovery is unclear
Use the trend between the RBA's one-year ahead forecast and two-year ahead forecast to extrapolate out to the midpoint of the RBA inflation target range.	10 years	Mid point of RBA target band	Differences in forecasts do not indicate a long-term trend. Reason for 10-year path to recovery is unclear
Specify some bounds around the mid-point of the inflation target range, and then apply a glide path only if the two-year ahead RBA forecast lies outside these bounds.	Unclear from proposal	Mid point of RBA target band	Use of bands adds complexity with limited demonstrated value
Undertake statistical analysis to estimate how quickly actual inflation reverts to the mid-point of the RBA inflation target range, and then use this estimate of the rate of mean reversion to determine the length of the glide path.	(Implied) 2 years – based on available RBA research ⁶⁶⁵	Mid point of RBA target band	Would arguably be equivalent to the approach used by the Commission in SAW RD16
Use the bond breakeven approach to estimate expected inflation over the next one year, two years, three years, and so on.	10 years	Mid point of RBA target band	Premiums and biases limit interpretation from market-based measures. Limited replicability

In most instances, Frontier Economics has suggested that the glide path should revert to the midpoint of the RBA's 2 to 3 percent target band over a ten-year period. The Commission, however, proposes the use of the IMF's medium-term projection as the anchor point for the length of the glide path. This is because the IMF is an independent and credible institution and the projection would be publicly available. Further, to the extent that the credibility or use of inflation targeting in Australia were to change, then that change would be expected to be reflected in the IMF's medium-term projection. Surveys of professional forecasters' long-term inflation expectations, and projections from the

⁶⁶⁵ Tulip and Wallace, *Estimates of Uncertainty around the RBA's Forecasts*, 2012, pp.12-1.

Australian Government as contained in the Budget Papers, serve as a cross-check on the number of the medium-term inflation expectations anchor; both currently suggest estimates of between 2.4 percent and 2.5 percent.⁶⁶⁶

A4.10 The Commission has included a worked example of the annual updates approach

The following worked example of the annual updates approach shows, on a step by step basis, how SA Water's maximum revenues would be adjusted each year to reflect movements in the risk-free rate, cost of debt and long-term inflation expectation. The values used in the worked example below are based on the experience of the SAW RD16 period⁶⁶⁷ and do not represent the Commission's view on the reasonable values of those parameters if the proposal for annual updates were to be used in the SAW RD20 period. The worked example includes the glide path approach to estimating long-term inflation expectations.

Step one: calculation of the rate of return at the time of making the regulatory determination

- ▶ The regulatory determination sets a predetermined formula for updating the regulatory rate of return each year to account for annual updates. The rate of return for year one of the period would be set as part of the determination.
- ▶ Table A4.6 illustrates an example of step one. The example uses a risk free rate of 2.53 percent, cost of debt of 7.22 percent and long-term inflation expectations of 2.33 percent (calculated as the geometric average of ten observations including two years of RBA forecasts of inflation and a linear glide path to the IMF's April 2016 medium-term projection of inflation for the year 2021). The market risk premium, equity beta and debt raising cost parameters as determined at the initial regulatory setting are applied in step one. Together these parameters produce an allowed real, post-tax WACC for year one of 4.66 percent.
- ▶ Indicative regulatory rates of return for the remaining three years (that is, years two, three and four) would be calculated. These would be calculated following the Commission's current approach. This includes using indicative forecasts of the risk free rate, cost of debt⁶⁶⁸ and long-term inflation expectations, and applying the market risk premium, equity beta and debt raising cost parameters as determined at the initial regulatory determination. The combination of allowed revenues for year one and indicative revenues for years two to four would be used to calculate the total four-year indicative revenue, expressed as a present value over four years (using the pre-tax WACC based on the latest regulatory rate of return estimates as the discount rates).

⁶⁶⁶ RBA, *Statement on Monetary Policy – November 2019*, 2019, p. 66; and Australian Government, *Mid-Year Economic and Fiscal Outlook: Economic Outlook*, p. 28, available at: https://budget.gov.au/2019-20/content/myefo/download/02_Part_2.pdf.

⁶⁶⁷ The parameters used in step one in the worked example are based on the SAW RD16 determination. In steps two to four, however, the nominal risk free rate and cost of debt parameters are based on data to the end of June of each year to when an annual update might occur. The trailing average cost of debt data used in steps two to four may include revisions that have occurred in the published data. Long-term inflation expectations are calculated using RBA forecasts of CPI inflation one and two years ahead and a linear glide path to the IMF's medium-term projection for CPI inflation. RBA forecasts have been taken from the RBA's *SMP* published in May in 2016, 2017, 2018 and 2019. IMF projections have been taken from the World Economic Outlook database, available at: <https://www.imf.org/en/Publications/SPROLLS/world-economic-outlook-databases#sort=%40imfdate%20descending>.

⁶⁶⁸ The indicative forecast of the cost of debt data holds the latest available observation constant for the regulatory horizon and calculates a rolling ten-year average.

- ▶ SA Water then sets its prices for water and sewerage services for year one of the regulatory period in the knowledge of the approach that has been set in the determination (and also in the knowledge of total indicative revenues).

Table A4.6: Step 1 calculation (example based on SAW RD16 period)

	Year 1	Year 2	Year 3	Year 4
Nominal risk free rate (%)	2.53			
Indicative forecast (%)		2.53	2.53	2.53
Cost of debt (%)	7.22			
Indicative forecast (%)		6.87	6.31	5.98
Long-term inflation expectations (%) (geometric average of ten observations based on two RBA forecast and linear glide path to IMF medium-term projection)	2.33			
Assumed RBA forecast of CPI inflation one-year and two-year ahead (%)	2, 2			
IMF medium-term projection (%)	2.52			
Indicative long-term inflation expectation (%)		2.33	2.33	2.33
Forecasts to hold constant (in blue)				
MRP (%)	6.0	6.0	6.0	6.0
Debt raising costs (%)	0.125	0.125	0.125	0.125
Equity beta (%)	0.7	0.7	0.7	0.7
Real, pre-tax WACC	5.12	4.74	4.41	4.21
Allowed real, post-tax WACC (%)	4.66			
Indicative real, post-tax WACC (%)		4.46	4.13	3.93
Real RAB assumption (\$m)	12000	12000	12000	12000
Allowed real revenue (\$m)	559			
Indicative real revenue (\$m)		535	495	472
Present value real revenue (\$m)	547	489	435	399

Step two: annual update prior to year two of the regulatory period

- ▶ The rate of return for year two of the period would be calculated prior to the commencement of year two, using updated estimates of the risk free rate, cost of debt and long-term inflation expectations. The latest available data on the risk free rate would be used. The ten-year average of the cost of debt would be updated based on the latest year of available data. The measure of long-term inflation expectations would be updated (calculated as the geometric average of ten observations including two years of RBA forecasts of inflation and a linear glide path to the IMF's April 2017 medium-term projection of inflation for the year 2022). These parameters would be observed in the lead up to the start of the financial year (based on data from the SAW RD16 period those parameters were 2.44 percent, 6.62 percent and 2.42 percent, as shown in Table A4.7 below). The market risk premium, equity beta and debt raising cost parameters (as determined at the initial regulatory setting) are applied. Together these parameters produce an allowed real, post-tax WACC for year two.
- ▶ The indicative regulatory rates of return for years three and four would be updated. This would be based on the Commission's current approach. This includes indicative forecasts of the risk free rate, cost of debt and long-term inflation expectations as well as the market risk premium, equity beta and debt raising cost parameters as determined at the initial regulatory determination. These indicative revenues for years three and four, combined with the allowed revenue for years one and two, would be used to calculate the total indicative four-year revenue.
- ▶ In this example, the lower rate of return calculated in step two relative to step one decreases the total present value of real indicative four-year revenues by \$93 million (calculated as the difference between the sum of the present value of real revenues in step one and the sum of the present value of real revenues in step two). SA Water then sets its prices for water and sewerage services for year two of the regulatory period in the knowledge of the decreased four-year revenue cap and may lower prices to reflect the increased revenue cap, or not apply the increase until subsequent years, subject to future revenue cap changes.

Table A4.7: Step 2 calculation (example based on values from SAW RD16 period)

	Year 1	Year 2	Year 3	Year 4
Nominal risk free rate (%)	2.53	2.44		
Indicative forecast (%)			2.44	2.44
Cost of debt (%)	7.22	6.62		
Indicative forecast (%)			5.99	5.60
Long-term inflation expectations (%) (geometric average of ten observations based on two RBA forecast and linear glide path to IMF medium-term projection)	2.33	2.42		
Assumed RBA forecast of CPI inflation one-year and two-year ahead (%)	2, 2	2, 2.5		
IMF medium-term projection (%)	2.52	2.46		
Indicative long-term inflation expectation (%)			2.42	2.42
Real, pre-tax WACC	5.12	4.64	4.27	4.04
Allowed real, post-tax WACC (%)	4.66	4.18		
Indicative real, post-tax WACC (%)			3.81	3.58
Real RAB assumption (\$m)	12000	12000	12000	12000
Allowed real revenue (\$m)	559	501		
Indicative real revenue (\$m)			457	430
Present value real revenue (\$m)	547	460	404	367

Step three

- ▶ The rate of return calculation for year three would follow the same update process as in step two above. Accordingly, the allowed revenues for year three would be calculated based on the revised rate of return forecasts. The indicative rate of return and hence revenue for year three would be calculated in a similar manner as set out above in step two.
- ▶ The allowed revenues for years one to three and the indicative revenue for year four would be combined to give the total indicative revenues. In this part of the example data from the SAW RD16 period is used.
- ▶ The slightly higher rate of return calculated in step three relative to step two increases the present value of total indicative four-year real revenues by \$19 million (calculated as the difference between the sum of the present value of real revenues in step two and the sum of the present value of real revenues in step three) (Table A4.8). SA Water can set its prices for year three in the knowledge of the higher revenue cap. Should the decrease in revenues in year two have been deferred, SA Water may choose to use the increase in year three to offset this to the extent that it can.

Table A4.8: Step 3 calculation (example based on values from SAW RD16 period)

	Year 1	Year 2	Year 3	Year 4
Nominal risk free rate (%)	2.53	2.44	2.72	
Indicative forecast (%)				2.72
Cost of debt (%)	7.22	6.62	5.98	
Indicative forecast (%)				5.58
Long-term inflation expectations (%) (geometric average of ten observations based on RBA forecast and nine observations of 2.5%)	2.33	2.42	2.43	
Assumed RBA forecast of CPI inflation one-year ahead	2, 2	2, 2.5	2.25, 2.25	
IMF medium-term projection (%)	2.52	2.46	2.52	
Indicative long-term inflation expectation (%)				2.47
Pre-tax WACC	5.12	4.64	3.90	4.11
Allowed real, post-tax WACC (%)	4.66	4.18	3.86	
Indicative real, post-tax WACC (%)				3.68
Real RAB assumption (\$m)	12000	12000	12000	12000
Allowed revenue (\$m)	559	501	468	
Indicative revenue (\$m)				442
Present value real revenue (\$m)	547	460	414	376

Step four

- ▶ The allowed rate of return for year four of the period would be calculated using the same process as above. The allowed revenues calculated for year four would, effectively, produce the final calculation of the four-year revenue cap.
- ▶ In step four, the rate of return decreases in year four relative to the estimate made in step three. The decrease would reduce the present value of the four-years of real revenues by \$51 million (calculated as the difference between the sum of the present value of real revenues in step three and the sum of the present value of real revenues in step four) (Table A4.9). In this final year, SA Water must set its prices for water and sewerage services for year four subject to the final calculation of allowed revenues over the four years. Any over-recovery of revenue that has been deferred in years one to three must be returned to customers in year four. Any under recovery of revenue in years one to three may be recovered in year four. However, to the extent that SA Water considers the recovery of that amount in year four may lead to price shocks for customers, it may apply to the Commission to defer that recovery to the subsequent regulatory period.

Table A4.9: Step 4 calculation (example based on values from SAW RD16 period)

	Year 1	Year 2	Year 3	Year 4
Nominal risk free rate (%)	2.53	2.44	2.72	1.40
Cost of debt (%)	7.22	6.62	5.98	5.44
Long-term inflation expectations (%) (geometric average of ten observations based on RBA forecast and nine observations of 2.5%)	2.33	2.42	2.43	2.34
Assumed RBA forecast of CPI inflation one-year ahead	2, 2	2, 2.5	2.25	2.00
IMF medium-term projection (%)	2.52	2.46	2.52	
Pre-tax WACC	5.12	4.64	4.38	3.56
Allowed real, post-tax WACC (%)	4.66	4.18	3.90	3.17
Indicative real, post-tax WACC (%)				
Real RAB assumption (\$m)	12000	12000	12000	12000
Allowed revenue (\$m)	559	501	468	380
Present value real revenue (\$m)	547	460	414	325



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