

November 2023



Review of ICT capital expenditure for SA Water

SA Water Regulatory Determination 2024

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1. INTRODUCTION

1.1. Purpose of this report

The Essential Services Commission of South Australia (the Commission) is reviewing the Regulatory Business Plan of SA Water, which sets out its proposed prices, revenue requirement and key service outcomes to apply to water and sewerage services commencing on 1 July 2024 through to 30 June 2028 (RD24). SA Water submitted its Regulatory Business Plan to the Commission for assessment in August 2023.¹

FTI Consulting has been engaged to provide advice on whether SA Water's proposed ICT capital expenditure is prudent and efficient. This report sets out our independent expert view of the prudence and efficiency of the proposed ICT capital expenditure included in SA Water's Regulatory Business Plan.

1.2. Water industry regulatory framework

The retail services provided by SA Water are subject to economic regulation by the Commission under the *Essential Services Commission Act 2002* (ESC Act) and the *Water Industry Act 2012* (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 (section 25(1) of the WI Act). While some matters are addressed through licence conditions alone, the Commission can make industry codes and rules that prescribe the rules of conduct and procedures that SA Water must follow in providing retail services (section 28 of the ESC Act). This relates 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 (section 25 of the ESC Act and section 35 of the WI Act). Under the legislative settings of the regime, the Commission regulates the 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 Regulatory Business Plan submitted by SA Water proposed maximum revenue, prices, service levels, and expenditure forecasts for the four-year period beginning 1 July 2024. The Commission will make a new regulatory determination to apply to the water and sewerage retail services provided by SA Water that sets the maximum revenues it can earn from its customers over that four-year period, and the service standards it must deliver for its customers.

¹ [SA Water Regulatory Business Plan 2024-28](#) published on the SA Water website.

In developing the maximum revenue cap, the Commission will analyse SA Water's proposed ICT expenditure, and form a view on the overall prudent and efficient expenditure required to deliver services. The Commission does this so that the revenue cap is based on the lowest sustainable cost for SA Water to efficiently deliver its essential services.

The Commission published a Framework and Approach Paper for the 2024 Regulatory Determination in September 2021 which sets out the intended outcomes from the price review, the principles that underpin the framework and the role of customers and the challenge process.²

The Commission also published a series of guidance papers between December 2021 and July 2022, that included:

- The Regulatory Business Plan³
- Stakeholder engagement for the Regulatory Business Plan⁴
- Assessing the Regulatory Business Plan⁵

The third guidance paper provided an insight into how the Commission will assess if the proposed expenditure in the Regulatory Business Plan is prudent and efficient.

1.3. Methodology and approach

The scope of our assessment is to examine SA Water's forecast ICT capital expenditure over the RD24 period.

Our methodology for assessing the ICT capital expenditure forecast for the next regulatory period is consistent with the Commission's guidance papers. In summary, the scope of our assessment includes a review, at a macro-level, of SA Water's planned programme of ICT capital expenditure, and a review of 15 business cases (and related documentation) relating to ICT capital expenditure that were provided by SA Water.

Our process for assessment has involved several steps:

- an initial review of SA Water's Regulatory Business Plan
- a discussion with SA Water staff on key issues related to the submission
- a detailed review of further supporting information provided by SA Water, which included 15 business cases and other strategic documents
- a follow up discussion focused on further questions resulting from our review of the additional information provided.

² Essential Services Commission of South Australia 2021, SA Water Regulatory Determination 2024: Final Framework and Approach, September.

³ Essential Services Commission of South Australia 2021, SA Water Regulatory Determination 2024: Guidance paper 1 – The Regulatory Business Plan, December.

⁴ Essential Services Commission of South Australia 2022, SA Water Regulatory Determination 2024: Guidance paper 2 – Engaging with stakeholders to develop the Regulatory Business Plan, April.

⁵ Essential Services Commission of South Australia 2022, SA Water Regulatory Determination 2024: Guidance paper 3 – Assessing the Regulatory Business Plan, July.

Our understanding is that WS Atkins International, on behalf of the Commission, are providing consultancy services that involve reviewing SA Water's (non-ICT) capital expenditure proposals. It is noted that that our methodology and approach – as outlined in this report – is specific to the assessment of ICT capital expenditure.

Further detail about our assessment framework is set out in Section 3.

2. SUMMARY OF EXPENDITURE PROPOSAL

SA Water's 2024-28 Regulatory Business Plan outlines 15 projects which collectively comprise the proposed ICT capital program, which is \$171.7 million (in real terms, as proposed in the RBP by SA Water). This proposal for RD24 represents a 13 percent increase on the actual expenditure in the current (RD20) regulatory period.⁶

FTI has reviewed SA Water's proposed ICT capital expenditure for the period 1 July 2024 to 30 June 2028 (RD24), to determine whether it is prudent and efficient. The assessment is based on the information provided in the Regulatory Business Plan submission, the additional supporting documents provided by SA Water and the Commission, and SA Water's overall approach to the development of the program.

Our assessment has included:

- consideration of the focus of the proposed ICT capital expenditure
- a comparison of the proposed ICT capital expenditure in this regulatory period (RD24) with what was incurred in the current regulatory period (RD20)
- a comparison of the proposed ICT capital expenditure to industry peers
- an assessment of the underlying processes for developing the ICT program
- an assessment of the reliability of the cost estimates adopted for the ICT program and projects
- an assessment of the deliverability of the ICT program
- an assessment of 15 business cases that make up the proposed ICT capital expenditure.

Based on the information provided in relation to the proposed program of work, the further detail provided regarding the evolution of the ICT program, the approach to cost estimation, and the planned approach to delivery of the program, we consider that:

- the proposed ICT capital expenditure program is consistent with a prudent service provider acting efficiently
- the proposed ICT capital expenditure is justified, robust and is capable of being delivered by SA Water during the RD24 regulatory period
- the proposal to deliver two significant projects (Billing modernisation and Finance management system migration) across the RD24 and RD28 periods is justified.

As such, we do not propose any adjustments to SA Water's proposed ICT capital expenditure for the RD24 regulatory period.

⁶ SA Water's incurred RD20 ICT capital expenditure for 2023-24 is an estimate/forecast.

3. ICT CAPITAL EXPENDITURE ASSESSMENT

3.1. Overview of assessment approach

FTI has reviewed SA Water’s proposed ICT capital expenditure for the period 1 July 2024 to 30 June 2028 (RD24), to determine whether it is prudent and efficient. The assessment is based on the information provided in the Regulatory Business Plan submission, the additional supporting documents provided by SA Water and ESCOSA, and SA Water’s overall approach to the development of the program.

To perform this assessment, FTI undertook the following reviews and engagements:

- A review of the SA Water Strategy 2020-2025, to understand the current strategic focus of the organisation
- A review of SA Water’s 2024-28 Regulatory Business Plan and Appendices, to understand the business context of the proposed ICT capital expenditure
- A review of SA Water’s Technology Corporate Strategy 2020-2025, to understand the strategic ICT framework within which the proposed business cases will be delivered
- An initial presentation by SA Water summarising the proposed technology investment portfolio, and responding to any initial questions arising from our earlier reviews
- A detailed review and assessment of all 15 proposed ICT business cases described in SA Water’s 2024-28 Regulatory Business Plan
- A review of SA Water’s responses to further questions arising from the detailed review and assessment of the business cases
- A closeout discussion with key SA Water ICT staff to gain further clarity where necessary.

In undertaking our assessment, we considered how SA Water’s proposed program of ICT capital investment compared with similar organisations in other jurisdictions in Australia, including whether the proposed technical solutions are consistent with those being adopted by large companies in Australia. We further considered whether the proposed program of ICT capital investment:

- provides adequate definition and justification of the estimated costs and benefits of the proposed individual projects
- when considered holistically covers all necessary aspects of the ICT landscape
- includes a balanced ratio of “Run, Grow and Transform” initiatives
- will deliver the technology systems and services required to adequately support SA Water’s strategy across the 2024-28 regulatory period
- aligns with SA Water’s digital transformation strategy and supports their longer-term plans for digital investment
- aligns with and supports SA Water’s strategy relating to cloud-technology solutions,

- will result in an appropriate balance of on-premises (OPIT) and cloud-based IT services (CBIT)
- accounts for cloud computing expenditure in accordance with International Financial Reporting Standards guidance, and
- can be delivered in a prudent and efficient manner across the RD24 period

3.2. Assessment of overall capital program

Proposed ICT capital program summary

SA Water’s 2024-28 Regulatory Business Plan outlines 15 projects which collectively comprise the proposed ICT capital program. These are listed in the table below and described in greater detail in section 3.3 of this report. The total proposed capital expenditure is \$171.7 million (in real terms, as proposed in the RBP by SA Water). Two projects, the Billing Modernisation project and the Finance Management System Migration project, have been flagged by SA Water as requiring further significant investment in RD28.

Table 3.1: SA Water’s proposed ICT capital expenditure for RD24 (\$ 1 January 2023, millions)

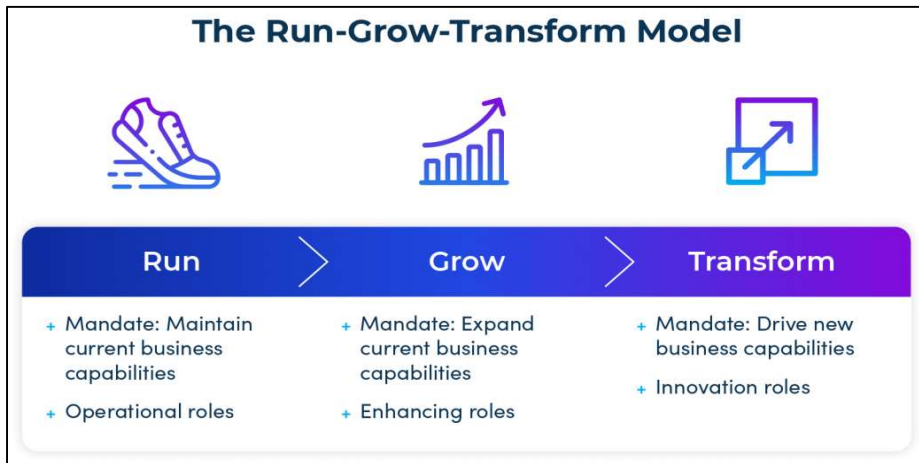
ICT capital expenditure project	Forecast
Cybersecurity	22.6
Billing modernisation	21.0
Desktop productivity and end user computing	16.8
Modernise SCADA architecture	15.5
Hardware and infrastructure systems	14.2
Application environment platforms	13.4
Customer relationship management system migration	12.6
Asset management platform system migration	10.5
Storage resilience	9.5
Network and communication systems	9.2
Legacy integration migration	6.5
Operations security	6.5
Operations collaboration	6.0
Operations site enhancements	3.8
Finance management system migration	3.6
TOTAL	171.1

Source: SA Water 2023, 2024-28 Regulatory Business Plan, 30 September, pages 179-181 & 193-195.

Overall, the proposed \$171.7m represents 6 per cent of the total proposed RD24 forecast capital expenditure (\$2,831.4m).

Proposed ICT capital program focus

A classic model used for the classification of ICT initiatives is the Run - Grow - Transform (RGT) model. Under this approach, Run initiatives effectively “keep the lights on”, Grow allows for expansion and enhancement of existing services and Transform changes the way the business operates through innovation. Historically, most of the ICT investment (across all industries) has been in the Run category, with the least in Transform. The typical RGT ratio is 70% - 20% - 10%. Gartner and other consultancies recommend companies strive to reduce their Run costs to 50% or less of overall ICT expenditure, allowing increased focus on Grow and Transform investment.



Source: [Gartner 2017](#)

In their submission, SA Water has described its proposed ICT capital program using a model with four categories being:

- Sustain Services
- Improve Services
- Enable Growth
- Meet External Obligations

While not an exact match to the RGT model, based on our understanding of SA Water's proposed ICT capital expenditure, we can infer that the Sustain Services and Meet External Obligations categories can be equivalent to Run, Enable Growth to Grow, and Improve Services to Transform.

The ICT capital program as proposed appears to be entirely focused on Sustaining Services (\$117.7m) and Meeting External Obligations (\$54.1m), with no capital expenditure planned during the RD24 period to Enable Growth or Improve Services.

The eleven proposed Sustaining Services projects are primarily focused on the periodic lifecycle refresh of core systems and generic ICT services. The focus of these projects all resolves to the Run category of the RGT model and represents 69% of the proposed ICT capital program.

The four proposed Meeting External Obligations projects are focused specifically on uplifting SA Water's cybersecurity readiness of Information technology (IT) and Operational technology (OT) systems and services. While these projects propose to introduce new capabilities for SA Water, the focus of those capabilities is securing information and ensuring service reliability rather than growing or transforming customer-facing services, and accordingly would also fit in the Run category of the RGT model, meaning that the entirety of proposed ICT capital expenditure in RD24 has a Run focus.

As the RD24 submission proposes no funding for any Improve Services and Enable Growth projects, SA Water will likely be limited in their capacity to explore or implement any of the emerging technologies discussed in their Technology Corporate Strategy. Among these are Digital Twins,

Artificial Intelligence, Business Process Automation and Workflow, Personal Dashboards and Digital Assistants, Wearables, IoT Sensors, Drones, Robotics, Virtual Reality and Autonomous Vehicles.

The omission of Improve Services and Enable Growth projects was discussed with SA Water in detail, who explained that these were systematically removed through a series of necessary reductions in proposed expenditure during the development of the Regulatory Business Plan. SA Water indicated that such initiatives would be deferred until the next regulatory period in RD28, unless a net positive business case could be developed that would allow it to proceed without impacting customer bills.

Therefore, we assess that the proposed ICT capital program does not represent a balanced ratio of “Run, Grow and Transform” initiatives, and is very heavily skewed towards “Run”. We recognise that this is driven to a large degree by the necessary investment in cyber security. As a result, it can be expected that SA Water will need to proactively increase its focused investment in transformative areas in RD28.

Having said this, we note that the Commission’s overall regulatory approach to capital expenditure is to allow SA Water the flexibility to manage and prioritise its investment activities for the regulatory period ahead within a total capital expenditure benchmark amount. In this respect, the Commission does not approve individual capital expenditure projects and programs.

Comparison of proposed ICT capital expenditure to RD20

SA Water will have invested \$151.5 million (in real terms) in ICT for regulatory period RD20, which is made up of a more even distribution across the three categories of sustaining services (run), enabling growth (grow) and improving service (transform) (see Table 3.2).

Table 3.2: SA Water’s actual and forecast ICT capital expenditure for RD20 (\$ millions in real terms)

	2020 21	2021 22	2022 23	2023 24	Total
Sustain services	11.1	9.2	20.0	26.1	66.4
Improve services	7.3	5.5	6.2	15.1	34.1
Enable growth	8.1	14.1	12.0	12.8	47.0
Meet external obligations	0.2	1.0	0.4	2.4	4.0
TOTAL	26.7	29.8	38.6	56.4	151.5

Source: SA Water RD24 Submission Summary slide pack, 05 September 2023, Slide 6,

The proposed capital expenditure in RD24 is \$171.7m, which represents a 13 per cent increase on the current regulatory period and is not unreasonable given the significant increases in both ICT and OT input costs over the last four years.

As noted earlier, proposed expenditure is for the two SA Water categories of sustaining services and meeting external obligations, both of which are significantly uplifted from the current period.

Comparison of proposed ICT capital expenditure to industry peers

SA Water has proposed allowable revenue over the RD24 period of \$3.29 billion from water customers and \$1.64 billion from sewerage customers – a total of \$4.93 billion (in 2022-23 dollars). The proposed ICT spend of \$190.6m (\$171.7 in capital expenditure and \$18.9m in operating expenditure) is 3.9 per cent of proposed allowable revenue.

While global benchmarks are a blunt instrument, this percentage aligns reasonably well with research produced from both Gartner⁷, whose survey in 2022 of global mid-sized utilities found an average of 4.2 per cent, and Deloitte⁸, whose 2018 survey of CIOs across all industries found an average of 3.6 per cent.

In Australia, Yarra Valley Water provides a reasonable comparator for SA Water in terms of annual revenue, organisational complexity and size of customer base. Their 2023-28 Price Submission (the Victorian equivalent to the Regulatory Business Plan), proposes an average total ICT spend of \$63m per annum during the regulatory period. When compared to their anticipated average annual revenue of \$972m, this represents 6.5% of total revenue.

However, \$10.5m of that annual ICT spend is flagged as at risk, subject to the identification or realisation of a positive business case. Accordingly, a better comparator is to assume an annual spend of \$52.5m, which equates to 5.2 per cent, which is higher than that proposed by SA Water.

When comparing the proposed Yarra Valley Water ICT spend and that proposed by SA Water, we noted that Yarra Valley Water's price submission also includes a range of transformation initiatives while SA Water's proposal is largely limited to sustaining services and uplifting cybersecurity. In the Yarra Valley Water submission, the planned investment in just these two specific categories totals 3.8 per cent of revenue, which correlates closely to the SA Water figure of 3.9 per cent.

FTI considers that SA Water's proposal is consistent with ICT investment by industry peers, when considering SA Water's decision to exclude "grow and transform" projects.

Underlying processes for developing the ICT program

Sections 7.6 and 7.7 of the Regulatory Business Plan describe the approach taken by SA Water in developing its ICT capital program. The RD20 capital plan was used as a starting point to develop a list of proposals assessed for their customer outcomes, costs, benefits, dependencies, and to resolve foundational technology gaps.

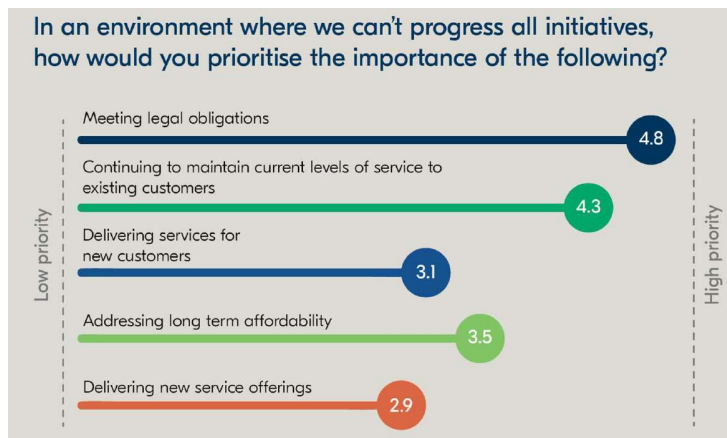
Under Technology Governance Committee (TCG) oversight, an initial list of proposals was refined through multiple rounds of review. Prioritisation was achieved by scoring and ranking investments

⁷ Gartner, 08 December 2022, "IT Key Metrics Data 2023: Industry Measures — Insights for Midsize Enterprises". <https://www.gartner.com/en/documents/4021799>

⁸ Deloitte Insights, January 2020, CIO Insider: Reinventing tech finance: The evolution from IT budgets to technology investments. https://www2.deloitte.com/content/dam/insights/us/articles/6300_CIO-insider-tech-finance/DI_CIO-Insider_Tech-Finance-Budgets.pdf

using the corporate risk and opportunity heat map. From the resultant ranking, portfolio options were prepared based on varying levels of investment and presented to the TGC. The TGC selected and refined the portfolio for inclusion in the corporate prioritisation process, where ICT proposals were included in a whole-of-business prioritisation process.

Following this, to achieve necessary affordability outcomes, the TGC undertook a value optimisation activity to further assess options to reduce the investment in technology. This considered feedback from the Customer Consultative Group, who provided their insight into how customers would prioritise initiatives (see below).



Source: SA Water 2023, 2024-28 Regulatory Business Plan, 30 September, page 148

The ICT program development commenced in November 2021 and concluded in January 2023. The initial set of potential initiatives was considerable and refined throughout the previously described process. The final round of corporate prioritisation, aimed at meeting customer cost expectations, restricted the proposals to proceed to only those that were considered mandatory to maintain current levels of technology reliability and security, and to meet external obligations. This resulted in the 15 projects included in the RD24 Regulatory Business Plan, with a value of \$171.7m. The progression of that refinement is shown in the following diagram.



Source: SA Water RD24 Submission Summary slide pack, 05 September 2023, Slide 4,

The result of the refinement process is a profile of initiatives focused on sustaining services and meeting external obligations, with no investment planned during the RD24 period to improve services or enable growth, as discussed earlier.

Our discussions with SA Water confirmed our initial assessment that the submission was significantly pared back to an essential risk-driven program of work. We find that SA Water has followed a well-developed process to define the ICT capital expenditure program, effectively self-regulating to ensure only necessary initiatives are proposed, which is consistent with a prudent service provider acting efficiently.

Reliability of cost estimation

SA Water's proposed ICT capital expenditure contains several significant projects currently in their initial phases, and accordingly the reliability of the specific estimation for those projects is likely to be low. Having acknowledged that constraint, when looking at the proposed costs for each project, the cost estimation provided seems logical and falls within the expected values based on our prior experience in other businesses as it specifically relates to ICT capital expenditure.

Many of the projects are already structured such that they will not be covering 100 per cent of the potential scope, for example refreshing every application or every device. Therefore, the expectation is that SA Water will manage the delivery of each project to maximise the outcomes for the project within its budget constraints, rather than exceeding the project budget.

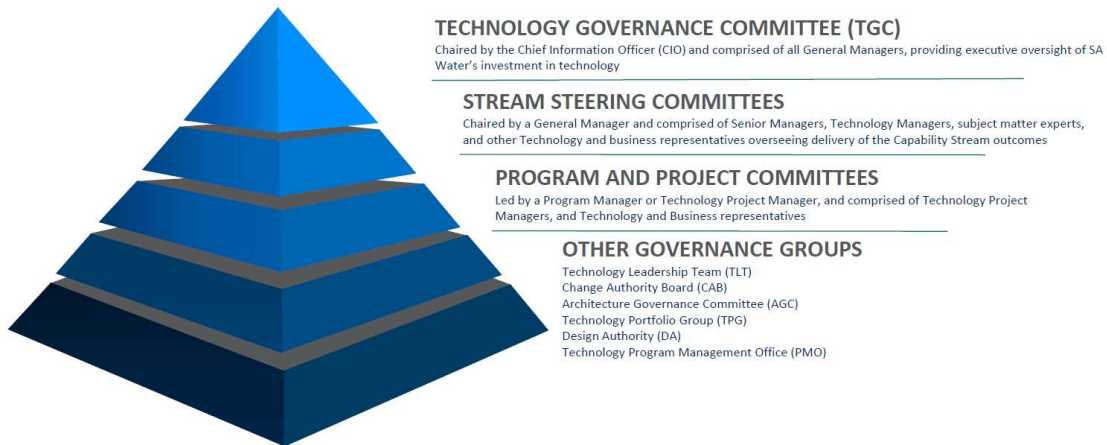
Moreover, in our discussion with SA Water it was confirmed that some projects will likely cost more than budgeted, while some will likely cost less, and it expected to manage costs across the portfolio, as well as at the individual project level.

Overall, the information provided in SA Water's submission, together with the further detail obtained from our discussions, indicates that SA Water's approach to cost estimation provides an appropriate basis for developing the estimates for its RD24 ICT capital expenditure program, and that the proposed \$171.7 million will be sufficient to deliver the proposed portfolio of projects.

It is noted that our review has not considered the historical performance of SA Water's cost estimation accuracy and/or whether SA Water is currently monitoring cost estimation accuracy through best practice processes. Our understanding is that, from the Commission's perspective, the monitoring and continual improvement of cost estimation accuracy is an area of potential improvement for SA Water.

Deliverability of capital program

Section 7.8 of the RD24 submission briefly covers the delivery of capital projects. We also discussed SA Water’s proposed approach in our initial meeting. SA Water described a well-defined ICT governance environment, with multiple levels of oversight, as shown in the diagram below.



Source SA Water RD24 Submission Summary slide pack, 05 September 2023, Slide 14,

Apart from Billing modernisation, Finance management system migration and Customer relationship management (CRM) system migration, SA Water’s proposed ICT portfolio of projects is largely a replacement and renewal program, wherein the delivery risks at most are moderate and the processes to deliver the projects are well defined and understood. We assess that SA Water has the capacity and capability to deliver these renewal projects.

The Billing modernisation, Finance management system migration and Customer relationship management (CRM) system migration projects between them represent a significant challenge for SA Water, as they are all key systems, and there is a strong relationship between them. The three projects together, including the rollover into RD28, represent around \$63 m of investment. SA Water is acutely aware of the need to closely manage these projects. Its decision to spread the projects across two regulatory periods, and to stagger the delivery timelines of the projects, indicates that it is proposing to undertake an appropriate portfolio management view, with the goal of minimising delivery risk. Based on the governance approaches outlined above, we assess that SA Water can deliver the appropriate components of these projects in the RD24 regulatory period.

Capitalisation of cloud services

The last decade has seen accelerated uptake of cloud services in all industries. In March 2019 and April 2021, the International Financial Reporting Standards (IFRS) Interpretations Committee issued guidance that a large portion of cloud related expenditure, including some one-off project costs to establish and configure those cloud services, should be treated as operational expenditure rather than be capitalised and depreciated over time, where the resulting “asset” was not in the control of the purchasing entity.

This guidance has significant ramifications for regulated capital-intensive utilities, as expensing such costs would likely necessitate customer bill increases due only to the accounting treatment of that expenditure. This has led to varied interpretations across Australian utilities, with some now expensing such costs while others continue to capitalise them. In some cases, this IFRS guidance is inhibiting innovation by restricting utilities from adopting increased levels of cloud services. In our opinion, utilities can likely best serve their customers and communities by making appropriate ICT procurement decisions regardless of the delivery method or payment model.

Section 10.1.3 of the Regulatory Business Plan RD24 Submission explains SA Water’s proposed financial treatment of cloud services is to capitalise such costs, noting that “Technology cloud computing expenditure (also referred to as ‘software as a service’) is being classified as capital expenditure and therefore depreciable, which maintains the RD20 treatment of this expenditure”.

Whether ongoing capitalisation of cloud services expenditure in RD24 is appropriate is a decision for the Commission to consider.

3.3. Assessment of ICT projects

ICT Project Portfolio

SA Water's proposed ICT capital expenditure includes 15 business cases totaling \$171.7m. We have assessed each of these business cases, which are summarised in sections 8.2.1.3 and 8.2.2.3 of the Regulatory Business Plan and listed in Table 2.1.

We have assessed each project in detail, reviewing the business cases and consulting with SA Water to gain further clarification where necessary. We have considered whether the:

- technology solution being adopted is appropriate
- method of estimating costs is appropriate and whether that estimated cost aligns with our experience in other jurisdictions
- business case has considered appropriate options
- project as defined is deliverable
- project as defined carries an appropriate level of risk.

When reviewing the business cases, we found that while the required information was mostly presented for each project, SA Water has not clearly articulated an integrated view of how the various projects would be delivered as a coherent program of work. Accordingly, there is potential that projects may experience issues arising from under-scoping, ambitious timelines, resource clashes and failure to adequately identify and address cross-dependencies between projects.

The development and presentation of an overall integrated program of work provides an opportunity for SA Water to pursue when composing the ICT capital program for the RD28 submission.

Each project is discussed in the following pages of this report.

T-532 - Operations Collaboration (\$6.0m)

This project proposes to extend SA Water’s IT and OT services to 10 water treatment sites and 1 wastewater treatment site that will be handed over from the existing operator (Trility) at the conclusion of a build-operate-transfer (BOT) arrangement. The project will integrate these sites into the SA Water SCADA network and provide IT services aligned to other SA Water operational sites. The proposed investment is \$6.0m. There is no associated operating expenditure uplift required.

Given these sites currently run CITECH SCADA managed by Trility, and SA Water has standardised GE SCADA, it is reasonable that these sites would be treated as “greenfield” for purposes of this project. Given the need for high OT security, and the preference to standardise the SCADA platform for operational integrity, we agree it is prudent to deploy the SA Water GE SCADA services to these sites as proposed.

In determining how the proposed investment was calculated, we noted that while each site differs in size and complexity, the overall budget is an appropriate mix of infrastructure, systems and external resources (58%), internal labour including SMEs (40%) and training (2%). The overall costs average to \$0.55m per site which we believe is a reasonable estimate of the cost of deployment of full IT and OT capability to these sites.

The detailed delivery schedule has not yet been developed, as there are open questions around who will operate these sites post-handover. Delivery is planned to be complete by December 2025, which is feasible. SA Water has the skills and capability to deploy these proposed systems and services, as these are an extension of the existing environment.

Accordingly, we do not propose any adjustments to this project.

T-533 - Billing Modernisation (\$21.0m)

The Billing Modernisation initiative is arguably the largest and most complex of the proposed ICT capital expenditure projects in SA Water's Regulatory Business Plan and is one of two projects proposed to be delivered over both RD24 and RD28. This project proposes to deliver the initial stages of a larger \$40m program of work to replace SA Water's bespoke Cobol based billing system CSIS by 2032. CSIS has been in operation for decades, is based on obsolete technology and is well overdue for renewal. The secondary driver for change is to modernise the billing services SA Water may offer to customers in the future, as this is constrained by current system capability.

The proposed investment in RD24 is \$21.0m and will result in an ongoing operating expenditure uplift of \$1.4m in the final year of RD24. A similar investment is expected in RD28 to complete the program. In determining the cost estimates for the project, SA Water investigated a range of options, each taking a differing approach to sourcing and split of systems functionality, with a high-level cost estimate developed for each option. These estimates ranged from \$35m to \$50m. A more detailed analysis was undertaken of the preferred option, the replacement of CSIS with a specialised Water Utility Billing Solution, and indicative project phasing with costs per phase was constructed. This analysis indicated the project delivery would take in the order of 4 years and the likely cost was determined by SA Water as being \$36.6 m including contingency. This has translated into \$21.0m in RD24 with the remainder to be delivered in next regulatory period.

This cost estimate is mid-range among contemporary deployments of utility billing systems into organisations like SA Water, where such projects ranged from \$25m to \$60m. Given no target system has been selected, nor a final architectural design developed, it would not be reasonable to expect SA Water to develop a more accurate financial estimate, and the \$40m proposed is likely to be reasonable for a project of this complexity and magnitude. SA Water will be able to provide greater clarity of final expected costs when submitting its Regulatory Business Plan for RD28.

The requested operating expenditure uplift in the final year of RD24 relates to the cost of integration services subscriptions that will likely be in place by that time and are a reasonable estimate of such costs. Our assessment has not considered whether this additional operating expenditure would potentially be offset from cost-savings and efficiency benefits in the short and long-term.

A key risk for this project is deliverability. Phasing this complex project over 6 or more years runs counter to the well-founded maxim in ICT that the longer any project runs, the more likely it is to fail. In their written response to FTI's question regarding how SA Water would mitigate this risk, SA Water has explained that the first stage is effectively planning and preparation, the next stage moves non-billing functionality out of CSIS to other target systems (such as CRM) as a form of scope and risk reduction, the third stage replaces the billing system core with a COTS billing system (likely acquired as a SaaS cloud service), and the final stage is closure and enhancement. SA Water contends that this staged approach will mean that it is well placed to manage staff burnout and the potential impact of other initiatives.

Another potential risk relates to maintaining resources to support CSIS into the 2030s. The proposed timeline implies transition to a new platform could take as long as 6 years, extending the already

present risk associated with supporting Cobol. We believe this remains an open risk to be closely managed by SA Water, noting that legacy Cobol system support is an increasing challenge across ICT generally, not just within the utility sector.

Despite the associated risks, the need to retire CSIS and move to a contemporary billing platform is undeniable, and any further delay in beginning this project will continue to increase SA Water's organisational risk and further limit its ability to deliver customer outcomes.

While we believe the requested investment in RD24 is warranted, and we do not propose any adjustments to this project, we do recommend that the SA Water Executive and Board maintain a close watch over its delivery, given the project is complex and is only in its planning and preparation stages. Furthermore, our understanding is that there were projects and programs undertaken during RD20 where the challenges were under-appreciated and experienced problems related to under-scoping.

T-538a - Finance Management System Migration (\$3.6m)

The Finance Management System Migration is the second project proposed to be delivered over both RD24 and RD28 regulatory periods, and in the Regulatory Business Plan SA Water has provided details of the initial phases of a larger \$20m investment to replace the Ellipse finance system. The key driver for this program is obsolescence, as Ellipse will reach end of mainstream support in 2028, and the end of reduced classic support in 2030. The target finance system has not yet been decided, nor is it specified whether it is planned to be on premise or in the cloud. It is expected to be a more integrated enterprise system than Ellipse, though not a tier 1 ERP, which should lead to improvement of business process maturity in some aspects of financial accounting, financial planning, asset accounting, management accounting, taxation and treasury functions.

The investment proposed in RD24 is around \$3.6m, with additional investment expected in the next regulatory period of an estimated \$16.8m inclusive of ongoing uplift in operating expenditure. The overall \$20m budget is comprised of \$8m of internal resource costs, \$8m of vendor costs, and \$4m of licensing fees for software and interfaces.

The risk of operating Ellipse beyond the mainstream support end date is likely to be manageable under the classic support structure but will require SA Water to effectively freeze system development in Ellipse for a period of at least 3 years – commencing prior to the end of mainstream support. We recommend SA Water take this constraint into account when developing a detailed deployment plan.

We believe the requirement to transition to a new finance system is well founded, and agree Ellipse is a legacy system with a limited future. The estimate of \$20m is realistic and aligns to outcomes elsewhere in the utilities sector. Given only 20 per cent of the overall budget is being included in this regulatory period, there is sufficient opportunity for SA Water to develop a more informed proposal for RD28. We would expect SA Water to include in its RD28 proposal further information regarding the system selected for implementation, the approach to implementation and how it will manage the associated risks of a project of that scope and complexity.

Accordingly, we do not propose any adjustments to this project.

T-539a - Cyber Security (\$22.6m)

This project will implement a full uplift of security enhancements to the corporate technology environment. It is a sister project to T-540a (Operations Security) which focuses on the cyber security framework for the operational technology environment. As an outcome of this project, there will be interoperability created between the Operations Control group and a new Cyber Security Operations Centre.

The driver for this project is risk avoidance and compliance, classified by SA Water as a requirement to meet external obligations. The regulation of critical infrastructure under the *Security of Critical Infrastructure Act 2018* (the SOCI Act) places obligations on responsible entities for certain infrastructure assets in relevant critical infrastructure sectors. The SOCI Act aims to strengthen the security and resilience of critical infrastructure by capturing sectors and asset classes essential to Australia. As South Australia's primary provider of water and sanitation services, SA Water must seek to address its obligations under the SOCI Act. Additionally, SA Water is governed by the South Australian Cyber Security Framework (SACSF).

The proposed investment is significant at \$22.6m and represents 13.2 per cent of the total proposed ICT capital expenditure in the Regulatory Business Plan. There is also nearly \$10m in additional operating expenditure associated with this initiative over the course of RD24, and this becomes \$4.37m per annum in RD28.

SA Water provided detail relating to its current cyber security readiness state, and its target state, measured by both the NIST and Essential 8 frameworks. We were satisfied that the planned uplift arising from the proposed investment is necessary and warranted.

SA Water further provided a breakdown of the various initiatives proposed across the RD24 period, which were developed from a detailed investigation undertaken in 2022. The bulk of the proposed investment relates to product and licensing. The proposed \$22.6m is categorized into 8 segments, the largest being Identity and Access Management (\$9m) and Cyber Monitoring (\$6m). While these costs are significant, they are not unreasonable given the intention is to lift SA Water to high cyber maturity that completely satisfies their SOCI and SACSF obligations.

We discussed the various options considered by SA Water in developing this cyber security proposal, to better understand the impact of its approach to limit the amount of proposed capital expenditure in the Regulatory Business Plan. It was understood that SA Water's full proposal was required to ensure that no deficiencies would remain in cyber monitoring, which would then provide ongoing challenges for SA Water's ability to fully comply with its legislative and regulatory requirements.

It is important to consider that cyber security investments will not mitigate all cyber risk, and while SA Water will be implementing a sophisticated set of defenses, potential cyber-attacks are continually changing. Therefore, this project cannot be considered a one-time investment, but rather a shift to high cyber readiness that will require ongoing funding post RD24.

Cyber security investments arguably offer the lowest return on value to the customer as they are effectively an investment in limiting risk to maintain the status quo. Having said that, cyber security is a significant and increasing challenge across all industries and SA Water, as the provider of critical

infrastructure and services, must commit to achieving SOCI and SACSf compliance, which will likely be a continuing challenge. We believe their proposed plan to achieve compliance is well considered and that successful delivery is feasible. While the proposed investment is substantial, it is not inconsistent with trends in cyber security spend across the Australian utilities sector and globally according to research from Ernst and Young in 2023.⁹

Accordingly, we do not propose any adjustments to this project.

⁹ “Globally, 44% of energy organisations are spending more than USD50 million per annum on their cyber capabilities. Cybersecurity budgets as a percentage of IT spend have increased significantly in the last year. Two-thirds of energy organisations now spend between 11%-20% of their IT budget on cybersecurity.

Ref: EY, 9 October 2023, How cyber security can keep pace with the energy transition
https://www.ey.com/en_au/cybersecurity/how-cyber-security-can-keep-pace-with-the-energy-transition

T-539b - Customer Relationship Management System Migration (\$12.6m)

This project migrates SA Water's existing on-premises Dynamics CRM to a new CRM, which is yet to be chosen but is likely to be Dynamics 365 cloud. The key driver is system obsolescence, as the current CRM will have reached the end of its effective life by 2029. The proposed investment is \$12.6m. The transition to a cloud service will also incur increased operating expenditure of \$0.5m during RD24.

The estimated cost is based on migration to Dynamics 365 cloud, modelled by SA Water and verified by DXC. The project timeline is estimated at 34 months.

We consider the \$12.6m cost estimate and timeline for this project to be reasonable given the general complexity of CRM programs and acknowledging this project is submitted prior to any firm decision on platform or a detailed approach to market. This effectively becomes the baseline against which any potential move to an alternate CRM can be tested prior to committing.

Accordingly, we do not propose any adjustments to this project.

T-539c - Asset Management System Platform Migration (\$10.5m)

This project will transition the organisation from the current on-premises IBM Maximo V7.6 instance to a new Maximo cloud service, MAS. The key driver is to avoid obsolescence as IBM has announced the end of general support for Maximo in 2025, and the extended support options are limited.

We note that since the initial preparation of this business case, IBM have further reduced the options for long term support, with extended support now ending in 2026, leaving SA Water with only a basic “sustained” support offering to 2030. This change increases the urgency of this project. SA Water intends to complete transition within the RD24 period, to minimise future support risk. Given SA Water has considerable experience with the Maximo platform, and that the project is a migration rather than a transformation, we believe the project timeline is achievable.

The proposed capital expenditure is \$10.5m, with an ongoing operating expenditure uplift of \$1.2m per annum. We believe this estimate is reasonable given the complexity of the transition to cloud, and the integrated nature of the asset management system. Our assessment has not considered whether this additional operating expenditure would potentially be offset from cost-savings and efficiency benefits in the short and long-term.

Accordingly, we do not propose any adjustments to this project.

T-539d - Legacy Integration Migration (\$6.5m)

This project proposes to move all existing interfaces from the Biztalk platform to the MuleSoft platform. The key driver for this project is to avoid obsolescence, with Biztalk being a product that Microsoft actively redirects its customers to use its Azure integration services.

Biztalk has been in use at SA Water for 14 years, and there are 150 integrations remaining on the platform. In 2021 SA Water implemented MuleSoft as their preferred integration platform, as it is a fully capable platform with broad scope. All interfaces developed since 2022 are already on MuleSoft, but the 150 integrations developed prior to that will need to be transitioned. A secondary driver of this project is efficiency, as running and maintaining one integration platform will be more efficient and provide increased security.

The investment proposed in RD24 is \$6.5m and SA Water has also proposed an operating expenditure increase of \$1.5m across RD24, and \$0.7m per annum in RD28. Most of the capital cost is labour, split evenly between technical resources and subject matter experts. The estimates assume an average of 3 weeks per interface, requiring a minimum of 3 developers to achieve all 150 interfaces during RD24.

We recognise the need to undertake this platform transition and are of the view that the estimate of 3 weeks per interface and associated costs are reasonable. We believe that SA Water has the capability to deliver this project in RD24 and decommission Biztalk by 2028.

Accordingly, we do not propose any adjustments to this project.

T-539e - Storage Resilience (\$9.5m)

This is a computer hardware project to uplift data storage available to SA Water to provide additional capacity, increase reliance and security, and ensure data survivability and business continuity. As a further important outcome, it will provide SA Water with the ability to segregate corporate and operational storage to ensure greater cybersecurity reliance. The proposed investment in RD24 is \$9.5m, and there is no required increase in operating expenditure.

From further discussions with SA Water we understand this project will deliver a like-for-like replacement of production and backup SANs, providing additional capacity and object storage capability, and the ability to segregate data between OT and IT. The vendor and product selections are appropriate and consistent with sector trends. Component costs as presented are consistent with industry costs.

In summary, this is a straightforward replacement of aging infrastructure and costs are in line with industry. Accordingly, we do not propose any adjustments to this project.

T-539f - Desktop productivity and EUC (\$16.8m)

This project is the periodic refresh of the desktop software used by staff, noting that the end user hardware is separately funded from baseline operating expenditure. The key driver is security and compliance, rather than any step change in functionality or productivity. SA Water proposes to upgrade all end user software during RD24.

The investment proposed in RD24 is \$16.8m, which is significantly higher than what was incurred in the last regulatory period (\$10.5m). SA Water explained that this increase arises largely from increased licensing and higher software costs, as well as a recategorisation of some of the cost definitions between regulatory periods.

SA Water further suggested that the original project scope was larger and had a cost estimate of \$22.5m, for which a breakdown was provided. This was reduced to \$16.8m during SA Water's internal prioritisation process (as described in section 3.2). Therefore, SA Water will need to prioritise which software and systems are refreshed based on an assessment of relative risk.

In our view the costs estimated are reasonable, and need to prioritise investment decision during the regulatory period is manageable. We are also of the view that the approach adopted to prioritisation by SA Water provides an opportunity to rationalise the large number of EUC applications currently in use, which will reduce application sprawl and increase efficiency.

Accordingly, we do not propose any adjustments to this project.

T-539g - Application Environment Platforms (\$13.4m)

This project aims to update, upgrade, or replace some of the corporate software systems used across the organisation. There are more than 600 in total, with around 500 being on premises solutions. This business case specifically excludes certain key applications that have their own business cases, such as the Billing modernisation, Finance management system migration, Asset management platform system migration, Legacy Integration migration and Customer relationship management (CRM) system migration projects. It also excludes some applications that are only used by a small number of users.

The key driver is to mitigate operational risk and avoid obsolescence by keeping software up to date and supportable. It is also necessary to keep software updated to avoid cyber security risks.

The investment proposed is \$13.4m. As with the project for desktop productivity and end user computing (T-539f), SA Water reduced the scope of this project during its internal prioritisation process by around 25 per cent. This has resulted in SA Water needing to prioritise the candidates for update under this project using a risk-based approach.

In discussion with SA Water, we understand that its approach to cloud is not “Cloud First”, but “Consider Cloud”, meaning that the proposed resultant ratio is 63 per cent on premises and 37 per cent in the cloud. We discussed reasons why certain key applications were not being transitioned to the cloud and were satisfied with SA Water’s rationale.

Accordingly, we do not propose any adjustments to this project.

T-539h - Hardware and Infrastructure (\$14.2m)

This project is the cyclic replacement of the hardware and infrastructure on which SA Water runs its ICT services, except for storage which is separately presented. Like any physical device, computer hardware becomes less reliable as it ages, and good practice seeks to mitigate risk by replacing hardware before it fails, and before the vendor withdraws support or increases support costs to a level where they become untenable.

Much of the infrastructure to be refreshed in this project resides in the data centre and includes data centre servers, operating systems, virtualisation software, virtual desktop services, backup services, IT monitoring tools and printers.

The investment proposed is \$14.2m, and it is anticipated to replenish approximately 75 per cent of the infrastructure base, resulting in SA Water needing to prioritise the candidates for update under this project using a risk-based approach.

In our discussion with SA Water, it indicated that as it refreshes these systems, they will be moving away from a more traditional fibre channel architecture to vSan and virtualized networking with containerisation, so there will be some progress towards adopting a virtual cloud architecture. This will assist SA Water establish a full cloud transition in later regulatory periods, when and if appropriate.

We believe SA Water has appropriately justified the requirement and cost for this project and can deliver it within RD24. Accordingly, we do not propose any adjustments to this project.

T-539i - Network and Communication Systems (\$9.2m)

This project will replace and/or refresh aging communication and networking equipment for both operational and technology networks. The broad scope includes switches, routers, Wi-Fi, 4G and satellite, communications towers, communications software and services, messaging and collaboration, video conferencing and virtual private networks.

The key driver is to ensure operational reliability by avoiding hardware obsolescence and to ensure cyber security compliance.

The investment proposed in RD24 is around \$9.2m and it will also require a small increase in operating expenditure of \$0.07m per annum in RD28. We note that in the options analysis, SA Water did not choose to update 100 per cent of its network and communication systems, but rather chose a modest 10 per cent increase on the amount incurred in the current regulatory period, which will allow a refresh of around 75 per cent of the communications asset base.

In discussions with SA Water, we were provided with a detailed breakdown of the intended investment, which was consistent with a prudent investment strategy.

Accordingly, we do not propose any adjustments to this project.

T-540a - Operations Security (\$6.5m)

This project will implement security enhancements to the operational control systems environment. It is related to the cybersecurity project (T-539a) which provides a cybersecurity uplift for the corporate environment. As an outcome of this project, there will be interoperability established between the Operations Control group and a new Cyber Security Operations Centre. The driver for this project is compliance, specifically SOCI and SACSf compliance.

The proposed investment in RD24 is \$6.5m, and there is a proposed increase in operating expenditure of around \$0.6m during RD24. It is also expected that a \$0.26m per annum increase in operating expenditure will be required during RD28, which is related to licensing, maintenance, and support.

In discussions with SA Water, we understand the focus of this project is on plant control, SCADA and the DMZ. The project will entail the implementation of security control systems, secure remote access, and adoption of cyber capabilities with a strong focus on detection and response.

We are of the view that the costs and deliverables outlined for this project are appropriate, and that SA Water will be able to efficiently deliver it during RD24. We believe the necessity exists to undertake this project to ensure SA Water achieves their legislative, regulatory and compliance requirements.

Accordingly, we do not propose any adjustments to this project.

T-540b - SCADA Modernisation (\$15.5m)

This project proposes to implement SA Water's SCADA Technical Standard TS 0350 across all SA Water operational sites. TS 0350 has been developed as a reference standard during RD20 and is a refinement of the SCADA architecture, building on the existing GE iFIX SCADA system, to allow better management, control, and security of the SCADA network. The proposed investment in RD24 is \$15.5m, and there is a \$2.6m increase in operating expenditure during RD24. It is also expected that a \$1.16m per annum increase in operating expenditure will be required in RD28.

In discussions with SA Water, we understand that this project will update all 28 SCADA nodes, which support over 3,000 connected assets. This will allow SA Water to achieve a standardised configuration for all sites. The consolidation and simplification of the SCADA network will also lead to operational efficiencies through reduced management effort and allow future upgrades to be simpler. The proposed updates will also provide for an improved ability to monitor the SCADA network for cyber threats.

As this significant investment relies on the viability and flexibility of the TS 0350 reference architecture, which is an in-house development, we explored with SA Water how the architecture was validated to ensure it is appropriate for deployment. We were satisfied that the reference architecture appears complete and appropriate and were assured appropriate cyber considerations have been included.

We believe SA Water needs to undertake this program for a range of reasons, not least of which is to underpin their SOCI and SACSf compliance initiatives. We are satisfied that the project is deliverable within RD24, and that the costs are reasonable given the scope and complexity of the project. Our assessment has not considered whether this additional operating expenditure would potentially be offset from broader cost-savings and efficiency benefits in the short and long-term.

Accordingly, we do not propose any adjustments to this project.

T-540c - Operations Site Enhancements (\$3.8m)

This project aims to improve the network and communications technology available at various operational sites to improve the performance, reliability and user experience of the technology solutions. The scope includes deployment of WiFi and cellular services at sites where current performance is deemed unacceptable. The proposal does not include delivery of application services, such as conferencing or collaboration systems. The key driver is improving workability and efficiency for the workforce, which will have flow on effects in OH&S, service quality and workplace culture benefits.

The proposed investment in RD24 is \$3.8m, and there is also a \$0.75m increase in operating expenditure over RD24, with \$0.32m per annum continuing into RD28. The delivery costs are 37 per cent labour, 62 per cent equipment and a 1 per cent allocation for training.

In our discussion with SA Water, we understand that there is currently no specific schedule of sites to be enhanced, and further work is required to develop the schedule. There are over 80 sites across metropolitan and regional areas to be prioritised for upgrades, and consideration includes the benefits for staff and the outsourced provision by Service Stream and Suez in the metropolitan area.

We are of the view that this project is arguably the only aspirational project in SA Water's Regulatory Business Plan, in that it attempts to provide a step change to current workforce experience and establishes a more digital future for SA Water. The value is a small percentage of the overall proposed ICT investment, and although its allocation across sites is currently uncertain, there is sufficient scope for investment. Our assessment has not considered whether this additional operating expenditure would potentially be offset from broader cost-savings and efficiency benefits in the short and long-term.

Accordingly, we do not propose any adjustments to this project.

3.4. Summary of capital expenditure assessment

Based on the information provided in relation to the proposed program of work, the further detail provided regarding the evolution of the ICT program, the approach to cost estimation, and the planned approach to delivery of the program, we consider that:

- the proposed ICT capital expenditure program is consistent with a prudent service provider acting efficiently
- the proposed ICT capital expenditure is justified, robust and is capable of being delivered by SA Water during the RD24 regulatory period
- the proposal to deliver two significant projects (Billing modernisation and Finance management system migration) across the RD24 and RD28 periods is justified.

As such, we do not propose any adjustments to SA Water's proposed ICT capital expenditure for the RD24 regulatory period.

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