IPART

Central Coast Council Water 2026-31 Expenditure Review

Consultant's Report: Central Coast Council Water 2026-31 Expenditure Review

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Job number

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Glossary

ABS	Australian Bureau of Statistics
ACMP	Asset Class Management Plans
AER	Australian Energy Regulator
AM	Asset Management
AMF	Asset Management Framework
AMP	Assessment Management Plan
AMS	Asset Management System
BTS	Base-trend-step
CCC Water	Central Coast Council Water
CCWPS	Central Coast Water Supply Strategy
CCWSMP	Central Coast Water and Sewer Masterplan
CCWSP	Central Coast Water Security Plan
CICL	Cast iron cement lined
CIRMP	Critical Infrastructure Risk Management Program
CPI	Consumer Price Index
DAF	Dissolved Air Flotation
D&C	Design and Construct
DCCEEW	Department of Climate Change, Energy, the Environment and Water (NSW)
DICL	Ductile Iron Cement Lined
DN	Nominal diameter
DSP	Development Servicing Plan
EOI	Expression of Interest
EP	Equivalent persons
EPL	Environmental Protection Licence
ERMF	ERMF Enterprise Risk Management Framework
ESP	Engineering Services Panel
FTE	Full-time equivalent
FY	Financial year
HDD	Horizontal direct drilling
HSE	Health, safety and environment
IDEA	Intermittent Decant Extended Aeration
IPART	Independent Pricing and Regulatory Tribunal
IP&R	Integrated Planning and Reporting
IPS	Infor Public Sector

IPWEA IIMM	IPWEA International Infrastructure Management Manual
LoS	Levels of service
LTIP	Long-Term Investment Plan
MCA	Multicriteria analysis
MLD	Megalitres/day
MSCL	Mild steel cement lined
NPR	National Performance Report
NPV	Net present value
NSW	New South Wales
PFAS	Per- and Polyfluoroalkyl Substances
PIB	Project Initiation Brief
PLC	Probable Logic Controllers
PMCA	Pressure Main Criticality Assessment
PRP	Pollution Reduction Program
RAF	Regulatory and Assurance Framework
RAS	Regulated asset base
RBA	Reserve Bank of Australia
RFI	Request for information
RUL	Remaining useful life
SAMP	Strategic Asset Management Plan
SCADA	Supervisory Control and Data Acquisition
SDE	Schematic Design Estimate
SFA	Stochastic frontier analysis
SPS	Sewer Pump Station
SRM	Sewer rising main
STP	Sewage Treatment Plant
THM	Trihalomethanes
WHS	Work health and safety
WIKA	Works in Kind Agreement
WIRC	Water Investment Review Committee
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant

Executive Summary

Background

The Independent Pricing and Regulatory Tribunal (IPART) is responsible for regularly reviewing and setting the maximum prices that water businesses can charge for services such as water supply, wastewater treatment, and stormwater drainage. IPART's primary role is to ensure that prices reflect the efficient costs of delivering these monopoly services, protecting customers from paying for inefficient or unnecessary expenditure while enabling water businesses to generate sufficient revenue to maintain service quality and infrastructure.

Central Coast Council Water (CCC Water) – specifically the Water and Sewer Directorate of Central Coast Council – is one of the water businesses regulated by IPART. The CCC Water's current regulatory period expires on 30 June 2026. A new regulatory determination is required to set the maximum price that will apply over the next regulatory period, beginning 1 July 2026. For the 2026–2031 pricing period, CCC Water submitted its proposal to IPART in September 2025.

We understand CCC Water is currently working to implement the recommendations made by the IPART in the 'Improving Performance' Information Paper (May 2022). These include implementing robust asset management and project management strategies to ensure its assets provide maximum value and meet our customers' needs, now and into the future.

IPART has engaged Arup and HoustonKemp to undertake an expenditure review of CCC Water's expenditure proposal for the 2026–31 regulatory period. The focus of our expenditure review was on assessing the efficient allocation of historical operating and capital expenditure, as well as the prudent and efficient forecast of operating and capital expenditure.

Expenditure review methodology

We assessed CCC Water's key strategic planning, asset management and decision-making systems and processes to determine the level of maturity, effectiveness and implementation. This involved a detailed document review, benchmarking against industry standards and good practice, and interviews to understand how these systems support decision-making and customer outcomes. Where gaps were identified, we evaluated their impact on efficiency and stakeholder value to inform improvement recommendations and, where relevant, adjust, CCC Water's operating and capital expenditure.

For our review of operating expenditure, we conducted a preliminary sufficiency assessment of CCC Water's operating expenditure proposal, examining cost drivers, evidence quality, and alignment with the 3Cs framework. We supplemented our review with discussions with CCC Water to help inform our comprehensive deep dive assessment. Our review adopted a first-principles lens to determine the operating expenditure that a prudent and efficient utility operating CCC Water's network would incur, considering both the business-as-usual steady state of the business, and the current state of its network. Where adjustments were warranted, recommendations were supported by comparative analysis and prudence checks.

Our capital expenditure review included trend analysis of historical and proposed costs, project sampling for detailed assessment, and program-level evaluation of deliverability and efficiency. We reviewed any trade-offs between capital expenditure and operating expenditure were reasonable and customer priorities were reflected. We then developed an efficient capital expenditure range based on project reviews, benchmarking, and risk assessment.

Key systems and processes

We found that CCC Water's decision-making systems and processes are maturing. CCC Water is implementing IPART's recommendations from the 2022 Determination. We sighted evidence of several new systems which are being implemented to achieve delivery and cost efficiencies, and to gain a better understanding of infrastructure risks. Given the recent implementation of some of these systems, we have not been able to form robust judgements on whether they have had, or will have, a material impact on efficiency

but we would expect to see gradual efficiency gains and performance improvements within the next price period.

CCC Water have made progress towards putting in place strategic documents (such as the Central Coast Water Security Plan and the Central Coast Water and Sewer Master Plan), however it does not have an overarching long-term investment outlook.

Presently, forward investment planning for the 2026 to 2031 price period reflects outcomes of community engagement and asset management processes. CCC Water has implemented a sound community engagement process which has informed a wholistic set of community values. CCC Water has used the community values to inform the development of appropriate performance metrics within early optioneering.

We have identified an improvement in CCC Water's approach to asset management from the 2022 Determination. Most notably, CCC Water's asset management systems now include approaches to understanding asset condition and criticality in alignment with good asset management practices. Currently, the asset management processes are given effect by a range of tools which prioritise assets for renewal based predominantly[1] on asset age[2]. We recognise that CCC Water is in the process of maturing its tools with asset condition data over 2026 Determination period. These changes will bring CCC Water's processes in alignment with good practice which would take into account a range of factors including age, location, material and consequence of failure.

Further, CCC Water's asset class management plans reflect a risk-based prioritisation of asset renewals; however, we have identified a lack of prioritisation at a portfolio level. We consider it is important that asset class renewals are compared against one another through customer values to ensure a holistic approach to prioritisation.

We have found deficiencies and opportunities in the key systems and processes and make the following recommendations:

- A lack of an overarching long-term investment plan which brings together strategic documents[3] into a consolidated capital outlook. While we have reviewed the water and sewer component of Central Coast Council's Long Term Financial Plan 2025-2035 and we acknowledge CCC Water is currently preparing documentation consistent with the Integrated Planning and Reporting (IP&R) Framework, we note the absence of a more detailed long term investment outlook for CCC Water, inclusive of both asset renewals and delivery of new assets. CCC Water and its customers would benefit from a long-term investment plan that sets out its optimal long-term investment pathway. The long-term investment plan should balance the need to meet regulatory obligations and customer and stakeholder expectations with the right cost and risk.
- A lack of strategic context in business case documentation and a lack of evidence of whether project or portfolio interdependencies are applied in capital planning. We recognise CCC Water are currently working to develop its Water and Sewer Master Plan, and we understand it will consider other gaps in its strategic planning such as a biosolids master plan[4]. In the future, project and program planning and optioneering should be undertaken in the context of these plans to ensure a more holistic system approach to identifying infrastructure and non-infrastructure solutions.
- A lack of evidence that appropriate approvals pathways are followed for investment decision-making in the CCC Water business cases. While we note the Central Coast Council Technical Paper 4 outlined the responsibilities of the Water Investment Review Committee (WIRC) and the Strategic Infrastructure Committee (SIC), the committee's should have clearly described decision-making accountabilities reflected in delegated authority. The sign-off of CCC Water business cases needs to be aligned with the appropriate delegated authority with clear statements as to the approval being sought and sign-off (authorisation) consistent with the Central Coast Council investment governance. That would look like signatures of the relevant committee members from the WIRC and the SIC – there were no

[1] Exceptions include Major Projects and Sewer Pump Station.
[2] In some cases, prioritisation has considered pipeline material.
[3] Such as the Water Security Plan and emerging Water and Sewer Master Plan.
[4] Aecom *Strategic Planning Assurance Gap Analysis*, Technical Memo, 19 May 2023 pp 12 and 16.

recommendations for approval nor signature blocks in any of the Major Project business case documents we reviewed.

- Within the asset management documentation sent to us, we have identified a strong emphasis on preventive maintenance and for a lifecycle-based approach which reflects a program for regular inspection, maintenance and renewal of assets according to condition and risk profiles. We consider that continued investment in scheduled maintenance programs, condition assessments, and renewal strategies designed to minimise unplanned outages and extend asset life reflect good industry practice. To support with improving maturity of these processes, we recommend that CCC Water develop a performance baseline against which they can measure outcomes of newly implemented systems and improvements in its levels of service.

Operating expenditure

CCC Water is proposing $703.3 million in operating expenditure over the upcoming regulatory period to be recovered through customer bills. It is also proposing an additional $75.9 million, comprising both recurring and non-recurring controllable operating expenditure, to be funded through its reserves in recognition of the affordability challenges faced by its customers. We consider our role is to assess the prudent and efficient operating costs of service provision. Accordingly, we have also assessed the prudence and efficiency of the expenditure CCC Water proposes to fund through its reserves, since it relates to recurring and non-recurring controllable operating expenditure. We note that there is a separate policy question, outside of the scope of this report, as to the use of reserves in the manner proposed by CCC Water. Table 1 summarises CCC Water's proposed operating expenditure and illustrates the effect of including the additional recurring and non-recurring controllable operating expenditure proposed to be funded through reserves.

Table 1 Overview of CCC Water's total operating expenditure over the 2026-31 determination period – water and sewer ($2025-26 million)

Opex component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	133.2	133.2	133.2	133.2	133.2	666.1
Trend	1.4	1.7	2.1	2.8	3.4	11.4
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-controllable	0.6	0.6	0.6	0.6	0.6	3.1
Subtotal – operating expenditure	141.4	140.3	139.5	141.9	140.2	703.3
Additional recurring controllable expenditure	10.1	9.1	9.2	9.2	10.6	48.2
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure	158.3	152.6	154.0	157.5	156.8	779.1

We recommend that IPART does not adopt CCC Water's proposed operating expenditure allowance. This recommendation is based on our findings that:

- CCC Water's actual operating costs should not be used to set base operating expenditure because it is not currently operating in a business-as-usual steady state. We recommend adopting a base expenditure reflective of this business-as-usual steady state, and adopting an explicit non-recurring uplift to address temporal network challenges. We also consider CCC Water's justification of the efficiency of its actual costs to be subject to significant shortcomings, and we are concerned about the efficiency of the corporate overhead costs allocated to CCC Water.

- CCC Water's proposed non-recurrent operating expenditure is prudent and efficient, but we recommend an additional allowance of between $51.1 million to $61.4 million over the upcoming regulatory period to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.

- CCC Water should transition towards the base operating expenditure in subsequent regulatory periods once major capital expenditure projects have been delivered, thereby reducing maintenance expenditure needs. This transition will necessarily involve additional operating expenditure as CCC Water undertakes increased inspections and maintenance on its network while capital investments come online, and to increase the quantum of proactive maintenance ahead of reducing reactive maintenance.
- CCC Water's proposed trend factor is reasonable, but there are opportunities for its cost efficiency strategy to better engage with the specifics of water utilities and CCC Water's own operating context.
- CCC Water's proposed step changes relating to PFAS water testing and liquid trade waste tracking are prudent and efficient, but no allowance should be provided for potential and uncertain compliance costs relating to the yet-to-be finalised changes to the NSW biosolids guidelines.
- CCC Water's proposed non-controllable operating expenditure is reasonable.

We have developed lower and upper bounds for our recommended prudent and efficient operating expenditure allowance for the upcoming regulatory period. To inform its assessment of the appropriate operating expenditure allowance, within this range we recommend that IPART adopt the upper bound for base operating expenditure.

Our recommended reasonable upper bound for operating expenditure over the upcoming regulatory period is $746.8 million. This is a reduction of $32.4 million over the regulatory period, which amounts to 4.2 per cent of CCC Water's total operating expenditure over the 2026-31 determination period. This difference is driven by a:

- $44.8 million reduction to CCC Water's proposed base operating expenditure over the regulatory period.
- $48.2 million reduction to CCC Water's additional non-recurrent operating expenditure.

These reductions are in part offset by our recommended reasonable uplift in non-recurrent expenditure of $61.4 million to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.

Although our recommended upper bound is a reduction to CCC Water's total operating expenditure over the upcoming regulatory period, it is higher than the amount CCC Water proposes to recover from customers. Excluding consideration of the additional operating expenditure, our upper bound would result in operating costs funded by customers of $719.1 million. This is 2.3 per cent higher than CCC Water's proposed amount of operating expenditure to be funded by customers.

This increase is driven by our recommended reasonable uplift in non-recurrent expenditure. However, the non-recurrent nature of this expenditure emphasises the need for CCC Water to continue its transition to operational maturity. It also reflects our expectation that CCC Water should transition towards the base operating expenditure in subsequent regulatory periods, once major capital expenditure projects have been delivered, thereby reducing maintenance expenditure needs.

Table 2 summarises our recommended reasonable upper bound for operating expenditure over the upcoming regulatory period.

Table 2 Recommended upper bound of operating expenditure – water and sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	124.3	124.3	124.3	124.3	124.3	621.3
Trend	1.3	1.6	2.0	2.6	3.2	10.7
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-recurring uplift	12.3	12.3	12.3	12.3	12.3	61.4

Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.5	0.5	0.5	0.5	0.5	2.3
Total operating expenditure	144.6	143.5	142.6	145.1	143.3	719.1
Additional recurring controllable expenditure	0.0	0.0	0.0	0.0	0.0	0.0
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure (including reserves)	151.5	146.6	148.0	151.4	149.3	746.8

Our recommended reasonable lower bound for operating expenditure over the upcoming regulatory period is $658.4 million. This is a reduction of $120.7 million over the regulatory period, which amounts to 15.5 per cent of CCC Water's total operating expenditure over the 2026-31 determination period. This difference is driven by a:

- $121.9 million reduction to CCC Water's proposed base operating expenditure over the regulatory period.
- $48.2 million reduction to CCC Water's additional non-recurrent operating expenditure.

These reductions are in part offset by our recommended reasonable uplift in non-recurrent expenditure of $51.1 million to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.

Table 3 summarises our recommended reasonable lower bound for operating expenditure over the upcoming regulatory period.

Table 3 Recommended lower bound of operating expenditure – water and sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	108.8	108.8	108.8	108.8	108.8	544.2
Trend	1.1	1.5	1.8	2.3	2.9	9.6
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-recurring uplift	12.3	11.2	10.2	9.2	8.2	51.1
Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.5	0.5	0.5	0.5	0.5	2.3
Total operating expenditure	129.1	126.9	125.0	126.3	123.4	630.7
Additional recurring controllable expenditure	0.0	0.0	0.0	0.0	0.0	0.0
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure (including reserves)	135.9	130.0	130.3	132.6	129.5	658.4

Capital expenditure

CCC Water is forecasting expenditure of $405 million on water and sewer over the 2022 Determination period, which is an approximate overspend of 33 per cent on the 2022 allowance. This has reflected an approximate 20 per cent year-on-year increase in capital expenditure over the 2022 period, with the most significant overspend occurring in 2024-25 and 2025-26. The causes of the overspend are unplanned expenditure on major projects required to rectify underperforming assets (such as the West Gosford Major Sewer Rising Main), the need to prioritise critical water asset renewals and cost escalation that has outpaced inflation. Through our detailed review of historic projects, we recommend the full actual expenditure over the 2022 Determination period be accepted by IPART as we consider it reflects both prudent and efficient expenditure given CCC Water's operating context and market conditions experienced over the 2022 Determination period.

CCC Water's proposed capital budget of $577.7 million over the 2026 Determination period reflects an increase on current capital expenditure levels and exhibits a continued trend of high capital expenditure over 2026-27 and 2027-28 before significantly reducing over the remainder of the Determination period. The proposed capital budget in the CCC Water's pricing submission is materially different to the Major Project budgets in the business cases we reviewed – noting that the business cases were prepared more recently using mature forecasts. We have been unable to calculate the total value of the difference with certainty but recognise it is material based on the information we have sighted.

In our opinion, given the scale of the current variance, and the associated risk of under investment leading to worsening performance, CCC Water should assess whether the proposed capital budget remains sufficient to meet defined regulatory, reliability and customer outcomes, and either:

- reprioritise the program with clear evidence that objectives can be achieved within the proposed allowance, or
- resubmit its proposal to IPART with an updated capital funding request that reflects the efficient cost of delivering the identified program.

Failure to rectify this misalignment risks embedding downstream impacts including deferred renewals, increased reactive expenditure, avoidable compliance risk and diminished credibility of future pricing submissions.

Variances in cost estimates are not clearly documented or explained, making it difficult to validate the assumptions or understand the basis of the financial ask. This lack of alignment and transparency undermines confidence in the accuracy of cost forecasts and may embed risks of underfunding or misallocation of resourcing. Inaccurate or poorly substantiated cost estimates can have significant implications for capital planning and delivery, including the potential for budget shortfalls, delays in project execution, and compromised ability to meet service reliability and safety objectives.

We consider our role is to assess the prudent and efficient capital costs of service provision. Accordingly, we have also assessed the prudence and efficiency of the capital expenditure CCC Water proposes to fund through DSCs. We note that there is a separate assessment, beyond the scope of our review, as to the application of DSCs in the manner proposed by CCC Water.

We consider that CCC Water's proposed capital budget is not prudent or efficient. CCC Water has reduced its capital plan through a deliverability cut or an efficiency factor to reduce it significantly less than the expenditure identified in supporting asset management plans (AMPs), asset class or major project business cases, condition assessments and other asset planning tools.

Over the 2022 Determination period, there has been an increasing decline in service performance (particularly for sewer assets). While CCC Water's performance is within the average range of similarly sized water utilities, we recognise that there is an ongoing declining trend in service performance related to ageing and/or poorly performing assets. We consider the downward adjustments made to CCC Water's proposed capital expenditure introduces a risk of under-investment that will lead to worsening service performance outcomes for its customers and does not reflect efficient prudent or expenditure over the 2026 Determination period.

We have developed an upper and lower bound forecast of CCC Water's proposed capital expenditure program over the 2026 Determination period, set out in Table 4. Both our calculated upper and lower bounds are materially higher than the proposed capital budget in CCC Water's pricing submission. Our upper and lower bound estimates were informed by more mature cost forecasts provided by CCC Water compared to CCC Water's pricing submission.

Given the material increase in the costs, the associated deliverability risks and the potential affordability impacts, our recommended appropriate expenditure is $640.0 million.

Table 4 Recommended upper and lower bound forecast of CCC Water's proposed capital expenditure ($2025-26 million)

Expenditure	2026/27	2027/28	2028/29	2029/30	2030/31	Total
CCC Water proposed expenditure						
Water	12.2	19.1	21.6	30.9	29.1	**112.9**
Sewer	148.0	130.9	71.3	71.5	43.3	**464.9**
Total	**160.2**	**149.9**	**92.8**	**102.5**	**72.3**	**577.8**
Estimated Lower Bound						
Water	19.8	18.4	22.2	23.3	22.8	**106.4**
Sewer	141.4	187.5	90.9	81.5	50.3	**551.5**
Total	**161.1**	**205.9**	**113.0**	**104.8**	**73.1**	**658.0**
Efficiency adjustment on Lower Bound						
	1%	1%	5%	5%	5%	
Total Lower Bound	**159.5**	**203.8**	**107.4**	**99.6**	**69.4**	**639.7**
Estimated Upper Bound						
Water	25.7	24.1	26.6	26.1	22.8	**125.2**
Sewer	166.5	239.2	111.2	81.5	50.3	**648.7**
Total	**192.2**	**263.3**	**137.8**	**107.6**	**73.1**	**773.9**
Efficiency adjustment on Upper Bound						
	5%	5%	10%	10%	10%	
Total Upper Bound	**182.6**	**250.1**	**124.0**	**96.8**	**65.8**	**719.3**
Estimated Appropriate Expenditure						
Water	19.8	18.6	22.2	23.3	22.8	**106.7**
Sewer	141.4	187.5	90.9	81.5	50.3	**551.5**
Total	**161.1**	**206.1**	**113.0**	**104.8**	**73.1**	**658.2**
Efficiency adjustment on Appropriate Expenditure						
	1%	1%	5%	5%	5%	
Recommended expenditure	**159.5**	**204.1**	**107.4**	**99.6**	**69.4**	**640.0**

We have identified deficiencies in CCC Water's pre-optioneering, optioneering and cost estimating processes that we consider have a material impact on the prudency and efficiency of the 2026 proposal. These deficiencies include:

- A lack of strategic portfolio planning to obtain a clear understanding of project need and timing and broader infrastructure and non-infrastructure options.
- A lack of clear alignment between project need and options selected which makes it difficult to identify whether the selected option sufficiently addresses the project need.
- A need to improve the quality of analysis contained in business cases to ensure these artefacts are sufficiently robust to inform investment decisions.
- The need to redo optioneering following external technical review which has resulted in a complete change in project trajectory, which suggests that the initial options investigation lacked sufficient rigour.
- A lack of transparency on how cost estimates have been developed, particularly for the calculation of provisional sums and contingencies. Without transparent and consistent approaches to calculating these costs, there is an increased risk of cost overruns, underfunding and a misallocation of resources.

Recommendations

We recommend that CCC Water undertake the following steps to drive efficiency in its operating and capital expenditure over the 2026 Determination period:

- Improve business case quality and strengthen governance processes related to business case development and approval. This includes updating the business case template to explicitly state the approval sought and associated level of delegated authority.
- Improve transparency in resource planning, ensuring there is an evaluation of efficient workforce planning, clear traceability from deliverability outputs and the costed capital plan.
- Undertake a comprehensive review of its corporate overhead requirements to ensure they reflect water-specific operational needs and efficient standalone utility practices.
- Undertake necessary investments in data systems to facilitate participation in the Water Services Association of Australia (WSAA) asset management customer-value benchmarking program, to provide data-driven insights for efficiency opportunities.
- Establish an expert advisory group with relevant water sector expertise to support the identification and implementation of efficiency initiatives, to help drive efficiency by providing strategic guidance on efficiency priorities and validation of efficiency claims and implementation plans.
- Accelerate the completion of condition audits and ensure that outputs are fed directly into planning and prioritisation tools. Strong data governance practices should be established for asset condition data. Renewals forecasts should be refreshed as condition data improves, enabling iterative updates to the capital plan to improve accuracy in asset management decisions.
- Embed strategic portfolio planning as a prerequisite to the optioneering process. This involves defining clear priorities, service drivers, risk appetite, affordability parameters and interdependencies with other capital or operational activities before project options are developed.
- Strengthen its optioneering process by explicitly mapping each option to the identified service driver and demonstrating how each option delivers measurable options. The rationale for selecting the preferred option must clearly integrate alignment with project need, lifecycle cost, risk profile and deliverability. CCC Water should also undertake comprehensive financial analysis prior to selecting the preferred option.
- Adopt a formal cost estimation framework that incorporates recognised estimate classes, a documented basis of estimate, escalation factors and risk-based contingency allowances. Business case costs should reconcile to project costings and the rationale for variances should be clearly explained within business case documents. CCC Water should also improve transparency around the calculation of indirect costs, provisional sums and contingency by defining standard calculation methodologies. These components should be clearly presented, with drivers and assumptions disclosed.
- Develop a performance baseline using available asset condition data so that it may measure efficiency in the future based on this.

1. Introduction

1.1 IPART is reviewing the maximum prices CCC Water can charge

The Independent Pricing and Regulatory Tribunal (IPART) is responsible for regularly reviewing and setting the maximum prices that water businesses can charge for services such as water supply, wastewater treatment, and stormwater drainage. IPART's primary role is to ensure that prices reflect the efficient costs of delivering these monopoly services, protecting customers from paying for inefficient or unnecessary expenditure while enabling water businesses to generate sufficient revenue to maintain service quality and infrastructure.[5]

IPART's pricing decisions are guided by principles outlined in section 15 of the Independent Pricing and Regulatory Tribunal Act 1992 (NSW). These principles include assessing the cost-of-service delivery, safeguarding consumers from monopoly pricing, promoting competition and operational efficiency, and considering the social and environmental impacts of pricing. This framework helps strike a balance between affordability for customers and the long-term sustainability of water services.

In 2022, IPART introduced the Water Regulation Handbook to support water businesses in delivering services that are efficient, sustainable, and aligned with community expectations. The handbook is structured around three core pillars: customers, cost, and credibility. This approach encourages greater transparency, customer engagement, and accountability in the pricing and delivery of water services.

This round of water pricing reviews is the first time IPART has applied the framework which aims to:

- Broaden IPART focus from cost efficiency to customer value
- Enable businesses to promote customer value with a flexible approach driven by the business's proposal
- Provide incentives to promote customer value which encourages businesses to earn autonomy by demonstrating accountability for delivering better customer outcomes.

Central Coast Council Water (CCC Water) – specifically the Water and Sewer Directorate of Central Coast Council – is one of the water businesses regulated by IPART. CCC Water's current regulatory period expires on 30 June 2026. A new regulatory determination is required to set the maximum price that will apply over the next regulatory period, beginning 1 July 2026. For the 2026–2031 pricing period, CCC Water submitted its proposal to IPART in September 2025.[6]

We understand CCC Water is currently working to implement the recommendations made by the IPART in the 'Improving Performance' Information Paper (May 2022).[7] These include implementing robust asset management and project management strategies to ensure its assets provide maximum value and meet its customers' needs, now and into the future.

IPART has engaged Arup and HoustonKemp to undertake an expenditure review of CCC Water's expenditure proposal for the 2026 – 31 regulatory period. The focus of our expenditure review has been on assessing the efficient allocation of historical operating and capital expenditure, as well as the prudent and efficient forecast of capital and operating expenditure.

[5] IPART (2025) *Prices for Central Coast Council's water and wastewater services from 1 July 2026,* available at: https://www.ipart.nsw.gov.au/review/water-metro-pricing/prices-central-coast-councils-water-and-wastewater-services-1-july-2026.
[6] IPART (2025) *Central Coast Council's water and wastewater pricing proposal,* available at: https://www.ipart.nsw.gov.au/central-coast-councils-water-and-wastewater-pricing-proposal.
[7] IPART (2022) *Information Paper – Improving Performance – Central Coast water prices May 2022,* available at: *https://www.ipart.nsw.gov.au/documents/information-paper/information-paper-improving-performance-central-coast-water-prices-may-2022.*

1.2 Our review considers the prudency and efficiency of expenditure

Prudency and efficiency reviews are a mechanism used by regulators to assess whether forecast or actual capital expenditure (capital expenditure) and operating expenditure (operating expenditure) is justified, satisfies least-cost and value for money evaluations and therefore warrants inclusion into the cost base for pricing.

Prudency relates to establishing whether there is a clear and acceptable driver for the expenditure to deliver the regulated services. Expenditure is linked to customer outcomes and regulatory drivers that typically include growth, renewal/refurbishment, regulatory and service improvement. Efficiency relates to whether expenditure is least cost and efficient in meeting the customer outcomes.

Capital expenditure reviews occur either *ex ante* (before the expenditure has been incurred) or *ex post* (after the expenditure has been incurred). *Ex ante* reviews assess whether the expenditure is needed and efficient and should be included in the regulated asset base (RAB) for pricing. By comparison, *ex post* reviews assess whether the actual expenditure occurred over the previous pricing period should be included in the RAB for the upcoming period. *Ex post* reviews are typically more rigorous than *ex ante* reviews because the former focuses on whether the business planned and delivered the execution of its project appropriately, while the latter identifies whether the business could have done so.

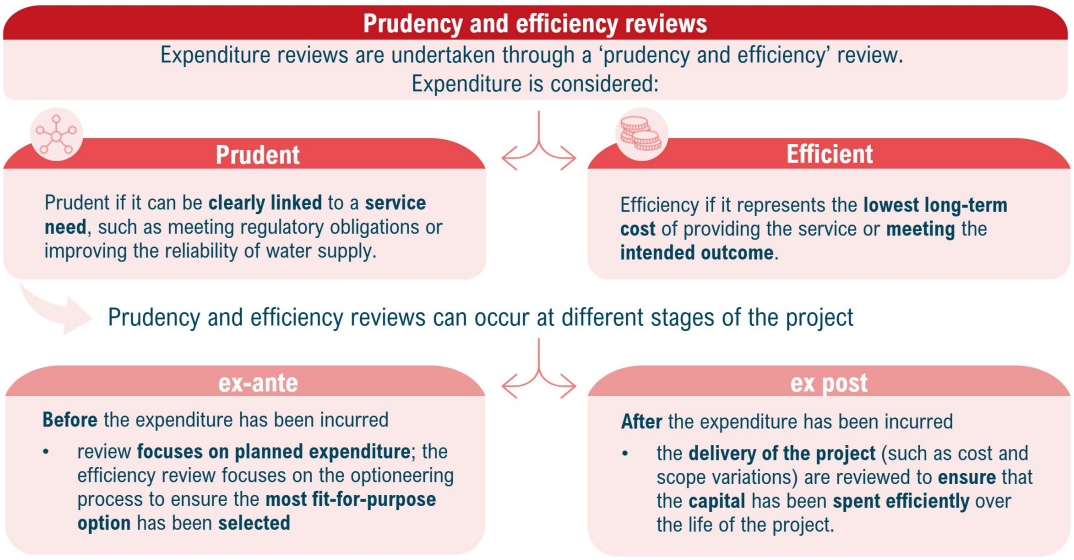

Figure 1 Prudency and efficiency reviews

Our scope of work required us to develop a comprehensive operating and capital expenditure review assessment process, that focuses effort on those cost categories that are most material to customer bill impacts. We have addressed this by:

- Reviewing the maturity and sophistication of CCC Water's key decision-making systems and processes, including how CCC Water uses those systems, the extent to which they have an impact on efficiency and whether stakeholder outcomes are appropriately met. We have assessed and made comment on CCC Water's proposed performance outcomes and measures including providing recommendations, where appropriate.
- Undertaking a detailed review of operating expenditure, considering the adequacy, appropriateness and efficiency of CCC Water's operating expenditure. The analysis period for this review was from 1 July 2022 to 30 June 2031 and has been split into historical operating expenditure (covering the period 1 July 2022 to 30 June 2026) and proposed operating expenditure (1 July 2026 to 30 June 2021).
- Completing a detailed review of forecast capital expenditure in each year of the determination period from 2026-27 to 2030-31 for water and wastewater services. This has included an assessment of the reasonableness of the capital program, within the context of CCC Water's long-term plans and the assumptions underlying it.

- Conducting a review of historical capital expenditure for water and wastewater services over the period 1 July 2021 to 30 June 2026. We have considered capital expenditure for each year of the analysis period to assess the efficient level of capital expenditure. We have reviewed variations in capital expenditure from what was allowed in each year of the 2022 Determination Period and commented on the reasons for each year's variation. We have also commented on the timing and the extent to which the capital expenditure incurred since the last determination has delivered the services on which the expenditure allowance was based.
- Completing a review of CCC Water's Long-Term Investment Plan (LTIP), which forms the basis of CCC Water's future capital expenditure, including the proposed expenditure from 2026 to 2031. In completing this task, we have considered the drivers and efficiency of the annual capital expenditure in the 10-years to 2035-36 and have provided inferences on the prioritisation of expenditure and system performance.

1.3 How we structured our report

This report is structured as follows:

- Section 2 sets out our approach to the expenditure review, including how we have considered the 3Cs framework.
- Section 3 sets out an overview of CCC Water's operating environment.
- Section 4 describes our assessment of the maturity, sophistication and impact on stakeholder outcomes of CCC Water's decision-making systems and processes.
- Section 5 sets out our assessment of CCC Water's operating expenditure proposal.
- Section 6 sets out our assessment of CCC Water's capital expenditure proposal, deliverability assessment and historic capital expenditure.

The appendices contain additional data, analysis or reports that have been prepared as part of completing the expenditure review of CCC Water's 2026-31 pricing proposal.

1.4 Information and sources used to inform our review

In preparing this report, we have drawn heavily on information provided to us by CCC Water, including:

- CCC Water's Central Coast Council Pricing Proposal and accompanying attachments.
- The associated annual information return spreadsheet.
- A series of confidential documents containing supporting information.

We also travelled to Wyong for a series of interviews with representatives from CCC Water. The purpose of these discussions was to develop a greater understanding of elements of the pricing proposal. We supplied CCC Water with a list of discussion topics and an agenda prior to each meeting. In this report, we clearly identify cases where we rely on information obtained through our discussions with CCC Water.

We also filed three requests for information (RFIs) with CCC Water to obtain further information on matters that we deemed relevant. Our citations in this report identify documents that we obtained in response to the RFIs. We also reviewed a number of publicly available documents and data sources that were not provided to us by IPART or CCC Water, particularly for the purposes of benchmarking CCC Water's performance against other businesses.

1.5 There are limitations to the extent of our review

We note the extremely compressed timeframes for CCC Water to respond to RFIs and the volume and complexity of our requests for information. Subsequently, CCC Water submitted and responded to all RFIs after their respective due dates, with some incomplete information (refer to Appendix 1). The late provision of responses significantly constrained our ability to review and validate the necessary data. Our emerging findings were presented to IPART on 28 November 2025; therefore, any RFIs received after on or after 26 November 2025 were not fully considered.

In cases where requested evidence was incomplete (such as when only a business case was available without the detailed cost build-up or optioneering reports) we relied on assumptions, which we outline in our assessment. Data gaps included the approach to cost escalation and insufficient information to reconcile, at a project level, actual expenditure over the current price path.

Where detailed net present value (NPV) or cashflow data was unavailable, we assumed adjustments occurred in the first year of project costs.

2. Our approach to the expenditure review

To complete the expenditure review of CCC Water's proposed operating expenditure and capital expenditure, we applied a structured, evidence-based methodology across three key areas: systems and processes, operating expenditure and capital expenditure.

We assessed CCC Water's key strategic planning, asset management and decision-making systems and processes to determine the level of maturity, effectiveness and implementation. This involved a detailed document review, benchmarking against industry standards and good practice, and interviews to understand how these systems support decision-making and customer outcomes. Where gaps were identified, we evaluated their impact on efficiency and stakeholder value to inform improvement recommendations.

For our review of operating expenditure, we first conducted a preliminary sufficiency assessment of CCC Water's operating expenditure proposal, examining cost drivers, evidence quality, and alignment with the 3Cs framework. This included benchmarking against industry standards and identifying areas for targeted verification. Where adjustments were warranted, recommendations were supported by comparative analysis and prudence checks.

Our capital expenditure review included trend analysis of historical and proposed costs, project sampling for detailed assessment, and program-level evaluation of deliverability and efficiency. We examined any trade-offs between capital expenditure and operating expenditure were reasonable and customer priorities were reflected. We then developed an efficient capital expenditure range based on project reviews, benchmarking, and risk assessment. We intended to review the LTIP, but no such document exists and as such, we were unable to review this.

2.1 We assessed CCC Water's key decision-making systems and processes

We conducted a detailed review to assess the quality and integration of CCC Water's key decision making systems and processes, including its:

- Strategic planning approach (specifically its long-term investment planning)
- Asset management systems and processes
- Risk management framework
- Procurement approach
- Delivery Plan (2022–2026), which outlines CCC Water's roadmap for improving its asset management practices.

We met with CCC Water to gain a comprehensive understanding of how CCC Water's systems and processes support decision-making, promote customer value, and when and how these systems were implemented. These discussions provided valuable insights into the organisation's operational framework and strategic intent.

We evaluated whether CCC Water's systems and processes are customer-centric, high-quality, and well-integrated into its operations. To provide context and comparative insight, we considered the maturity and sophistication of CCC Water's decision-making systems against good industry practice.

In addition, we undertook a thorough evaluation of CCC Water's customer engagement processes. This included assessing the effectiveness of engagement methodologies, the quality of information provided to customers, and the extent to which customer feedback has been incorporated into expenditure decisions. We also reviewed CCC Water's strategies for ongoing customer engagement and the mechanisms it uses to track and report on the delivery of customer-valued outcomes.

Where we identified systems and processes that were ineffective or poorly implemented, we assessed the material impact on efficiency and stakeholder outcomes. These findings informed our recommendations for potential improvements to CCC Water's systems and processes, directly contributing to IPART's decision-making process.

2.2 We assessed the adequacy and efficiency of CCC Water's operating expenditure

The first stage of our operating expenditure review was a preliminary check and rapid sufficiency assessment to determine the need for a targeted review of CCC Water's proposed operating expenditure. In undertaking this sufficiency assessment, we focused on understanding:

- How CCC Water has prepared its operating expenditure proposal, and how it ensures on a day-to-day basis to incur prudent and efficient expenditure.
- The extent to which its proposed expenditure deviates from trends in historical actual expenditure.
- The drivers behind any deviation in its proposed expenditure from historical trends.
- At a high level, how CCC Water's proposed expenditure benchmarks against its peers.
- How CCC Water considers trade-offs between cost, service performance and risk.

As part of this initial review, we reviewed CCC Water's proposal, assessed a range of supporting information provided by CCC Water in its response to RFI 1 (noting that some responses were provided later, and so formed part of our stage 2 assessment), and met with CCC Water to better understand its proposal.

Our initial review resulted in us identifying several strengths and deficiencies in CCC Water's proposal, which helped to inform our scope for further analysis in stage 2. In our second stage assessment, we conducted a comprehensive deep dive assessment, focused on areas where:

- The materiality of impact on customer bills is higher
- We did not have sufficient evidence to assure ourselves of the prudence and efficiency of CCC Water's proposed operating expenditure
- There are any changes to CCC Water's or its customers' risk appetite or risk assessment.

As part of our second stage review, we closely interrogated information provided by CCC Water, undertook a range of benchmarking to assess how CCC Water's historical and proposed operating expenditure compares to its peers, and met with CCC Water again to test our preliminary findings.

We adopt a first-principles lens to determine the operating expenditure that a prudent and efficient utility operating CCC Water's network would incur, considering both the business-as-usual steady state of the business, and the current state of its network. Where we have found that adjustments to CCC Water's proposed operating expenditure are required, we have provided analysis and reasoning, supported by benchmarking against CCC Water's peers where that is warranted.

Consistent with IPART's 3Cs framework, we provide a range for CCC Water's efficient operating expenditure. Our lower and upper bounds represent trade-offs between cost and service quality, including operating and capital expenditure trade-offs.

2.3 We assessed the adequacy and efficiency of CCC Water's capital expenditure

2.3.1 Trend analysis

To begin our review of CCC Water's capital expenditure, our team conducted a trend analysis to understand historical and proposed cost patterns. This included comparing outturn costs with previously proposed costs, identifying any step changes between historic and proposed expenditure, and analysing the composition of proposed costs by service type and driver. The trend analysis was completed across both water and wastewater services, and by regulatory drivers such as renewal, growth, and compliance.

2.3.2 Project selection

As part of the capital expenditure review, we selected a representative sample of projects for detailed assessment. The selection was informed by our earlier review of CCC Water's key processes and procedures, its capital expenditure technical paper,[8] as well as our trend analysis.

We selected 14 water and sewer projects / programs for detailed assessment (see Table 5). As sewer makes up a larger portion of the overall capital program, we selected a higher proportion of sewer-related projects. These projects provide a representative sample of CCC Water's capital plan.

Table 5 Selected spread of projects

Stage	Water	Sewer	Total
Historic	2	1	3
Proposed	4	7	11
Total	6	8	14

2.3.3 Historic capital expenditure

To review historic capital expenditure in water and wastewater services, we conducted a review of the project drivers and an efficiency review of CCC Water's expenditure. This phase included an initial evaluation of the sufficiency of the supplied project documentation, followed by a request for further information, as required.

For projects that were found to be prudent in the 2022 price review, we considered the timing of the expenditure but did not review whether the project drivers were clearly evidence-based. For projects that were not assessed as part of the 2022 review, we considered whether the project need was clearly evidenced and that the timing of investment was appropriate. This involved identifying whether the project documentation supplied clearly indicated a link to at least one of the following drivers:

- Growth – demand for the service has increased, or is forecast to increase, and an expansion to existing services is required to satisfy that demand.
- Renewal – existing assets have become obsolete or exhausted their remaining life and require replacement.
- Compliance – failure to meet regulated environmental, technical, health or safety requirements, meaning infrastructure investment is required to ensure compliance.
- Service improvements – expenditure is explicitly requested by a relevant customer group, where such a group has explicitly indicated a willingness to pay for that service improvement.

We also evaluated how each project aligned with customer preferences and priorities, as outlined in the 3Cs framework.

We then undertook an efficiency review of CCC Water's historic capital expenditure projects across both water and wastewater services. Efficiency relates to whether expenditure was least-cost and economically efficient. This is typically considered through assessing whether the expenditure was:

- The lowest lifecycle cost option (i.e., the business has selected the most efficient option to meet the need).
- Delivered efficiently during implementation. This is typically assessed through evaluating delivery in accordance with the standard, scope and cost in the original project budget.

[8] CCC Water, Technical paper 4, Capital expenditure, September 2025.

Variations between forecast and actual expenditure while delivering the program are reviewed to determine the drivers of the difference and whether any efficiencies were realised over the relevant period. This also contemplates whether the intended benefits were realised.

2.3.4 Proposed capital expenditure

For the proposed capital projects, our review adopted a flexible methodology tailored to the level of project definition and planning undertaken. Fundamentally, we reviewed whether:

- Sufficient evidence was provided to justify that the project was needed, the outcomes were realistic and achievable, and the delivery timeline was appropriate.
- The project aligned with customer preferences and priorities, as outlined in the 3Cs framework. This included an assessment of whether the project objectives and benefits were comprehensive and clearly linked to CCC Water's customer values.
- CCC Water had followed industry standard practice in relation to optioneering, cost estimation, risk assessment and procurement planning, to the extent this was practicable based on the level of project definition.

2.3.5 Program assessment and deliverability

We also conducted a program-level assessment of CCC Water's capital expenditure proposal. We considered whether the proposal is reasonable, having regard to:

- Historic expenditure trends (both in terms of outturn costs relative to the proposal and the step change between historic expenditure and proposed expenditure)
- Whether the capital expenditure proposal is supported by robust and mature business processes (from the review of key systems and processes)
- The deliverability of the program by considering the size and complexity compared to historic program
- Review of efficiency factors applied on the capital program
- Any relationships that may exist between the proposed capital and operating expenditure.

2.3.6 Development of a draft range of efficient capital expenditure

Finally, our team developed a draft range of efficient capital expenditure for IPART's consideration, informed by our detailed project reviews and integrated into our broader program assessment. The outputs of our review included a clear understanding of the prudency and efficiency of both historic and proposed capital projects, a thorough evaluation of the capital program's reasonableness and deliverability, and recommendations on the efficient level of capital expenditure for water and wastewater services.

2.4 We did not review whether CCC Water's long-term investment plan delivers value for customers

A key consideration in our review was whether the capital expenditure and operating expenditure trade-off is reasonably reflected in CCC Water's long-term investment plan (LTIP). Investments in capital projects that aim to improve internal process efficiency or reduce costs should result in a corresponding decrease in operating expenditure in future periods. This alignment is critical to ensuring that the LTIP delivers sustainable value for customers over time.

We intended to examine whether the long-term needs identified in the LTIP are adequately reflected in short- to medium-term investments. This connection is essential for translating strategic priorities into actionable programs and projects that deliver tangible benefits for customers and stakeholders. As well as how well the LTIP aligns with IPART's water regulatory framework, particularly its emphasis on customer engagement under the 3Cs framework. The LTIP should therefore demonstrate clear evidence of customer input and reflect preferences and priorities identified through robust engagement processes. However, we note that there is no LTIP and we were therefore unable to perform this review.

3. Overview of CCC Water's operating environment

3.1 CCC Water is the third largest water utility in New South Wales

CCC Water is the water utility division of Central Coast Council, responsible for delivering essential water and wastewater services across the Central Coast region of New South Wales. CCC Water supplies approximately 83 million litres of drinking water daily to around 150,000 properties. In addition to water supply, it manages the collection, treatment, and disposal of wastewater, ensuring compliance with environmental and public health standards. These services are delivered through a complex network of infrastructure assets, including three dams, three weirs, three water treatment plants, over 50 reservoirs, and more than 2,200 kilometres of pipelines.[9] CCC Water is the third largest water utility in New South Wales, following Sydney Water and Hunter Water.[10]

Figure 2 CCC Water's operating footprint[11]

[9] Central Coast Council (n.d) *Water and Sewer,* available at: https://www.centralcoast.nsw.gov.au/residents/water-and-sewer.
[10] NSW Government (2024) *Regulation streamlined for Central Coast Water,* available at: https://www.nsw.gov.au/media-releases/regulation-streamlined-for-central-coast-water-0.
[11] Central Coast Council (2023) *Central Coast Council Water Security Plan*, available at: https://cdn.centralcoast.nsw.gov.au/sites/default/files/2023-12/Central-Coast-Water-Security-Plan_June-2023.pdf.

CCC Water manages a significant portfolio of infrastructure assets that support the delivery of high-quality water and wastewater services. These include bulk water assets such as Mardi Dam, weirs, and treatment plants, as well as reservoirs, pumping stations, and extensive pipeline networks. The infrastructure is maintained to meet current service levels and future growth, with strategic investment guided by long-term planning documents such as the Development Servicing Plan (DSP).

The DSP outlines the infrastructure required to support new development and sets developer charges to recover part of the cost of providing water and sewerage services. CCC Water operates separate regional charges for the Northern and Southern regions, reflecting differences in infrastructure and development patterns.

CCC Water services a diverse and growing population across the Central Coast. Urban expansion, population growth, and climate variability continue to drive increased demand for water and wastewater services. To address these challenges, CCC Water has developed the Central Coast Water Security Plan (CCWSP) in collaboration with Hunter Water and the NSW Department of Planning, Infrastructure and Environment.

The Water Security Plan outlines strategies to enhance water efficiency, diversify supply sources, and improve system resilience. Options under consideration include desalination, purified recycled water for drinking, recycled water, and increased use of rainwater tanks. Community feedback has highlighted strong support for sustainable solutions and concerns about environmental impacts, energy use, and long-term viability.

3.2 CCC Water's legislative framework has changed

Historically, CCC Water operated under two separate legislative frameworks: the *Water Management Act 2000* and the *Local Government Act 1993*, making it unique among NSW councils. In 2024, the NSW Government commenced the *Water Management Amendment (Central Coast Council) Act 2024* to streamline regulation and eliminate duplication.[12] This reform aligns CCC Water's governance with other regional councils. Council retains full control of water services and infrastructure, ensuring these remain publicly owned and managed.

IPART remains responsible for reviewing the maximum prices that CCC Water can charge to provide water, wastewater, and related services. The price review focuses on promoting value for money, while aiming to help water businesses remain financially viable to efficiently deliver their services.

CCC Water is subject to a key range of regulatory obligations that directly influence the cost of providing services.[13] These include compliance with bulk water service obligations, dam safety standards, and flood operation protocols to ensure public safety and water security. CCC Water must also manage water entitlements and resource allocation in line with statutory frameworks, adhere to development conditions for infrastructure projects, and control noxious weeds and pests to protect ecosystems.

3.3 CCC Water's operating environment over the 2022 Determination period

CCC Water's operating environment has been challenging during the 2022 determination period, driven in early years by Council's administration period[14], and in later years due to the condition of its network.

In FY2023, CCC Water significantly underspent its IPART operating expenditure allowance. CCC Water identified challenging resourcing conditions and procurement challenges as the main drivers of this underspend, including both difficulties hiring internal staff and engaging external contractors.[15] These challenges reflect the effects of Council's broader financial crisis in FY2022 on CCC Water's delivery capacity and resourcing levels.

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[12] NSW Government (2024) *Regulation streamlined for Central Coast Water,* available at: https://www.nsw.gov.au/media-releases/regulation-streamlined-for-central-coast-water-0.

[13] Central Coast Council (2024) *Southern Water Supply and Sewerage Development Servicing Plan,* available at: https://www.centralcoast.nsw.gov.au/sites/default/files/2025-03/southern-water-supply-and-sewerage-development-servicing-plan-2024.pdf.

[14] In the years following the amalgamation of Wyong Shire Council and Gosford City Council in 2016 to form Central Coast Council, a combination of catastrophic errors in financial management occurred, which led to four years of successive losses and an approximate debt of $565M by late 2020. *Central Coast Council Administrator's Final Report*, August 2024

[15] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp23-24.

In FY2024, CCC Water's actual operating expenditure was below but closer to IPART's allowance. Consistent with its FY2023 challenges, CCC Water identified resourcing conditions and procurement as the main drivers of its underspend.[16]

In FY2025, CCC Water's actual operating expenditure was significantly more than IPART's allowance. CCC Water states that this is due to resourcing ramping up to deliver its transition strategy and securing contractors to perform additional sludge removal works.[17] However, in our assessment, this overspend is principally driven by a range of non-recurring items related to the poor quality of its network, including but not limited to emergency pump hire at Kincumber Sewage Treatment Plant (STP) that suffered a catastrophic failure, and a one-off fine from the NSW Environmental Protection Authority.

In FY2026, CCC Water expects to significantly overspend its IPART operating expenditure allowance again. CCC Water states that this is predominantly related to the costs associated with dewatering and sludge removal.[18] However, in our discussions with CCC Water, we understand it is ramping up its preventive maintenance program and must undertake higher levels of reactive maintenance while critical capital projects come online.

In conjunction, CCC Water identifies that its customers are concerned about cost-of-living pressures and so are focused on affordability. In line with this, CCC Water identifies that 30 per cent of households on the Central Coast are classified 'low income', with a gross weekly individual income of less than $800. CCC Water has reflected this in its proposal, in that it proposes to use $75.9 million in reserves to assist in funding operational expenditure and reduce prices, considering broader affordability concerns.[19]

In our assessment, given the current state of its network, CCC Water is likely to continue to incur operating expenditure that is greater than the prudent and efficient cost during business-as-usual steady state due to the condition of its network.

3.4 Relevance of the 3Cs framework to CCC Water's 2026 pricing proposal

In November 2022, IPART introduced the 3Cs framework, which broadened the focus of its pricing reviews to customer value, cost-efficiency and credibility over the short and long term. By centring the regulatory process around customer priorities, IPART aimed to ensure that pricing proposals promoted efficient use of and investment in water infrastructure.[20]

The 3Cs framework is underpinned by twelve guiding principles, which water businesses and IPART are expected to use to develop and assess pricing proposals. These guiding principles are categorised into:[21]

- Six 'customer principles' related to how customer preferences are integrated into the proposal
- Four 'cost principles' relating to how customer needs and preferences are delivered in a cost-efficient matter
- Two 'credibility principles' focusing on how businesses provide assurance about the deliverability of its proposal.

These principles are illustrated in Figure 3.

[16] CCC Water, Technical paper 5, Operating expenditure, September 2025, p26.
[17] CCC Water, Technical paper 5, Operating expenditure, September 2025, p28.
[18] CCC Water, Technical paper 5, Operating expenditure, September 2025, p30.
[19] CCC Water, Pricing proposal, September 2025, pp19-20.
[20] IPART (n.d.) *How we regulate the water business*, available at: https://www.ipart.nsw.gov.au/Home/Industries/Water/Reviews/Metro-Pricing/How-we-regulate-the-water-businesses.
[21] IPART, Water regulation handbook, July 2023, pp2 and 10.

Figure 3 Guiding principles under the 3Cs framework

Each business self-assesses its proposal as either 'standard', 'advanced' or 'leading' against the 3Cs framework. They further identify focus principles, which will be given greater emphasis in IPART's assessment if well justified.[22]

CCC Water has assessed its pricing proposal as 'standard' and identified that principle 7 (robust costs) and principle 1 (customer centricity) align most to its customer and community values and outcomes.[23]

IPART will either affirm or challenge and downgrade a water business' self-assessment using a grading rubric. This rubric is structured along the twelve guiding principles, with the 'standard', 'advanced' and 'leading' grading levels for each principle. The principles will be weighted according to the focus principles identified by the water business, if well-justified.[24]

Water businesses awarded with the 'advanced' or 'leading' assessment will be rewarded with procedural, reputational and financial rewards. These include financial payments, mechanisms to share customer value, informing customers on performance and tailored reviews for high quality proposals.[25]

[22] IPAR T, Water regulation handbook, July 2023, pp9-10.
[23] CCC Water, Technical paper 11, Accountability, customer influence and self-assessment, September 2025, pp4-5.
[24] IPART, Water regulation handbook, July 2023, p101.
[25] IPART, Water regulation handbook, July 2023, p3.

4. Our findings on CCC Water's key systems and processes

In the 2022 Price Determination, IPART made several recommendations aimed at promoting better performance and accountability of Central Coast Council Water.[26] One of their key recommendations was for CCC Water to continue to improve its strategic plans and asset management systems so that they reflect good industry practice.

As part of our review, IPART has asked us to consider CCC Water's key decision-making systems and processes and comment on their relative maturity and sophistication. We reviewed CCC Water's strategic planning approach, asset management system and processes, risk management system and procurement approach. We have also considered CCC Water's Delivery Plan[27] (which outlines how the actions from the IPART 2022 Price Determination would be delivered over the 2022 regulatory period period).

In considering the key decision-making systems and processes, we have focused on how CCC Water has:

- Developed its decision-making systems and processes over the current determination period
- Implemented and complied with the systems and processes
- Developed and tracked performance outcomes and measures.

We make our comments and recommendations in the context of good industry practice with a particular consideration of the ISO 55000[28] family of standards, focusing specifically on the requirements for a robust asset management system.

4.1 CCC Water's governance framework

The CCC Water Investment Review Committee (WIRC), formed in 2019 to manage, monitor and review the water and sewer capital delivery program for deliverability and ensure projects align with corporate and regulatory expectations. CCC Water notes that the WIRC was established with the primary roles and responsibilities aligning closely with those of a Board structure. Consisting of the Water and Sewer Senior Leadership Team,[29] the WIRC is responsible for:

- Monitoring of CCC Water's delivery and cost commitments
- Monitoring approved projects against cost and program
- Reviewing the risks and opportunities related to cost, delivery efficiency, and asset performance
- Monitoring of how proposed outcomes and benefits are being met by projects and programs
- Overseeing delivery of projects through the Project Lifecycle Gate Review and Approval process.

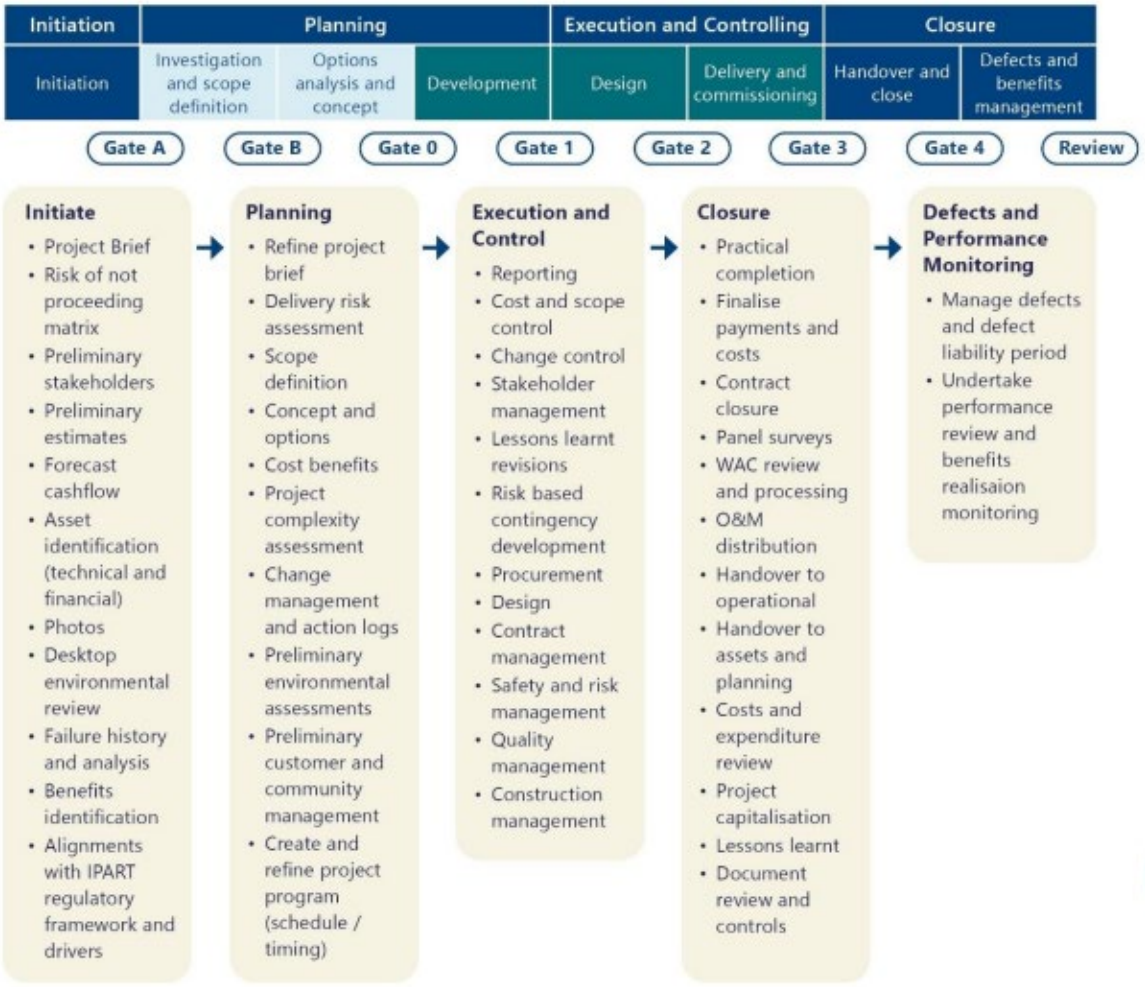
[26] IPART, Information Paper – review of Central Coast Council water prices – Improving performance, May 2022, p2.
[27] CCC Water, Delivery Plan – Central Coast Council Water and Sewer, 2022-2026.
[28] The ISO 55000 sets out what is needed to be in place to undertake best practice asset management. This includes the criteria necessary for establishing, implementing, maintaining and improving an asset management system.
[29] CCC Water, Technical paper 4, Capital expenditure, September 2025.

Aligning with good industry practice for asset management governance,[30,31] we would expect the governance framework to clearly outline the authority for:

- Capital investment decision making
- Operations and maintenance decision making
- Lifecycle value realisation
- Resourcing strategy
- Levels of service strategy.

In the documentation supplied to us, it is not clear whether the WIRC have any decision-making authority. Rather, it appears that the WIRC provides a review and monitoring role of water investment. We were also not provided with any information that provides the context for the WIRC within the broader Central Coast Council governance framework.

We note, the WIRC also oversee the gated investment process known as the Water and Sewer Project Lifecycle (see Figure 4).



periodFigure 4 Water and sewer project lifecycle

The Major Project business cases we reviewed were prepared in a consistent template and covered the topics we would typically expect in a business case[32] considering the level of detail at each gateway. However, the

[30] Global Forum on Maintenance and Asset Management, The Asset Management Landscape, second edition, June 2024 pp37-38.
[31] ISO 55001: 2024 Decision-Making Framework.
[32] Noting broad consistency with the required structure for business case development set out in the NSW Treasury Guidelines.

business cases content lacks the expected depth and sophistication of analysis, particularly in key sections such as risk analysis, procurement strategy and cost estimation. There was also no clear statement as to the gateway, the approval being sought and the actual sign-off of the approval.[33]

All major project business cases we reviewed were dated late October 2025, with some still in draft. We would expect to see documentation within these business cases of how the WIRC, SIC, and other approvers are being engaged within the context of the specific investment decision. We also note that in some instances, procurement had occurred earlier in 2025, despite the business case being finalised months later in October. The timing of approval of the major project business cases does not appear to be consistent with the Central Coast Council's procurement policy and procedure[34] however further advice from CCC Water is that procurement was approved via the delegated approval of a procurement plan consistent with Council's procurement policy. We have not sighted procurement plans for any of the projects we reviewed.

The costs contained within the business case documents do not reconcile internally, making the financial ask and the costing for the project unclear. The basis of the cost estimate, including the basis of calculating contingency, is not consistently set out in the project documentation. Without a comprehensive risk analysis being provided in the business case documentation, it is difficult to understand whether key project risks have been understood and costed, and whether the procurement model / strategy supports risk management overall.

4.2 CCC Water have made progress towards wholistic strategic planning, however more work is required

4.2.1 Long term investment planning

CCC Water maintains that it conducts long-term investment planning through integrating inputs from its Community Strategic Plan, and the Central Coast Council Asset Management Policy (see Figure below). The CCC Water infrastructure pipeline (which we did not sight) is intended to be informed by asset management documentation, as well as water and sewer master plans (currently being developed) to identify priority capital projects. CCC Water is responsible for developing a long-term capital program which aligns which the outputs of these documents.

The investment plan is informed by the following sources:[35]

- Treatment and Network Strategic Planning[36]
- Customer values and improved service
- Regulatory and legislative compliance
- Water security and sustainability
- Condition and failure data
- AMPs
- In field identification.

We have reviewed the water and sewer component of Central Coast Council's Long Term Financial Plan 2025-2035,[37] which assesses the impact of expenditure on key financial performance metrics. We note the absence of a more detailed long term investment outlook for CCC Water, inclusive of both asset renewals

[33] As identified in the following Major Project Business cases: Charmhaven STP, Gwandalan STP, Kincumber STP and West Gosford Sewer Rising Main Partial Replacement.
[34] Central Coast Council Procurement Procedure, section 9.6 states that a "funding source needs to be identified" prior to the procurement process proceeding. These funding sources are noted as: - a currently adopted budget, - the Long-Term Financial Plan, - an endorsed business case with approval by the Chief Financial Officer (in the event that above options do not apply). We note that neither the Central Coast Council Operational Plan 2024-25 nor the Long-Term Financial Plan include line items outlining spend for individual projects. The Delivery Program for 2025-29 and Operational Plan 2025-26 does include individual line items which do not align with the Major Project business cases provided by CCC Water.
[35] CCC Water, Technical paper 4, Capital expenditure, September 2025.
[36] Not sighted.
[37] Central Coast Council, Long Term Financial Plan 2025-2035, June 2025.

and delivery of new assets. As a priority, we recommend that CCC Water develop a long-term investment plan which wholistically encompasses its capital and operating expenditure outlook.

4.2.2 Strategic planning

All councils in NSW are required to work within the *Integrated Planning and Reporting (IP&R) Framework*, shown in Figure 5. This framework dictates that all plans, policies, programs and activities must link back to a council's Community Engagement Strategy. As per this framework, CCC Water is required to develop long-term financial plans which are both realistic and effective, being informed by workforce management strategy and asset management practices.

The Central Coast Council Community Engagement Strategy[38] (dated March 2025) references a dedicated Engagement and Education Strategy,[39] setting out Council's approach to engaging, communication, educating, and continually improving its water and sewer services.

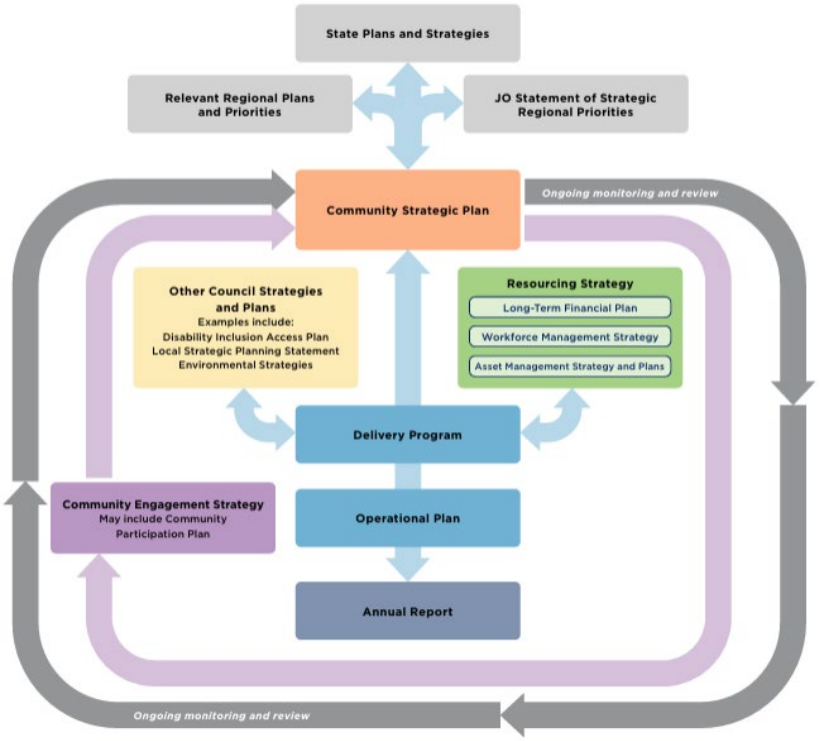


Figure 5 The integrated planning and reporting framework

[38] Central Coast Council (n.d) *Community Engagement Strategy*, available at: https://www.centralcoast.nsw.gov.au/sites/default/files/2025-05/community-engagement-strategy.pdf accessed December 2025.
[39] Central Coast Council (n.d) *Community Engagement Strategy* https://www.centralcoast.nsw.gov.au/sites/default/files/2025-05/community-engagement-strategy.pdf December 2025.

CCC Water must also demonstrate effective, and evidence based strategic planning as a Local Water Utility (LWU) in line with the requirements of the *Regulatory and Assurance Framework for Local Water Utilities 2022* (RAF).[40] The RAF requires 12 outcomes to be achieved and evident in strategic planning, being:

- Understanding service needs
- Understanding water security
- Understanding water quality
- Understanding environmental impacts
- Understanding system capacity, capability and efficiency
- Understanding other key risks and challenges
- Understanding solutions to deliver services
- Understanding resourcing needs
- Understanding revenue sources
- Make and implement sound strategic decisions
- Implement sound pricing and prudent financial management
- Promote integrated water cycle management.

CCC Water's approach to meeting these standards involves delivering both technical and business enabling documents, as summarised in Table 6.

Table 6 Key strategic documents being delivered by CCC Water

Document	Status and detail
Central Coast Water Security Plan (CCWSP)	This plan has been completed and has identified priority investments to improve the Central Coast's water security. This has utilised stochastic modelling to understand potential climate impacts on surface water supplies, prioritising future water supply augmentations to adapt to changing conditions. The CCWSP was finalised in 2023, following community consultation and consultation with stakeholders including Hunter Water and the NSW Government.
Central Coast Water and Sewer Masterplan (CCWSMP)	This masterplan is currently under development and incorporates growth into investment planning. This is a strategic document which aims at developing a long-term vision for water and sewer servicing.
Water and Sewer Strategic Business Plan	Currently in development, embedding asset management into decision making processes.
CCC Water IP&R Documentation	Currently underway, and includes Community Strategic Plan, Resourcing Strategy, and Operational Plan.

A significant number of strategic documents are currently in draft format or under development. As such, we have been unable to review them which has limited our ability to develop a well-informed view as to how well CCC Water's strategic planning approach aligns with customer values, and performance-related risks. Notwithstanding, we recommend that CCC Water prioritise the progression of actions identified in the CCWSMP for it to serve as a basis for both current and future investment decisions.

The CCWSP is a strategic planning document that considers the risks posed by drought and identifies priority investments to address these risks. This plan is informed by stochastic modelling of the key surface water supplies in the Central Coast, particularly Mangrove Creek Dam. We understand that investments included within the CCWSP are prioritised based on levelized cost, and triggered based on growth of demand, as shown in Figure 6.

[40] NSW Government (n.d.) *Regulatory and assurance framework,* available at: https://www.water.dcceew.nsw.gov.au/our-work/local-water-utilities/regulatory-and-assurance-framework.

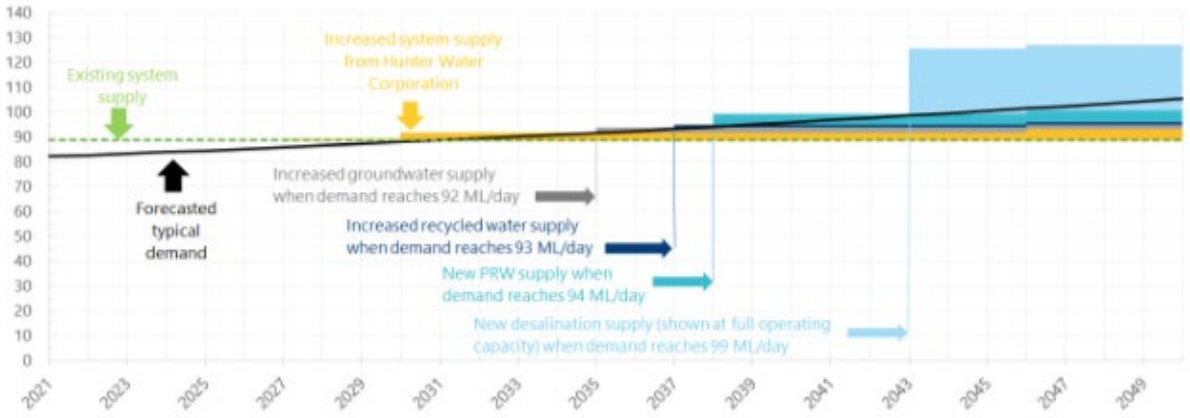


Figure 6 New supplies identified in the CCWSP and corresponding demand triggers[41]

In our view, the level of detail provided in the CCWSP does not sufficiently justify the prioritisation approach that it describes. For example, it is understood that upgrades are nearing completion at Mardi WTP to enable it to provide 130 MLD.[42] It is not clear whether these upgrades are accounted for in Figure 6 given the existing system supply line remains at 90 MLD through to the planning horizon.

We further consider that the demand forecast applied in the CCWSP appears to be from pre-2019, without clear commentary about how the timing of delivery of water security assets will change as growth forecasts are updated. The methodology for the derivation of the demand forecast applied in the CCWSP is not clearly stated and does not align with the Department of Planning (NSW) common planning assumptions projections,[43] despite these assumptions being applied in other planning documentation (such as the Central Coast Regional Plan 2041[44]). Figure 7 shows the disparity between the population forecast presented in the CCWSP compared to the NSW planning figures.

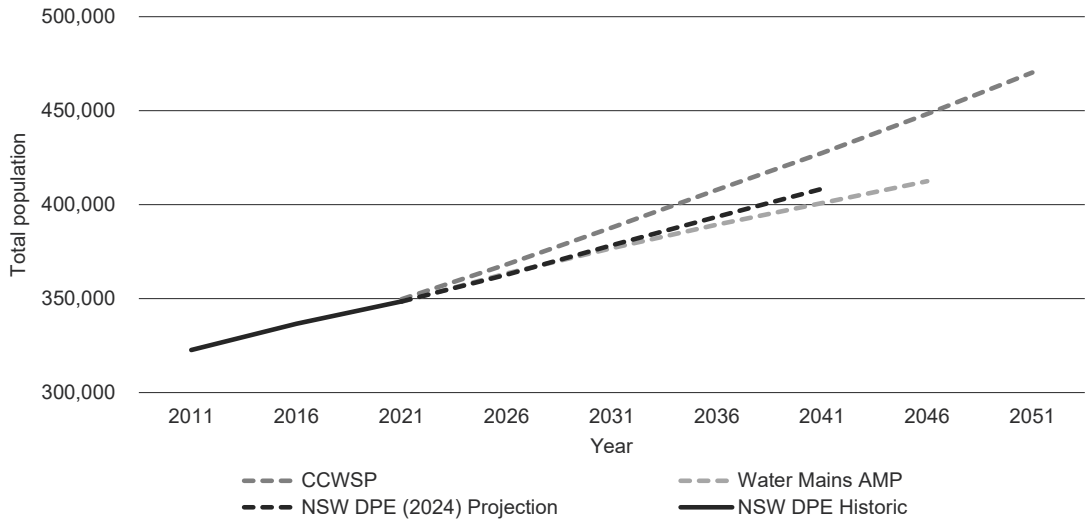


Figure 7 Growth projections applied in CCC Water's documentation compared to NSW DPE figures

To provide assurance in investment, and to make sure that strategic planning remains customer centric, we recommend that growth figures and other long-term assumptions are reconciled across strategic and planning documents, in alignment with current projects.

[41] Central Coast Council (2023) *Central Coast Council Water Security Plan,* available at: https://cdn.centralcoast.nsw.gov.au/sites/default/files/2023-12/Central-Coast-Water-Security-Plan_June-2023.pdf.
[42] Refer section 6.
[43] Department of Planning (NSW) (n.d.), *Common Planning Assumptions,* available at: https://www.nsw.gov.au/nsw-government/public-sector/financial-information-for-public-entities/common-planning-assumptions accessed December 2025.
[44] NSW Government, Central Coast Regional Plan 2041, October 2022.

4.3 CCC Water have promoted customer values through community engagement

4.3.1 CCC Water's approach to community engagement

CCC Water's customer engagement process demonstrates a commitment to transparency, inclusivity, and continuous improvement. Our high-level review of CCC Water's approach to community engagement has found that it aligns with the IPART 3Cs Model. The community involvement undertaken to date has been completed across a range of engagement channels (such as in-person forums, online surveys, and targeted outreach). CCC Water have dedicated Customer Liaison Officers and have integrated digital tools into operations to enable continuous and consistent engagement.

CCC Water's Water and Sewer Community Engagement and Education Approach sets out its approach to synthesising the values of its customer base and ensuring that they are embedded in capital planning and operations. Based on customer engagement, CCC Water have identified seven community values which it aims to promote in its work plans and strategic objectives, as shown in Table 7.

Table 7 CCC Water's customer values

Customer value	Description
Good quality water	Clean, clear, safe drinking water that tastes and smells good and is tested and monitored regularly.
Quality treatment	Minimising odour and health impacts on customers and workers and releasing high quality effluent to the ocean.
Reliable service	Well maintained network with minimal leaks and breakages with fast response times to faults and issues.
Affordable	Cost efficient, consistent, and good value for money with fair allocation of costs between customers.
Effective planning	Using the latest technology, water sources and long-term planning to ensure future supply demands can be met and are resilient to climate change.
Environmental focus	Protecting our catchments, oceans and marine life and utilising renewable energy to power our assets.
Transparency and education	Providing clear, easy to understand information and good communication and raising community awareness about our water supply, water conservation and what is safe to flush down the toilet.

In our view, CCC Water's approach to community engagement represents an effective strategy to embedding customer needs and priorities into operations. CCC Water has also demonstrated how its financial decisions are being informed by community expectations. The community values identified in the above table have been clearly aligned with the capital program, as shown in Table 8.

Table 8 CCC Water's proposed capital expenditure linked to community values ($2025-26 million)

Value	Proposed capital expenditure	Percentage of overall expenditure
Water		
Effective planning	26.2	5%
Good quality water	0.5	0%
Reliable service	86.2	15%
Water – subtotal	**112.9**	**20%**
Sewer		
Effective planning	290.8	50%
Quality treatment	49.5	9%
Reliable service	124.6	22%
Sewer – subtotal	**464.9**	**80%**
Total	**577.8**	**100%**

4.4 CCC Water asset management systems are improving

4.4.1 CCC Water's asset management framework

A key outcome of the 2022 IPART Determination were recommendations related to significant improvements in CCC Water's asset management practices. These improvements have been progressively implemented over the 2022 regulatory period, with further improvements continuing throughout the 2026 Determination period.

The structure of CCC Water's approach to asset management is set out in Figure 8. Over the 2022 Determination period, CCC Water has implemented a further three tiers of asset management documentation within the broader Central Coast Council asset management framework. The new framework follows a hierarchy which reflects standard industry practice.

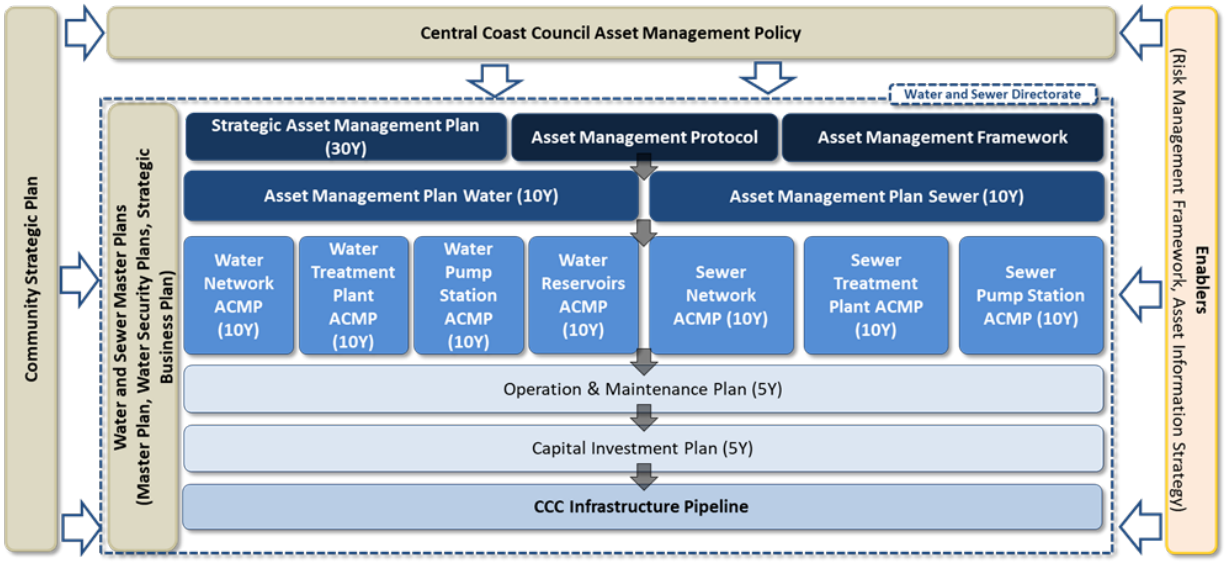


Figure 8 CCC Water's asset management system hierarchy

The asset management framework begins with a suite of strategic and governance documentation. These are the:

- Strategic Asset Management Plan (SAMP) which provides long-term investment objectives.[45] This document is in draft format and has not been finalised, hence the effectiveness of the SAMP cannot be robustly assessed.
- Asset Management Protocol establishes the principles and procedures for managing water and sewer assets, ensuring a consistent, risk-based, and lifecycle-focused approach across the organisation. The protocol is aligned with relevant international asset management and risk standards,[46] and provides a framework for asset planning, performance monitoring, risk assessment, and continuous improvement.[47]
- Asset Management Framework (AMF) is written to align with the requirements of both international standards and the NSW Asset Management Policy (TPP19-07).[48] The framework provides an overview the governance structure, including roles and responsibilities across various committees and teams, and describes the processes for strategic planning, demand analysis, risk management, and service delivery.[49]

CCC Water's asset management framework then considers asset planning at a portfolio level for networks, pump stations, treatment plants and reservoirs. For each relevant asset portfolio, planning is realised through various AMPs, which describe the long-term vision, objectives, and high-level investment strategy for the water/sewer portfolio, including renewal and maintenance programs over a 10-year forecast. Asset Class Management Plans (ACMPs) are then developed which reflect more detailed operational plans for specific asset classes. The ACMPs focus on lifecycle management, condition assessment, renewal priorities and risk mitigation for the relevant asset class.

The outcomes of the asset management planning reviews are captured in operational and maintenance plans, capital investment plans and the Central Coast Council infrastructure pipeline.

We consider that there is structural and procedural alignment throughout CCC Water Asset Management System (AMS) hierarchy. Notwithstanding, CCC Water should consider how it facilitates translation of policy into practical, data-driven renewal prioritisation.

Currently, CCC Water's asset management processes are given effect by a range of tools which prioritise assets for renewal based solely on asset age[50]. We recognise that over the 2026 Determination period, CCC Water will continue its asset condition assessments with the asset data used to update these tools. If done effectively, the CCC Water asset renewal prioritisation process will mature to include a range of factors such as age, location, material and consequence of failure – aligned with good practice for asset renewal prioritisation.

We consider that continued investment in scheduled maintenance programs, condition assessments, and renewal strategies designed to minimise unplanned outages and extend asset life, aligns with good industry practice. To support with improving maturity of these processes, we recommend that CCC Water develop a performance baseline against which they can measure outcomes of newly implemented systems and improvements in levels of service.

Further, CCC Water's asset class management plans reflect a risk-based prioritisation of asset renewals; however, we have identified a lack of prioritisation at a portfolio level. We consider it is important that asset class renewals are compared against one another through customer values to ensure a holistic approach to prioritisation.

[45] CCC Strategic Asset Management Plan, 2025.
[46] ISO 31000: International Standard for Risk Management and ISO 55001: International Standard for Asset Management Systems.
[47] CCC Asset Management Protocol.
[48] NSW Treasury, TPP19-07 NSW Asset Management Policy, October 2019, available at: https://arp.nsw.gov.au/tpp19-07-nsw-asset-management-policy.
[49] CCC Asset Management Framework, June 2025.
[50] In some cases, prioritisation has considered pipeline material.

4.4.2 CCC Water has identified levels of service based on technical benchmarks and community preferences

CCC Water's primary purpose is to provide consistent and reliable drinking water services in terms of quantity and quality. In addition, provide environmentally and socially responsible sewer services delivered in an economical and sustainable manner.[51] The CCC Water identified levels of service (LoS) have been developed through a structured, multi-stage process that combines regulatory requirements, customer engagement, benchmarking, and technical analysis.

Customer LoS measures are intended to indicate service performance relating to quality, safety, availability and reliability. These measures are used to gauge stakeholder expectations and satisfaction with the services delivered. Technical LoS measures are intended to indicate performance of the asset, relating to aspects such as reliability and availability, which typically includes:

- Intervention levels to address anticipated asset failures
- Response times to service requests and defect notifications
- Performance of operational and capital expenditure against budget
- Compliance with operations and maintenance specifications
- Health, Safety and Environmental (HSE) compliance.

The risk, priority of works and criticality of assets are all assessed according to the potential impact to the provision of a service. The relationship between these aspects is shown in Figure 9.

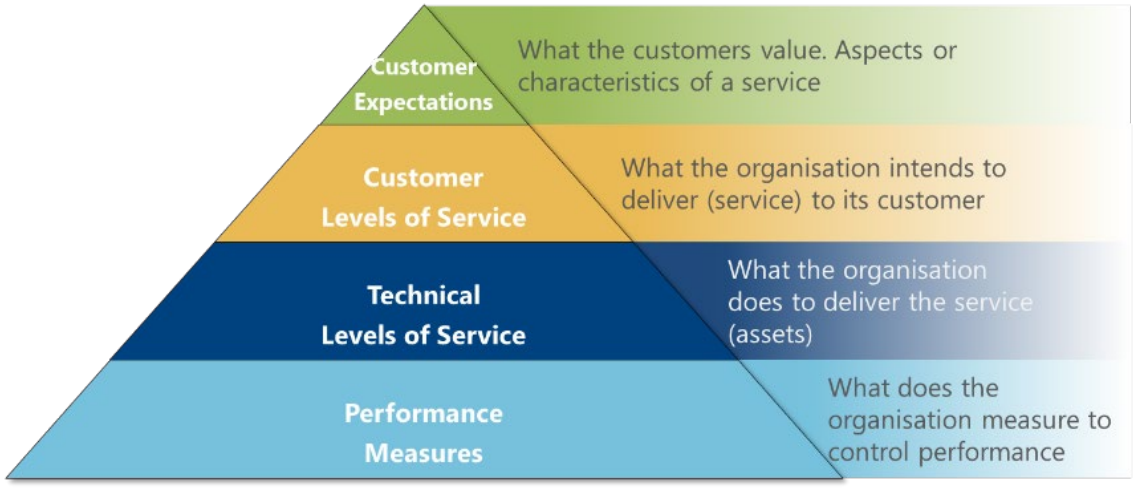


Figure 9 Relationship between impacts of risk, priority of works and criticality of assets

CCC Water publish several documents that record the progress in achieving customer LoS and asset management objectives.[52]

Current performance outcomes are published in CCC Waters 2024-2025 annual performance figures[53], which includes benchmarking from the Local Water Utility performance national reporting undertaken by the Bureau of Meteorology from 2023-24[54]. It shows that CCC Water's performance on several key customer metrics is behind target and/or national averages of other "Major" utilities, as summarised in Table 9.

[51] CCC Technical Paper 2 – Service Levels, September 2025.
[52] CCC Strategic Asset Management Plan, 2025.
[53] CCC Water, Water and Sewer Performance Report 2024 – 2025, available at: https://www.centralcoast.nsw.gov.au/residents/water-and-sewer/about-water-and-sewer-services/water-and-sewer-performance-reports-and-delivery-plan#annual_reportv
[54] Bureau of Meteorology National Performance Report, available at: https://www.bom.gov.au/water/npr/.

Table 9 CCC Water's performance metrics

Performance item	CCC Target	Current Performance	National Major Utility Average
Number of unplanned water interruptions per 1,000 properties	118	128	145.12
Average duration of unplanned interruptions (minutes)	No target set	178	151.4
Number of water quality complaints per 1,000 properties	7.00	4.18	1.64
Number of wastewater overflows per 100 km	26.0	28.0	NA
Number of wastewater overflows reported to EPA per 100 km of mains	1.3	2.3	NA
Number of wastewater main breaks and chokes per 100 km	30.0	35.74	28.5 National Performance Report (*NPR) 2023-24*
Number of water main breaks per 100 km	14.0	14.62	18.5

4.4.3 CCC Water have a risk management framework which aligns to good industry practice

CCC Water's risk management framework is based on ISO 31000:2018, an international standard which provides principles and guidelines for risk management and has an overarching Enterprise Risk Management Framework (ERMF) has been developed to alignment with ISO31000:2018.[55] Risks are actively identified, evaluated, and prioritised, with mitigation strategies embedded in capital works programs and renewal planning.[56] Other industry standard risk management practices such as projects maintaining live risk registers, updated throughout the project lifecycle are referenced in project business cases.

CCC Water has committed to managing their critical assets in accordance with regulatory requirements. For example, since the 2022 Determination CCC Water has lodged a *Direct Interest Holder of a Critical Infrastructure Asset Registration* with the Department of Home Affairs for water and sewer critical infrastructure assets. It has also established a Water and Sewer Critical Infrastructure Risk Management Program (CIRMP). The CIRMP represents a formalised commitment to developing and maintaining a program of material risks which could impact critical water and sewer assets (dams, water and sewer treatment plants etc). The aim of the program is to reduce material risk and the relevant impact of realised incidents.

Procurement and contract management procedures require risk assessment at all stages, with contracts segmented by risk and value (operational, tactical, strategic). In procurement, CCC Water identifies common risks (WHS, environmental, financial, reputation, modern slavery) and mandates risk analysis for high-value or non-standard contracts.[57] CCC Water's contract management procedure requires ongoing risk review, documentation in risk registers, and escalation of high/extreme risks. High-risk contracts require detailed risk analysis, regular review, and escalation.[58]

We consider that the structure of CCC Water's risk framework and whole-project-lifecycle application is adequate and aligned with good industry practice. CCC Water have effectively integrated a risk framework into their asset management, procurement and contract management frameworks, and have demonstrated commitment to managing their critical risk assets.

We acknowledge that project and program reviews are being undertaken to prioritise activities or delivery within a discrete asset class. However, we have identified a deficiency in the prioritisation at a portfolio level

[55] CCC Asset Management Framework, June 2025.
[56] CCC Strategic Asset Management Plan, 2025.
[57] CCC Procurement Procedure, June 2025.
[58] CCC Contract Management Procedure, June 2025.

and question whether the risk assessment across asset classes is adequate and have identified that risk data is not being comprehensively integrated across systems.[59] While strategic risks between asset classes have been identified in the SAMP,[60] we consider that CCC Water has inadequately demonstrated how these strategic risks inform capital allocation and renewal programs. We also consider that the allocated capital expenditure does not accurately reflects the risk of failure across the asset classes.

We were unable to assess the extent of implementation of risk management frameworks or continuous improvement frameworks. We recommend that CCC Water incorporate lessons learned into the risk management approach, to demonstrate continuous improvement.

4.5 CCC Water's project delivery approach

4.5.1 Procurement framework

CCC Water's procurement activities are governed by the *Local Government Act 1993* and Local Government (General) Regulation 2021. All contracts for goods, services, and works must comply unless exempted (e.g., contracts under $250,000 excl. GST). CCC Water also adheres to the NSW Tendering Guidelines for Local Government, ensuring transparency and fairness.

CCC Water's overarching objective is to deliver services and infrastructure cost-effectively, fairly, and transparently. Suppliers and the community should understand the process by which goods and services are procured and have confidence that the processes of CCC Water is applied fairly and consistently.[61]

CCC Water's Procurement Operations centrally manages procurement activities, ensuring alignment with statutory obligations and best practices. CCC Water's procurement lifecycle is structured into three main phases, as describe during their interview sessions (held on 12 and 13 November 2025): planning (developing procurement strategies), sourcing (obtaining quotes, running tenders and making purchases), and management (overseeing contract performance and commitments.

The procurement approach employed by CCC Water varies according to the estimated fee value of the works. CCC Water has also established various contractor panels and sole sourced arrangements to streamline procurement for recurring or specialised services to achieve time and cost efficiencies. Contractors are established through an Expression of Interest (EOI) process that meets the requirements of the Local Government (General) Regulation 2021.[62]

Through these panel arrangements, CCC Water must continue to seek value for money in all Procurement activities. Value for money is mostly achieved in an open competitive environment in which suppliers can be confident that their proposals will be assessed on merit.[63]

We consider that CCC Water's procurement process is well-aligned with NSW local government regulatory requirements,[64] and comparable to other water utilities.

4.6 CCC Water's appreciation for what it can deliver

We understand that the WIRC is responsible for reviewing and mitigating deliverability risks or performance issues associated with CCC Water's delivery of capital projects. While we have not sighted the resourcing strategy currently being developed as part of CCC Water's IP&R documentation, CCC Water has identified deliverability as a significant limiting factor over the 2026 Determination period.

CCC Water has undertaken a deliverability assessment to derive adjustments to its proposed capital expenditure that includes consideration of performance, current utilisation, and effort needed to ramp up capacity. CCC Water has stated that the methodology it used to complete the deliverability assessment was

[59] CCC Asset Information Strategy, December 2024.
[60] CCC Strategic Asset Management Plan, 2025.
[61] CCC Procurement Policy 2025.
[62] Central Coast Council, 2025, Procurement Procedure Rev 0.4.
[63] Central Coast Council, 2025, Procurement Procedure Rev 0.4.
[64] Tendering Guidelines for NSW Local Government, October 2009.

based on a quantitative assessment of historic delivery against historic resourcing levels. This assessment is the basis for which CCC Water has made deliverability cuts to its capital expenditure program.

While we have sighted the outcomes of the deliverability assessment on the capital plan, including the scenario analysis which has been undertaken, we have not sighted sufficient evidence for how deliverability risks have been accounted for in the capital plan.

4.7 Recommendations

This section summarises our recommendations regarding deficiencies we have identified in our review of CCC Water's key systems and processes.

4.7.1 Actions to driver better performance

Develop an overarching long-term investment and strategic plan

We have reviewed the Water and Sewer component of Central Coast Council's Long Term Financial Plan 2025-2035,[65] which assesses the impact of expenditure on key financial performance metrics. We have not sighted a strategic document which summarises the infrastructure pipeline.

We recognise that a number of key strategic documents are still under development but note that the critical CCWSMP is not referenced in the Central Coast Community Engagement Strategy. It is further not clear how it links to the council's asset management processes. However, we consider that a document which fully captures CCC Water's full capital plan would provide clarity on what is being delivered, when. We recommend that CCC Water develop a long-term investment plan made up of planned investments across the Water and Sewer Directorate.

We recommend that growth figures are reconciled between strategic documents, and in alignment with current projections. In addition, periodic updates of investment prioritisations (including with new climate figures, new population forecasts, and new cost data) would provide a greater level of certainty in investments.

Embed up-to-date strategic portfolio planning as a prerequisite to the optioneering process

CCC Water should embed strategic portfolio planning as a prerequisite to the optioneering process. This involves defining clear priorities, service drivers, risk appetite, affordability parameters, and interdependencies before options are developed. Program and project pipelines should be aligned with strategic objectives, including levels of service, regulatory compliance, resilience, growth, and other commitments. Portfolio constraints modelling, covering funding caps, resource limitations, and market capacity, should be applied to shape feasible option sets and ensure that investment decisions are both realistic and strategically aligned.

Establish robust performance baseline

We recognise CCC Water's work to date in establishing new systems and processes as part of its asset management improvement efforts. Overall, while foundational work is strong, further refinement is needed to ensure the framework is practical and easy to navigate.

We support CCC Water's aims to improve their asset management practices via a shift towards preventive maintenance. In principle, this will result in more efficient use of resources, and long-term cost savings. New tools, including the Pressure Main Criticality Assessment (PMCA) tool and Infor Public Sector (IPS), are being implemented to assist the transition.

We recognise that these tools will continue to mature over the 2026 Determination period, as new condition data becomes available and is integrated into these tools. We recommend that that CCC Water develop a clear performance baseline to measure future improvements against to support with this maturity of tools and systems.

[65] Central Coast Council, Long Term Financial Plan 2025-2035, June 2025.

Prioritise opportunities for continual improvement in risk management

The Water and Sewer Strategic AMP present a long-term outlook for CCC Water's future asset management needs. Strategic risks have been introduced within this document, however there is no clear evidence that these risks have been cascaded in the development of asset class-specific capital plans.

We have not sighted evidence that asset management priorities have been prioritised at a portfolio level. We recommend that continual improvement steps, including project post-implementation reviews, are embedded into CCC Water's risk management processes.

Improve business case quality and strengthen governance processes

To strengthen governance and improve the quality of business cases, CCC Water should update its business case template to explicitly state the approval sought and the associated level of delegated authority. Investment gateway processes must be consistently applied and documented to demonstrate compliance with pre-procurement approval requirements.

Business cases should include the depth of analysis necessary to support sound investment decisions, with quality assurance processes aligned to NSW Treasury guidelines to ensure robustness and fitness for purpose. Each business case should provide clear justification and evidence within the scope, options, and analysis sections, and cost estimates must reconcile internally or include a transparent explanation of any variances.

5. Assessment of operating expenditure

This section sets out our assessment of Council's operating expenditure proposal.

Summary of findings and recommendations

- We recommend that CCC Water's total operating expenditure (including reserves) over the 2026-31 determination period should lie between a lower bound of $658.4 million and an upper bound of $746.8 million. This represents a reduction of $120.9 million or 15.5 per cent for the lower bound, and a reduction of $32.4 million or 4.2 per cent for the upper bound, compared to the $779.1 million in total operating expenditure that CCC Water proposes to incur over the determination period.
- CCC Water's actual operating costs should not be used to set base operating expenditure because it is not currently operating in a business-as-usual steady state. We recommend adopting a base expenditure reflective of this business-as-usual steady state and adopting an explicit non-recurring uplift to address temporal network challenges. We also consider CCC Water's justification of the efficiency of its actual costs to be subject to significant shortcomings, while we are concerned about the efficiency of the corporate overhead costs allocated to CCC Water.
- We recommend a lower bound for efficient base operating expenditure of $108.8 million per year and an upper bound of $124.3 million per year, both of which are significantly below CCC Water's proposed base operating expenditure of $133.2 million per year. To inform its assessment of the appropriate operating expenditure allowance, within this range we recommend that IPART adopt our upper bound estimate for base operating expenditure.
- In addition to the base operating expenditure, we find that CCC Water's proposed non-recurrent operating expenditure is prudent and efficient. We recommend an additional reasonable allowance of between $51.1 million to $61.4 million over the upcoming regulatory period to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.
- We expect that CCC Water should transition towards the base operating expenditure in subsequent regulatory periods once major capital expenditure projects have been delivered, thereby reducing maintenance expenditure needs. This transition will necessarily involve additional operating expenditure as CCC Water undertakes increased inspections and maintenance on its network while capital investments come online, and to increase the quantum of proactive maintenance ahead of reducing reactive maintenance.
- CCC Water's proposed trend factor is reasonable. However, there are opportunities for its cost efficiency strategy to better engage with the specifics of water utilities and CCC Water's own operating context.
- CCC Water's proposed step changes relating to PFAS water testing and liquid trade waste tracking are prudent and efficient. However, no allowance should be provided for potential compliance costs relating to the yet-to-be finalised changes to the NSW biosolids guideline.
- CCC Water's proposed non-controllable operating expenditure is reasonable.
- To drive efficiency in its operating expenditure, we recommend that CCC Water:
  - undertake a comprehensive review of its corporate overhead requirements to ensure they reflect water-specific operational needs and efficient standalone utility practices.
  - undertake necessary investments in data systems to facilitate participation in the WSAA asset management customer-value benchmarking program, to provide data-driven insights for efficiency opportunities.
  - undertake investment to improve its visibility of workforce utilisation.

- establish an expert advisory group with relevant water sector expertise to support the identification and implementation of efficiency initiatives, to help drive efficiency by providing strategic guidance on efficiency priorities and validation of efficiency claims and implementation plans.

- The above recommendations are likely to require operational separation of CCC Water from the broader Council so that it can develop cost reporting and governance arrangements suitable for an efficient water utility. The extent of separation will be influenced by what is feasible within Council's legislative environment.

5.1 Our approach to assessing CCC Water's proposed operating expenditure

This section explains our approach to assessing CCC Water's proposed operating expenditure, which aligns with the 'base-trend-step' methodology prescribed by IPART's 3Cs framework. It also explains how we have factored CCC Water's proposed use of reserves into our assessment of the prudent and efficient operating costs of service provision.

5.1.1 IPART's 3Cs framework uses the 'base-trend-step' methodology

Our assessment of CCC Water's operating expenditure proposal aligns with IPART's 3Cs framework and evaluates CCC Water's prudent and efficient costs of providing water and wastewater services over the 2026-31 determination period.

The 3Cs framework requires businesses to submit their operating expenditure forecasts using a base-trend-step (BTS) format for its recurrent controllable operating expenditure, which comprises:[66]

- base expenditure, being the current efficient level of recurrent controllable operating expenditure
- trend, being any predictable change in the efficient level of recurrent controllable operating expenditure due to output growth, productivity improvements and real input price changes
- step, which is any forward-looking step change in the efficient level of recurrent controllable operating expenditure due to a particular event, such as changes to regulation or the method of delivering a service.

In formulating the base, the business is expected to remove any:[67]

- non-recurrent expenditure (including cyclical costs, such as regulatory submission costs)
- non-controllable costs, such as bulk water costs (where prices are set by IPART) and regulatory license fees.

If considered prudent and efficient, these costs would be added back into the operating expenditure allowance after setting the efficient base.

Step changes are forward-looking changes in the recurrent controllable operating costs of providing services. Proposed step changes would reflect changes that have occurred since the completion of the base year or that will predictably occur over the next determination period.[68]

In line with IPART's 3Cs framework, CCC Water's base expenditure should best reflect the efficient recurrent costs of providing water and wastewater services in the base year. Accordingly, any adjustments to the base should be confined to those categories where the expected costs of providing particular services are non-recurrent or non-controllable.

CCC Water has proposed several discrete adjustments to its base, where its base year expenditure does not reflect its expected costs over the upcoming determination period.

[66] IPART, Water regulation handbook, July 2023, p42.
[67] IPART, Water regulation handbook, July 2023, pp42 and 43. We note that businesses are also expected to remove any cost savings or efficiency improvements expected or committed to in the final year of the current determination period, including any continuing efficiency improvement expectations set by IPART for the current period.
[68] IPART, Water regulation handbook, July 2023, p44.

In our assessment, forward-looking discrete changes to CCC Water's efficient recurring costs that will occur in the final year of the current determination period, or during the next determination period, are best categorised as steps. As such, if we were to adopt CCC Water's proposed base as the starting point for our assessment, we would reframe several of its proposed base adjustments as step changes.

5.1.2 Our task is to assess the prudent and efficient operating costs of service provision

CCC Water has proposed $703.3 million in operating expenditure over the five-year determination period in its proposal. It is also proposing an additional $75.9 million, comprising both recurring and non-recurring controllable operating expenditure, to be funded through its reserves to respond to economic pressures and reduce prices, with consideration of affordability to the community.[69] Accordingly, CCC Water is proposing to spend $779.1 million over the upcoming five-year determination period, with $703.3 million funded by customers through prices.[70]

Using reserves to constrain the bill impacts of its operating expenditure proposal is a policy decision for IPART to consider. However, our task for IPART is to assess the prudent and efficient operating expenditure for CCC Water to provide water and wastewater services during the forthcoming regulatory period. As such, we assess the entirety of CCC Water's proposed expenditure of $779.1 million, which includes the recurring and non-recurring controllable operating expenditure CCC Water proposes to fund through its use of reserves. To give effect to this assessment, we adjust CCC Water's proposal to add back this additional operating expenditure.

5.2 Assessment of proposed base operating expenditure

This section sets out our assessment of CCC Water's proposed base operating expenditure. It explains our opinion that CCC Water's actual operating expenditure should not be used to set the 'base' because it is not currently operating in a business-as-usual steady state. We also consider CCC Water's justification of the efficiency of its actual operating expenditure to be subject to significant shortcomings, and we are concerned about the efficiency of the corporate overhead costs allocated to CCC Water.

We recommend a lower bound for prudent and efficient base operating expenditure of $108.8 million per year and an upper bound of $124.3 million per year, both of which are significantly below CCC Water's proposed base of $133.2 million per year. We discuss a reasonable non-recurring uplift in CCC Water's operating expenditure to reflect the fact that CCC Water is not operating in its business-as-usual steady state in section 5.3.3.

5.2.1 Overview of CCC Water's proposal

CCC Water proposes base operating expenditure of $133.2 million per year over the upcoming regulatory period, comprising $65.4 million for water and $67.9 million for sewer. CCC Water states its base represents its efficient recurrent controllable operating expenditure in the penultimate year of the current regulatory period (2024-25).[71] Since CCC Water prepared its proposal before the end of the 2024-25 financial year, its proposed base expenditure is derived by annualising its year-to-date actuals from February 2025. Two distinct types of adjustments are made to these annualised actuals to derive the proposed base, i.e.:[72]

- upwards adjustments to add expenditure that would not be accurately captured in the annualised figures, such as staff members that joined part way through the year
- downward adjustments to remove non-recurring and non-controllable costs.

Figure 10 summarises the build-up of CCC Water's proposed base operating expenditure.

[69] CCC Water, Pricing proposal, September 2025, p20.
[70] Numbers do not add due to rounding.
[71] CCC Water, Technical paper 5, Operating expenditure, September 2025, p33.
[72] CCC Water, Technical paper 5, Operating expenditure, September 2025, p33.

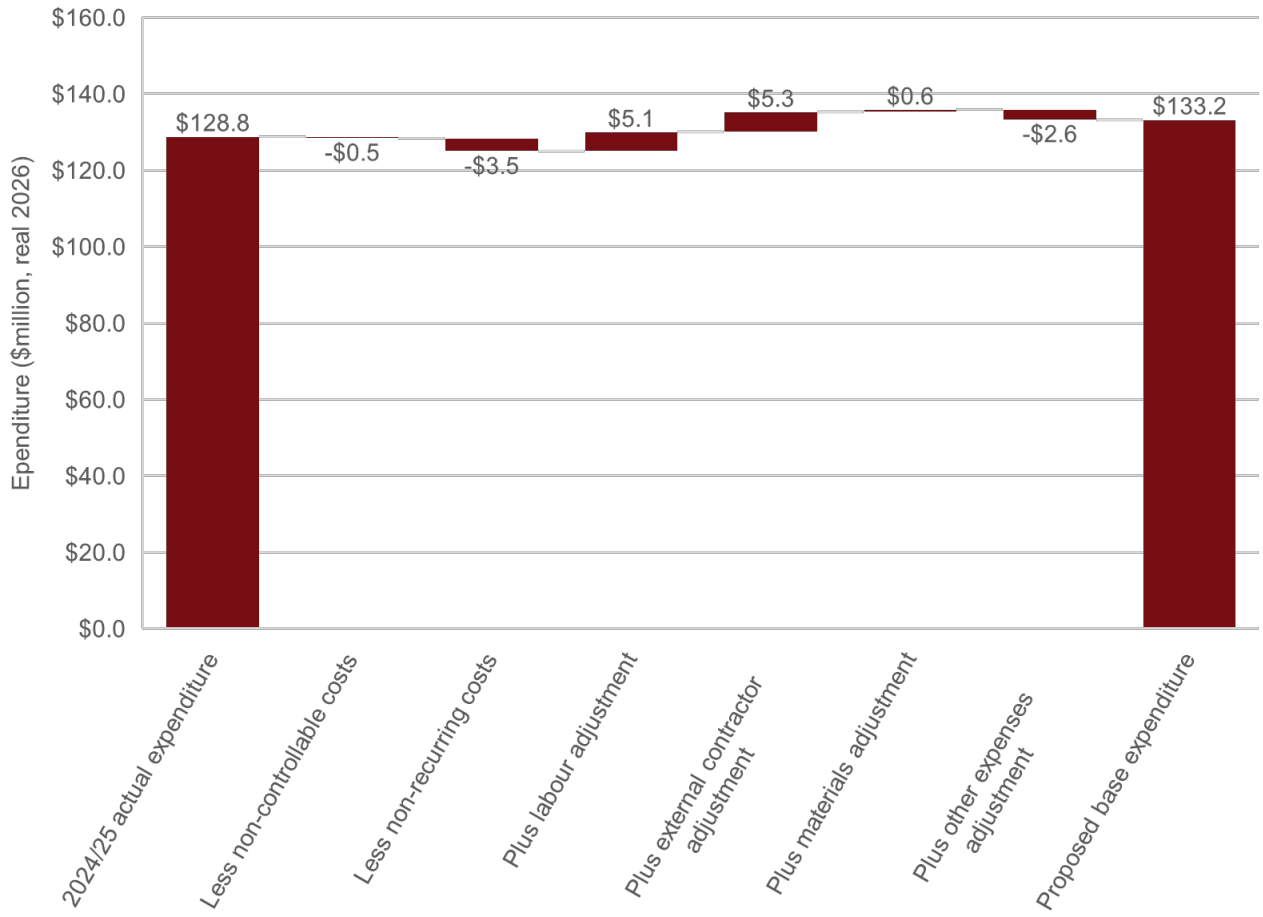


Figure 10 CCC Water's proposed base operating expenditure ($2025-26 million)

CCC Water justifies the efficiency of its base operating expenditure by reference to econometric benchmarking of operating expenditure using a sample of other large and major utilities. It uses this analysis to estimate operating expenditure for water and sewer individually with 75 per cent efficiency, constructing lower and upper bounds to account for the statistical uncertainty that characterises econometric analysis.[73] Table 10 compares CCC Water's proposed base operating expenditure with the efficient range derived through its statistical analysis.

Table 10 Comparison of CCC Water's proposed base operating expenditure with econometric benchmarks ($2025-26 million)

Component	Upper bound	Lower bound	Midpoint	Proposed base
Water	73.3	54.7	63.3	65.4
Sewer	67.2	59.2	64.4	67.9
Total	140.5	114.0	127.8	133.2

CCC Water concludes that its proposed expenditure is efficient because its proposed base operating expenditure falls within these bounds in aggregate. Although the proposed base expenditure for sewer exceeds the upper bound, CCC Water argues that customer prices are based on total operating expenditure and so the fact that the total proposed base falls within the bounds of its econometric analysis illustrates its efficiency.[74]

[73] CCC Water, Technical paper 5, Operating expenditure, September 2025, p8.
[74] CCC Water, Technical paper 5, Operating expenditure, September 2025, p8.

CCC Water provides further support for the efficiency of its proposed base operating expenditure by comparing its operating cost per property for sewer and water to Sydney Water, Hunter Water and a range of other councils using NPR data. Among this sample, CCC Water had the:[75]

- second lowest operational costs per property for water in 2023-24
- fourth lowest operating costs per property for sewer in 2023-24.

The combination of CCC Water's econometric analysis and cost benchmarking to other utilities underpins its conclusion as to the efficiency of its proposed base operating expenditure.

5.2.2 CCC Water's actual costs do not provide a reasonable estimate of base operating expenditure

In our opinion, CCC Water's actual costs do not provide a reasonable estimate of efficient base operating expenditure. We form this opinion on the basis that:

- CCC Water is not currently operating in a business-as-usual steady state, which is a key rationale for applying the BTS approach.
- CCC Water's analysis in support of the efficiency of its proposed base operating expenditure is subject to a number of shortcomings.
- We are concerned about the efficiency of corporate overhead costs allocated to CCC Water.

We explain each aspect of our assessment below.

CCC Water is not operating in a business-as-usual steady state

The base component of the BTS methodology is underpinned by an assumption that the utility is operating in a business-as-usual steady state environment. This is an important assumption because the base year expenditure is intended to represent efficient, sustainable operations that can be reliably extrapolated forward through trend adjustments. Where this assumption does not apply, it becomes difficult to distinguish between costs that represent ongoing efficient operations and costs that reflect a utility managing the consequences of past underinvestment and its current transition to operational maturity.

In our opinion, CCC Water does not appear to be in a business-as-usual steady-state environment. It is managing multiple transitions simultaneously, i.e., addressing historical underinvestment in its network, building operational capacity and shifting from reactive to preventative maintenance practices. The instability of CCC Water's operating environment is evident in the considerable variability of its operating expenditure in the current regulatory period – see Figure 11. The key drivers of this variability are:

- Challenges in securing appropriate skilled resources and engaging external contractors in the first two years of the current regulatory period.[76]
- Securing additional resources to support the transition to preventative maintenance from reactive maintenance, as well as securing contractors and consultants, particularly for sludge removal, in the final two years of the current regulatory period.[77]

[75] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp8-10.
[76] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp23-26.
[77] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp27-30.

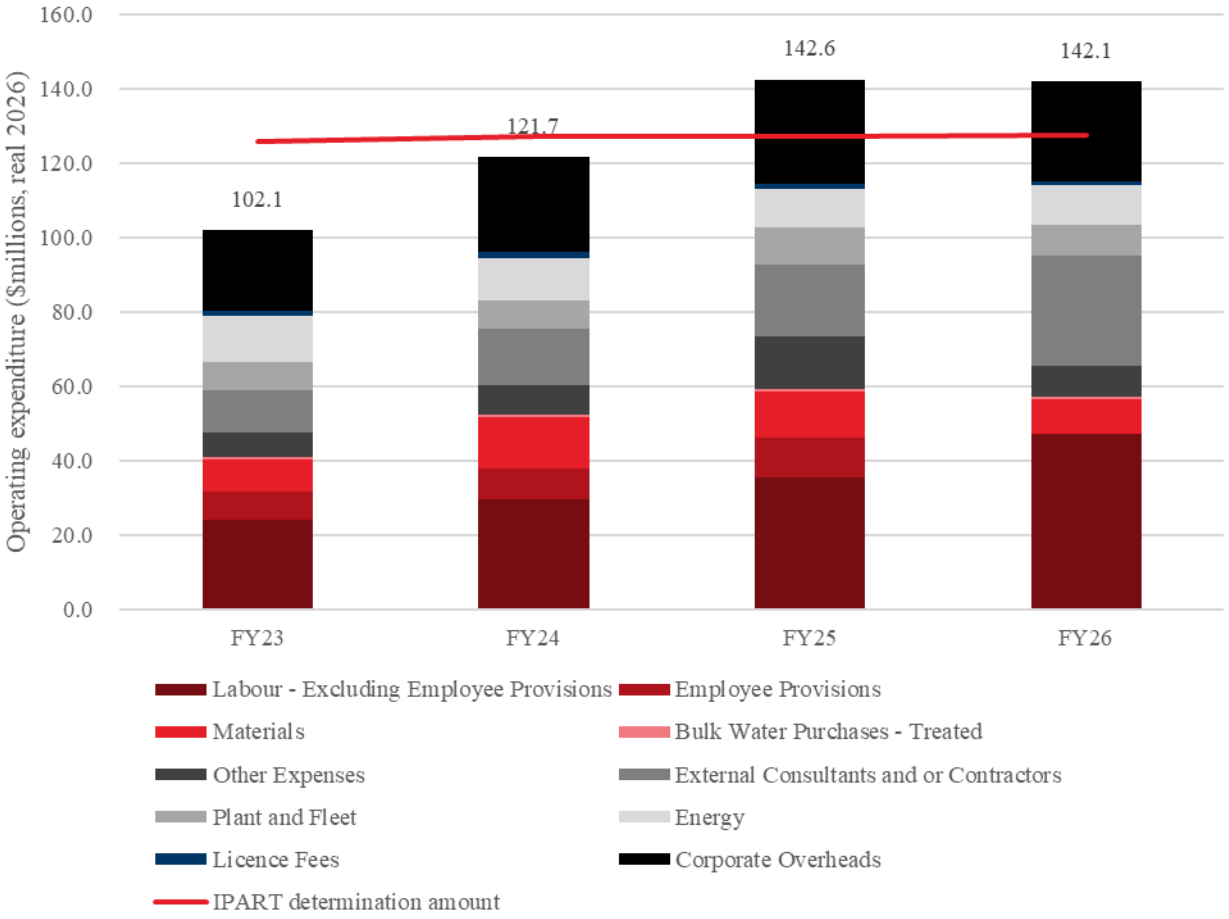


Figure 11 CCC Water's outturn operating expenditure relative to IPART determination ($2025-26 million)

The consequence of managing the implications of historical underinvestment and transitioning to operational maturity is that CCC Water's actual costs contain several non-recurring expenditures. We acknowledge CCC Water's efforts to remove these non-recurring operating expenses from its base in its proposal. However, for some cost categories – such as labour and contractors – it is difficult to disentangle its efficient recurring, controllable operating expenditure from expenditure that may only be required on a transitory basis.

By way of example, Table 11 sets out CCC Water's historical and projected full-time equivalent employees (FTEs) from 2019-20 to 2030-31 (the end of the upcoming regulatory period). It shows a significant reduction in FTEs during Council's administration period, with significant growth in FTEs over the current regulatory period. Network operations and maintenance have experienced the largest increase in FTEs since 2020-21, which is consistent with the need to address asset condition issues from historical underinvestment and the strategy to transition to preventative maintenance.

This example highlights the challenge of using CCC Water's actual costs. It is difficult to disentangle the amount of labour that is required for its business-as-usual functions as opposed to managing its transition to a steady operating state. As part of our engagement with CCC Water we sought to understand the rationale for its budgeted FTEs. CCC Water disclosed that it has insufficient visibility over the utilisation of maintenance staff and associated labour costs. It follows that, at present, CCC Water can neither make data-driven staff decisions or identify the extent to which staff are engaged in business-as-usual operations as opposed to transitional activities. This lack of granular visibility undermines our ability to assess whether the proposed labour costs – as an example – represent efficient recurring expenditure.

Table 11 CCC Water's historical and projected FTEs

Business unit	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27-31
Assets and projects			38.0	35.0	52.4	59.2	75.8	85.6	85.6
Asset delivery			16.0	16.0	26.0	28.8	35.5	41.0	41.0
Assets and planning			18.0	17.0	24.5	28.5	38.3	41.6	41.6
Assets and projects			4.0	2.0	1.9	1.9	2.0	3.0	3.0
Headworks and treatment			57.9	57.1	63.8	79.8	84.5	89.6	89.6
Compliance water systems			14.0	14.3	16.9	20.6	20.1	23.0	23.0
Headworks and treatment			2.0	2.0	2.0	2.0	4.0	3.0	3.0
Treatment plants and catchments			41.9	40.9	44.9	57.2	60.5	63.6	63.6
Network operations and maintenance			154.0	139.1	149.1	170.6	183.2	208.2	208.2
Maintenance services			63.0	58.0	60.5	63.4	73.4	82.6	82.6
Network maintenance			62.0	54.0	61.1	66.0	66.0	77.0	77.0
Network operations and maintenance			3.0	2.4	1.7	2.8	3.8	4.0	4.0
Systems operations			26.0	24.7	25.8	38.4	40.0	44.6	44.6
Water and sewer			4.6	5.6	2.6	2.6	3.5	2.6	2.6
Business strategy and performance			0.0	0.0	7.6	9.8	24.8	30.0	30.0
Business strategy and performance			0.0	0.0	6.6	5.0	3.0	3.0	3.0
Community delivery			0.0	0.0	0.0	0.0	11.0	13.0	13.0
Performance and risk			0.0	0.0	1.0	4.8	10.8	14.0	14.0
Total	264.3	305.3	254.5	236.8	275.4	321.9	371.8	416.0	416.0

CCC Water's efficiency justification has several key shortcomings

To demonstrate the efficiency of its operating expenditure, CCC Water undertakes two key benchmarking exercises using NPR data,[78] i.e.:[79]

- Stochastic frontier analysis (SFA) over the period from 2009 to 2024 for both 'major' and 'major and large' sets of utilities[80]
- Cost performance comparisons using operating expenditure per property using 'major' utilities.

SFA is an econometric technique used to measure how efficiently firms are operating compared to the theoretical best performance for those firms. SFA has two critical shortfalls that make it unsuitable for comparing the performance of water utilities, i.e.:

- It does not measure the relative quality of outputs provided by utilities, or the change in the quality of those outputs over time.
- It does not recognise the various advantages and disadvantages that individual utilities may have, including from topography, location, density or scale.

CCC Water uses SFA to demonstrate that its expenditure has been efficient over the 2009 to 2024 period, finding that its total operating expenditure falls within the bounds of efficient expenditure for both 'major' and 'major and large' utilities.[81]

As we set out above, CCC Water has incurred operating expenditure over the current determination period that demonstrates considerable variability. In its 2022 determination, IPART considered that CCC Water had historically underspent and needed to spend more to meet its regulatory obligations, service standards and deliver better services.[82] CCC Water has not engaged with how its period of underspending, declining service performance, deliverability challenges and financial concerns between 2009 and 2024 may undermine the validity of SFA in estimating efficient expenditure for the business.

In our opinion, these factors are sufficient to render SFA an unsuitable methodology for assessing the efficiency of CCC Water's historical expenditure. In our opinion, to be capable of use for benchmarking, SFA would have to be performed on utilities that are not only similar in size, but also in quality of outputs. It would also have to consider topographical factors, density, etc.

In addition, CCC Water's proposed base operating expenditure for sewer of $67.9 million exceeds the upper bound of its SFA of $67.2 million.[83] CCC Water asserts that it is appropriate to consider its total operating expenditure, as opposed to the operating expenditure for each service line. However, in our opinion, it is not appropriate to group water and sewer services when assessing the efficiency of a utility's operating expenditure, given the discrete services provided. We note also that CCC Water's outturn sewer expenditure in FY2025 of $77.2 million significantly exceeded the upper bound for efficient sewer expenditure of $67.2 million.

We further highlight that CCC Water proposes to significantly increase its sewer operating expenditure per property over the upcoming period, which would take it further from its identified 'efficiency frontier'. This further demonstrates the shortcomings of CCC Water's efficiency assessment.

The alternative methodology CCC Water uses to demonstrate its efficiency is NPR benchmarking against other 'major' utilities.[84] However, in our assessment, CCC Water has not used 'major' utilities, but instead has selected Sydney Water, Hunter Water, and a range of Councils to compare its performance against.

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[78] NPR data is a publicly available dataset that presents a range of network, financial and service performance information from 143 utilities across Australia.
[79] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp6-10.
[80] Major utilities are defined as those that serve >100,000 connections. Major and large utilities are defined as those that serve 50,000 to 100,000 connections. See: Bureau of Meteorology, National performance report 2023-24: urban water utilities, Part A, March 2025, p9.
[81] CCC Water, Technical paper 5, Operating expenditure, September 2025, p8.
[82] IPART, Review of Central Coast Council water prices – summary, Final report, May 2022, p28.
[83] CCC Water, Technical paper 5, Operating expenditure, September 2025, p8.
[84] CCC Water, Technical paper 5, Operating expenditure, September 2025, pp9-10.

In our opinion, one of the main drivers of a utility's operating expenditure is its number and density of customers, and so the relative efficiency of scale that utility can achieve. We recognise that there are other drivers of a utility's relative efficiency, including but not limited to its topography and the age of its network. However, we do not believe that a utility's ownership structure is an appropriate basis to select the appropriate comparator set to undertake benchmarking.

We present CCC Water's operating expenditure per property for sewer in Figure 12, which highlights that in 2023-24, CCC Water had the second highest operating expenditure per property out of major utilities in Australia.

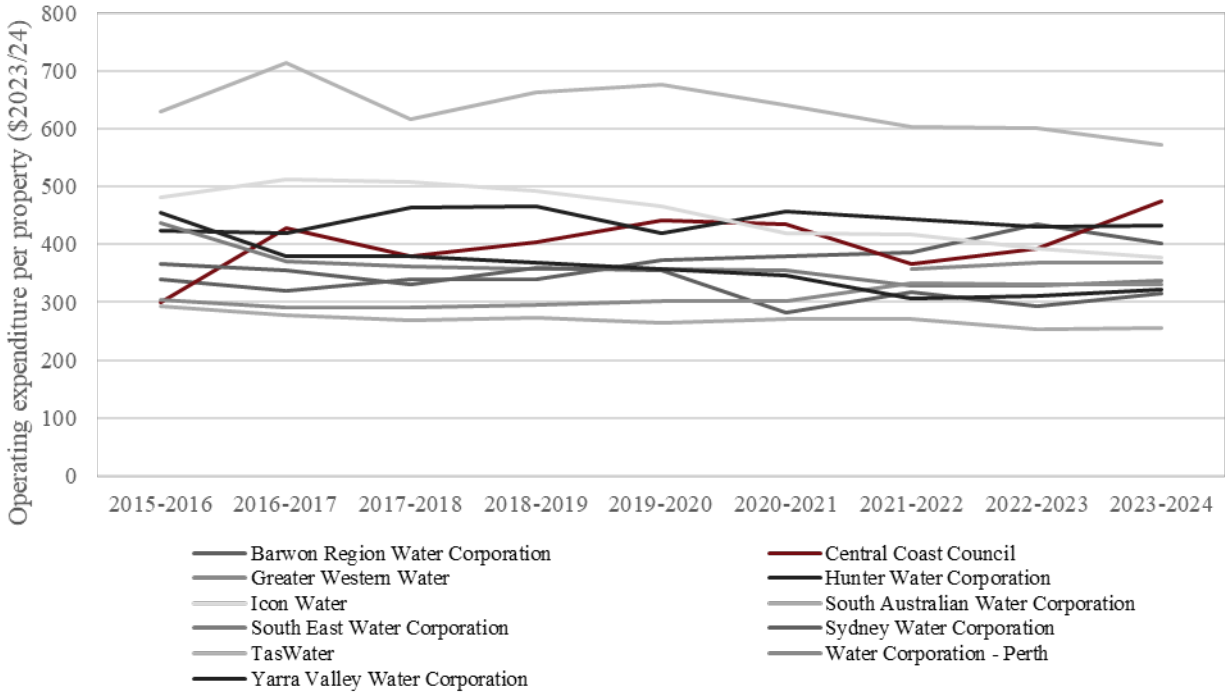

Figure 12 CCC Water's sewer operating expenditure per property

We understand from discussions with CCC Water that it has topographic disadvantages (i.e., a relatively large number of sewer pump stations per property) and less benefits of scale than other 'major' utilities, which are likely to drive sewer operating expenditure up. Nevertheless, in our assessment, CCC Water's operating expenditure per property is not at the lower end of the comparator set and has been increasing relative to its peers over time.

We acknowledge that CCC Water's operating cost per property for water performs well against its peers using NPR data, even after adopting a corrected comparator set.

Insufficient evidence to determine whether corporate overhead allocation is efficient

As part of our review of CCC Water's proposed base operating expenditure we sought greater clarity as to Council's approach for incurring costs and allocating corporate overheads. This included meetings with relevant staff from the finance team within the corporate services business unit and the provision of a memorandum outlining the allocation methodology.

We understand from this information that Council allocates corporate overheads from the general fund to CCC Water (and other business units) using a cost driver methodology, which was updated in FY2024. Council's approach is based on the principle that overhead costs should be allocated according to the activity or resource that best reflects each business unit's actual usage of that service. By way of example, if a particular business unit is the dedicated user of an aspect of corporate services, it is directly allocated that cost.

We understand that shared services are allocated based on a number of cost drivers. For instance, the Wyong administration building is distributed based on the headcount of people using the facility as their primary workplace, while depot costs are distributed based on area of occupancy. Other cost drivers include FTEs,

operating expenditure, legal cases, purchase order volumes, stores issues, invoice volumes, energy consumption and asset valuations.

We understand that Council regularly undertakes service reviews to establish confidence in the efficiency of its corporate overheads. The corporate services unit undertakes these reviews drawing on the input of other business units where necessary. We understand that these reviews comprise three stages:

- first, assessing whether there is ongoing need for the specific corporate service and, if not, discontinuing the provision of that service.
- second, assuming there is an ongoing need, examining the most cost-effective way of providing that corporate service, i.e., considering whether it should be provided in-house or by an external provider.
- third, assuming the service is most cost-effectively provided in-house, seeking to determine process efficiencies in delivering that corporate service.

In our opinion, Council's overhead allocation methodology applies reasonable principles, using activity-based cost drivers and conducting regular service reviews to maintain cost discipline. This approach appears to be appropriate for allocating costs across Council's general operations.

However, we have concerns about whether this Council-wide framework yields efficient corporate costs for a regulated water utility. We have not seen evidence that Council has assessed whether its corporate services, and the associated allocation, are fit-for-purpose for a regulated water utility.

Council's corporate services are designed to support general government functions such as administering rates, delivering community programs, managing local infrastructure and providing civic services. A water utility has fundamentally different operational and regulatory requirements. Council's allocation methodology splits the cost of existing corporate services among business units but does not assess whether those services appropriately meet a water utility's distinct needs. The methodology implicitly assumes the underlying services are appropriate and their cost is efficient for CCC Water's purposes, without testing this assumption against utility-specific requirements or industry benchmarks.

Without benchmarking or assessment of whether Council's corporate services meet CCC Water's needs efficiently, we cannot be satisfied that allocated overhead costs represent efficient expenditure for regulatory purposes. Since we do not adopt CCC Water's actual costs for the purpose of determining efficient base expenditure, we do not recommend a specific adjustment for corporate overheads. Rather, we recommend that CCC Water undertake a comprehensive review of its corporate overhead requirements to ensure they reflect water-specific operational needs and efficient standalone utility practices.

5.2.3 Our proposed alternative estimate of base operating expenditure

In line with our discussion above, we do not adopt CCC Water's actual operating expenditure as the starting point for our 'base' operating expenditure. Instead, we have calculated a range of alternate 'base' estimates, noting that it is difficult to come up with a quantum of prudent and efficient 'base' expenditure with specific reference to CCC Water given its history.

There are a range of shortcomings of using benchmarking to determine the appropriate operating expenditure for an individual utility, none of which indicate that operating expenditure should be adjusted in a uniform direction. By way of example, some concerns we have with NPR benchmarking are:

- A lack of consideration of quality of service – we are aware that CCCW's customers are receiving a lower level of service than comparable firms, and do not prefer a gold-plated service, which would indicate a lower level of operating expenditure is preferred.
- Limited comparability of networks due to topographical and climate features, which may indicate higher or lower levels of operating expenditure are appropriate, depending on the individual utility's circumstances.
- Limited consideration of the economies of scale outside of the grouping into 'major' utilities, which may disadvantage relatively smaller businesses like CCCW who typically cannot achieve the same economies of scale that larger comparators can.

We also acknowledge that NPR data compares CCCW's performance in FY2024. CCCW's operating expenditure of $121.7 million in FY2024 is significantly less than its operating expenditure of $142.6 million in FY2025. We have reviewed the 8 December NPR release for FY2025,[85] but have found data inconsistencies in this early publication.

However, in our opinion there is limited ability to assess whether an individual utility is operating efficiently without assessing their performance relative to their peers or broader cost benchmarking, particularly in circumstances where that utility does not have a stable history of operating expenditure for assessment. Accordingly, we undertake a benchmarking exercise to determine CCC Water's 'base' operating expenditure, noting that we apply an explicit uplift to this 'base' to reflect its current network condition in section 5.3.3.

Our lower bound estimate of $108.8 million per year ($real 2026) reflects a benchmarking exercise akin to the approach from the Australian Energy Regulator (AER), which adopts a 0.75 efficiency score (akin to a 67th percentile assessment) for operating expenditure per property of major water and wastewater utilities.[86] We calculate our lower bound estimate by taking the 67th percentile operating expenditure per property for water and sewer using FY2024 NPR data, escalating that to $real 2026, and applying this to CCC Water's forecast connection volumes in 2024-25 (i.e., the base year). In practice, CCC Water's operating expenditure is lower than the 67th percentile and, as such, we adopt its water operating expenditure per connection for the purposes of this assessment.

Our upper bound estimate of $124.3 million per year ($real 2026) also adopts CCC Water's outturn water operating expenditure per property in FY2024 using NPR data, and nudges CCC Water's observed sewer operating expenditure per property down to that of its closest comparator (in dollar terms) using NPR data. This approach recognises CCC Water's relatively low water operating expenditure per property and encourages CCC Water to seek small but achievable improvements in its sewer operating expenditure. Again, we calculate our upper bound estimate using NPR data from FY2024, scaled up using CCC Water's connections in FY2025.[87]

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[85] Bureau of Meteorology, Urban national performance report, available at: https://www.bom.gov.au/water/npr/, accessed 10 December 2025.

[86] The AER notes that the best possible efficiency score is 1.0, and adopts a 0.75 comparator point to assess the relative efficiency of distribution businesses (after adjusting for operating environment factors). This reflects the upper quartile of comparator points, and not the distribution of the actual efficiency scores of the distribution businesses the AER benchmarks. In its assessment for Icon Water, Quantonomics identifies that the AER's 0.75 efficiency score corresponds to a percentile close to but slightly below the 67th percentile. See: AER, Jemena distribution determination 2021 to 2026 – Attachment 6 operating expenditure, Final decision, April 2021, p 6-19; Quantonomics, Response to Independent Competition and Regulatory Commission Draft Report for Regulated Water and Sewerage Services Prices 2023–28, 18 November 2022, pp 29-30.

[87] We note that this is higher than CCCW's outturn operating expenditure for FY2024 as it accounts for connections growth increases between FY2024 and FY2025. We note that CCCW's FY2025 connections in its pricing proposal appear significantly higher than NPR data for FY2024.

To inform its assessment of the appropriate base operating expenditure allowance, within our range of prudent and efficient base operating expenditure, we recommend IPART adopts our upper bound estimate, as it more closely reflects CCC Water's historical expenditure, as opposed to the 67th percentile expenditure of its comparators. We also recommend that over the next determination period, CCC Water undertakes to understand its efficient 'base' level of operating expenditure in steady state operation, which is likely to include having better visibility of the utilisation of its field staff.

5.3 Assessment of proposed non-recurrent operating expenditure

This section sets out our assessment of CCC Water's proposed non-recurrent operating expenditure. It explains that we consider the proposed non-recurrent expenditure to be prudent and efficient. It also explains that we recommend a reasonable allowance of between $51.1 million to $61.4 million of additional non-recurrent expenditure to manage the transitory network challenges CCC Water faces.

5.3.1 Overview of CCC Water's proposal

CCC Water proposes $19.8 million over the FY27-FY31 determination period in non-recurring costs, comprising:[88]

- $2.04 million for dam safety compliance, reflecting additional climate change and environmental control requirements, increased dam audits, inspections and site plan reviews.
- $17.4 million for long term effective planning, which in turn is made up of the following contractor expenses.
  - $8.4 million for water resilience planning, which relates to addressing CCC Water's present lack of formal water conservation plan backed by an efficient level of water conservation model, incomplete drought preparedness strategy and uncertainty as to the preferred water supply portfolio.
  - $4.9 million for asset management, which relates to improving CCC Water's asset management practices such that they are deemed 'competent' according to Institute of Asset Management standards.
  - $4.3 million for asset planning, which relates to strategic planning studies related to reducing carbon emissions, responding to changes in biosolids reuse rules and addressing issues associated with odour and septicity management within the sewerage network.
- $0.4 million for business strategy and performance, which we understand relates to preparation of the regulatory submission.

CCC Water also proposes to fund $27.6 million of non-recurring expenditure relating to sludge removal through its reserves. CCC Water explained as part of our discussions that this expenditure relates to one-off, additional sludge removal from various lagoons to address a build-up of sludge stemming from a historical lack of sludge removal in the relevant locations. We therefore assess this expenditure as part of non-recurring operating expenditure.

5.3.2 Proposed non-recurring expenditure is prudent and efficient

We have reviewed a range of supporting information provided by CCC Water in relation to its proposed non-recurring expenditure. This includes business cases for the most material elements of non-recurring expenditure, i.e., long term effective planning, and interviews with CCC Water staff to understand the driver of the expenditure and its cost estimation methodology.

Based on this supporting information, we consider CCC Water's proposed non-recurring expenditure to be prudent and efficient. The expenditure is driven by regulatory obligations and improvements to long-term

[88] CCC Water, Technical paper 5, Operating expenditure, p 36. We note that this is different to section 6.7 of its proposal, that identifies $21.3 million in non-recurring operating expenditure, due to the inclusion of the benthic study as a step change. We have assessed the benthic study as a step change.

planning maturity. We consider that these are factors that a benchmark efficient entity would appropriately respond to. Further, we understand that CCC Water's cost estimation methodology comprised:

- estimating the amount of effort that would be required, based on previous, similar work
- applying the unit rates available from its engineering services panel.

We note that we queried with CCC Water whether there was scope to defer costs associated with water resilience. We raised this with CCC Water due to its relatively high levels of storage at present, customer concerns regarding affordability and customers' limited willingness to pay for items outside of water quality.

CCC Water explained that any deferral of water resilience expenditure would result in a reduced understanding of the costs and timings of critical resilience investments and a potentially increased total cost for those investments. For example, in the absence of further work to better understand how its storages are likely to empty during a drought, CCC Water may have an inefficient response such as procuring solutions too early or too late, procuring a higher cost solution, or being unable to maintain high quality water supply to its customers.

Based on this response and the other supporting information provided, we are satisfied that CCC Water's proposed non-recurring expenditure is prudent and efficient.

5.3.3 Additional non-recurring expenditure is appropriate to manage existing network challenges

In our opinion, it is appropriate to provide CCC Water with a non-recurring uplift to its operating expenditure to manage its existing network challenges. This uplift explicitly recognises the need for CCC Water to undertake increased inspections and maintenance on its network while capital investments come online, and to increase the quantum of proactive maintenance ahead of reducing reactive maintenance.

To determine a reasonable quantum of maintenance expenditure, we evaluate CCC Water's proposed labour and external consultant/contractor expenditure in FY2025 and FY2026, against its FY2024 expenditure. We adopt CCC Water's expenditure in FY2024 as an indicative starting point, on the basis that its FY2024 expenditure of $121.7 million is close to our recommended base of $124.3 million, and because CCC Water's additional operating expenditure for addressing historical challenges had not yet come online.

CCC Water's labour and external consultant/contractor expenditure in FY2024 was $53.1 million ($real 2026), or 43.6 per cent of its total operating expenditure of $121.7 million. In contrast, CCC Water's labour and external consultant/contractor expenditure in:

- FY2025 was $65.3 million or 45.8 per cent of its total operating expenditure of $142.6 million, noting that this percentage would be 49.0 per cent if we excluded operating expenditure that CCC Water identified in its proposal as non-recurring.
- FY2026 is expected to be $77.1 million or 54.3 per cent of its total operating expenditure of $142.1 million.

To sense-test the reasonableness of these amounts, we evaluate Hunter Water's labour and maintenance expenditure ratios against CCC Water. In FY2024, Hunter Water's labour and maintenance expenditure made up 48.6 per cent of its total operating expenditure.[89] We note that there was insufficient publicly available information to evaluate Sydney Water's expenditure ratios, for an additional point of comparison.

In our opinion, CCC Water's proposed operating expenditure uplift for FY2025 is reasonable to manage the current state of its network. This reflects increasing its maintenance expenditure as a proportion of total operating expenditure to approximately 5 per cent higher than its FY2024 levels (after excluding costs CCC Water identifies as non-recurring), and to roughly in line with Hunter Water.

In our opinion, the magnitude of CCC Water's proposed additional uplift in FY2026 is large, and in our opinion has not been sufficiently justified. In particular, the majority of the uplift in FY2026 is related to external contractors, for which CCC Water proposes a $10.7 million or 55.8 per cent increase over FY2025

[89] Calculated as (70.9+24.1)/195.3. Source: Hunter Water, Attachment F: Operating expenditure in the current pricing period, November 2024, pI.2.

amounts. We have not seen sufficient evidence to demonstrate the prudence, efficiency or deliverability of this increased expenditure.

Our proposed bounds for CCC Water's operating expenditure uplift to maintain its existing network challenges are tied to the service performance outcomes and associated reactive maintenance we expect to arise given its capital expenditure program.

Consistent with our broader discussion in section 6, we do not expect that the lower bound capital expenditure scenario will be sufficient for CCC Water to materially improve the state of its network during this determination period. Accordingly, we adopt CCC Water's observed uplift in labour and external consultant/contractor expenditure between FY2024 and FY2025 in full over the five-year determination period, being $12.3 million per year.

In an upper bound capital expenditure scenario, we expect CCC Water can increase compliance with its environmental protection licenses and begin to reduce its level of ad-hoc reactive maintenance. However, we expect that CCC Water's reactive maintenance will still be above base levels for a business operating in a steady state, as its network replacement program will remain behind. Accordingly, in an upper-bound capital expenditure scenario, we adopt a linear transition to two thirds of CCC Water's proposed uplift by FY2031.

Table 12 Lower and upper bound scenario

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Lower bound capital expenditure scenario	$12.3	$12.3	$12.3	$12.3	$12.3	$61.4
Upper bound capital expenditure scenario	$12.3	$11.2	$10.2	$9.2	$8.2	$51.1

5.4 Assessment of proposed trend factor

This section sets out our assessment of CCC Water's proposed trend factor. It explains that we consider the proposed trend factor to be reasonable but note that there are opportunities for CCC Water's cost efficiency strategy to better engage with the specifics of water utilities and CCC Water's own operating context.

5.4.1 Overview of CCC Water's proposal

The trend component of IPART's BTS methodology requires CCC Water to calculate a trend factor that reflects:

- The business' proposed efficiency factor for controllable operating expenditure productivity improvement
- A meaningful measure of output growth, such as growth in customer connections or volume delivered
- Expected real changes in input prices of rolled forward baseline costs.

In line with this approach, CCC Water proposes an annual trend factor that is calculated as:

- Forecast output growth, which relates to its forecast change in the number of water and sewer connections in each year; plus
- Forecast input price growth, which is derived by reference to an equal weighting of the consumer price index (CPI) and the EGWWS WPI; less
- Forecast productivity growth, which is derived by reference to total factor productivity.

We summarise CCC Water's proposed trend factor in Table 13.

Table 13 CCC Water's proposed trend factor

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
Productivity factor	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%
Output growth – water connections	0.85%	0.79%	0.70%	0.62%	0.71%	0.70%
Input cost factor	0.55%	0.40%	0.35%	0.45%	0.55%	0.55%
Cumulative trend – water	0.70%	1.19%	1.55%	1.93%	2.50%	3.06%
Productivity factor	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%	-0.70%
Output growth – sewer connections	0.68%	0.63%	0.56%	0.50%	0.56%	0.56%
Input cost factor	0.55%	0.40%	0.35%	0.45%	0.55%	0.55%
Cumulative trend – sewer	0.53%	0.86%	1.08%	1.33%	1.75%	2.17%

The following sections outline CCC Water's methodology for estimating each of the above components of the trend factor and our assessment of that methodology.

5.4.2 Methodology for forecasting output growth is reasonable

CCC Water proposes an annual rate of output growth of between 0.62 per cent and 0.85 per cent for water and between 0.50 per cent and 0.68 per cent for sewer. In response to our request for information, CCC Water provided additional detail regarding its methodology for forecasting output growth. It explained that its estimate of output growth is based on the relationship between the change in customer connection numbers and change in operating expenditure. Specifically, the output growth rates are calculated by multiplying:

- CCC Water's forecast change in connections for both water and sewer.
- an econometrically estimated relationship between connections growth and operating expenditure growth (for water and sewer separately), derived from NPR data for major and large water utilities.

CCC Water forecasts water connection growth based on the rate of historical connections, population, and dwellings growth and divided into three different categories, i.e.:[90]

- Residential (includes exempt)
- Non-residential (excluding exempt)
- Non-residential exempt.

For the baseline, CCC Water takes the actual relative growth of billable entities from the previous:[91]

- Two years (FY23 and FY24) to forecast residential water connection growth, and
- Three years (FY22 to FY24) to forecast non-residential water connection growth.

CCC Water notes that, historically, residential sewer connections are close to 98 per cent of the residential water connections. CCC Water adopts this rule of thumb for forecasting residential sewer connections. CCC Water assumes that non-residential sewer connections grow in line with non-residential water connections.[92]

We understand from CCC Water that it overlays this mathematical approach with information from local housing developers to adjust its connections growth forecasts. This alignment process accounts for the lumpy nature of its outturn annual connections growth forecasts.

[90] CCC Water, Technical paper 7, Demand for services, p21.
[91] CCC Water, Technical paper 7, Demand for services, p21.
[92] CCC Water, Technical paper 7, Demand for services, p21.

In our opinion, CCC Water's demand forecasting approach is a reasonable basis for estimating growth in connections. We also consider CCC Water's use of econometric analysis to determine the relationship between connections and operating expenditure to be appropriate. We therefore consider that CCC Water's methodology for forecasting output growth over the upcoming regulatory control period is reasonable.

5.4.3 Methodology for forecasting real input price growth is reasonable

CCC Water proposes an annual rate of real input price growth of between 0.35 per cent to 0.55 per cent for both water and sewer operating expenditure. In response to our request for information, CCC Water clarified its approach to forecasting real input price growth. Its approach involves assuming:

- 50 per cent of costs are labour related and, as such, will grow in line with the WPI, and
- 50 per cent of costs are non-labour related and, as such, will growth in line with the CPI.

It follows from these assumptions that CCC Water is applying real price growth to only the labour portion of operating expenditure. This is because the WPI typically exceeds the CPI, thereby leading to real cost increases. In contrast, other input costs will, by definition, have no real increase because such increases are measured relative to the CPI.

CCC Water's real price increase for labour is drawn from a Deloitte Access Economics report prepared for the AER in March 2025. Specifically, CCC Water adopts Deloitte's forecast of the real increase in the WPI for utilities in NSW over the upcoming regulatory period, weighted by 50 per cent.

In our opinion, the methodology adopted by CCC Water to forecast real price growth is reasonable. We consider the assumed equal split between labour and other input costs to be consistent with established regulatory practice (such as the AER) and a reasonable approximation of typical utility cost structures. Further, the use of Deloitte's WPI forecast prepared for the AER is appropriate, noting that the March 2025 report may not reflect the most current forecasts. While more recent forecasts are available (such as the Reserve Bank of Australia's (RBA's) November 2025 Statement on Monetary Policy), these typically provide national-level wage growth estimates that may not reflect the specific labour market conditions facing NSW water utilities. On balance, we consider NSW utilities-specific forecasts, even if somewhat dated, provide a more appropriate basis for CCC Water's input price assumptions than more recent national data.

5.4.4 Methodology for forecasting productivity growth is reasonable

CCC Water proposes an annual efficiency factor for operating expenditure of 0.7 per cent. CCC Water explains that this efficiency target has been set having regard to:[93]

- The broadly efficient nature of CCC Water's operating expenditure
- An internal assessment of operational and capital expenditure cost saving initiatives and the estimated value of these opportunities.
- A comparison of CCC Water's efficiency factor to other benchmarks, including:
  - Historical productivity performance in the water services and general market sector of the Australian economy based on econometric benchmarking and multi-factor productivity levels as published by the Australian Bureau of Statistics (ABS), and
  - Other efficiency targets set by various economic regulators.

In practice, CCC Water's proposed efficiency factor of 0.7 per cent corresponds to the average annual increase in multi-factor productivity for the market sector between 1994-95 to 2023-24 (the latest data available). We consider that setting an efficiency target based on the long-term economy-wide productivity trend provides an objective and appropriate benchmark for CCC Water. This is particularly the case as CCC Water continues to transition to a mature water utility following a period of underinvestment. This transition

[93] CCC Water, Water and Sewer cost efficiency strategy, September 2025, pp16-20.

involves implementing new systems, building capability and establishing processes, all of which constrain its ability to achieve higher productivity improvements in the near term.

Based on CCC Water's proposed operating expenditure, meeting its efficiency target will require identification of $18.4 million of efficiencies over the regulatory period.[94] To identify and implement these efficiencies, CCC Water has developed a five-step cost efficiency framework. We summarise this framework in Figure 13.

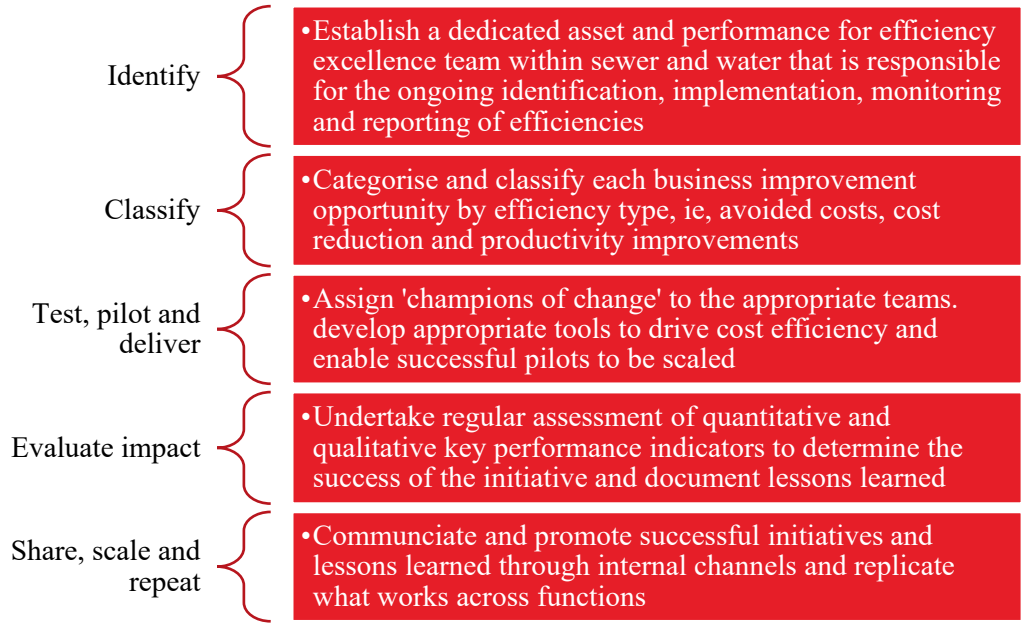

Figure 13 CCC Water's proposed cost efficiency framework[95]

CCC Water has identified several efficiency initiatives to pursue over the upcoming regulatory period. These relate to cost savings of:[96]

- $9.2 to $11.2 million from digital and technology improvements, such as the use of acoustic scanning, ROV and S-GATE valves to improve capacity to detect and prevent asset leaks and enable proactive maintenance of assets to avoid large, more expensive replacements.
- $3.4 to $5.7 million from cost rationalisation, which may include:
  - Energy cost optimisation by operating major sites during off-peak periods where this will not comprise service standards.
  - Reducing the number of staff deployed to undertake reactive and preventative maintenance operations, thereby maintaining service standards while reducing cost.
  - Evaluating the cost-effectiveness of insourcing key functions currently performed by external contractors.
- $2.3 million from continuing to move away from reactive maintenance and towards preventative maintenance.

Up to a further $1.4 million in efficiencies will be investigated through the framework summarised in Figure 14 to meet CCC Water's efficiency target for operating expenditure.

In our opinion, CCC Water's development of a cost efficiency strategy and identification of specific efficiency initiatives is a positive development in creating an efficiency culture within the business. We also

[94] CCC Water, Water and Sewer cost efficiency strategy, September 2025, p25.
[95] Adapted from CCC Water, Water and Sewer cost efficiency strategy, September 2025, pp21-24.
[96] CCC Water, Water and Sewer cost efficiency strategy, September 2025, pp25-26.

consider that the framework is logically structured and contains most necessary elements. However, we consider that there are opportunities for the strategy to better engage with the specifics of water utilities or CCC Water's context. We have identified two key recommendations to improve CCC Water's cost efficiency strategy so that it better engages with its operating context.

First, we recommend that CCC Water undertake necessary investments in data systems to facilitate participation in the WSAA asset management customer-value benchmarking program. WSAA benchmarking would significantly strengthen CCC Water's ability to identify, prioritise and deliver efficiency improvements by facilitating:

- Objective identification of efficiency opportunities, since it provides comparative data across a wide range of operational and financial metrics, thereby enabling CCC Water to identify specific areas where its performance diverges from its peers.
- Access to leading practices, since WSAA participation provides access to a network of water utilities that have successfully implemented efficiency initiatives, with many efficiency opportunities in water utilities relating to common operational challenges.
- Accountability and transparency, since the reporting of benchmarking results creates external accountability for efficiency performance.

We understand from our discussions with CCC Water that it has historically not participated in WSAA benchmarking because its cost reporting does not align with WSAA's benchmarking framework, particularly given its integration within Council's broader financial systems. We acknowledge this constraint. However, we recommend that CCC Water continues to work towards WSAA participation despite these challenges.

In our opinion, the benefits of benchmarking, such as identifying efficiency opportunities, accessing leading practices and creating performance accountability, outweigh the transitional effort of aligning cost reporting frameworks. CCC Water should therefore investigate separating out its financial reporting so that it is fit-for-purpose for a water utility.

Second, we recommend that CCC Water establish an expert advisory group with relevant water sector expertise to support the identification and implementation of efficiency initiatives. The nature of operating in the local council environment is such that CCC Water does not have access to a board with water industry expertise. This creates a gap in strategic guidance, particularly for identifying efficiency opportunities that require deep sector knowledge or assessing the relative performance of different operational approaches. The role of this expert advisory group would be to help drive efficiency by providing strategic guidance on efficiency priorities and validation of efficiency claims and implementation plans.

5.5 Assessment of proposed step changes

This section sets out our assessment of CCC Water's proposed step changes to its operating expenditure allowance. It explains that we consider CCC Water's proposed expenditure to undertake PFAS water testing and invest in a liquid trade waste tracking system are prudent and efficient. It also explains our recommendation that no allowance be provided for potential compliance costs with yet-to-be-finalised changes to the NSW biosolids guideline.

5.5.1 Overview of CCC Water's proposal

CCC Water proposes $2.8 million over the FY27-FY31 determination period in step changes. This comprises:

- $1.4 million for completing a Benthic study.
- $1.0 million for PFAS water testing to comply with the updated guideline values in the Australian Drinking Water Guidelines.
- $0.4 million to upgrade its liquid trade waste tracking system to comply with the NSW Department of Climate Change, Energy, the Environment and Water's (DCCEEW's) liquid trade waste management guidelines, particularly in respect of tracking the transportation and disposal of waste.

CCC Water also proposes to fund $42.9 million from its reserves to address potential outcomes of the ongoing NSW biosolids guideline review. This represents a worst-case scenario where the revised guidelines would require all sludge to be disposed of at the general waste rate rather than the biosolids rate due to PFAS contamination. The $42.9 million covers the incremental cost difference between general waste disposal and biosolids disposal, with the latter already included in CCC Water's base expenditure. We assess this as a step change because it relates to new regulatory compliance obligations.

Further, CCC Water proposes to fund $5.3 million in contract cost escalation using its reserves. We do not assess this item, on the basis that we provide CCC Water with a non-recurring expenditure uplift to address its maintenance position, which we discuss in section 5.3.3.

5.5.2 Proposed step changes are prudent and efficient

We consider CCC Water's proposed step change for the benthic study is reasonable, as this relates to a requirement by the NSW EPA. We understand that this will be delivered in partnership with a local university, and so CCC Water has estimated the costs using a different approach to its tendered rates, which we consider are reasonable.

We consider CCC Water's proposed step changes for PFAS water testing and liquid trade waste tracking to be prudent and efficient. These expenditures are necessary to comply with new or updated regulatory obligations, and the proposed costs are reasonable given the nature and scope of the compliance requirements. Further, the total amount of $1.4 million represents less than 0.2 per cent of CCC Water's proposed allowance for the upcoming regulatory period and is therefore unlikely to materially affect customer bills.[97]

5.5.3 We recommend no allowance for yet-to-be determined regulatory obligations

We do not consider it appropriate to provide a step change allowance for biosolids disposal costs at this time. The NSW biosolids guideline review remains ongoing and the final requirements are uncertain. Providing an allowance based on a worst-case scenario would transfer risk from CCC Water to customers for an outcome that may not eventuate – either over the upcoming regulatory period or at all.

In our opinion, a prudent and efficient service provider would not assume worst-case scenario when planning for regulatory change. Instead, it would assess the most likely compliance pathway and associated costs while managing the risk of alternative outcomes through its normal business operations and expenditure prioritisation. We note that chapter five of IPART's water regulation handbook sets out the features of the regulatory framework relevant to addressing the changing revenue needs of water businesses.

We consider that the appropriate allocation of risk in this case is for CCC Water to bear the uncertainty until the guidelines are finalised. This approach ensures that customers only fund costs that are certain and necessary, rather than subsidising contingent expenditure that may not be required. CCC Water's proposal to fund this potential expenditure through its reserves is consistent with this risk allocation principle.

5.6 Assessment of proposed non-controllable operating expenditure

CCC Water proposes to remove $469,000 of non-controllable costs from its base. As we do not adopt CCC Water's outturn operating expenditure as its base, we do not remove any of CCC Water's proposed non-controllable costs from its 'base'.

CCC Water estimates future non-controllable costs, which it adds back into its proposal, ie:

- $103,000 for estimated increases in Sydney Water purchases of treated bulk water, as an outturn of their price increases, and
- $53,000 for future estimated increases in dam safety compliance license fees.

[97] 1.4/703.3=0.19%.

In our assessment, these non-controllable costs are reasonable, and so we also add these back to CCC Water's proposed expenditure.

5.7 Recommendations

This section summarises our recommendations regarding the upper and lower bound of prudent and efficient operating expenditure for CCC Water over the upcoming regulatory period. It also summarises our recommendations as to discrete actions CCC Water can take to drive further efficiency in its operating expenditure.

5.7.1 Bounds of prudent and efficient operating expenditure

CCC Water is proposing $703.3 million in operating expenditure over the upcoming regulatory period. As discussed in section 5.1.2, we have also assessed the prudence and efficiency of the additional operating expenditure CCC Water proposes to fund through its reserves. This increases total operating expenditure over the upcoming regulatory period to $779.1 million. Table 14 summarises CCC Water's proposed operating expenditure and illustrates the effect of adding this additional expenditure to CCC Water's proposal.

Table 14 Overview of CCC Water's total operating expenditure over the 2026-31 determination period – water and sewer ($2025-26 million)

Opex component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	133.2	133.2	133.2	133.2	133.2	666.1
Trend	1.4	1.7	2.1	2.8	3.4	11.4
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-controllable	0.6	0.6	0.6	0.6	0.6	3.1
Subtotal – operating expenditure	141.4	140.3	139.5	141.9	140.2	703.3
Additional recurring controllable expenditure	10.1	9.1	9.2	9.2	10.6	48.2
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure	158.3	152.6	154.0	157.5	156.8	779.1

Our recommended reasonable upper bound for operating expenditure over the upcoming regulatory period is $746.8 million. This is a reduction of $32.4 million over the regulatory period, which amounts to 4.2 per cent of CCC Water's total operating expenditure over the 2026-31 determination period. This difference is driven by a:

- $44.8 million reduction to CCC Water's proposed base operating expenditure over the regulatory period.
- $48.2 million reduction to CCC Water's additional non-recurrent operating expenditure.

These reductions are in part offset by our recommended reasonable uplift in non-recurrent expenditure of $61.4 million to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.

Although our recommended upper bound is a reduction to CCC Water's total operating expenditure over the upcoming regulatory period, it is higher than the amount CCC Water proposes to recover from customers. Excluding consideration of the additional operating expenditure, our upper bound would result in operating costs funded by customers of $719.1 million. This is 2.3 per cent higher than CCC Water's proposed amount of operating expenditure to be funded by customers.

This increase is driven by our recommended reasonable uplift in non-recurrent expenditure. However, the non-recurrent nature of this expenditure emphasises the need for CCC Water to continue its transition to operational maturity. It also reflects our expectation that CCC Water should transition towards the base operating expenditure in subsequent regulatory periods, once major capital expenditure projects have been delivered, thereby reducing maintenance expenditure needs while noting the need for additional expenditure to address current challenges.

Table 15 summarises our recommended reasonable upper bound for operating expenditure over the upcoming regulatory period.

Table 15 Recommended upper bound of operating expenditure – water and sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	124.3	124.3	124.3	124.3	124.3	621.3
Trend	1.3	1.6	2.0	2.6	3.2	10.7
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-recurring uplift	12.3	12.3	12.3	12.3	12.3	61.4
Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.5	0.5	0.5	0.5	0.5	2.3
Total operating expenditure	144.6	143.5	142.6	145.1	143.3	719.1
Additional recurring controllable expenditure	0.0	0.0	0.0	0.0	0.0	0.0
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure (including reserves)	151.5	146.6	148.0	151.4	149.3	746.8

Table 16 and Table 17 summarise the breakdown of our recommended reasonable upper bound across CCC Water's water and sewer service lines respective.

Table 16 Recommended upper bound of operating expenditure – water ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	59.4	59.4	59.4	59.4	59.4	297.0
Trend	0.7	0.9	1.1	1.5	1.8	6.1
Step changes	0.2	0.2	0.2	0.2	0.2	1.0
Non-recurring controllable	4.3	3.0	1.8	3.3	2.4	14.8
Non-recurring uplift	3.9	3.9	3.9	3.9	3.9	19.6
Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.3	0.3	0.3	0.3	0.3	1.4
Total operating expenditure	69.0	67.9	66.9	68.7	68.1	340.6
Additional recurring controllable expenditure	0.00	0.00	0.00	0.00	0.00	0.0

Additional non-recurring controllable expenditure	0.0	1.4	1.4	4.2	1.4	8.4
Total operating expenditure (including reserves)	69.0	69.3	68.3	73.0	69.5	349.0

Table 17 Recommended upper bound of operating expenditure – sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	64.9	64.9	64.9	64.9	64.9	324.3
Trend	0.6	0.7	0.9	1.1	1.4	4.7
Step changes	0.6	0.1	0.5	0.6	0.1	1.8
Non-recurring controllable	1.1	1.5	1.0	1.2	0.3	5.1
Non-recurring uplift	8.4	8.4	8.4	8.4	8.4	41.8
Non-controllable – bulk water purchases	0.0	0.0	0.0	0.0	0.0	0.0
Non-controllable – other	0.2	0.2	0.2	0.2	0.2	1.0
Total operating expenditure	75.6	75.6	75.8	76.3	75.1	378.5
Additional recurring controllable expenditure	0.00	0.00	0.00	0.00	0.00	0.0
Additional non-recurring controllable expenditure	6.8	1.7	3.9	2.1	4.6	19.2
Total operating expenditure (including reserves)	82.5	77.4	79.7	78.4	79.8	397.7

Our recommended reasonable lower bound for operating expenditure over the upcoming regulatory period is $658.4 million. This is a reduction of $120.9 million over the regulatory period, which amounts to 15.5 per cent of CCC Water's total operating expenditure over the 2026-31 determination period. This difference is driven by a:

- $121.9 million reduction to CCC Water's proposed base operating expenditure over the regulatory period.
- $48.2 million reduction to CCC Water's additional non-recurrent operating expenditure.

These reductions are in part offset by our recommended reasonable uplift in non-recurrent expenditure of $51.1 million to manage the asset condition challenges CCC Water faces as it transitions to operational maturity.

Table 18 summarises our recommended reasonable lower bound for operating expenditure over the upcoming regulatory period.

Table 18 Recommended lower bound of operating expenditure – water and sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	108.8	108.8	108.8	108.8	108.8	544.2
Trend	1.1	1.5	1.8	2.3	2.9	9.6
Step changes	0.8	0.3	0.7	0.8	0.3	2.8
Non-recurring controllable	5.4	4.5	2.8	4.5	2.6	19.8
Non-recurring uplift	12.3	11.2	10.2	9.2	8.2	51.1
Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.5	0.5	0.5	0.5	0.5	2.3
Total operating expenditure	129.1	126.9	125.0	126.3	123.4	630.7
Additional recurring controllable expenditure	0.0	0.0	0.0	0.0	0.0	0.0
Additional non-recurring controllable expenditure	6.8	3.1	5.4	6.3	6.0	27.6
Total operating expenditure (including reserves)	135.9	130.0	130.3	132.6	129.5	658.4

Table 19 and Table 20 summarise our recommended reasonable lower bound for operating expenditure across CCC Water's water and sewer service lines respectively.

Table 19 Recommended lower bound of operating expenditure – water ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	59.4	59.4	59.4	59.4	59.4	297.0
Trend	0.7	0.9	1.1	1.5	1.8	6.1
Step changes	0.2	0.2	0.2	0.2	0.2	1.0
Non-recurring controllable	4.3	3.0	1.8	3.3	2.4	14.8
Non-recurring uplift	3.9	3.6	3.3	2.9	2.6	16.3
Non-controllable – bulk water purchases	0.2	0.2	0.2	0.2	0.2	0.8
Non-controllable – other	0.3	0.3	0.3	0.3	0.3	1.4
Total operating expenditure	69.0	67.5	66.2	67.8	66.8	337.3
Additional recurring controllable expenditure	0.00	0.00	0.00	0.00	0.00	0.0
Additional non-recurring controllable expenditure	0.0	1.4	1.4	4.2	1.4	8.4
Total operating expenditure (including reserves)	69.0	68.9	67.6	72.0	68.2	345.8

Table 20 Recommended lower bound of operating expenditure – sewer ($2025-26 million)

Operating expenditure component	FY27	FY28	FY29	FY30	FY31	Total
Base operating expenditure	49.4	49.4	49.4	49.4	49.4	247.2
Trend	0.4	0.5	0.7	0.9	1.1	3.6
Step changes	0.6	0.1	0.5	0.6	0.1	1.8
Non-recurring controllable	1.1	1.5	1.0	1.2	0.3	5.1
Non-recurring uplift	8.4	7.7	7.0	6.3	5.6	34.8
Non-controllable – bulk water purchases	0.0	0.0	0.0	0.0	0.0	0.0
Non-controllable – other	0.2	0.2	0.2	0.2	0.2	1.0
Total operating expenditure	60.1	59.4	58.8	58.6	56.6	293.4
Additional recurring controllable expenditure	0.00	0.00	0.00	0.00	0.00	0.0
Additional non-recurring controllable expenditure	6.8	1.7	3.9	2.1	4.6	19.2
Total operating expenditure (including reserves)	66.9	61.1	62.7	60.6	61.2	312.6

5.7.2 Actions to drive further efficiency

In assessing CCC Water's operating expenditure, we have identified three discrete actions that can be pursued over the forthcoming regulatory period to drive efficiencies. Specifically, we recommend that CCC Water:

- Undertake a comprehensive review of its corporate overhead requirements to ensure they reflect water-specific operational needs and efficient standalone utility practices.
- Undertake necessary investments in data systems to facilitate participation in the WSAA asset management customer-value benchmarking program.
- Undertake investment to improve visibility of workforce utilisation.
- Establish an expert advisory group with relevant water expertise to support the identification and implementation of efficiency initiatives.

The overarching theme connecting these three recommendations is the tension between the operational and governance requirements of a regulated water utility and the structures appropriate for local council operations. Our recommendations are designed to address these structural tensions by ensuring CCC Water has access to utility-appropriate corporate services, industry-standard performance information and specialist governance advice. Giving effect to these recommendations may require some degree of operational separation between CCC Water and Council's other business units. For instance, implementing dedicated data and reporting systems or creating distinct governance mechanisms. Such separation would enhance CCC Water's ability to demonstrate regulatory efficiency. However, we note that there are likely to be practical constraints to the degree of separation that is possible in the context of Council's legislative environment.

6. Assessment of capital expenditure

This section sets out our assessment of Council's capital expenditure proposal and historic capital expenditure.

Summary of findings and recommendations

- CCC Water's proposed capital budget of $577.7 million over the 2026 Determination period reflects an increase on current capital expenditure levels and exhibits a continued trend of high capital expenditure over 2026-27 and 2027-28 before significantly reducing over the remainder of the Determination period.
  - CCC Water has reduced its capital plan through a deliverability cut or an efficiency factor to reduce its proposed capital to significantly less than the expenditure identified in supporting asset management plans, asset class or major project business cases, condition assessments and other asset planning tools. We consider this introduces a risk of under-investment that will lead to worsening service performance outcomes for its customers and does not reflect efficient expenditure.
  - We have identified deficiencies in CCC Water's pre-optioneering, optioneering and cost estimating processes that we consider have a material impact on the prudency and efficiency of the 2026 proposal. These deficiencies include:
    - A lack of strategic portfolio planning to obtain a clear understanding of project need and timing.
    - A lack of clear alignment between project need and options selected which makes it difficult to identify whether the selected option sufficiently addresses the project need.
    - A need to improve the quality of analysis contained in business cases to ensure these artefacts are sufficiently robust to inform investment decisions.
    - The need to redo optioneering following external technical review which has resulted in a complete change in project trajectory, which suggests that the initial options investigation lacked sufficient rigour.
    - A lack of transparency on how cost estimates have been developed, particularly for the calculation of provisional sums and contingencies. Without transparent and consistent approaches to calculating these costs, there is an increased risk of cost overruns, underfunding and a misallocation of resources.

- We further recommend that CCC Water undertake the following steps to drive efficiency in its capital planning and delivery:
  - Improve business case quality and strengthen governance processes related to business case development and approval.
  - Improve transparency in resource planning, ensuring there is an evaluation of efficient workforce planning, clear traceability from deliverability outputs and the costed capital plan.
  - Accelerate the completion of condition audits and ensure that outputs are fed directly into planning and prioritisation tools. Strong data governance practices should be established for asset condition data. Renewals forecasts should be refreshed as condition data improves, enabling iterative updates to the capital plan to improve accuracy in asset management decisions.
  - Embed strategic portfolio planning as a prerequisite to the optioneering process. This involves defining clear priorities, service drivers, risk appetite, affordability parameters and interdependencies with other capital or operational activities before project options are developed.
  - Strengthen its optioneering process by explicitly mapping each option to the identified service driver and demonstrating how each option delivers measurable options. The rationale for selecting the preferred option must clearly integrate alignment with project need, lifecycle cost, risk profile and deliverability. CCC Water should also undertake comprehensive financial analysis prior to selecting the preferred option.
  - Adopt a formal cost estimation framework that incorporates recognised estimate classes, a documented basis of estimate, escalation factors and risk-based contingency allowances. Business case costs should reconcile to project costings and the rationale for variances should be clearly explained within business case documents. CCC Water should also improve transparency around the calculation of indirect costs, provisional sums and contingency by defining standard calculation methodologies. These components should be clearly presented, with drivers and assumptions disclosed.

6.1 Evaluation of 2022-26 historic capital expenditure

CCC Water is forecasting expenditure of approximately $405 million[98] on water and wastewater infrastructure in the current price determination period from July 2022 to June 2026. The forecast expenditure is approximately $100 million (33 per cent)[99] over the efficient capital cost,[100] as shown in Figure 14. The overspend was most significant in 2024-25 and 2025-26.[101]

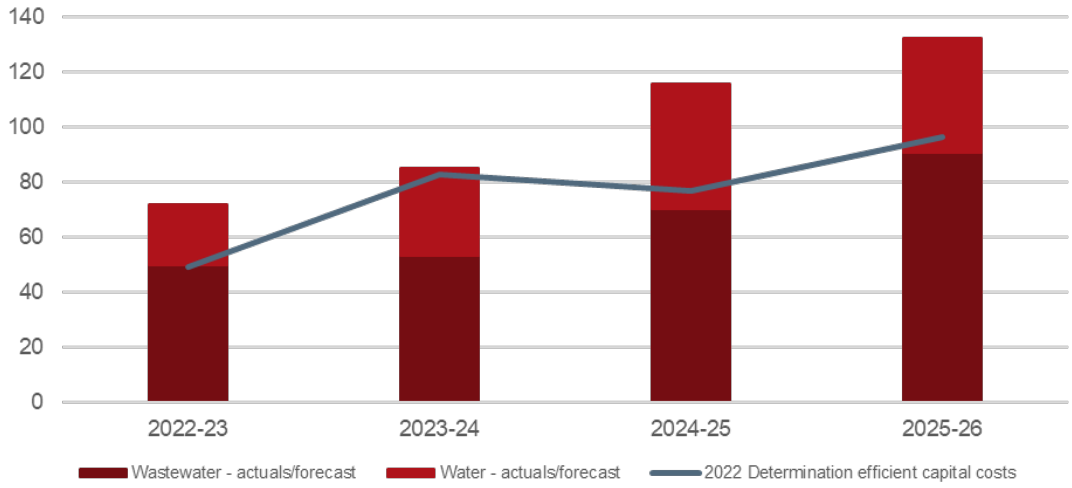

Figure 14 CCC Water's water and wastewater capital expenditure over the 2022 regulatory period ($2025-26 million)

A comparison of actual capital expenditure by service compared to the efficient capital cost set in the 2022 determination is outlined in Table 21.

Table 21 Summary of differences between 2022 efficient capital cost and actual capital expenditure ($2025-26, millions)[102]

	2022-23	2023-24	2024-25	2025-26	Total
CCC Water proposed expenditure[103]					
Water	40.08	35.06	23.06	35.80	**134.00**
Wastewater	39.95	45.12	56.58	43.44	**185.09**
Total	**80.03**	**80.18**	**79.64**	**79.24**	**319.10**
2022 Efficient Capital Cost					
Water	14.2	47.5	27.9	32.0	**121.5**
Wastewater	35.1	35.1	49.0	64.3	**183.5**
Total	**49.3**	**82.6**	**76.9**	**96.3**	**305.0**
2022-26 Actual expenditure					
Water	22.0	32.2	45.3	41.6	**141.1**
Wastewater	49.9	53.1	70.3	90.7	**263.9**
Total	**71.9**	**85.3**	**115.6**	**132.3**	**405.0**
Difference between 2022 efficient capital cost and actual expenditure					
Water	7.8	(15.3)	17.4	9.6	**19.6**
Wastewater	14.8	18.0	21.3	26.4	**80.4**
Total	**22.6**	**2.7**	**38.7**	**36.0**	**100.0**

[98] CCC Water, Technical paper 4, Capital expenditure, September 2025, p8. Excludes actual/forecast drainage expenditure.
[99] CCC Water, Technical paper 4, Capital expenditure, September 2025, p8. Excludes actual/forecast drainage expenditure.
[100] IPART, Review of Central Coast Council water prices – Operating and capital costs. Information Paper, May 2022, p17.
[101] CCC Water, Technical paper 4, Capital expenditure, September 2025, p9. Excludes actual/forecast drainage expenditure.
[102] Information taken from CCC Water, Capital expenditure – technical paper 4, Table 1 p8.
[103] Information taken from Consultant Draft Report by Frontier Economics, pp 123-124

CCC Water has stated that the overspend is primarily driven by:[104]

- Unplanned major project expenditure to upgrade poorly performing wastewater assets to meet EPA requirements.
- The need to re-prioritise and increase critical asset renewals.
- Cost escalation that has significantly outpaced inflation, for particularly for construction materials and contract rates.

CCC Water sought to offset the overspend primarily through project controls, such as the Water and Sewer Project Lifecycle (CCC Water's gateway process)[105] which includes a prioritisation review that assesses the risk of deferring the project. It also stated that it is implementing an Asset Management Improvement Plan which includes actions to optimise customer value by balancing service performance, risk and cost.[106] We would expect these actions to materialise in more efficient delivery in the future.

6.1.1 Unplanned major project expenditure required to upgrade poorly performing sewer assets to meet Environmental Protection Authority requirements

Unplanned capital expenditure was required in the 2022 determination period to upgrade poorly performing wastewater assets to meet Environmental Protection Authority (EPA) requirements. These projects included:

- Terrigal Lagoon pollution (major project)
- West Gosford Major Sewer Rising main Partial Replacement (major project)
- Kincumber Treatment Plant urgent renewal works (major project)
- Magenta Rising Main (TO36) (major project)
- Springfield tunnel collapse (high-risk reactive works)
- High-risk reactive works for minor assets (valued <$350,000).

These major projects all continue into the 2026 Determination period, except for the Terrigal Lagoon works.

The EPA prosecuted Central Coast Council on 20 December 2025 after a major pollution incident. Between 13-15 April 2023, 1,834,000 litres of untreated sewage escaped from the west Gosford major sewer rising main into Nara Creek, a tributary of Brisbane Water estuary. The two offences included failing to maintain the rising main pipe in proper condition and water pollution.[107]

Central Coast Council committed to replacing 2 km of the rising main and allocated $11 million over 3 years commencing 2024/2025. This decision was informed using the PMCA tool, which identified the need for pipe replacement. These actions form part of broader pollution reduction initiatives aimed at preventing future sewage discharges and ensuring compliance with environmental requirements.

The overspend in wastewater over the 2022 determination period is expected to be $80.4 million, which is approximately 43 per cent higher than the set efficient capital cost. As such, we consider undertaking a detailed review on key projects to be appropriate to ensure this expenditure was efficient.

[104] CCC Water, Technical paper 4, Capital expenditure, September 2025, p9. Excludes actual/forecast drainage expenditure.
[105] CCC Water, Technical paper 4, Capital expenditure, September 2025, p9. Excludes actual/forecast drainage expenditure.
[106] CCC Water, Technical paper 4, Capital expenditure, September 2025, p47. Excludes actual/forecast drainage expenditure.
[107] Central Coast Council (n.d.) Central Coast Council Convicted and Penalised water pollution after flow, available at: https://www.centralcoast.nsw.gov.au/council/public-notices/central-coast-council-convicted-and-penalised-water-pollution-after-overflow and Environmental Protection Authority (n.d.), Central Coast Council Fined, available at: https://www.epa.nsw.gov.au/news/epamedia/250109-central-coast-council-fined-for-spilling-1-8m-litres-of-untreated-sewage. Accessed 10 December 2025.

6.1.2 The need to prioritise critical water asset renewals

CCC Water has an ongoing program to renew water mains related to replacing ageing infrastructure across the region. Throughout the 2022 Determination period, CCC Water is forecasting to overspend on its set efficient cost by approximately $3.4 million.[108] While this represents an approximately 20 per cent overspend, we recognise that improvements have been made to CCC Water's prioritisation tools and therefore do not consider this to have a material impact on efficiency. As such, we have not undertaken a detailed review of this expenditure.

6.1.3 Cost escalation that has outpaced inflation

We requested supporting information and further detail regarding the 2022-26 overspend related to cost increases. We requested the data be provided to us for water and wastewater assets in the following format:

- Budgeted costs by category
- Outturn costs by category
- Extent of cost increases driven by factors other than market conditions (e.g., changes in scope)
- Reason for deviation from budgeted costs.

CCC Water advised that its financial and contract systems do not support the quantitative data management and analysis to present budget and actual expenditure by categories at a portfolio level.[109]

However, CCC Water provided an analysis of inflation within the construction sector[110] over the 2022 Determination period. This analysis showed cost escalation within the construction sector had significantly outpaced inflationary gain over the same analysis period. This information was used specifically to evidence the driver of cost increases for the Mardi Water Treatment Plant Upgrade, which is presented in section 6.1.4.

6.1.4 Review of historic projects

We sampled three historic projects (see Table 22) for detailed review.

Table 22 Historic projects selected for detailed review

Project	Total proposed 2022 Determination expenditure ($M)	Total actual 2022 Determination expenditure ($M)	Variance
Wastewater			
West Gosford Major Sewer Rising Main replacement	Unplanned expenditure	33.3	N/A
Water			
Mardi Water Treatment Plant upgrade	39	75.7	36.7
Water Trunk Main Renewal – Avoca Lagoon	2.2	4.5	2.3

Our review of these projects is set out below.

[108] CCC Water, Technical paper 4, Capital expenditure, September 2025, pp9-27. Excludes actual/forecast drainage expenditure.
[109] Memo Response to IPART consultant request.
[110] Memo Response to IPART consultant request.

West Gosford Major Sewer Rising Main Partial Replacement Project

Prudency	●	The project need is well-defined and clearly linked to regulatory drivers (compliance). The project timing is well-supported as it relates to a requirement by the EPA to complete works.[111]
Efficiency	●	In our view, the initial optioneering could have been more comprehensive, as it primarily focused on route alignment options rather than evaluating all alternatives. However, we recognise the urgency of the project delivery due to non-compliance with regulatory requirements and consequent legal action by the NSW EPA. The optioneering process applied was a Multi-Criteria Analysis (MCA). We consider this to be an appropriate approach for shortlisting options but question its effectiveness as a decision-making tool between options involving the same engineering solution, only different in route alignment. However, we consider that the preferred option is sound and if constructed correctly, will adequately address the project drivers.
Scope		Replacement of a section of an existing DN600 DICL main with a hybrid alignment of above ground, trenched and HDD DN600 sewer rising main (SRM), approximately 2km in length.

	2022 efficient capital cost	Actual/forecast	Variance
Expenditure ($M)	Not included	33.3	Unknown
Delivery timeline	Construction tender evaluation completion date: December 2025	Expected completion date: February 2027	

Background

The West Gosford sewer rising main was built in 1986 and services approximately 13,000 people. It receives flow from 25 upstream sewerage pump station sites and has some gravity feeding into the rising main and the pump stations themselves. The West Gosford Sewer Rising Main is a critical part of CCC Water's wastewater network.

In 2020 and 2023, there were two significant failures which caused the uncontrolled discharge of raw sewage into Narara Creek and adjacent sensitive bushland. CCC Water commissioned a condition assessment (in 2023)[112] of the sewer rising main to understand the cause of the failures. This identified severe external corrosion of the pipe led to thinning of the wall pipe and different pressure variability under different scenarios. Aggressive ground conditions, through corrosive soils and fluctuating groundwater, had exacerbated the corrosion. It was also found that the wrapping of the pipe was non-standard at the time of construction.

In December 2024, CCC Water was charged with two offences related to the discharge of raw sewage into Narara Creek from the West Gosford Sewer Rising Main. An enforceable undertaking is in place which required the replacement of 2 km of mains and allocating funding over a three-year period.

Project need

The project drivers are clearly identified in the documentation provided to us by CCC Water. The drivers are:

- Compliance with regulatory requirements set by the EPA following prosecution and commitments made by CCC Water as part of court proceedings. These related to the partial replacement of the rising main between the Narara Creek Crossing and Glennie Street West sections.
- Renewal of ageing sewerage infrastructure to ensure reliable service delivery and operate a well-maintained network. The project addresses the need to renew / replace existing section of a compromised asset.
- Improvements. CCC Water is separately undertaking environmental improvement works in Narara Creek as part of the court proceedings.

[111] CCC Water response to IPART consultant request.
[112] CCC Water, *West Gosford Major Sewer Rising Main – Condition Assessment Report*, 2023.

The project timing was driven by the EPA enforcement action, which required the replacement of the relevant section of sewer rising main by June 2026. There was a further requirement for no other sewage discharges into the environment during the construction or operation of the new sewer rising main.

The timing was also driven by the significant risks to public and environmental health and the escalating costs associated with not acting.

Outcomes realisation

The request for tender process is currently underway and has not yet been completed. As such, there is no current evidence that the project achieved the outcomes intended. The construction is forecast to take 52 weeks and expected to complete in February 2027. We recommend that CCC Water undertake a comprehensive lessons learned following project completion in order to support continual improvement and develop the maturity of asset management processes.

Scope

CCC Water developed the scope of works based on the recommendations in the 2023 condition assessment. The condition assessment[113] undertaken by WSP in 2023 recommended that any pipe sections that had a remaining useful life (RUL) of less than eight years should be replaced. Through reviewing the land uses adjoining the pipe section, CCC Water decided that between CH116 to CH2350 should be replaced.

CCC Water's optioneering report[114] is primarily focused on route alignment options rather than evaluating all alternatives. The condition assessment[115] recommended that any pipe sections that had a remaining useful life (RUL) of less than eight years should be replaced, and hence a "Do Nothing" option was deemed not to be a safe, efficient and long-term solution.

Similarly, a “Do Minimum” renewals option, as described in the Business Case3[116] was discounted due to not providing a "sustainable, efficient and long-term solution to implement conclusions and recommendations of the condition assessment report". This options was not further discussed in Section 4.2 of the business case or in the Options Assessment Report. There may have been opportunities to achieve the project objectives at the lowest cost by adopting a do minimum approach combined with alternative solutions, however, to achieve the outcomes noted in the condition assessment we acknowledge that replacement is required.

Broader strategies should be captured in the optioneering report to demonstrate a robust and evidence-based approach to developing project options and ultimately identifying the most suitable option.

The preferred option is a hybrid alignment of above ground, trenched and HDD DN600 SRM approximately 2 km in length. The preferred option was identified through an MCA. However, the basis for the weighting and scoring applied in the MCA is not transparent. We question whether the MCA was appropriate, given that the primary differences between options were related to route alignment and the differentiated factors were not reflected in the weighting of the criteria. This raises concerns about the robustness and appropriateness of the process.

Cost

In May 2024, CCC Water engaged GHD to develop costs during the options phase of the project. GHD developed these costs on a unit rate basis with preliminary costs for design, project management and construction management included. A universal 30 per cent contingency rate was applied, no justification was provided for inclusion of the contingency, however considering these costs were developed during the options phase, this is deemed acceptable.

In October 2025 an updated P90 construction cost estimate was prepared which excluded professional fees, client PM fees and council’s contingency and included in the Major Project Business Case[117]. This fee cost

[113] CCC Water, *West Gosford Major Sewer Rising Main – Condition Assessment Report*, 2023.
[114] CCC Water, *WGMJ Sewer Rising Main Partial Replacement Options & Concept Design, Options Assessment, 2024.*
[115] CCC Water, *West Gosford Major Sewer Rising Main – Condition Assessment Report*, 2023.
[116] CCC Water, *Water and Sewer Major Project Business Business Case, West Gosford Major Sewer Rising Main Partial Replacement, 2025.*
[117] CCC Water, *Water and Sewer Major Project Business Business Case, West Gosford Major Sewer Rising Main Partial Replacement, 2025*

3x the fee included in the Options Assessment[118] developed by GHD. CCC Water have noted an "increase in scope of works including relocation of western transfer main (WTM) in the detailed design phase" and more refined and accurate costing as the reasoning for the cost increase. The cost breakdown provided in Section 7.2 of the Business Case does not clearly provide justification for this increase in forecast cost.

CCC Water built contingency into the P90 budget estimate through an integrated quantitative risk assessment, which we have not sighted. Various preliminary costs and separate council contingencies have also been identified by CCC Water and considering the risk of the project we deem them to be reasonable.

Project review findings and recommendations

We consider the West Gosford Major Sewer Rising Main Partial Replacement project prudent and sufficiently evidenced by compliance, renewals and network improvements. In our view, the optioneering process was found to not sufficiently comprehensive as it focused on route alignment rather than evaluating alternative options that could have been fit-for-purpose. An MCA was undertaken which, while we consider it appropriate for determining a shortlist, we question the validity of the approach where the only difference between options route alignment (as opposed to alternative solutions). We also note that the cost estimate applied for the MCA was materially understated, which, in our view, brings into question the validity of the cost component of the optioneering process. Notwithstanding, we consider the preferred option is sound, and if constructed correctly, will adequately address the project drivers. We note that a preferred contractor has not been selected, and the project has not progressed into construction.

Mardi Water Treatment Plant Major Upgrade

Prudency	●	The 2022 Determination accepted the need for this project on the basis that a capacity and staging review be conducted to reassess the size of the proposed DAF plant. Additionally, the assumptions used for the peak demand forecasting were considered broad and poorly validated, and likely to result in overestimated forecast estimates. Consequently, the capacity and staging review indicated that the plant requires 130 MLD of capacity by 2040. We accept the present need for a pre-treatment stage to manage a changed raw water quality envelope, which has introduced the need to remove algae.
Efficiency	●	We accept that additional poor raw water quality consideration was required following the introduction of blue green algae as a water quality risk. However, we consider that further justification for not selecting the least-cost option on the basis of algae risk would have provided greater certainty regarding project cost efficiency. Further, we note CCC Water raised a concern related to the risk of trihalomethane (THM) formation in its interview. We note this was not a primary driver for the selected option but the reduction in THM risk was a minor consideration in early optioneering.[119]. We consider the selected option to be acceptable for addressing algae risks stated as a primary treatment driver for this project. However, we consider the suitability of the selected option to consistently address the THM risk is largely untested.
Scope		This project is the Stage 3 upgrade to Mardi WTP, aimed at enabling the plant to supply 130MLD under a wider range of raw water quality conditions, while also facilitating a future Stage 4 upgrade to 160MLD. Historically, plant performance has been impacted by elevated organics and algal content in raw water, and pre-treatment has been identified as the most suitable on-site option to address these issues.

	2022 efficient capital cost	Actual/forecast	Variance
Expenditure ($M)	39	75.7	36.7
Delivery timeline	February 2021 to June 2023	Estimated completion December 2026*	Approximately 2.5 years delay.

*Estimated forecast completion date changed from December 2026 to March 2027 from business case

Background

The Mardi Water Treatment Plant (WTP) uses direct dual media filtration and was originally constructed in 1982. The plant was augmented in 1994 to a total capacity of 160 MLD. Mardi WTP treats water from the nearby Mardi Dam. The need for an upgrade to allow Mardi WTP to provide its full capacity under a wider range of raw water quality conditions was identified in 2014.

[118] CCC Water, *West Gosford Major Sewer Rising Main Options & Concept Design – Options Assessment Report*, 2024.
[119] Hunterh20, *Mardi Water Treatment – Investigations & Options Analysis*, August 2015 p20 and p87.

The 2022 IPART determination recommended that a capacity and staging review be conducted for Mardi WTP to identify areas for potential cost savings and capital expenditure deferral. This study resulted in the deferral of a portion of the mechanical and electrical works related to the DAF and ferric chloride dosing systems.

The initial investigation and options analysis undertaken for this upgrade identified inclined plate sedimentation as the preferred pre-treatment solution. The subsequent concept design was paused near completion when Mardi Dam experienced a significant blue-green algal bloom and CCC Water identified that treatment of algae cells and toxins had not been considered when selecting the clarification process as historical data was not available at the time of defining the raw water envelope[120]. This exercise identified Dissolved Air Flotation (DAF) pre-treatment as the preferred option due to its algae removal capability. We note that the algae removal performance of DAF has not been directly compared to that of inclined plate sedimentation, although inclined plate is anticipated to remove between 58 per cent and 93 per cent of algae cells.

CCC Water is currently forecasting an overspend of $16.9 million for water expenditure, primarily due to the cost increases for the Mardi WTP project.

Project need

The prudency of the Mardi WTP major upgrade was reviewed as part of the 2022 Determination. The project was approved with recommendations that included CCC Water undertake a capacity and staging review, as well as a value engineering exercise. Consequently, we have not re-investigated whether the project was prudent with clear links to regulatory drivers.

We have reviewed the timing of project delivery which includes a review of the capacity and staging review, as well as the value engineering exercise. This review has demonstrated that only a small portion of upgrade costs can be deferred to a later stage, consistent with CCC Water's pricing submission as the project is main capacity upgrade is required in Stage 1 to 130MLD. We consider the outcomes from the capacity and staging review to therefore demonstrate a prudent approach to delivery.

Outcomes realisation

As the project is still in final stages of commissioning, it is not possible to fully assess how well the project meets the original outcomes and standards set out in the original capex program at this time.

Scope

Prior to the 2022 Determination process, CCC Water adjusted the scope of the project in response to changing raw water quality and emerging risks including algae blooms and filter clogging.

This project was initially assessed in the 2022 Determination, and IPART recommended that CCC Water conduct a staging and capacity review to identify opportunities for cost saving and capital expenditure deferral. Following this, CCC Water adopted a two-stage approach. The first stage was to build a pre-treatment plant with a capacity of 130 MLD.

The capacity and staging review concluded that mechanical and electrical works for 2 of the 8 DAF trains would be deferred, as well as 1 of the 3 ferric chloride bulk storage tanks. The new staged approach did not result in the deferral of any structural or civil works. The rationale for deferring these costs is well justified, as documented in the capacity and staging review, however there is limited detail provided on the total value of cost savings achieved.

Cost

Following the original Gate 2 business case in February 2021, CCC Water initiated a request for tender process which included early contractor involvement and the development of advanced tender designs. Submissions received were significantly higher than the approved Gate 2 business case budget.

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[120] Central Coast Council, *File Note: Mardi Water Treatment Plant Stage 3 Upgrade: Clarification process selection*, 25 November 2020.

Given the significant cost increase, and post the 2022 determination, CCC Water undertook a staging / capacity review and a further ECI phase with the preferred tenderer, which included a value engineering process. Following these activities, the cost estimate for the Mardi Water Treatment Plant project nearly doubled, from $39 million to $75.7 million. We understand that some cost savings were achieved via the staging and value engineering studies, but the value of cost savings is not well documented.

CCC Water attributes the cost escalation to impacts of COVID-19, supply chain constraints, increased construction demands and commodity price fluctuations. We accept that since 2020, there have been material, unforeseen and rapidly changing market conditions that have resulted in increased project costs. As such, we accept that the project costs have increased due to these pressures. Figure 15 shows the increases in Mardi WTP cost estimates relative to CPI.

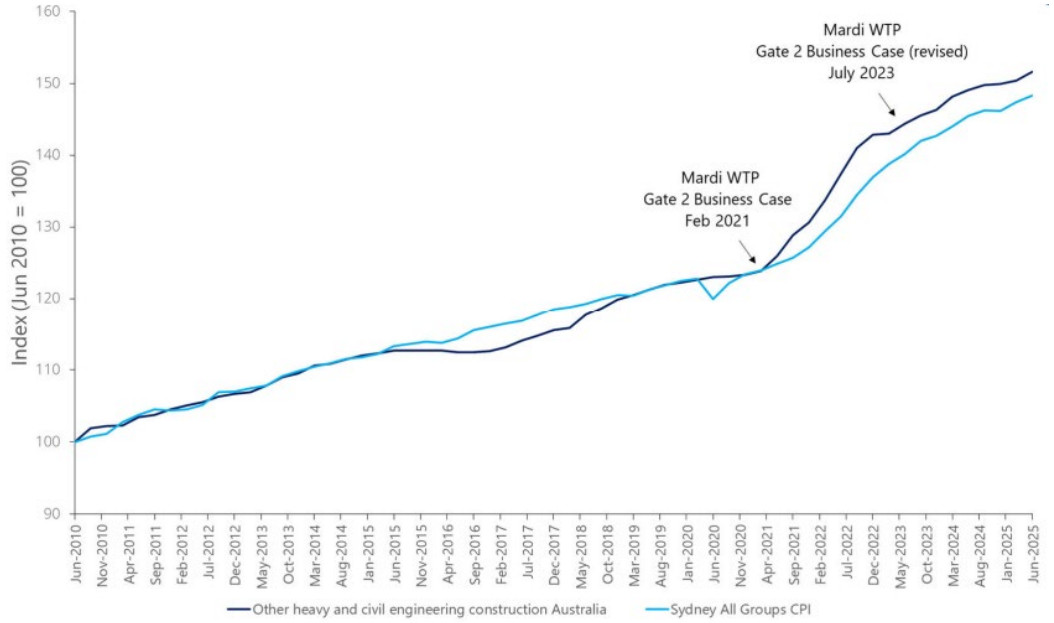

Figure 15 Mardi Water Treatment Plant Upgrade inflation analysis

Project review findings and recommendations

We accept the need for the Mardi WTP Major Upgrade project in the context of emerging water quality risks, and safe drinking water compliance issues. We accept that over the 2022 determination period there have been cost increases above inflation in the construction sector, and these align with the increased cost to deliver Mardi. We also recognise that cost estimates prepared to support the 2022 determination period were likely understated due to rapidly changing market conditions.

Water Trunk Main Renewal Program – Avoca Lagoon

Prudency	●	The project need is well-defined and clearly linked to a renewals driver. As several major failures have already occurred, and the asset has reached the end of its useful life, we accept the need for urgent renewal. This need is reinforced by the criticality of this asset, as there is a significant risk of prolonged service interruptions.
Efficiency	●	In our view, the initial optioneering conducted could have been more comprehensive, as it primarily focused on route alignment options rather than considering all alternatives. However, we recognise the urgency for delivery of this project due to the high consequence of failure, given this is a critical network asset. The preferred option was identified through a Multi-Criteria Analysis (MCA). We consider this to be an appropriate approach for shortlisting options, but question its effectiveness as a decision-making tool between options involving the same engineering solution, only different in route alignment.
Scope		This project involves the replacement of a DN450 drinking water main which spans across Avoca Lagoon. This replacement includes CICL sections on either side of the submerged length, as well as MSCL sections on the lagoon banks and spanning the lagoon itself.

	2022 efficient capital cost	Actual	Variance
Expenditure ($M)	2.2	4.6	2.4
Delivery timeline	Not specified	September 2024	22 weeks

Background

Avoca Lagoon trunk main supplies water to Avoca beach, Copacabana and MacMasters beach with an approximate population of 5,300 permanent residents. This DN450 water main, installed in 1970, has experienced several breaks between 2017 to 2020 on the northern and southern sides of Avoca lagoon in cast iron cement lined (CICL) sections. No failures have been recorded in the mild steel cement lined (MSCL) section which spans the lagoon itself, nor in the immediate CICL segments adjacent to the lagoon banks.

In 2020, the Central Coast experienced a cluster of severe storms, king tides and tidal surges into the lagoon which further eroded the embankment, exposing the pipe and undermined its structural integrity. The reactive repairs and ongoing maintenance in this section are complex due to location constraints and accessing the submerged section of pipe.

CCC Water determined that due to the risk of loss of service for up to 3 days following a main break, the age of the asset and challenging maintenance / repairs that the full length of pipeline would be converted to an underground pipeline via horizontal directional drilling (HDD).

The preferred replacement option was a new DN560 PE pipeline, 332 m of HDD installation and 115 m of trenched installation from the North Avoca reserve to the valve chamber located at the car park on Ficus Avenue.

Project need

CCC Water have indicated that various failures have occurred, however historical failure data which triggered the renewal is unavailable as it was held in systems that were replaced after amalgamation between Gosford and Wyong Councils. However, CCC Water has concluded that the existing DN450 CICL pipe had reached the end of its asset life due to external corrosion along the underside of the pipe.

CCC Water have also stated a specific condition assessment was not undertaken for the pipe as it had already incurred multiple failures. This triggered the replacement driver under the prioritisation methodology that was in place at the time of project initiation. We are unable to validate the assessment driver as no condition assessment or data from the pipeline failures has been sighted however on the basis of multiple failures we accept that this project was needed.

Outcomes realisation

The primary objective of the project was to address potential impacts to Avoca beach, Copacabana and MacMasters beach customers because of pipe breaks and consequent loss of service. We consider that one

new continuous buried pipeline from north to south, which minimises future failure risk, achieves this objective.

Additional objectives, such as improving maintainability, have also been achieved, with new valves configured to allow isolations and repairs to system with minimal interruptions to customers. We consider that project delivery objectives were met.

We accept that project delivery objectives were met, CCC Water reported a 6 per cent variation in project costs and 22-week delay in program. The cost variation is reasonable, and program variations were adequately justified.

Scope

The scope of works was initiated using a legacy prioritisation methodology following several pipe breaks between 2017 and 2020, and exposure of the pipeline following storms in 2022, triggering renewal of the entire pipeline.

Following completion of the options report, a workshop was held to discuss the key findings from the optioneering stage and seek for Council's endorsement on the preferred option. Option 2 was selected as the preferred route. It is unclear what evaluation process was conducted.

Based on the evidence provided to us, we consider there were significant shortfalls in the optioneering process. Most notably, the optioneering process primarily focused on route alignment rather than evaluating alternative solutions that were fit-for-purpose. This narrow approach limited the consideration of broader strategies that could have delivered the required outcomes more effectively. Similarly, it is unclear why a "do minimum" base case option was not considered. There may have been opportunities to achieve the project objectives at a lower cost by replacing the sections of main that experienced failures and reinforcing areas of the main that have been exposed due to storm erosion.

The scope of the replacement was a new DN560 PE pipeline, 332 m of HDD installation and 115 m of trenched installation from the North Avoca reserve to the valve chamber located at the car park on Ficus Avenue. There were no significant changes to the scope of works over the course of the program. There was a 22-week delay in the program, largely driven by inclement weather and program variations.

Cost

The actual expenditure of the trunk main renewal project exceeded the initial cost estimate by 6 per cent, which we consider immaterial. We have not sighted the original cost estimate prepared for the project, nor have we sighted the contingency applied. Due to this, we are unable to assess whether the contingency allowed for was adequate, however the quantum of cost increase is deemed to be within the bounds of good practice.

Despite a 22-week delay in program, CCC Water has reported a 6 per cent variation in project costs. We consider that this deviance is immaterial and unlikely to have impacted the efficiency.

Review findings

We accept the need for renewing the Avoca Lagoon trunk main in the context of asset condition and service reliability risks. Considering the evidence available to us, in our view, we consider the optioneering process was deficient. It is primarily focused on route alignment rather than evaluating alternative solutions that were fit-for-purpose

The acceptable escalation in capital costs and program is attributed to significant inclement weather, delayed site mobilisation and HDD start date and design delays.

6.1.5 Summary of findings and recommendations for historic expenditure

Our historic review covered three major infrastructure projects undertaken by CCC Water: the West Gosford Major sewer rising main partial renewal, the Mardi WTP upgrade, and the Avoca lagoon trunk main renewal. Each project addressed critical service reliability and compliance risks, and while we accept the need for these projects, we identified common issues in planning, optioneering, and cost management.

Across all three projects, the need for renewal or upgrade was clear and aligned with compliance, service reliability, and renewals. However, deficiencies in optioneering were evident, with limited consideration of alternative solutions and lack of transparency in evaluation processes.

Cost management practices varied, with significant escalation in the West Gosford and Mardi projects and minor variation in Avoca Lagoon, but documentation gaps (such as missing condition assessments, failure data, and contingency justification) reduce confidence in decision-making efficiency. While we accept market conditions and other external factors (like inclement weather and supply chain constraints) contributed to delays and cost increases, we consider that CCC Water's governance and planning processes require improvement to ensure robust, transparent, and cost-effective outcomes.

We recommend that the full actual expenditure over the 2022 Determination period be accepted as it represents both prudent and efficient spend given CCC Water's operating context. We consider the projects of which we have conducted a detailed review to be prudent for the following reasons:

- Mardi WTP and Avoca Lagoon renewal projects had previously been considered prudent in the 2022 Determination period. The IPART recommendations for Mardi WTP were undertaken and resulted in an improved construction staging approach.
- While the West Gosford Major Sewer Rising Main Partial Replacement project was not identified within the 2022 Determination period, we consider it prudent due to its compliance driver considering recent EPA prosecutions.

While we have identified potential efficiency improvements in these projects, we do not consider that these are sufficiently material to justify a historic adjustment to capital expenditure for the following reasons:

- We consider the cost increases for the Mardi WTP upgrade to be the result of unforeseeable market fluctuations and supply chain constraints, primarily due to rapidly changing market conditions post-COVID-19 pandemic.
- While optioneering practices could have been improved for both the Avoca Lagoon and West Gosford Major Sewer Rising Main Partial Replacement projects, we have considered the general maturity and sophistication of CCC Water's then current practices (over the 2022 Determination period) and note that the criticality of failure resulted in an urgent need for investment. We further consider the preferred options will provide an acceptable solution to the relevant project drivers, without providing a higher level of service unnecessarily.
- Asset management practices (and associated prioritisation within renewal programs) was identified as an area for improvement in IPART's 2022 recommendations. Considering this, we anticipate that asset renewal programs may not have identified relevant projects historically. However, it is our view that given CCC Water's operating context, and following the administration period, no actions could have been taken to achieve delivery efficiency.

Based on the findings from our review of CCC Water's historic capital expenditure, we recommend no adjustment to the action costs incurred within the 2022 Determination period.

6.2 Evaluation of 2026-31 capital expenditure proposal

Figure 16 shows the actual and forecast expenditure by relevant driver, disaggregated by water, wastewater and relevant IPART drivers.

The most significant driver is the renewals driver (an average of 76 per cent across expenditure) followed by growth (an average of 22 per cent across expenditure). Compliance and improvement drivers reflected a minor portion of the expenditure, an average of 2 per cent across water and wastewater expenditure.

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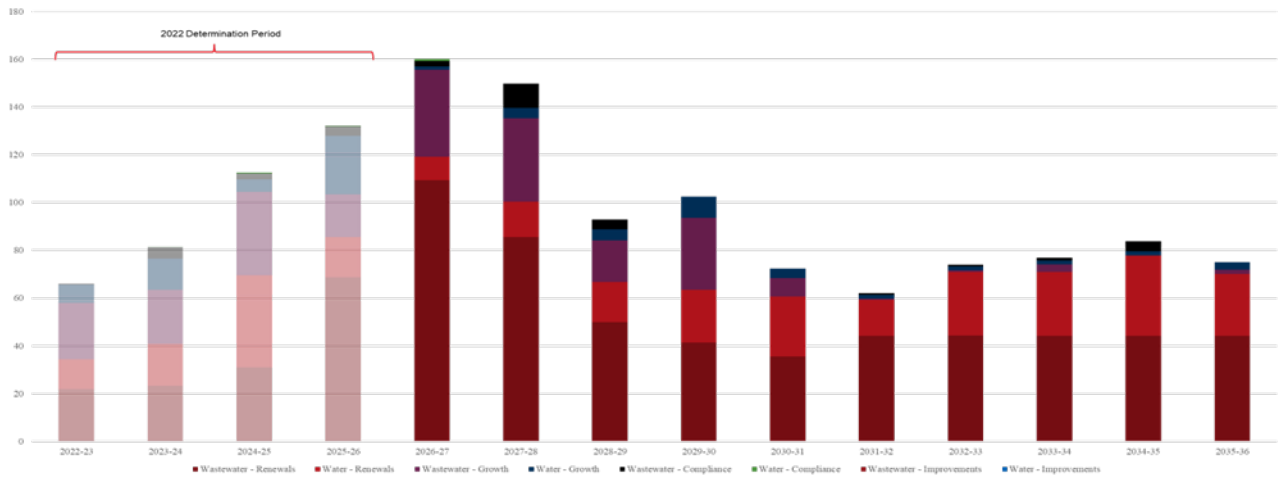

Figure 16 CCC Water's historic and proposed water and wastewater expenditure by driver ($2025-26 million)[121]

CCC Water advised that while total expenditure will decrease, the portion of expenditure driven by renewal purposes will significantly increase from 2025-26. Growth-driven projects will steadily decrease. Compliance and improvements will remain a minor component of the proposed capital expenditure. CCC Water has acknowledged that it is in the process of obtaining further condition data and replacement cost data that will be integrated into its asset management tool and financial asset registers to support improvements in applying data-driven decision-making related to the renewal driver.

CCC Water's forecast capex for the 2026 Determination period is shown in Figure 17.

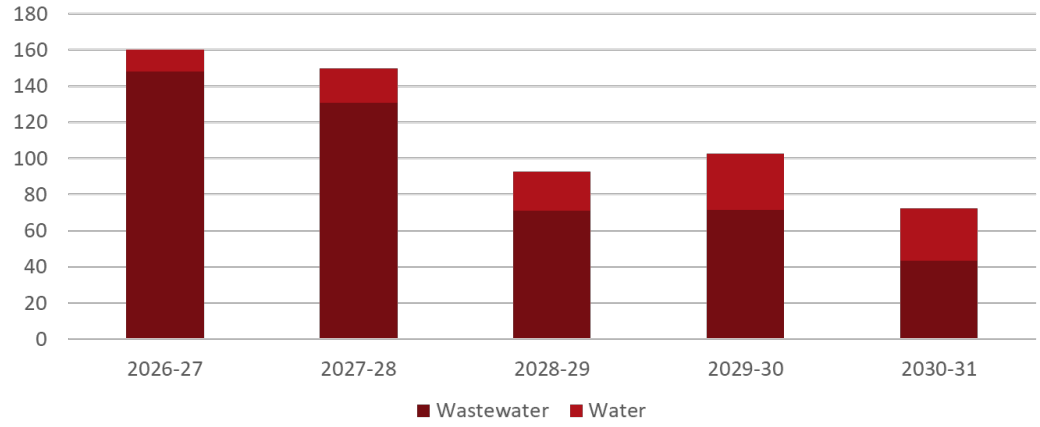

Figure 17 CCC Water's proposed water and wastewater capital expenditure over the 2026 Determination period ($2025-26 million)[122]

Figure 18 shows a 14 per cent increase in the average annual capex in the 2026 Determination period compared to the 2022 Determination period. This is comprised of $23 million on water assets and $93 million on wastewater assets spent annually. The forecast capex is inclusive of projects that commenced in the 2022 Determination period which are forecast to finalise over the 2026 Determination period, the majority of which is for sewer services.

[121] Information taken from Central Coast Council Annual Information Return (AIR SIR) 2024-25, Table 4.2 - Capital expenditure of regulated water, wastewater and stormwater business activities (excluding avoided cost claims for recycled water, including actual contingent capex incurred).

[122] Information taken from Central Coast Council Annual Information Return (AIR SIR) 2024-25, Forecast capital expenditure of regulated business, excluding Exceptional projects and contingent capex, Table 4.4 - Detailed capex forecasts ($'000).

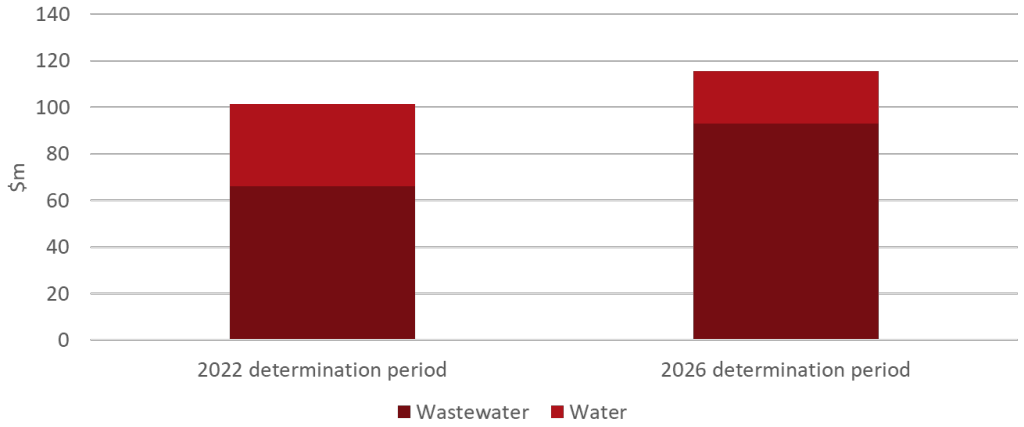

Figure 18 Comparison of 2022 and 2026 Determination period annual average expenditure by water and wastewater ($2025-26 million)[123]

The largest capital projects proposed by CCC Water include:

- Charmhaven STP Major Augmentation Works (sewer, $107.6 million)
- Gwandalan STP Major Upgrade (sewer, $76.6 million)
- Kiar Reservoir (water, $16.3 million)
- West Gosford Major Sewer Rising Main Partial Replacement (sewer, $13.4 million)
- Kincumber STP Operational Improvements (sewer, $12.1 million)
- Hamlyn Terrace Sewer Pump Station and Rising Main Upgrade (sewer, $5.7 million).

[123] Information taken from Central Coast Council Annual Information Return (AIR SIR) 2024-25, Forecast capital expenditure of regulated business, excluding Exceptional projects and contingent capex, Table 4.4 - Detailed capex forecasts ($'000).

6.2.1 Detailed project review

Table 23 summarises the capital projects for which we have undertaken a detailed assessment.

Table 23 Capital projects subject to a detailed review ($2025-26 million)

Project	Project type	Total proposed 5-year expenditure
Water		
Water Main Renewal Program – Region Wide	Program	53.9
Water Reservoir New Asset – Bushells Ridge rd. Kiar	Project	16.3
Water Security Assets	Project	2.1
Groundwater Renewal Program – Region Wide	Program	1.1
Wastewater		
STP Major Augmentation Works – Charmhaven	Project	107.6
Sewer Treatment Plant Major Upgrade – Gwandalan	Project	76.6
Sewer Main Rehabilitation Program – Region Wide	Program	40.8
Operational Improvements – Kincumber STP	Project	12.1
Sewer Rising Main Renewal Program – Region Wide	Program	7.8
Sewer Pump Station Electrical Switchboard Replacement Program – Region Wide	Program	6.3
Sewer Pump Station and Rising Main Upgrade – Hamlyn Terrace (CH12-13)	Project	5.7

This sample of projects represents approximately 53 per cent of the value of the proposal capital expenditure for the 2026-31 determination period. Table 24 shows the proportion total 2026 Proposed Capital Expenditure covered in the project review.

Table 24 Capital expenditure captured through the detailed project review

Asset class	Selected projects	All projects	% of total spend selected
Sewer			
Sewer Network	21.2	79.3	27%
Sewer Pump Station	12.0	50.9	24%
Sewer Treatment Plant	196.3	233.7	84%
Other	0.0	100.9	0%
Total – Sewer	**229.5**	**464.9**	**49%**
Water			
Water Network	53.9	55.4	97%
Water Pump Station	0.0	2.2	0%
Water Reservoirs	16.3	22.4	73%
Water Treatment Plant	0.5	3.0	16%
Other	3.2	29.9	11%
Total – Water	**73.9**	**112.9**	**65%**
Total	**303.4**	**577.8**	**53%**

STP Major Augmentation Works – Charmhaven

Prudency	The project need is well-demonstrated to address current compliance issues associated with water quality. Further, the project is required now to service growth, however the extent of this need is not clearly and consistently established. The need for biosolids stabilisation is also not well established in project documentation.
Efficiency	In our view, the rationale for selecting the preferred option, in relation biosolids stabilisation, was not sufficiently demonstrated. There was a lack of clear justification for selection of more costly option which includes digestion. The least-cost solution was not accepted due to an unevidenced requirement related to biosolids management (treating to Class B standard), which led to a higher cost option being selected. CCC Water also lacks a biosolids strategy which considers future risks, issues and opportunities which may result in alternative decision-making regarding the project.
Scope	Significant upgrades are needed to meet current/future demand as well as compliance with licence effluent quality requirements.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	61.5	25.5	20.6	-	-	107.6
Proposed delivery timeframe	Construction start: October 2024			Handover: March 2023		

Background

Charmhaven STP was commissioned in 1988 with a biological design capacity of 40,000 EP. The plant is operating at around 32,000 EP due to ageing infrastructure and operational constraints (such as limited aeration capacity and overloaded sludge management systems). This has caused breaches of Environmental Protection Licence (EPL) annual load limits, reduced biosolids stabilisation grading and environmental overflows from the wet weather pond.

It is one of five STPs that discharge to Norah Head Outfall under the common EPL 2647. Under EPL 2647, there are no current load limits for individual plants: they are managed collectively under a bubble license.

There have been several non-compliances with the EPL since 2018, which has resulted in the EPA requiring a Pollution Reduction Program (PRP) be implemented to redress the environmental damage.

The project was approved in the 2022 determination period, with an adjusted total value of $59.05 million.

Project need and timing

There are multiple needs identified in the project documentation provided to us, however not all of these are well-evidenced. The drivers identified include:

- Growth: the Charmhaven STP has a nominal design rating of 40,000 EP but a current connected population of more than 46,000 EP. The catchment is forecast to experience growth, meaning that there is insufficient treatment capacity for current and future population loads. Data provided to EPA states current servicing capacity of plant is 59,000EP but more recently suggest 46,000EP.
- Compliance: the annual pollutant loads exceed the EPL 2647 conditions which has led to EPA intervention via a PRP. CCC Water has identified that Charmhaven contributes approximately 30 per cent of the total volume discharged to the Norah Head outfall. It is the largest STP under EPL 2647.
- Renewals: critical mechanical and electrical assets are reaching end-of-life and are non-compliant with current standards.

Customer values

The Charmhaven STP meets customer values of reliable service through reducing noise/odour complaints and environmental/public health values through reducing non-compliances with EPL 2647.

Optioneering

The optioneering process used to identify the preferred option followed a standard approach, beginning with a longlist and progressing to a shortlist. We understand that the shortlisting of the technology for processes was undertaken by AECOM in 2023 through an options assessment. We have not sighted this report and are therefore unable to validate how options were shortlisted from the longlist.

Shortlisted options were then evaluated using both cost and non-cost criteria. The initial longlist included reasonable capital interventions at that site aimed at addressing compliance issues. We note that this did not consider a comprehensive evaluation of alternative system solutions, such as the transfer of flows to alternative sites to reduce pressures on the Charmhaven STP. We anticipate that the development of the Water and Sewer Master Plan would identify viable strategic planning options in the future.

We further note that Intermittent Decant Extended Aeration (IDEA) was originally included in the longlist and identified for shortlisting but was not considered during the shortlisting process. It is unclear whether this omission reflects an error in the longlist or shortlist. We are unable to verify why it was not considered as part of the shortlisting process, noting it was previously the preferred option. The shortlisting process should explicitly rule out viable options where there are differences in cost and/or performance – we would anticipate some difference between the IDEA and SBR options.

Among the options were a Do Nothing base case and a Do Minimum base case. The Do Minimum option was investigated by GHD in 2018 and involved minimal upgrades to resolve immediate issues with dewatering, aerators, and covering the discharge vent stack (with potential inclusion of bio-trickling and activated carbon for odour control if required). It also recommended deferring grit removal until a new inlet was required. Based on the documentation provided, this work was delayed because the facility lacked the capacity to deliver the upgrades while maintaining acceptable service levels during concurrent operations. Ultimately, it was discounted because it did not provide long-term compliance or service reliability for anticipated population growth.

Not withstanding the above, the selection of MLE will address the project need as well as providing some flexibility in both design and operation to adapt to uncertain growth forecasts.

Following shortlisting, CCC Water rejected the preferred option because it did not provide for Grade C biosolids stabilisation. In our view, Council did not fully explore operating solutions that might have delivered lower-cost outcomes, nor did it sufficiently justify the need for Grade B biosolids stabilisation. The

documentation suggests this requirement was driven by the fact that Grade C biosolids must be sent to landfill or a composting facility. We sighted evidence that some of Council's waste facilities have been closed by the EPA due to limited capacity, and further disposal of biosolids to landfill would reduce remaining space. CCC Water also stated that a "recent open tender" identified only one contractor capable of handling Grade C biosolids, creating a material risk that no contractor would accept these in the future.

CCC Water lacks a biosolids strategy which considers future risks, issues and opportunities which may result in alternative decision-making regarding the project. It is further unclear why the standard of biosolid stabilisation was not included in the optioneering process if it was material to preferred option selection.

Cost estimation

We were unable to reconcile the different costings for the project in the information provided to us and have therefore been unable to undertake a comprehensive review of the cost estimation process that underpinned the optioneering and CCC Water's 2026 submission to IPART.

The costs presented in the business case appear to have been completed on a +/- 50 per cent basis (consistent with a Class 5 cost estimate under the Association for the Advancement of Cost Engineering Guidelines), which would be appropriate to support high-level optioneering. However, in our view, a more advanced costing should have been completed on the shortlisted options (consistent with at least a Class 3 or 4 estimate), and an operational cost been developed that reflects the costs of landfill disposal.

A Class 2 estimate was developed by GHD in 2025 in the detailed design phase. This increased the total project cost to $200 million. As such, we consider that the concept design cost estimate (class 3)[124] was considerably under-stated even allowing for increased contingency consistent with the maturity of the cost estimate.

We understand the contingency applied is in the order of 23 per cent but have been unable to verify the basis of the contingency and whether this has been calculated appropriately. We also did not sight the risk register (other than a snip in the interview presentation) for the project and are therefore uncertain as to whether the material project risks have been factored into project costing.

Procurement

The procurement approach adopted was Construct-Only delivered under the complex works procurement pathway, being select tender basis. We note Construct-Only contracts introduce an interface risk between detailed design and construction. It is unclear why this method was chosen and why this risk was considered acceptable. We also note that the business case was prepared after the Expression of Interest (EOI), which does not align with CCC Water's governance processes[125].

Notwithstanding these concerns, we consider the decision to undertake a two-stage procurement process (EOI followed by tender) prior to completing a select tender process to be a robust approach to procurement.

Review findings

Our review identified that the project need is well-demonstrated to address current compliance issues associated with water quality. However, while this project will also be required to service future growth, we consider that the growth forecasts have not been clearly and consistently established and evidenced.

We also consider that the rationale for selecting the preferred option has not been sufficiently demonstrated, and there is a lack of clear justification for selection of a more costly option. The decision to reject the least cost option is predicated on an unsupported requirement related to biosolids management (treating to Grade B standard). Without a biosolids strategy that considers future risks, issues and opportunities, we consider that CCC Water has not clearly established the need for Grade B biosolids, at the Charmhaven WWTP – noting that there is a contractor currently accepting a combination of Grade B and C biosolids. We also consider that if the biosolids management was an important consideration, this criterion should have been

[124] Aecom, *Charmhaven STP Upgrade Concept Design Report*, 17 April 2024, Appendix Q p 77.
[125] Central Coast Council Water and Sewer, *technical Paper 4 Capital Expenditure,* September 2025, figure 17 and section 5 Investment Governance.

applied in the optioneering (including at the longlist stage) to ensure only appropriate options were carried through to the shortlisting process to identify the preferred option.

Similarly, the aeration capacity of the of IDEA tanks was found to be the limiting criterion for the current capacity of the IDEA tanks. With non-overlapping aeration phases, the estimated IDEA tank biological capacity is 16,300 EP per tank, increasing to 20,100 EP per tank if the design, overlapping, aeration phase timing is used. We understand that the current apparent inability to have overlapping aeration phases may be due to the condition and/or limitation of the electrical equipment rather than the aerators themselves. We have no evidence that CCC Water have considered the cost of addressing the electrical shortcomings as an alternative option and the impact increasing the biological design capacity may have, if any, on the options to address the growth driver.

The hydraulic decant and pipework (hydraulic) capacity of the IDEA tanks was found to be 22,000 EP per tank, which is considered the feasible capacity of each existing reactor.

The business case we received included a project cost estimate that we have been unable to reconcile with CCC Water's proposal for the project. The business case reports the estimated project cost at $201 million, while CCC Water is only requesting $107 million. We understand from discussions with CCC Water that variance reflects more mature cost estimates in the business case we reviewed with the cost of the project increasing by close to 40% over the last 12 months.

We consider a reduction of total project cost of $13.2 million between the preferred option and the least cost option, based on the lack of justification for biosolids management, to be appropriate. The figure is based on the initial capital costs for the two options (developed in 2023) and escalated using the Producer Price Indexes, Australia for Heavy and Civil Engineering Construction Prices as published by the Australian Bureau of Statistics.

Our adjustments are shown in Table 25.

Table 25 Proposed adjustments for Charmhaven STP Upgrade

	Total in 2022 Determination Period	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	-	61,540,100	25,536,466	20,568,228	-	-	107,644,794	107,644,794
CCC Water total project costs	27,610,724	86,803,166	87,241,550	-	-	-	201,655,440	174,044,716
Total lower bound	-	73,595,391	87,241,550	-	-	-	160,836,941	160,836,941
Lower bound adjustment	-	(13,207,775)	-	-	-	-	(13,207,775)	(13,207,775)
Total upper bound	-	73,595,391	87,241,550	-	-	-	160,836,941	160,836,941
Upper bound adjustment	-	(13,207,775)	-	-	-	-	(13,207,775)	(13,207,775)

STP Major Upgrade – Gwandalan

Prudency	🟡	The project is needed to address non-compliances with EPL 2647, and also to address growth. However, a lack of portfolio planning for STP assets covered under the EPL means that it is not clear that upgrades at Gwandalan STP are still needed if the upgrade at Charmhaven STP is also delivered.
Efficiency	🟡	It is not clear that the strategic context for the project has been fully considered, with a lack of justification for exclusion of options such as flow transfers to Mannering Park STP, which may offer a lower cost option. There is also a lack of explanation of contingency applied, and accompanying rationale.
Scope		Significant upgrades are needed to meet current/future demand as well as compliance with licence effluent quality requirements.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	32.8	37.8	6.0	-	-	76.6
Proposed delivery timeframe	Construction start: November 2026			Handover: July 2028		

Background

The Gwandalan STP was commissioning in 1986 with a nominal design capacity of 6,000 EP. The plant is currently operating above this threshold, servicing a population of 7,500 EP. This is forecast to increase to 15,000 EP ultimate capacity.

The plant was originally designed for a nominal capacity of 6,000 EP, comprising two sludge lagoons and IDEA tanks rated at 6,000 EP each. However, IDEA Tank 1 was decommissioned in 2013, reducing overall capacity to 6,000 EP. The current serviced population is estimated at 7,500 EP, exceeding design limits.

It is one of five STPs that discharge to Norah Head Outfall under the common EPL 2647. Under EPL 2647, there are no current load limits for individual plants: they are managed collectively under a bubble license. There have been several non-compliances with the EPL since 2018, which has resulted in the EPA requiring a Pollution Reduction Program (PRP) be implemented to redress the environmental damage.

Project need and timing

There are multiple needs identified in the project documentation provided to us, however not all of these are well-evidenced. The drivers identified include:121F

- Compliance: the annual pollutant loads exceed the EPL 2647 conditions which has led to EPA intervention via a PRP. CCC Water has identified that Gwandalan contributes approximately 5 per cent of the total volume discharged to the Norah Head outfall.
- Growth: insufficient treatment capacity has been identified as a critical issue for both current and future loads, with a projected requirement of 7,500 EP compared to the existing capacity of 6,000 EP. Population growth is encroaching around the treatment plant, and commercially zoned land nearby cannot be developed due to odour issues.
- Renewals: most of the mechanical and electrical equipment is the originally installed equipment from the late 1980s, meaning it is reaching it's the end of its useful life. CCC Water has also stated that there is currently a lack of redundancy, which limits the ability to perform maintenance on key assets.

In our view, the compliance requirement is not well-justified. While it is clear that there are breaches of the nitrogen and total suspended solids limits across the 5 STPs covered by EPL 2647, it is not clear that the Gwandalan project is required to address compliance issues. CCC Water has identified that it contributes approximately 5 per cent of the total discharge to the Norah Head outfall, while Charmhaven STP accounts for approximately 30 per cent. We have not sighted any evidence that considers whether the reduction in load from Charmhaven would be sufficient to achieve compliance with the current EPL requirements, nor whether if the Charmhaven project is completed, whether the upgrades at Gwandalan are required.

We have reviewed the Basis of Design Review and Acceptance Report prepared by GHD in 2025 and consider it provides sufficient evidence that the plant is servicing a population beyond its original design capacity. The report confirms that the 2025 load is approximately 7,709 EP, exceeding the plant's current

capacity, and forecasts population growth to 10,000 EP by 2046. However, we note that CCC Water has reported that IDEA Tank 1 was decommissioned in 2013, leaving only one operational IDEA tank and downrating the plant's capacity. We have not sighted any justification for why this decommissioning occurred, nor why redundancy was not addressed during the decommissioning process.

The decommissioning of IDEA Tank 1 in 2013 left only one operational IDEA tank, eliminating redundancy and limiting opportunities for maintenance and renewal of IDEA Tank 2. It is unclear why redundancy was not addressed during the decommissioning process or why the tank was removed.

Customer values

The Gwandalan STP meets customer values of reliable service through reducing noise/odour complaints and environmental/public health values through reducing non-compliances with EPL 2647. We understand that no community engagement process was required for this project as its primary driver relates to meeting regulatory requirements.

Optioneering

As part of the optioneering process, the potential to transfer flows to Mannering Park STP was considered due to its proximity and the possibility of repurposing existing effluent transfer infrastructure to convey raw sewage to an upgraded Mannering Park facility.

In 2023, AECOM undertook a high-level feasibility and optioneering assessment, which identified that the existing transfer system lacked sufficient capacity to manage wet weather flows from Gwandalan. Two alternatives were explored: installing a higher-capacity transfer system or converting Gwandalan into a wet weather storage and return facility. While the latter option was lower in cost, it introduced odour risks. CCC Water decided that pursuing this option was deemed unjustified due to the associated risks given uncertainty in the investigation and associated costing.

However, it remains unclear what the specific risk was and why this option was discounted, particularly as it appeared to offer a lower-cost and potentially more viable solution. The decision to exclude this alternative seems to have been made without a comprehensive investigation or clear justification.

A longlist of reasonable capital interventions was identified and refined to a shortlisted based on a net present cost (NPC) assessment by AECOM. Options were disregarded where they did not achieve Grade B biosolids stabilisation, though this warrants further clarification as we do not consider sufficient justification has been provided to support a requirement of Grade B biosolids stabilisation and consider that sending Grade C biosolids to landfill could offer a more cost-effective solution.

The shortlisted options included:

- Option 1 – MLE plus Digestor
- Option 2 – SBR plus Digestor
- Option 3 – MLE 20 plus Lagoon
- Option 4 – SLE plus Lagoon
- Option 5 – MLE only
- Option 6 – SBR only.

In May 2025, a technical review completed by NSW DCCEEW highlighted that the selection of MLE technologies over other alternatives was not adequately justified and that discounting the refurbishment of the existing IDEA tank lacked sufficient rationale. In response, GHD re-ran the optioneering process, considering refurbishment of the IDEA tank with a concrete liner (including aerobic digestion and dewatering) alongside construction of a new MLE bioreactor (including two clarifiers, aerobic digestion, and dewatering).

DCCEEW also recommended that CCC Water complete an assessment of the pollutant contribution from Gwandalan STP on the overall EPL load limits. DCCEEW considered that the contribution from Gwandalan is low compared to other plants covered under the EPL, which diminishes the need for more substantial

upgrades (such as MLE). DCCEEW considered that the preferred option of making the second IDEA reactor operational requires more detailed consideration.

GHD was engaged to undertake a review of the original optioneering for the Gwandalan project. The key outcomes of GHD's report were that it considered the comparative cost estimate of the MLE option, as documented in the original options report, appeared to be understated while the other IDEA/SBR option appear to be overstated. GHD also found that population estimates updated for the catchment area had resulted in much smaller future loads than what had been used in the original concept design.

In September 2025, GHD later revisited the optioneering for:

- Option 1 – Refurbish IDEA tanks with concrete liner including aerobic digestion and dewatering.
- Option 2 – Construct a new MLE bioreactor with two clarifiers, aerobic digestion and dewatering.

Options were evaluated using a MCA, incorporating weighting, scoring, and sensitivity testing, as well as NPC analysis. This process identified Option 1 (refurbish IDEA tanks) as the preferred solution.

We note that the options considered by GHD had a material cost difference ($38.4 million compared to $53.4 million). As part of the sensitivity analysis conducted, the cost parameter was tested via adjusting the weighting of the cost criterion as opposed to adjusting the assumed cost of the options. Given there was a cost difference between the options, this embedded a positive bias towards Option 1 as it was the lower cost item.

As the costing used to inform the MCA was consistent with a Class 4 estimate, we consider adjusting the cost parameters themselves within the existing MCA framework would have been more appropriate to identify whether there was a material difference between options. This would have been more representative of the inherent uncertainty in the cost estimates used to inform the optioneering process. We also consider applying a higher weighting on environmental performance may have been more appropriate as this links more to the next most important parameters (related to environmental performance).

Cost estimation

We were unable to reconcile the different costings for the project in the information provided to us and have therefore been unable to undertake a comprehensive review of the cost estimation process that underpinned the optioneering and CCC Water's 2026 submission to IPART.

The current cost estimate for the project was developed by a quantity surveyor based on the concept design completed by AECOM in 2024. That cost estimate included costs incurred to date and a forecast of approximately $4.5 million in 2025-26, covering detailed design and works for the effluent disposal system upgrade, wet weather ponds, clearing, grubbing and levelling, and construction of a new RE, demolition of the existing RE and RW infrastructure. This results in a total cost estimate of $103.2 million for the project, consistent with a Class 4 estimate. We understand that these costs may be being refined as part of the detailed design process, though it is not clear whether the $103.2 million reflects a more mature cost estimate or not.

The level of contingency applied in the cost estimate is approximately 21 per cent of the total project cost. We have not sighted the basis of the contingency nor a risk assessment for the project and are unable to determine whether this has been costed in line with standard industry practice. We do, however, note that since the maturity of the design is at a concept level, the estimated contingency may be understated as further information related to construction risk may emerge as part of the detailed design process.

Procurement

The procurement to date has only covered the detailed design. We understand that CCC Water has decided to employ a Construct Only approach, intending to go to market through a two-stage procurement process (first through an Expression of Interest process, following by a Request for Tender).

We note that a Construct Only approach introduces an interface risk between detailed design and construction. It is unclear why this method was chosen and why this risk was considered acceptable.

Review findings

We do not consider that sufficient investigations have been completed to fully justify the project need for the upgrade at Gwandalan. While we acknowledge that there are non-compliances with EPL 2647, there has been a lack of consideration of the impact of completing the Charmhaven project upgrade on compliance with nitrogen and total suspended solids discharge at Norah Head outfall. Charmhaven STP is estimated to contribute approximately 30 per cent of the total discharge of all 5 STPs under EPL 2647 and it is unclear whether the completion of that project would result in compliance with the requirements of EPL 2647.

Further analysis should be completed to understand whether the Gwandalan upgrades are required to meet compliance requirements once the Charmhaven project is completed. Similarly, Since Gwandalan is estimated to contribute 5 per cent of the total discharge of all 5 STPs under EPL 2647, it is unclear whether the project would materially contribute to improvements in compliance outcomes.

We further consider that the strategic context and potential operational solutions have not been fully considered, with a lack of justification for exclusion of options such as flow transfers to Mannering Park STP, which may offer a lower cost option. There is also a lack of explanation of contingency applied, and accompanying rationale.

As such, we consider that the lower bound capital estimate should exclude the Gwandalan STP upgrade on the basis that the project has not been sufficiently justified. Should further analysis be undertaken that demonstrates project need, we consider that further options assessments should be undertaken to determine the cost of transferring flows to Mannering Park STP and this should be considered against the current preferred option. We anticipate that the development of the Water and Sewer Master Plan would identify viable strategic flow transfer options once it is complete.

Our recommended adjustments are shown in Table 26.

Table 26 Recommended adjustments for Gwandalan STP upgrade

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	32,800,000	37,800,000	6,003,802	-	-	76,603,802	76,603,802
CCC Water total project costs	25,171,216	51,700,000	20,325,000			97,196,216	97,196,216
Total lower bound	-	-	-	-	-	-	-
Lower bound adjustment	(25,171,216)	(51,700,000)	(20,325,000)	-	-	(97,196,216)	(97,196,216)
Total upper bound	25,171,216	51,700,000	20,325,000	-	-	97,196,216	97,196,216
Upper bound adjustment	-	-	-	-	-	-	-

Water Reservoir New Asset – Bushells Ridge rd. Kiar

Prudency	🟡	A new reservoir at the location was identified as a result of hydraulic modelling done in 2008. We understand that this analysis has not been revisited since the initial study, and it is therefore not clear that this project is still needed. The project was initially scheduled for completion in 2016.
Efficiency	🔴	It is not evident that a robust cost estimate has been prepared ahead of project commencement. An initial costing was done in 2017, which has been escalated forward without reassessment. There is also a lack of detail in recent optioneering, and it is not clear that the least cost option or most fit-for-purpose option has been selected as the preferred option.
Scope		As part of hydraulic modelling undertaken in 2008, Kiar Ridge was identified as a strategic location for the construction of a new reservoir to enable servicing of an elevated area. This project involves the construction of a new drinking water reservoir as informed by this initial modelling, as well as a siting assessment undertaken in 2017.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	-	1.9	4.4	6.3	3.8	16.3
Proposed delivery timeframe					Commissioning: 2029	

Background

The Wyong Water Supply: Distribution System Review (April 2008) identified Kiar Ridge as the preferred site for a new 15 ML reservoir to be built which, based on the population forecasts at the time, would be sufficient capacity to service the area out to the 2051 planning horizon.

CCC Water states that the reservoir will take demand from the Kanwal Reservoirs and also provide contingency storage to the new elevated Kiar Ridge Zone. The new reservoir zone will be commissioned as further growth occurs within Bushell's Ridge (currently under rezoning and assessment by NSW Urban Development Program) and supplements the recently developed Warner Industrial Park. Without the reservoir, customers within the Kiar Ridge Zone will be supplied by a single transfer pipeline (via a Pressure Reduction Valve) and no second available source of supply.

Project need and timing

The project driver has been identified as growth. The project need was identified in hydraulic modelling completed in 2008, which identified a need to service the elevated Kiar Ridge Zone. We were not supplied any further documentation until a siting assessment completed in 2017. We understand from discussions with CCC Water that the reservoir was not constructed in line with timing presented in the 2008 study as the associated development within the Bushell's Ridge and Warner Industrial Park had not occurred.

In 2017, the siting assessment considered different reservoir considerations at the proposed site. We have not been supplied any further documentation that considers whether the reservoir is still required given revised population growth projections.

Customer values

This project meets the reliable service and effective planning community values by providing consistent water supply to the elevated Kiar Ridge zone at a good water pressure.

Optioneering

A site investigation study conducted in 2017 considered fifteen initial reservoir layouts for the Kiar Ridge location. The preferred option was a single 17.9ML reservoir. It is not evident that this project has been analysed in the context of the wider network subsequent to initial hydraulic modelling.

We understand, updated hydraulic modelling will be undertaken as part of the Central Coast Water and Sewer Master Plan to:

- Confirm the required reservoir volume and any potential for staging of capacity based on updated growth forecasts.

- Identify benefits to Kanwal reservoir operation in the future with increased demand and optimum reservoir zone delineation (Kiar/Kanwal boundary).
- Outline the role of the reservoir to facilitate network expansion to un-serviced properties in Jilliby (west of M1 Motorway) and potential to decommission Treelands reservoirs.

Cost estimation

The cost estimate prepared during the 2017 site investigation, based on the NSW Reference Rates Manual, has been used as the foundation for the proposed 2026 Determination cost. The original estimate included a 30 per cent contingency.

We understand that CCC Water has applied an additional contingency allowance in the 2026 Determination to account for risks such as potential land acquisition costs; however, the basis for this revised contingency has not been sighted.

Similarly, the methodology used to escalate the 2017 estimate to present-day dollars has not been provided. In our view, escalating a 2017 construction cost for a 2026 project is not appropriate, as the original estimate is unlikely to reflect current market conditions.

Without clear documentation related to the revised contingency allowance (including the specific risks considered and how these were quantified), we are unable to verify that the contingency is appropriate. However, we note that CCC Water has never completed a project of this size and scale before, and therefore we consider the application of a higher contingency as acceptable.

We also consider that the cost estimate for the project should be updated to reflect current market conditions or verified through current market benchmarks and applying industry-standard escalation methodologies. We consider that the proposed project costs are likely to be significantly different to the escalated 2017 cost estimate. Similarly, a detailed cost review should be undertaken to ensure the proposed budget reflects realistic construction costs for the 2026 Determination period delivery timeline.

Procurement

As the project is in early stages of design, a procurement strategy has not yet been developed. We consider this acceptable at this stage of project definition.

Review findings

We consider that insufficient investigation has been conducted to justify the need for a new water reservoir at Kiar Ridge. The original project need as defined in hydraulic modelling done in 2008 has not been revisited, and the urgency of this project is not apparent given the fact it was originally planned for completion in 2016. Further analysis should be completed to understand whether the Kiar Ridge reservoir project is required to meet growth requirements.

As such, we recommend that the lower bound of capital expenditure exclude the Kiar Ridge reservoir project and the upper bound include an allowance for a planning study (subsequent to modelling as part of the Water and Sewer Master Plan), inclusive of indirect costs. Our adjustments are set out in Table 27.

Table 27 Recommended adjustments for Kiar Ridge Reservoir project

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	-	1,880,270	4,387,296	6,267,566	3,760,539	16,295,671	16,295,671
CCC Water total project costs	Note: we did not receive a cashflow supporting this cost estimate.						10,000,000
Total lower bound	-	-	-	-	-	-	-
Lower bound adjustment	-	(1,880,270)	(4,387,296)	(6,267,566)	(3,760,539)	(16,295,671)	(16,295,671)
Total upper bound	-	235,000					235,000
Upper bound adjustment	-	(1,645,270)	(4,387,296)	(6,267,566)	(3,760,539)	(16,060,671)	(16,060,671)

Kincumber STP– Operational Improvements

Prudency	●	Urgent work is needed at Kincumber STP to address critical asset failures experienced. The plant is experiencing significant wear, corrosion and failures, and immediate action is needed to prevent further catastrophic failures.
Efficiency	●	A detailed assessment of strategic options has not been conducted, although it is noted that Kincumber STP is the largest plant in the relevant service area, and therefore redirection of flow to an existing STP is not possible. The cost estimate prepared for this project is based on in-house benchmarks from recent projects. The level of contingency applied is not well documented or justified.
Scope		This project involves repairs to Kincumber STP, which has recently experienced critical failures due to lack of adequate or preventative maintenance. These failures now contribute to extended downtimes and an increase in breaches of the plant's EPL.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	1.5	1.8	3.5	5.3	-	12.1
Proposed delivery timeframe	Construction start: January 2026					

Background

The Kincumber STP was originally designed with a 180,000 EP capacity. Currently, the plant is servicing approximately 145,000 EP. We understand that the operating capacity of the plant is limited by poor condition equipment. Historically, Kincumber STP has experienced failures and operational challenges, resulting in poor performance and numerous breaches of its Environment Protection Licence (EPL 1802). The issues at the plant are attributed to aging infrastructure, and poor maintenance in the past. The Kincumber STP Operational Improvements program is intended to address the issues by replacing or refurbishing components at the plant.

Kincumber STP has recently seen several issues with critical assets failing or requiring works due to lack of adequate or preventative maintenance performed over the past 5-10 years.

A number of these failures are now causing a large increase in unexpected downtime of key assets across the plant, with the potential for process implications becoming increasingly urgent. Kincumber STP has failed to meet its licence conditions as outlined in EPL 1802 for the past few annual return periods, with one major cause being the plant condition and assets failing to perform as designed.

The recent failures have already resulted in major and unexpected downtime across critical assets, leading to plant performance issues and an increase in odour complaints from the local community. There are also several safety incidents that have occurred because of the increased manual handling and workarounds required to operate the plant without key equipment operating as designed.

Project need and timing

The primary drivers of the project are stated as Growth and Compliance. CCC Water has stated that non-compliances have been caused by asset failures, rather than overloading from increased incoming flow. CCC Water has a mandatory legal obligation to operate Kincumber STP under the conditions specified within EPL 1802. Failure to comply with this licence poses a risk to customers and surrounding environments.

While Growth has been stated as a driver, we do not consider that this project is growth driven. The plant is not currently operating at its nameplate capacity due to equipment failures, but the nameplate capacity is sufficient to service the current connected population. The most recent strategic review of the plant capacity and catchment forecast found that the plant has capacity out to the 2051 planning horizon.

The primary issues which the program aims to address are operational challenges caused by aged and failing assets, and compliance issues, as the plant has breached its EPL multiple times historically. As well as this, four pollution incidents have been reported to the EPA in 2024-25. Non-compliances of EPL 1802 have been occurring on an annual basis since 2006. The last 5 years of non-compliances is summarised in Table 28.

Table 28 Five-year summary of historic non-compliances at Kincumber STP

	2020-21	2021-22	2022-23	2023-24	2024-25
Non-compliance summary	• Total suspended solids and total oil annual load exceedances. • Total suspended solids during rainfall event exceeding limit. • Daily volume limit for outfall tunnel exceeded 5 times. • Written reporting conditions not satisfied on 2 occasions.	• Total suspended solids annual load exceedance. • BOD and Total Suspended Solids exceeding concentration limits 2 times. • Daily volume limit for outfall tunnel exceeded 3 times. • Written reporting conditions not satisfied on 3 occasions.	• Total nitrogen annual load exceedance. • Daily volume limit exceedance 3 times. • Written reporting conditions not satisfied.	• Total nitrogen annual load exceedance. • Daily volume limit exceedance.	• Total suspended solids concentration limit exceedance. • Daily volume limit exceedance.

The operational and regulatory challenges at Kincumber STP require urgent attention. Due to this, a prioritised approach is taken to systematically deliver each discrete renewal project based on level of risk and urgency. This process, however, is not well documented in the information provided. The discrete projects included within the program are summarised in Table 29.

Table 29 Cost of improvement projects within the 2026 Determination period

Project	Description	Capital expenditure in 2026 Determination Period
RAS Pumping Station	Installing new submersible pumps in place of two Archimedean screw pumps which have reached end of life and experienced failure.	1,760,792
Primary Sedimentation Tank	Repairing assets following a full travelling bridge derailment and various areas of damage.	6,983,997
Odour Control System	Repairs to the odour control facility, which has not been maintained well and is now essentially non-operational, to bring it back to operation.	276,604
Grit Removal System	Trials of a new grit system to replace currently impacted grit removal system.	3,334,485
Clarifiers	Failures in the clarifiers have resulted in EPL non-compliances. This project includes renewals of these clarifiers to address compliance issues.	7,998,592
Inlet Screenings Area Miscellaneous Equipment and Guarding	Renewals to equipment in poor condition.	258,852
Lime Dosing Refurbishment	Renewals to equipment in poor condition.	699,296
Site Lighting	Improvements to site lighting to address site safety concerns.	71,746
Aeration Tanks Diffuser Replacement	Renewals to aeration tank diffuser membranes, which are nearing end of life.	240,967
	Total	**21,625,331**

Customer values

This project aims at ensuring wastewater is treated to the required level, to prevent health impacts on customers and workers, and to protect natural environments. Thus, it aligns with CCC Water's quality treatment and environment customer values.

Optioneering

Strategic options were considered at a high level, such as redirecting flows from Kincumber STP to an adjacent STP in the area. Kincumber STP is significantly larger than the other plants in the catchment, and thus redirection options were deemed not feasible.

Options assessments were conducted for the RAS pumping station upgrade, the grit tank refurbishment, and the primary sedimentation tank renewal projects. For the remainder of the discrete projects, a direct asset replacement or single solution is adopted. The optioneering undertaken for these projects has considered multiple solutions, including adoption of new technologies where appropriate.

The staging of the Kincumber works reflect a risk-based approach based on prioritising what is most urgent or critical for renewal. Options have been considered using a high-level costing and there are currently options studies underway, including a current trial, which will inform the preferred options for future works.

Cost estimation

The cost estimates we have sighted for the Kincumber STP project appear to be based on CCC Water's internal database of completed project costs. The majority of benchmark costs used were completed in 2025, and we therefore consider this to be a reasonable basis of cost estimation. However, we were unable to determine whether the benchmark costs contained contingencies and provisional sums. As such, we recommend that the database be updated to clearly specify the basis of the costs, and a methodology be developed to ensure a forecast of contingency is commensurate with the level of risk in the project. Similarly, allowances for provisional sums should be clearly identified.

Cost estimates have been prepared for all nine discrete projects within the Kincumber STP Operational Improvements package.

Table 30 Packages of work by urgency and cost estimation approach for Kincumber STP Operational Improvements

Project	Urgency	Cost estimation approach
RAS Pumping Station	Civil and mechanical – Critical Electrical – Important	Preliminary cost estimate developed during Detail Design, applying a 40 per cent contingency. It is not clear to what level of accuracy this cost has been developed.
Primary Sedimentation Tank	Civil and mechanical – Critical Electrical – Major importance	An order of magnitude cost was developed for addressing sludge and scum pump issues. It is understood that the majority of the cost for this project lies within the structural upgrade piece. The cost estimation approach of this component is not clear.
Odour Control System	Civil and mechanical – Minor importance Electrical – Important	Cost estimation approach or level of accuracy is not clear.
Grit Removal System	Civil and mechanical – Major importance Electrical – major importance	"First pass" budget estimates were prepared. A contingency of 40 per cent is applied.
Clarifiers	Civil and mechanical – Major importance Electrical – Important	The cost estimation approach or level of contingency applied is not clear.
Inlet Screenings Area Miscellaneous Equipment and Guarding	Civil and mechanical – Critical Electrical – Major importance	The cost estimation approach or level of contingency applied is not clear.
Lime Dosing Refurbishment	Civil and mechanical – Critical Electrical – Critical	The cost estimation approach or level of contingency applied is not clear.
Site Lighting		The cost estimation approach or level of contingency applied is not clear.
Aeration Tanks Diffuser Replacement	Civil and mechanical – Important Electrical – Major Importance	The cost estimation approach or level of contingency applied is not clear.

There is an overall lack of clarity in the cost estimation approach adopted for each discrete project. There is a disparity between cost estimates included in the Major Project Business Case and the costs within the 2026 capital submission. This is summarised in Table 31.

Table 31 Variance in cost between 2026 capital submission and Major Project Business Case ($M)

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Major Project Business Case Cost	6.1	6.8	4.3	4.4	0.0	21.6
2026 Capital Submission	1.5	1.8	3.5	5.3	0.0	12.1
Variance	-4.6	-5.0	-0.8	0.9	0.0	-9.5

Procurement

Initial surveys and site investigations are being delivered via the Engineering Services Panel. This panel is made up of two partners. The construction phase of the discrete projects will be delivered by CCC Water's delivery panels, through either construct only, or design and construct models.

Review findings

We note that the need for renewals in several areas at Kincumber STP is not a new issue. For example, a 2006 condition assessment recommended that the bridge rails in PST 1 were replaced within 12 months. It is not clear why this renewal has not been conducted to date.

We accept the need for urgent renewals at Kincumber STP. Plant performance has been significantly impacted as a result of aging infrastructure and poor maintenance historically. This has led to increased frequency of asset failures and compliance breaches. The Kincumber STP Condition Assessment undertaken in April 2025 describes all discrete renewals or improvements that are required, grading them in terms of urgency.

The urgency rating system is well documented, as summarised in Table 32, however it is unclear which projects have been included within the 2026 Capital Submission.

Table 32 Urgency rating system applied within the Kincumber STP Condition Assessment

Urgency rating		Description
1	Incidental – No action (20 years plus)	The item is not important to the performance or operation of the asset. The item is not important for safety, security and environment.
2	Minor importance – Follow-up needed (10 years plus)	The item is a minor component to the performance or operation of the asset. The item has minor safety or environmental consequences.
3	Important – Needs attention (5-10 years)	The item is an important component to the performance or operation of the asset. The item has important safety or environmental consequences.
4	Major importance – Needs higher attention (within 2 years)	The item is a major component to the performance or operation of the asset. The item has major safety or environmental consequences.
5	Critical – Needs urgent attention (immediately)	The item is essential to the performance or operation of the asset. The item is critical to the safety and environment at the asset.

Given the criticality and urgency of these works, and that CCC Water's approach to optioneering is demonstrating good industry practice, we consider the proposed expenditure for Kincumber STP to be prudent. As such, we do not consider any adjustments are required to the Kincumber STP project cost.

Table 33 Recommended adjustments for the Kincumber STP Operational Improvements Upgrade

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	1,500,000	1,800,000	3,525,000	5,275,000	-	12,100,000	12,100,000
CCC Water total project costs	6,118,641	6,811,571	4,328,454	4,436,666	-	32,206,658	21,695,332
Total lower bound	6,118,641	6,811,571	4,328,454	4,436,666	-	21,695,332	21,695,332
Lower bound adjustment	-	-	-	-	-	-	-
Total upper bound	6,118,641	6,811,571	4,328,454	4,436,666	-	21,695,332	21,695,332
Upper bound adjustment	-	-	-	-	-	-	-

Sewer Pump Station and Rising Main Upgrade – Hamlyn Terrace (CH12-13)

Prudency	●	The assets are in poor condition and are approaching end of life. Failures and hydraulic performance issues have been experienced, and there is an urgent need for renewal.
Efficiency	●	There is limited evidence that a rigorous optioneering process was undertaken, with the options assessment focusing purely on route alignment.
Scope		Additional rising main infrastructure to increase system capacity within the Charmhaven catchment, which includes duplication and extension of existing mains, and an upgrade to SPS CH12.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	1.7	4.0	-	-	-	5.7
Proposed delivery timeframe	Project development: early 2026				Project completion: late 2028	

Background

The Charmhaven catchment is forecast to experience growth, necessitating the upgrade of existing infrastructure. Sewer Pump Station (SPS) CH12 and SPS CH13 are two key pumping stations in the Charmhaven catchment. Both pump stations are at their theoretical capacity and upgrades works are required to accommodate flows. SPS CH12 has experienced six overflows during peak wet weather events since 2020, while SPS CH13 has experienced one.

SPS CH13 discharges into SPS CH12 via a DN600 rising main, with SPS CH12 discharging into Charmhaven STP with a DN450 DICL rising main. SPS CH12 is experiencing a greater number of overflows due to SPS CH13 discharging into SPS CH12 a higher flowrate than the capacity of SPS CH12.

Additional rising main infrastructure has been proposed to increase the system capacity to cater for future growth in the catchment including the following:

- SPS CH13 DN600 rising main to be extended through to Charmhaven STP to reduce the flows coming into SPS CH12.
- SPS CH12 rising main to be duplicated, with a new DN600 rising main from SPS CH12 to Charmhaven STP. SPS CH12 will then pump through the parallel rising mains, the existing DN450 and the new DN600. This will reduce the dynamic head on the SPS CH12 pumps and increase the station flow rate capacity.

Further to the above, in 2024, AECOM undertook a condition assessment of 4.3km of the CH12 SRM, a DN450 Ductile Iron Cement Lined (DICL) pipe installed in 1993. It extends from Hamlyn Terrace to Charmhaven STP. This SRM has had three historical failures occurring in 2015, 2016 and 2021 causing

sewage spills. One section of main was noted as having a RUL percentage of 5-10 per cent due to external corrosion. AECOM recommended two immediate renewal options for this section of SRM.

There are multiple needs identified in the project documentation provided to us. The drivers identified include:

- Compliance: reduce the risk of EPL non-compliances, reduce the number of reportable pollution and wet weather overflow incidents and ensure ongoing compliance with WHS legislation in the SPS CH12 and SPS CH13 catchment.
- Renewals: Condition assessments conducted by AECOM note the RUL percentage of 5-10 per cent along 1.3km of the main due to external corrosion. Resulting in reduction of the risk of costly reactive repairs through possible breaks in the compromised section of existing CH12 SRM and the risk to the environment from possible future sewer main breaks.
- Growth: Service major growth within the surrounding catchments including Warnervale, Hamlyn Terrace, Woongarrah while minimising the risk of wet weather overflows.

The timing of the need has been provided across various documents and include the following:

- SPS CH12 is operating over capacity and hence during wet weather has significant overflows. The population SPS CH12 services exceeds NSW Public Works design standards.
- Hydraulic performance is currently impacted due to the condition if the existing asset. Sewer main breaks and chokes have been trending outside of target asset performance.
- The consequence of failure has been considered as high on the PMCA tool.

Customer values

The SPS CH12 and SPS CH13 upgrades meets customer values of improving environmental/public health outcomes through reducing wet weather overflows and sewer discharge from possible sewer main breaks.

Optioneering

Options assessments were conducted for an upgrade of SPS CH12, the CH12 SRM duplication and CH13 SRM extension and renewal/rehabilitation of the compromised section of existing CH12 SRM.

In 2020, Jacobs undertook preferred route assessment for both the proposed DN600 CH13 SRM and the then DN450, now DN600 CH12 SRM. The assessment identified four route options for the SRM and assessed the relative advantages and disadvantages of each option. Specific attention has been given to environmental factors and required future environmental studies.

Four alignments options were explored as part of the assessment. These options were developed considering horizontal alignment and vertical alignment assessments, environmental and geotechncial conditions. Options were evaluated considering relative advantages and disadvantages, and during a Route Selection Workshop the preferred option was selected.

The following options were considered:

- Option 1 - Utilises existing in-ground infrastructure. Follows the Western side of the wetland
- Option 2 - Minimum possible amount of pipework
- Option 2a - Same horizontal alignment with an underbore under the high point along Hiawatha
- Option 3 - Runs along the Eastern edge of the wetland reserve
- Option 4 - Avoids the issues of the potential environmental sensitivity of the wetlands by running exclusively in road reserves.

Minutes and presentation content from the Route Selection Workshop was not included in the information provided. The preferred route assessment anecdotally notes a review of analysis criteria weighting, option

scoring and a preferred option identification. This process identified Option 1 as the preferred route for the CH12 duplication and Option 2 was identified as the preferred route for the CH13 main augmentation.

Jacobs states that the order of magnitude cost estimates for option comparison effectively showed negligible difference in cost between all options, however costs were not provided. It is also noted that the capital cost portion of the assessment only considered the cost of the DN450 SPS CH12 duplication. It was also noted that, it would be reasonable to expect the new SPS CH13 rising main to cost 30-50 per cent more (than CH12 SRM)

As MCA criteria and weighting, and option scoring and costings have not been provided, we cannot confirm the validity option the optioneering process. Of the options provided one was deemed to be not feasible, and the preferred option was a combination of Option 1 and 2. This does not represent adequate options consideration.

Sewer Pumpstation

Several options were identified for the upgrade of SPS CH12 including the following:

- Do nothing
- Upsize Pump Impellers in current pumps
- Upsize pump impellers in current pumps and install a matching fourth pump
- Install new pumps.

Options discounted were:

- Barometric loop removal at CH12 rising main end. Discarded as ensures the discharge location of the rising main is the highest point. If removed, a large portion would drain to the discharge point each time the pump station stopped causing operating issues, odour and cement lining degradation associated with H2S issues.
- Installing "Storm Pumps" where 2 smaller dry weather pumps and two larger wet weather pumps are installed. This was discounted as comparable results can be provided without a mismatch of pump units. Arranging new pumping systems where different sized pumps may need to pump in parallel is not recommended as it is difficult to ensure both pumps operate at suitable efficiency points along their curves.
- Operating pumps at 60Hz - install Xylem N series pumps with VSDs and run at 60Hz (instead of 50Hz). Risk of overheating and reducing pump design life. Also requires upgrades to the switch room.

The preferred option selected was an upgrade of pumps and installation of 4th pump at SPS CH12 and Electrical/Mechanical Upgrade at SPS CH12.

Cost estimation

We have been unable to validate the cost estimation that was used during the optioneering phase. An order of magnitude estimate was developed by Jacobs for the costing to determine the relative cost between options It is noted that the cost difference between the SRM options is negligible and CH13 SRM is to cost 30-50 per cent more than CH12 SRM.

An approximate cost per metre ($12,000/m) was developed based on the cost of West Gosford major sewer rising main cost estimate. This reference project was of the same diameter as this project and involved a mixture of trenched and trenchless sections. We consider this method to be a valid estimation approach for a pre concept design phase estimation.

Costs as specified in the Project Initiation Brief (PIB) are set out in Table 34.

Table 34 Cost estimate from the PIB for Hamlyn Terrace

Equipment And Materials	Unit	Quantity	Rate ($)	Total ($)
New DN600 duplicate sewer rising main (CH12 SRM)	m	3,800	12,000	45,600,000
Renewal/replacement of existing DN450 DICL main (possibly reline)	m	1,300	2,000	2,600,000
Upgrade of pumps and installation of 4th pump at SPS CH12	Each	4	100,000	400,000
Electrical/Mechanical Upgrade at SPS CH12	LS	1	200,000	200,000
External Contracts Services And / Or Labour	**Unit**	**Quantity**	**Rate ($)**	**Total ($)**
Engagement of consultant for options assessment and concept design (underway)	LS	1	650,000	650,000
Engagement of consultant for detail design	LS	1	2,407,500	2,407,500
Total Project Budget Requirement				**48,800,000**

We note that this cost estimate excludes the new DN600 bypass sewer rising main (CH13 SRM) as it is currently uncertain if this main (or portions of) are required to be constructed in conjunction with CH12 SRM. CCC Water will confirm this at Gate 0 post options and concept design.

We have not sighted the basis of the contingency nor a risk assessment for the project and are unable to determine whether this has been costed in line with standard industry practice. We do, however, note that since the maturity of the design is at a concept level, the estimated contingency may be understated as further information related to construction risk may emerge as part of the detailed design process.

We further note a variance between the cost estimate developed for the project and the proposed capital costs in the 2026 capital expenditure proposal developed by CCC Water. These are set out in Table 35.

Table 35 Variance in cost between the project cost estimate and the 2026 capital proposal

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Project initiation brief for Hamlyn Terrace	2.4	13.7	32.0	-	-	48.2
2026 Capital Submission	1.7	4.0	-	-	-	5.7
Variance	-0.8	-9.7	-32.0	-	-	-42.5

We were unable to reconcile the different costings for the project in the information provided to us and have therefore been unable to undertake a comprehensive review of the cost estimation process that underpinned the optioneering and CCC Water's 2026 submission to IPART.

Procurement

CCC Water are yet to undertake procurement of any design or construction services. We understand that CCC Water intends to utilise the Major Works Pannel (which aligns with their procurement policy – contract value over 10 million) and implement a Design and Construct (D&C) contract.

CCC Water have noted that they will assess contractors based on their capability to undertake Horizontal Directional Drilling (HDD), their experience with similar assets, resource mobilisation, and commitment to innovation and sustainability, and comprehensive understanding of project risk.

Review findings

There is sufficient evidence to justify the need of the project, the condition of the existing assets and growth in the Charmhaven catchment increases the risk of main failures and SPS overflows. Addressing these needs aligns with CCC Water Community Strategic Plan.

Further evidence should be provided to identify justification for excluding DN600 bypass sewer rising main (CH13 SRM). We note CCC Water are currently uncertain if all (or portions) of this main is required to be

constructed in conjunction with CH12 SRM. CCC Water note that this will be confirmed at Gate 0 post options and concept design. Assuming the West Gosford Major SRM $/m rate is applicable, the potential additional cost is $50 million.

It is our assessment that the condition of the asset requires remedial action. It is our view that CCC Water should revise their optioneering assessment with accurate costings. Once this has been undertaken, outcomes should be reported upon and the preferred option justified. The current optioneering outcome and 2026 Capital submission cannot be deemed valid

Our recommended adjustments are to adopt the total project costs for Hamlyn Terrace based on the relevant asset class business case.

Table 36 Recommended adjustments for the Hamlyn Terrace upgrades

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	1,652,482	4,021,039	-	-	-	5,673,521	5,673,521
CCC Water total project costs	2,407,500	13,722,750	32,019,750			48,150,000	48,150,000
Total lower bound	2,407,500	13,722,750	32,019,750	-	-	48,150,000	48,150,000
Lower bound adjustment	-	-	-	-	-	-	-
Total upper bound	2,407,500	13,722,750	32,019,750	-	-	48,150,000	48,150,000
Upper bound adjustment	-	-	-	-	-	-	-

Water Security Assets

Prudency	🔴	The proposed expenditure is for the continuation of planning work for new water supplies, as well as for detailed design of new non-drinking recycled water augmentations. It is not clear how these investments link to water security, and there is apparent overlap between this program and the groundwater renewal program.
Efficiency	🟡	The scope for this phase of works is not clearly articulated, and the rationale for prioritising these investments is not well defined.
Scope		This program includes investigative and planning work to identify augmentations to the potable water supply. The proposed expenditure allows for detail design of recycled water treatment enhancements.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	-	-	0.04	0.04	2.0	2.1
Proposed delivery timeframe					Commence recycled water detail design: 2030	

Background

The CCWSP identified options for augmenting the potable water supply with the aim of improving water security. Groundwater augmentation was initially identified as a preferred augmentation but has since been put into question as PFAS contamination has emerged as a significant risk to this water source. The works within this program align with the preferred portfolio identified within the CCWSP.

Following the identification of the PFAS risk, upgrades to the Woy Woy Groundwater scheme have been deferred until necessary water quality investigations have been completed. The focus of this program has instead shifted to prioritising the detail design of recycled water upgrades to ensure compliance with tightening regulatory standards and increase utilisation of recycled water supplies.

Project need and timing

In light of the identification of PFAS risks associated with existing groundwater supplies, expenditure towards investigating alternate water supplies is considered prudent. The CCWSP states that groundwater supplies were originally expected to be able to contribute approximately 5 MLD of drinking water. It is not

clear, however, what the true gap is between supply and demand, given that Mardi WTP is currently being upgraded to be able to supply up to 130 MLD.

We understand that allowance for groundwater upgrades is included within the proposed expenditure, yet we do not accept this as water security-driven expenditure, given the emerging PFAS water quality risk.

Customer values

The water security program aligns with the reliable service, affordability and effective planning customer values. A key focus of the CCWSP is to prioritise the most cost-efficient options to achieve value for money and affordability.

Optioneering

The strategic optioneering undertaken in the CCWSP considered a range of operational and infrastructure options. Infrastructure solutions considered in the shortlist are:

- Dam enlargement
- Desalination
- Groundwater
- Purified recycled water for drinking
- Rainwater tank scheme
- Recycled water (non-drinking)
- Water sharing between regions
- Water transfers.

We have not sighted specific detail about the groundwater upgrades included within this program, but there is no evidence to justify their inclusion as water security assets.

Cost estimation

The water security costs included within the 2026 Capital Submission are made up of two distinct projects, as summarised in Table 37.

Table 37 Proposed expenditure on water security assets from the 2026 capital proposal

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Recycled Water for Water Security - Region Wide	-	-	-	-	1,913,991	1,913,991
Groundwater Capacity Upgrades for Water Security - Region Wide	-	-	39,785	39,785	85,304	164,874
Total	**-**	**-**	**39,785**	**39,785**	**1,999,295**	**2,078,865**

The methodology for estimating these costs is not documented in detail. It is not clear whether contingency has been allowed for in the cost estimates put forward in the submission.

We understand that the recycled water expenditure included in the final year of the 2026 Determination period is a cost for detail design of recycled water upgrades.

Review findings

The proposed expenditure is for the continuation of planning work for new water supplies, as well as for detailed design of new non-drinking recycled water augmentations. It is not clear how these investments link to water security, and there is apparent overlap between this program and the groundwater renewal program.

In response to our draft report CC Water provided us with the Technical Report – Supply System Modelling. We note a key assumption in the modelling is that recycled water will provide 1.1 MLD constant supply. We were unable to verify how the number was built up from with the CCWSP or the technical report, in order to satisfy ourselves exactly what capital investments would be funded for recycled water and that it would be prudent to progress those investments.

We note that there are variations across strategic documents in terms of population forecasts, notably between the CCWSP and the Central Coast Regional Plan 2041, and we are unable to verify the currency of the demand assumptions within the CCWSP.

Because pre-planning (such as clear demand assumptions aligned with growth forecasts, quantification of the PFAS risk) has not occurred to demonstrate that the project is needed, we recommend that the water security assets program be removed from both the upper and lower bound capital forecast. Our recommended adjustments are shown in Table 38.

Table 38 Recommended adjustments to the water security assets program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	-	-	39,785	39,785	1,999,295	2,078,865	2,078,865
CCC Water total project costs						-	-
Lower bound adjustment	-	-	(39,785)	(39,785)	(1,999,295)	(2,078,865)	(2,078,865)
Total lower bound	-	-	-	-	-	-	-
Upper bound adjustment	-	-	(39,785)	(39,785)	(1,999,295)	(2,078,865)	(2,078,865)
Total upper bound	-	-	-	-	-	-	-

Groundwater Renewal Program – Region Wide

Prudency	The identified program of works is based on CCC Water's Groundwater AMP, which draws on an approach that is aligned with the IPWEA International Infrastructure Management Manual (IIMM). Using the life-constrained ratings that are broadly consistent with the IIMM, the AMP data indicates that just over 10 per cent of assets are in very poor or poor condition, the majority are in fair condition, and only a small proportion (around 1–2 per cent) are in good condition. This results in a theoretical condition rating that may not be realised in practice. In practice, an asset can be technically life expired but operating at a similar level to a new asset, depending on historic maintenance interventions and operating conditions, among other factors. CCC Water has provided a 'smoothed' replacement profile which we consider is in principle appropriate to support efficient asset management planning. However, we have not sighted clear documentation related to the prioritisation and programming of renewals based on risk and criticality.
Efficiency	We were unable to verify the prioritisation of groundwater sites in the project documentation supplied to us and are unclear whether the prioritisation is appropriate. The proposal costs are also materially different to the recommended costs in the AMP. The justification of the cost difference was not clearly demonstrated, nor the risks clearly articulated for proposing a lower expenditure amount. While CCC Water has indicated there is a step change in costs related to beginning a proactive maintenance regime, we do not consider the use of replacement costs an appropriate measure of proactive maintenance costs. Further, proactive maintenance costs may be operating expenditure and therefore not included in the capital submission. Absent this data, we have been unable to verify the costs of this program.
Scope	The groundwater scope was spread across three program priorities[126]: • Maintaining existing supply at Central Coast Stadium (Grahame Park) via renewal of mechanical and electrical assets. • Renewal of Bangalow Creek bore field mechanical and electrical assets. • Woy Woy groundwater bores subject to emerging PFAS risks and WA investigations including treatment train assessment.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	0.4	0.3	0.04	0.4	0.1	1.1
Proposed delivery timeframe	We did not sight evidence related to the proposed delivery timeline of the groundwater renewal program, outside of the proposed expenditure forecast.					

[126] CCC Water interview presentation slides.

Background

Groundwater forms part of the existing water supply scheme and is used differently depending on the system. It can be transferred into surface storage or treated at groundwater treatment plants. There is a major facility at Woy Woy, primarily for drought contingency, and another at Gosford Stadium, which treats groundwater and has the option to process stormwater for irrigation and toilet use. Gosford Stadium also includes a tanker filling point for non-potable water.

The Central Coast Water Supply Strategy (CCWPS) assumes existing groundwater resources can provide up to 5 ML/day (including 4 ML/day from the Woy Woy scheme) during average climate years, and 2 ML/day during dry conditions. This augmentation option is triggered in 2035, when average daily water demand for the Central Coast reaches 92 ML/day.

The Woy Woy groundwater scheme, established in 2006–07 during the Millennium Drought, consists of approximately a dozen production bores and a dedicated water treatment plant. It has operated primarily as a drought management measure, triggered when Mangrove Creek Dam storage falls below 50 per cent. Historical data shows limited operation and capacity: the maximum daily output was 3.1 ML/day for one day in September 2010, with most of 2010 below 2.5 ML/day. During the 2017–20 drought, output did not exceed 2 ML/day.

This is a relatively small asset class for CCC Water, with a total gross replacement value of approximately $27 million. There are nine sites across the region, each comprising a bore with casings to keep the hole open, pumps to extract water, and associated electrical systems, instrumentation, water quality monitoring, and a series of pipes integrated within the water main asset class.

Many of these assets were installed during the Millennium Drought in the early 2000s and are now reaching 20–25 years of service life. Expanded use of groundwater is identified as the first augmentation step in the preferred supply portfolio by 2032, with most of the increase expected from the Woy Woy scheme. This expansion would focus on automation improvements at the WTP to enable more permanent operation. However, an emerging PFAS risk has placed the Woy Woy scheme on hold while further investigations are completed to determine an appropriate solution.

Project need and timing

The Groundwater Renewal Program is a ten-year program outlining the actions required for groundwater assets to deliver an agreed level of service in the most cost-effective manner, while identifying associated risks over the planning horizon.

The identified program of works is based on CCC Water's Groundwater AMP, which draws on an approach that is aligned with the IPWEA IIMM. Using the life-constrained ratings that are broadly consistent with the IIMM, the AMP data indicates that just over 10 per cent of assets are in very poor or poor condition, the majority are in fair condition, and only a small proportion (around 1–2 per cent) are in good condition. This results in a theoretical condition rating that may not be realised in practice. In practice, an asset can be technically life expired but operating at a similar level to a new asset, depending on historic maintenance interventions and operating conditions, among other factors.

CCC Water has provided a 'smoothed' replacement profile which we consider is in principle appropriate to support efficient asset management planning. However, we have not sighted clear documentation related to the prioritisation and programming of renewals based on risk. Each asset should be assigned a criticality level and evidence of the asset being unserviceable (such as operational evidence or condition assessments) should be used by CCC Water to ensure the program is appropriately staged and costed.

Customer values

CCC Water have stated that its customers place a high value on having a diverse water resource portfolio and for avoiding reliance on a single source. Where there is demand for water that does not require drinking water standards, they expect these opportunities to be utilised.

There is also a strong need to control reactive maintenance costs and transition toward a more preventative maintenance strategy. In addition, electrical equipment must be maintained to meet Work Health and Safety (WHS) requirements, while ongoing asset renewals remain essential to sustain service levels.

We note that customer satisfaction measures have been identified within the AMP, but it is unclear how these metrics directly inform prioritisation and the appropriateness of utilising these metrics for program planning for non-potable water sources.

Optioneering

The AMP incorporates a demand management strategy and considers climate conditions that may impact resilience and supply. The program is driven by AMP assumptions and FAR descriptions. It is an asset class program intended to fund potential future works. No specific projects have been initiated, and therefore no detailed options assessments or condition reports have been completed. We have assumed that the current options assume like-for-like replacement.

The scope of the program includes civil, electrical, instrumentation, and mechanical replacements at groundwater bore sites. No detailed condition assessments have been undertaken, and the current prioritisation plan is based on a 'core' Asset Management (AM) approach aligned with the International Infrastructure Management Manual. This is a top-down methodology where analysis is applied at the system or network level rather than at individual asset level. We recognise that the International Infrastructure Management Manual is a well-established guidance for asset management, however,

Most assets are rated as fair, with a RUL of between 20 per cent and 50 per cent. Priority sites include the Gosford Stadium (asset value $340k) and Bangalow Creek borefield mechanical/electrical assets (FAR $1.12 million), which can transfer water to Mardi Dam for treatment at Mardi WTP. We did not sight evidence related to the prioritisation of these sites.

Cost estimation

The cost estimates for the groundwater renewal program are based on the current replacement cost value, which we consider appropriate for renewals or major refurbishments. However, the proposed costs for the 2026 Determination are materially lower than the values in the AMP and the rationale for this has not been sufficiently justified. The differences are shown in Table 39.

Table 39 Renewals costing based on the Groundwater AMP compared to 2026 Capital Submission

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
CCC Water proposed 2026 Determination	353,436	277,763	41,537	358,281	65,500	1,096,517
CCC Water total project costs	2,985,944	-	-	1,443,490	-	4,429,434

We also note that we have not been able to validate the extent of proactive maintenance costs contained in the AMP budget. We do not consider that replacement cost is an appropriate method for valuing proactive maintenance, and we would expect that some proactive maintenance would be expensed rather than capitalised, depending on the activity.

Procurement

We understand that no procurement has occurred to date for this program and were not provided any procurement documentation by CCC Water. As such, these considerations have not formed part of our evaluation of the program.

Review findings

The identified program of works is based on CCC Water's Groundwater AMP, which draws on an approach that is aligned with the IPWEA IIMM. Using the life-constrained ratings that are broadly consistent with the IIMM, the AMP data indicates that just over 10 per cent of assets are in very poor or poor condition, the majority are in fair condition, and only a small proportion (around 1–2 per cent) are in good condition. This results in a theoretical condition rating that may not be realised in practice. In practice, an asset can be

technically life expired but operating at a similar level to a new asset, depending on historic maintenance interventions and operating conditions, among other factors.

CCC Water has provided a 'smoothed' replacement profile which we consider is in principle appropriate to support efficient asset management planning. However, we have not sighted clear documentation related to the prioritisation and programming of renewals based on risk and criticality.

We also recognise that there is a step-change in CCC Water's approach to maintenance, as they move towards a proactive approach vs. a reactive approach which accounts for some of the step change in expenditure. However, we do not consider that sufficient evidence is contained in the AMP or the proposal to demonstrate the rationale for the proposed program.

We were unable to verify the prioritisation of groundwater sites in the project documentation supplied to us and are unclear whether the prioritisation is appropriate. The proposal costs are also materially different to the recommended costs in the AMP. The justification of the cost difference was not clearly demonstrated, nor the risks clearly articulated for proposing a lower expenditure amount.

As such, we recommend that the groundwater renewal program be excluded, and an allowance be made to undertake a PFAS investigation study. These are set out in Table 40.

Table 40 Recommended adjustments to the Groundwater Renewal Program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	353,436	277,763	41,537	358,281	65,500	1,096,517	1,096,517
CCC Water total project costs	2,985,944	-	-	1,443,490	-	4,429,434	4,429,434
Total lower bound	225,000	-	-	-	-	225,000	225,000
Lower bound adjustment	(2,760,944)	-	-	(1,443,490)	-	(4,204,434)	(4,204,434)
Total upper bound	225,000	-	-	-	-	225,000	225,000
Upper bound adjustment	(2,760,944)	-	-	(1,443,490)	-	(4,204,434)	(4,204,434)

Water Main Renewal Program – Region Wide

Prudency ●	The program is demonstrated by renewing ageing assets that are failing and resulting in mains breaks / outages that are beyond the targets. We understand that CCC Water consulted its customers regarding the appropriate targets, and customers requested that the targets be held for the 2026 Determination period.
Efficiency ●	We consider CCC Water's use of asset management tools appropriate; however, the origin and suitability of current targets for water main breaks and unplanned outages remain unclear. While customers want these targets retained for the next determination period, CCC Water should review them to ensure the renewal program is correctly sized to meet service expectations and manage risk. We note that CCC Water's current performance is around the average of the national benchmark for Australia but toward the higher end when compared to large council utilities in NSW. Additionally, there is a significant gap between the asset class plan's recommended replacements and CCC Water's proposed profile for the 2026 Determination. CCC Water explained this reduction was based on an internal deliverability assessment, but we did not sight this analysis or understand how it translated into annual replacement quantities or program growth. As a result, we cannot validate whether the program is appropriately sized or timed.
Scope	The Central Coast Council's Water Main Renewal Program is a targeted, evidence-driven initiative designed to ensure the long-term reliability, safety, and cost-effectiveness of the region's water supply infrastructure. A significant portion of the water main network was installed in large batches between the 1960s and 1980s, using materials such as asbestos cement and cast iron. These assets are now reaching the end of their useful lives, resulting in a rising trend of water main breaks and unplanned outages. Recent performance data shows that break rates have consistently exceeded customer and regulatory targets, with failures most common in older, corrosion-prone materials.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	4.3	8.6	12.4	13.8	14.8	53.9

Proposed delivery timeframe	Ongoing renewals program.

Background

The water mains network was constructed in large batches by the NSW Works Department over the 1960s, 1970 and 1980s. Most of the mains network was constructed in the mid-1960s. Materials have evolved over time: initially asbestos cement (common in Wyong) and cast iron (common in Gosford), with PVC only becoming the predominant material in the late 1980s. Many reticulated mains are cast iron.

Network challenges include soil conditions and pressure variations, which can lead to water main breaks. These breaks risk damage to public and private assets and cause unplanned outages. When repairs are completed and normal flow resumes, dirty water issues are often triggered. CCC Water has advised that the failure rate of their water mains is persistently higher than their target levels.

Project need and timing

This program is dedicated to renewing aging water main assets ranging from DN100 to DN300 and upgrading where necessary to accommodate future demand. It consists of an ongoing program of works. The water mains assets have a total replacement cost of approximately $1.6 billion and annual depreciation of around $20 million. The program originates from the water main Asset Class Management Plan.

Water main breaks and unplanned outages for CCC Water are currently above their target. We understand that CCC Water consulted its customers regarding the appropriate targets, and customers requested that the current targets be held for the 2026 Determination period.

The number of breaks and outages continues to increase as mains deteriorate, highlighting the need for an increased rate of renewal to improve customer-focused metrics and manage broader risks associated with mains failures. A step change in investment is required to address assets installed during the 1960s to 1980s.

While we have not sighted condition assessment data, we have sighted the developed runs based on connection of their highest risk assets to other high-risk assets. CCC Water have not clearly articulated the impact of their annual replacement rate and how it will impact performance markers like main breaks per 100km.

CCC Water has sought to smooth the renewals of water mains through a stepped increase in mains renewals over the 2026 Determination period to balance cost, risk, performance and deliverability. When benchmarked to similar sized water utilities, the number of water mains breaks per 100km of water mains for Central Coast Council sits in the mid-range among the utilities (see Figure 19). The trend shows relatively low break rates in 2020–21 (around 10 per 100km) with a sharp increase in 202-22 (to around 14 per 100km), peaking in 2022-23 (at around 16 per 100km) before reducing in 2023-24 and 2024-25.

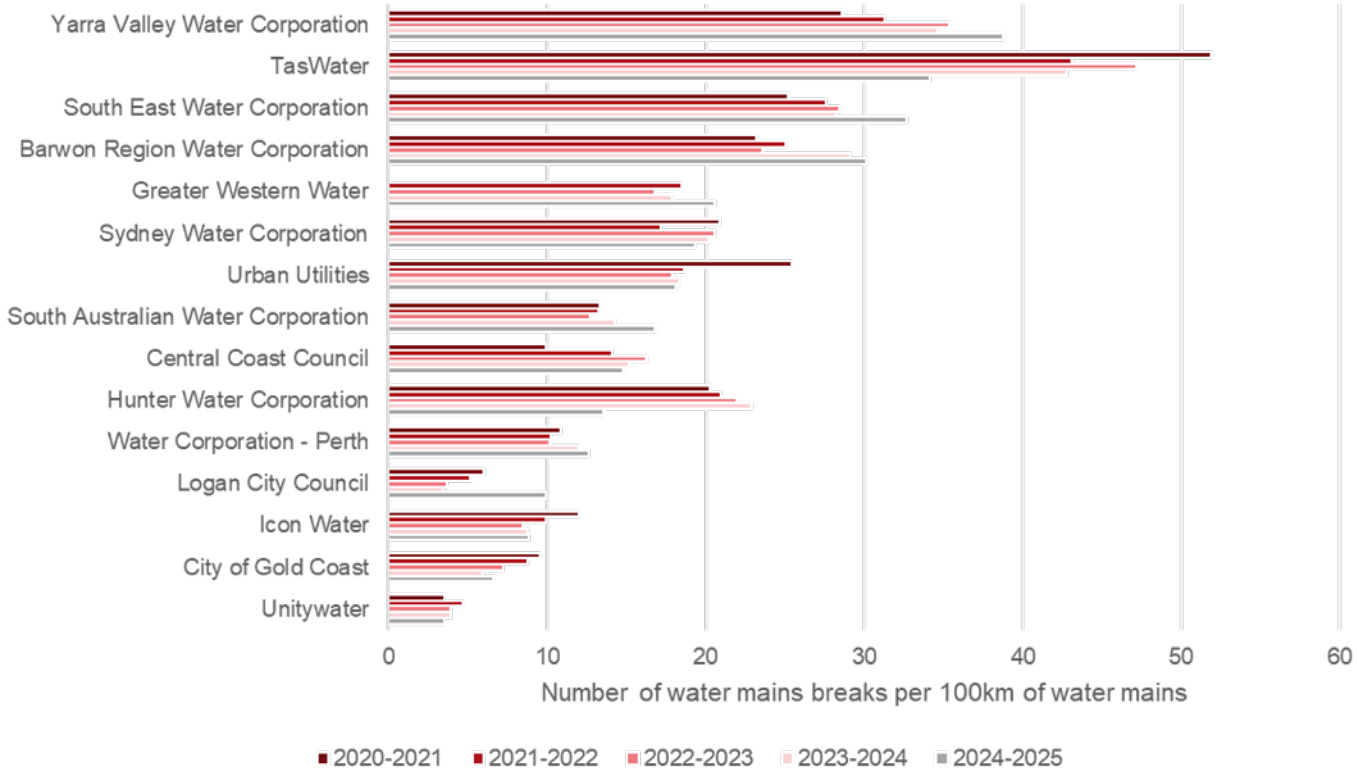

Figure 19 Number of water mains breaks per 100km of water mains[127]

Figure 20 sets out benchmarking for unplanned drinking water interruptions per 1,000 properties over the period 2020-21 to 2024-25. It shows that Central Coast Council sits in the middle for unplanned drinking water interruptions per 1,000 properties over the analysis period. Central Coast Council has experienced a notable increase in unplanned drinking water interruptions over the period 2020-21 to 2023-24, with a reduction showing in 2024-25.

[127] Arup analysis based on Bureau of Meteorology National Performance Report, available at: https://www.bom.gov.au/water/npr/.

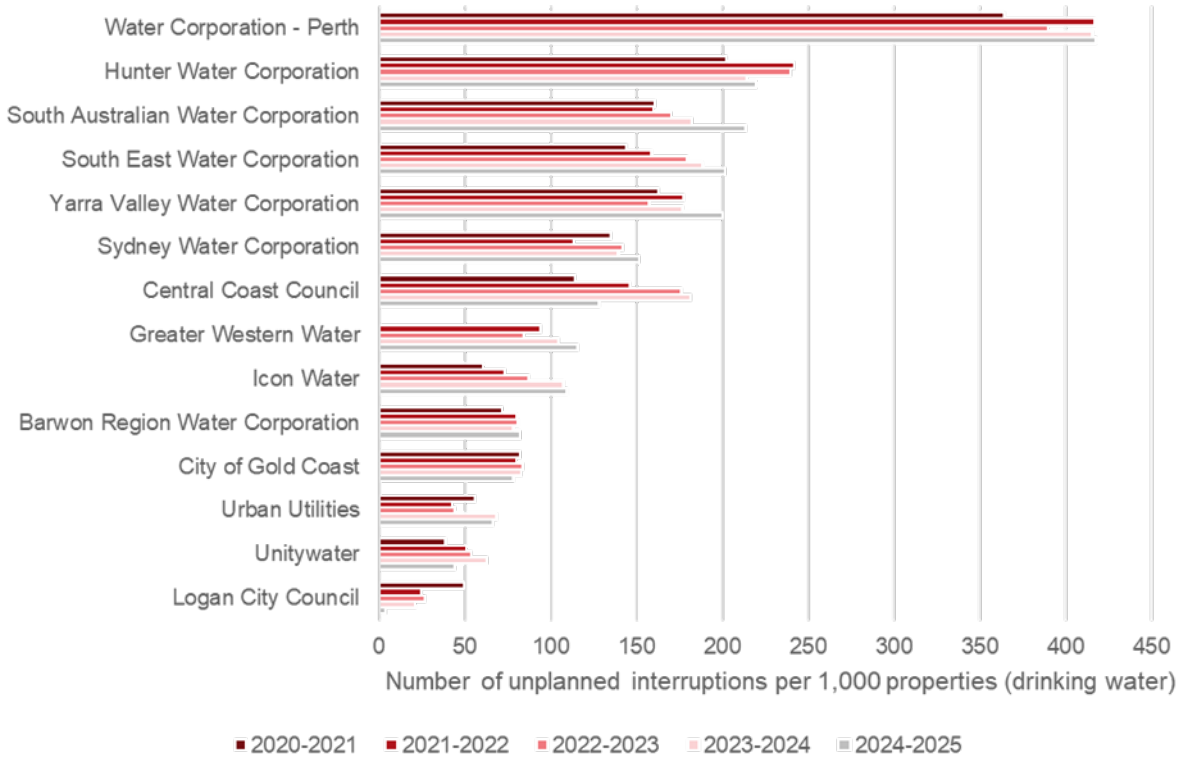

Figure 20 Number of unplanned interruptions per 1,000 properties (drinking water)

Our benchmarking analysis shows Central Coast Council sits mid-pack for both water main breaks per 100 km and unplanned interruptions per 1,000 properties, with a distinct spike around 2022–23 and then stabilisation at a level above earlier years. This pattern suggests pockets of deteriorated mains or operating stress rather than a system-wide crisis. The implication is that renewals are likely warranted, but targeted, risk-based investment will deliver better value than a broad, uniform replacement program.

Customer values

This project supports customer values through improving service delivery and reducing mains breaks and unplanned outages.

Optioneering

Optioneering is generally not relevant for renewal programs, as these programs focus on replacing existing assets with modern, like-for-like equivalents. For the water mains renewal program, CCC Water's prioritisation is based on data from the asset replacement model which recommends an average annual renewal quantity. This information is then inputted into CCC Water's Pressure Mains Criticality Assessment tool, which is a dedicated tool that uses various physical factors (including condition assessment data) to determine which sections of mains should be replaced.

The prioritised list is based on PMCA scores and grouped 'runs' of water mains renewals. PMCA is updated monthly to confirm ongoing priority assets and inform budget reviews. The long-term plan is supplemented by reactive packages to address failed assets that impact customers, particularly where additional failures are likely due to technical factors.

Asset prioritisation is guided by a MCA that combines risk, level of service, and lifecycle cost considerations. Risk is assessed based on asset criticality, likelihood and consequence of failure, and compliance with regulatory or statutory requirements. CCC Water prioritises assets with high residual risk following post-treatment risk assessment. Level of Service considerations relate to asset condition and performance. For example, condition grade 4 requires renewal within 2–5 years, while grade 5 requires urgent renewal within 1 year. Level of Service also considers asset life and spare parts availability. Lifecycle cost includes maintenance, operational, and renewal costs. We consider this an appropriate approach for prioritisation.

However, it is currently unclear where the existing targets for water main breaks and unplanned outages originated and whether they remain fit for purpose. While customers have expressed a desire for these targets to continue into the upcoming determination period, CCC Water should undertake a review to determine appropriate target levels. Without a clear rationale for the basis of the current targets, we have been unable to determine whether the renewal program is correctly sized to meet service expectations and manage risk effectively.

We also note that there is a significant disparity between the asset class plan recommended replacements and CCC Water's proposed replacement profile for the 2026 Determination. CCC Water explained that the program was reduced through an internal assessment of internal deliverability, which focused on historic performance and a workforce assessment. We did not sight this internal assessment nor how this resulted in a quantified value of the length of mains to be replaced each year, nor the growth of the program through the 2026 Determination period. As such, we have been unable to validate whether the program is appropriately sized or timed.

Cost estimation

The basis of the costing provided in the Water Main Renewal Program has not been supplied, though we understand that average costs per metre have been applied to alignments that do not have a financial asset register value. However, due to the relative low complexity of the program, current consistency of construction and the consistency of assets installed, we consider that the application of a standard rate for high level budgeting is appropriate.

Procurement

CCC Water currently procures water mains replacements through a single supplier arrangement. This is a four-year Schedule of Rates contract that contains extension options. It was recently re-tendered through a competitive tendering process.

We consider that this procurement approach is acceptable for the current program as it is a low complexity program, however, CCC Water should review their procurement model if there is a material increase in the mains renewals requirements over the 2026 Determination period. CCC Water should consider whether additional contractors / partners should be procured to support the delivery of the program and ensure the program is deliverable and efficient costs are passed onto customers.

Review findings

The need for this program is well demonstrated as renewing ageing assets that are failing and resulting in mains breaks and unplanned outages that are beyond CCC Water's targets. We understand that CCC Water consulted its customers regarding the appropriate target levels for the 2026 Determination Period and customers have requested that the targets be held for this period.

We consider CCC Water's use of asset management tools appropriate, however, the origin and suitability of current targets for water main breaks and unplanned outages remain unclear. While customers want these targets retained for the next determination period, CCC Water should review them to ensure the renewal program is correctly sized to meet service expectations and manage risk. We note that CCC Water's current performance is around the average of the national benchmark for Australia but toward the higher end when compared to large council utilities in NSW.

Additionally, there is a significant gap between the asset class plan's recommended replacements and CCC Water's proposed profile for the 2026 Determination. CCC Water explained this reduction was based on an internal deliverability assessment, but we did not sight this analysis or understand how it translated into annual replacement quantities or program growth. As a result, we cannot validate whether the program is appropriately sized or timed.

To derive the recommended adjustments for the water mains program, we have considered data provided by the PMCA and the asset class business plan that established the level of investment required in water mains renewal over the 2026 Determination period. We have then adjusted the proposed length of renewals year-on-year using a smoothing approach that will result in CCC Water achieving a higher rate of renewal than currently proposed. Costing has been developed based on the costs provided in the PMCA. Our recommended adjustments are set out in Table 41.

Table 41 Recommended adjustments to the water mains renewal program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	4,317,869	8,605,393	12,397,806	13,765,675	14,844,180	53,930,923	53,930,923
CCC Water total project costs	6,000,000	8,600,000	12,400,000	13,800,000	15,000,000	55,800,000	55,800,000
Total lower bound	4,488,599	6,194,718	8,549,334	11,798,940	16,283,723	47,315,315	47,315,315
Lower bound adjustment	(1,511,401)	(2,405,282)	(3,850,666)	(2,001,060)	1,283,723	(8,484,685)	(8,484,685)
Total upper bound	10,391,885	11,626,773	13,008,404	14,554,218	16,283,723	65,865,004	65,865,004
Upper bound adjustment	4,391,885	3,026,773	608,404	754,218	1,283,723	10,065,004	10,065,004

Sewer Rising Main Renewal Program – Region Wide

Prudency	●	There is a clear need for rising sewer main renewals due to assets reaching end of life and beginning to fail, leading to compliance breaches. Growth across the region is leading to greater strain on existing assets.
Efficiency	●	Renewal projects are prioritised based on both asset age and frequency of reactive maintenance jobs, via the PMCA tool. There is limited information available on how contingency has been applied, with no detailed cost breakdown provided.
Scope		This program is focused on prioritising the renewal of high-risk sewer rising mains in the CCC Water network. Priority projects are identified using the PMCA tool, age of assets, frequency of unplanned reactive maintenance, CCC Water's performance metrics, and regulator expectations.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	0.1	1.5	1.6	2.0	2.6	7.8
Proposed delivery timeframe	Ongoing renewals program.					

Background

CCC Water own approximately 246 km of SRM and 148 km of these mains will reach their expected end of RUL between 2030 and 2090, however, the actual end of useful life is often well short of the theoretical end due to a combination of age, installation conditions and effectiveness of maintenance.

The consequence of a SRM failure is generally high. Raw sewage is being pumped under pressure, and hence if a main fails a large volume of sewage will be discharged in a short time. Damage to property and environment is increased compared to gravity mains and water mains. The larger the SRM the greater the consequence. To align with EPA expectations, CCC Water is required to avoid breakages of sewer rising mains and must not have repeated failures.

The Sewer Rising Main Renewal Program represents an average of 1.27 km sewer rising main renewal and $3.19 million cost per year over five years.

Project need and timing

There are multiple needs identified in the project documentation provided, these include:

- Renewals: Peak investments in sewer networks occurred during the 1970s and 1990s, resulting in a significant proportion of sewer assets now nearing the end of their practical and economic lives. As SRMs age, they are expected to exhibit declining performance, the risk of failure is expected to increase and escalating operating expenditure.
- Compliance: As CCC Waters SRMs age, the risk of failure and hence noncompliance is expected to increase. CCC Water's asset condition assessment improvement projects and programs aim to improve the provision of assets and service reliability, as well as at improving output measures and targets set by IPART. These programs are also driven by existing mandatory standards set by the EPLs and NSW EPA enforceable undertakings as well as Pollution Reduction Programs. Compliance is expected.
- Growth: Drivers affecting demand include things such as population change, regulations and changes in demographics. CCC Water have developed projections for demand drivers that may impact future service delivery and use of assets.

Without proactive renewal programs, breakages per year will naturally rise and fall as groups of individual rising mains reach their actual end of life and undergo reactive replacement. Rising main failures often result in larger volumes of discharge due to their high operating pressure compared with gravity mains. Consequently, environmental regulators typically have less appetite for rising main failure and, where repeat failures are involved, often apply significant fines and actions against Council, hence proactive and timely renewals are critical. Various condition assessment reports demonstrate assets with no RUL and high failure rates. Failures result in environmental, community impacts and fines.

When benchmarked against similar sized water utilities over the period 2020-21 to 2024-25, Central Coast Council sits in the higher end of the middle for number of sewer main breaks, leaks and chokes per 100 km of sewer mains, as set out in Figure 21. It shows that Central Coast Council's sewer network performance is average to slightly above average in terms of failure rates. There was a spike of breaks in 2022-23 which may indicate localised deterioration or operational stress (climate stress), but the subsequent stabilisation suggests some corrective measures. This data indicates that renewals investment is justified but does not support a blanket renewal program. Rather, a targeted and risk-based approach focusing on high-failure segments will deliver more efficient outcomes.

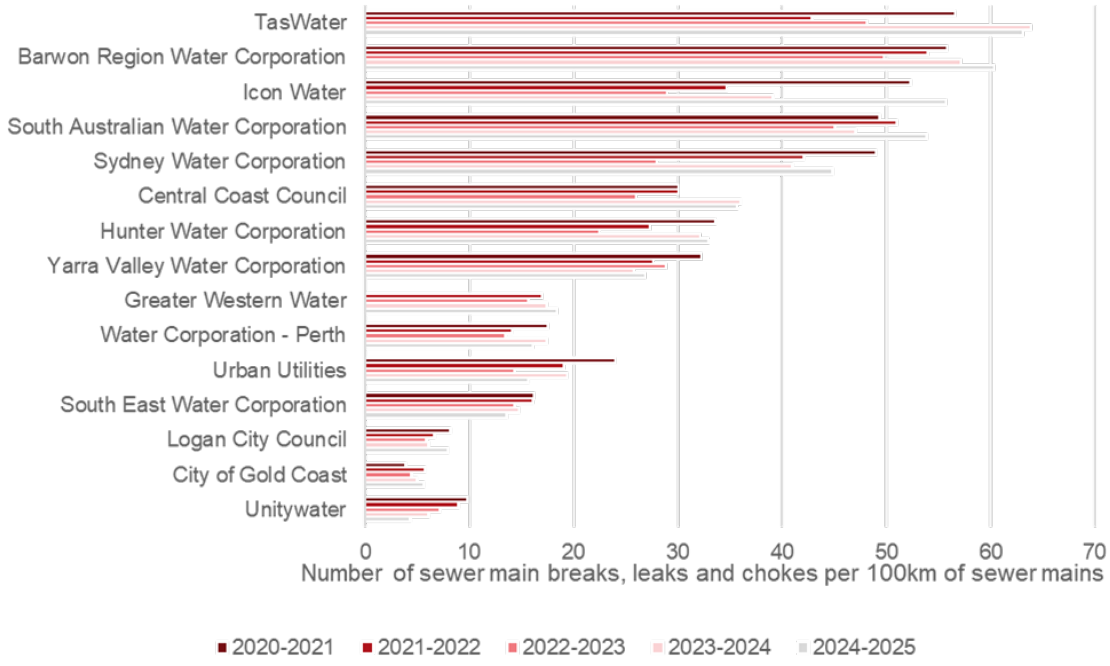

Figure 21 Number of sewer main breaks, leaks and chokes per 100km of sewer mains[128]

Customer values

The Sewer Rising Main Renewal program meets customer values of reliable service and affordability by ensuring renewals are carried out at the right time to avoid excessive breaks whilst maximising life of the asset to make best use of funds. Reactive sewer main repair costs can increase with magnitude of the failure and potential for consequential damage to public/private assets.

The program also meets the Environmental Focus customer value, by reducing the number of reportable environmental incidents related to sewer main breaks decrease as part of overall planned reductions to the frequency of reportable environmental incidents.

Optioneering

Optioneering is generally not relevant for renewal programs, as these programs focus on replacing existing assets with modern, like-for-like equivalents. However, the programming and prioritisation of which assets get replaced when a key consideration is in determining whether the program is right-sized based on the project driver / need.

For the sewer rising mains renewal program, CCC Water's prioritisation is based on ongoing rate of renewal, age-based backlog and break-rate relationship, CCC Water customer performance metrics response, and regulator expectations. This information is then inputted into CCC Water's Pressure Mains Criticality Assessment tool, which is a dedicated tool that uses various physical factors (including condition assessment data) to determine which sections of mains should be replaced.

The prioritised list is based on PMCA scores and grouped 'runs' of sewer rising mains renewals. PMCA is updated monthly to confirm ongoing priority assets and inform budget reviews. The long-term plan is supplemented by reactive packages to address failed assets that impact customers, particularly where additional failures are likely due to technical factors.

The PMCA tool informs Council that there are currently 47 pressure sewer mains longer than 100 m with a risk of failure score greater than 10. Council's Intervention Framework, shown in Figure 22 recommends that these rising mains undergo condition assessment which then informs the decision to create a condition

[128] Arup analysis based on Bureau of Meteorology National Performance Report, available at: https://www.bom.gov.au/water/npr/.

management plan and/or initiate proactive renewal of the rising main. Asset prioritisation is then undertaken using the information gained from condition assessments.

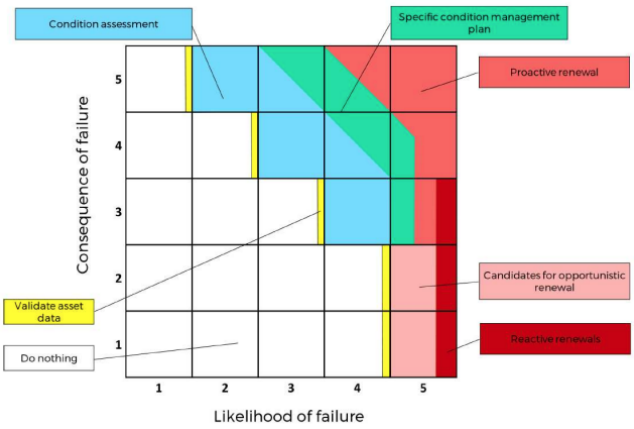

Figure 22 Sewer main rising intervention framework

In addition to Intervention Framework prioritisation, rising mains are place on the priority list due to multiple breaks and/or specific commitments made to the EPA. Delaying these renewal projects places Council at increased and significant risk of further breaks and potential legal action.

CCC Water's current targets for wastewater overflows per 100 km of main and wastewater main breaks and chokes per 100 km have been set following various customer engagement sessions over the period of 2022 to 2025. While customers have expressed a desire that targets for both of these metrics be reduced CCC Water should undertake a review to determine appropriate target levels. The performance metrics relating to the sewer mains asset class are trending unfavourably, indicating a need to improve to meet customers' expectations

Cost estimation

The projected yearly capital costs for sewer rising main renewals for FY 2027 to 2031 represent an average of 1.27 km rising main renewal and $3.19 million cost per year over 5 years. Cost have been developed on a rates basis using the Department of Primary Industries Office of Water's NSW Reference Rates Manual combined with information from the Northern Region Water Supply and Sewerage Development Servicing Plan.

Due to the relatively low complexity of the program, current consistency of construction and the consistency of assets installed, we consider that the application of a standard rate for high level budgeting is appropriate.

CCC Water have demonstrated planning and delivery initiatives to drive cost efficiencies in the sewer rising main program. These include CCC Water W&S directorate works closely with Infrastructure Services directorate to align road renewal programs with intrusive water and sewer asset renewal programs, and packaging renewal projects within close physical proximity.

It is unclear if the contingency applied is commensurate with the level of risk in the project. There are a lot of risks associated with the program of work including, reputational risk and defective works, compliance and potential exposure to EPA issues, levels of service with identified renewals and under-delivery against required annual rate.

Procurement

CCC Water currently procures consulting services for sewer rising main replacements via a two-party Engineering Services Panel (ESP). The two panel partners deliver the initial survey, investigation and design activities to support the renewal program.

CCC Water currently procures construction phase services through the General Works Delivery Panel while also providing flexibility for Design & Construct delivery models depending on the project characteristics Most site wide renewals are delivered by the General Works Delivery Panel, either following a Design and Construct contract model, or as a Construct Only contract following detail design by the Engineering

Services Panel. This decision is based on the scope of proposed work, interfaces with external stakeholders or the presence of difficult geotechnical conditions.

Review findings

There is sufficient evidence to justify the need of the program of works. A large portion of CCC Water's SRMs are nearing the end of their practical and economic lifespans. This results in the increased the risk of SRM failures, and sewer discharge into the environment, causing environmental damage, reputation damage and exposing CCC water to fines from the EPA due to noncompliance.

To develop the recommended adjustments for the sewer rising main renewal program, we have adopted the value of the asset class plans. Our recommended adjustments to the sewer rising main renewal program are set out in Table 42.

Table 42 Recommended adjustments to the sewer rising main renewal program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	83,461	1,535,748	1,602,344	1,971,862	2,584,983	7,778,398	7,778,398
CCC Water total project costs	1,567,000	4,923,000	5,861,000	2,340,000	1,233,000	15,924,000	15,924,000
Total lower bound	1,567,000	4,923,000	5,861,000	2,340,000	1,233,000	15,924,000	15,924,000
Lower bound adjustment	-	-	-	-	-	-	-
Total upper bound	1,567,000	4,923,000	5,861,000	2,340,000	1,233,000	15,924,000	15,924,000
Upper bound adjustment	-	-	-	-	-	-	-

Sewer Main Rehabilitation Program – Region Wide

Prudency	●	There is an evident need for gravity main renewals due to assets reaching end of life, as well as due to environmental factors such as root intrusion. Council has failed to meet performance targes for sewer main breaks and chokes historically, suggesting that urgent work is needed.
Efficiency	●	Renewal projects are prioritised based on both asset age and frequency of reactive maintenance jobs. Costs for renewals are developed based on an up-to-date schedule of contractor rates.
Scope		The Sewer Main Rehabilitation Program includes renewals of mains and relevant manholes across the wastewater network.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	8.2	8.2	8.2	8.2	8.2	40.8
Proposed delivery timeframe	Ongoing renewals program for gravity mains and manholes.					

Background

The region wide Sewer Main Rehabilitation Program covers renewals of gravity mains (<300 mm diameter), and manholes, across CCC Water's network. The asset types addressed within this program are summarised in Table 43.

Table 43 Summary of gravity mains in CCC Water's network

Asset type	Length (m)
Branch main	48,866
Gravity main	2,180,944
Overflow main	583
Syphon	145
Manholes	61,373
Total	**2,291,911**

A large amount of the gravity mains in the network were installed around the same time, in a batched process, throughout the 1970s, 1980s, and 1990s. Consequently, a significant amount of gravity mains in the network are approaching end of useful life concurrently, with performance data showing a decrease in performance.

The renewal prioritisation process has identified 31.7 km of gravity sewer mains which are reaching end of life across the 5-year determination period. Root intrusion is the primary cause of chokes and overflows. Historically, maintenance of these assets has been prioritised based on mitigating environmental risk (focusing on mains close to waterways).

Project need and timing

Gravity sewer main assets are made of materials such as vitreous clay, asbestos cement and cast iron, and a significant portion of the network is reaching end of useful life. Addressing the risks posed by aging assets and root intrusion is critical to minimise breaks and chokes in the network.

Customer values

The renewal strategy is aligned with customer values of reliable service (through minimising the occurrence of mains breaks and asset failures) and environment (minimising discharges of raw sewage into the environment).

Optioneering

Optioneering is generally not relevant for renewal programs, as these programs focus on replacing existing assets with modern, like-for-like equivalents. On a project-by-project basis, route alignment and pipe material options are considered based on environmental factors. When a manhole is marked for renewal, nearby linear sewer assets are included in the renewal package, to minimise overhead costs and service interruptions. Condition assessment is prioritised for mains which experience more than 2 chokes over a 3-year period.

Prioritisation of renewals is based on the following performance data:

- Asset maintenance data including frequency of chokes, and amount of reactive maintenance required.
- SCADA information, such as flows being higher than anticipated.
- Asset age or assessed condition, informing remaining useful life. Sections composed of vitrified clay, cast iron and asbestos concrete are assumed to be higher risk.
- Pipe diameter, with larger pipes being prioritised first.
- Level of consequence and impact to both community and environment, including proximity to natural waterways.

Cost estimation

The cost estimates for gravity main renewals are formed using the up-to-date schedule of rates from CCC Water's current sewer rehabilitation contractor. A contingency of 30 per cent is applied across all costs, although there is a lack of detail explaining how this relates to the level of risk and uncertainty.

Procurement

Initial surveys, site investigations and design activities are delivered through the Engineering Services Panel. Delivery of renewals is delivered through the General Works Delivery Panel in the form of either Design & Construct or Construct Only procurement models. In terms of maintenance, such as relining, CCC Water has in place a trenchless sewer rehabilitation contract.

Review findings

We accept the need for ongoing renewals of gravity sewer mains. The principles for prioritisation of renewals are explained in the asset class business case, although there is limited description of the prioritisation process itself. Based on the buildup of renewals costing, which has been provided, it is apparent that prioritisation is being done based on pipe material type and assessed asset age.

The renewal costs documented in the asset class business case do not match those provided in the 2026 Capital Submission, and the reason for this variance is not explained. Because of the risk of worsening service outcomes, we have adopted recommended adjustments to the sewer main rehabilitation program that reflect the costs set out in the asset class business plan, as set out in Table 44.

Table 44 Recommended adjustments to the sewer main rehabilitation program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	8,150,000	8,150,000	8,150,000	8,150,000	8,150,000	40,750,000	40,750,000
CCC Water total project costs	9,122,094	9,122,094	9,122,094	9,122,094	9,122,094	45,610,470	45,610,470
Total lower bound	9,122,094	9,122,094	9,122,094	9,122,094	9,122,094	45,610,470	45,610,470
Lower bound adjustment	972,094	972,094	972,094	972,094	972,094	4,860,470	4,860,470
Total upper bound	9,122,094	9,122,094	9,122,094	9,122,094	9,122,094	45,610,470	45,610,470
Upper bound adjustment	972,094	972,094	972,094	972,094	972,094	4,860,470	4,860,470

Sewer Pump Station Electrical Switchboard Replacement Program – Region Wide

Prudency	●	Switchboards are a critical component of sewer pump stations, and approximately 95 per cent of switchboards in CCC Water's network currently have at least one critical defect. Switchboards in poor condition have the potential to impact the overall reliability of services. Based on this, the need for urgent renewals of these critical components is clear.
Efficiency	●	This program involves the systematic replacement of existing sewer pump station switchboards with an up-to-date standardised design, and therefore options assessment is not applicable across the board. Prioritisation is based on the condition of the existing asset ongoing rate of renewal and age-based backlog. The level of contingency applied based on the estimate type undertaken. For this program Schematic Design Estimates are undertaken, 40 – 50 per cent contingencies.

Scope

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Proposed expenditure ($M)	1.2	1.2	1.3	1.3	1.3	6.3
Proposed delivery timeframe	Ongoing renewals program for mechanical and electrical components of switchboards on CCC Water's SPS'.					

Background

CCC Water own approximately 325 sewer pump stations (SPS). Some of the assets are approaching 50 years in service. CCC Water engaged AECOM to conduct condition assessments of these assets, assessing civil, mechanical, electrical, ventilation, CDUs and OCUs. This identified a program of works based on asset condition, including switchboard replacement.

The condition of the civil, mechanical and electrical components of the ageing sewer pump stations has a negative impact on their reliability in the network. “Sewerage overflows” are instances where wastewater flows out of the sewer system, typically due to heavy rain or blockages, and is discharged into areas like streets, waterways, or the environment.

Project need and timing

There are two significant needs identified in the project documentation provided, these include:

- Renewals: 95 per cent of the 334 SPSs have switchboards with at least one critical defect.
- Compliance: Switchboard failure can cause unplanned SPS shutdown, increasing the risk of wastewater overflows, impacts to the environment, reputational damage to CCC Water and the risk of fines from the EPA.

The timing of the program is based on a 20-year capital plan developed by AECOM in connection with the condition assessment of the SPS network. Without proactive renewal programs, unplanned failures, SPS down time, risk of sewer overflow and reactive maintenance will naturally rise and fall as groups of individual assets reach their actual end of life.

Customer values

The Sewer Pump Station Electrical Switchboard Replacement Program meets customer values of reliable service and affordability. Reliable service values are met by reducing the number of unplanned outages attributed to sewer pump station failures / downtime. Reliable service values are also met by rectify WHS hazards, replace or repair defective components including upgrading switchboards. Affordability customer values are met by reducing the amount of reactive maintenance costs attributed to reactive replacement or renewal of switchboards. Furthermore, customers place a strong emphasis on environmental outcomes and view a reduction in pollution incidents as a key measure of success.

Optioneering

Optioneering is generally not relevant for renewal programs, as these programs focus on replacing existing assets with modern, like-for-like equivalents, unless issues are found that necessitate re-design of the site (safety issues, access issues etc.).

CCC Water implement the SPS Electrical Switchboard Replacement Program via two intervention types: corrective works and end of life renewal.

CCC Water’s renewal / replacement prioritisation is based on the condition of the existing asset (as per AECOM’s condition assessment reporting), ongoing rate of renewal and age-based backlog. A 20-year capital plan was also developed by AECOM, which reflects the required rate of replacement of all components of the SPS network. We understand that works are then prioritised based on SPSs operational performance, the asset condition and age, and the SPSs hydraulic performance.

CCC Water currently renew between 4 and 8 switchboards annually, however asset condition data indicates that a renewal rate of 30 switchboards per year is required. Renewals to these switchboards also include updates to the relevant Supervisory Control and Data Acquisition (SCADA) technology packs. Current rate of renewal is linked to the delivery capacity of suppliers and contractors.

Cost estimation

Switchboard replacement cost estimates are undertaken as a Schematic Design Estimate (SDE) – Gate 0: Class 4. CCC Water note Class 4 estimations are used when the proposed project has some more information on scope and design detail, with 40 – 50 per cent contingencies.

CCC Water engaged AECOM to undertake SPS Condition Assessments. AECOM included a 20 Year Works List in their condition assessment package which notes unit costs of switchboards ranging from $16,000 to $730,000. CCC Water's Water and Sewer Renewal Program Business Case - Sewer Pump Stations shows projected capital expenditure for the switchboard replacement program is consistent at approximately $1.2-$1.3 million year on year over the 5-year assessment period (inclusive of contingency).

Procurement

The SPS switchboard renewal program is typically delivered by CCC Water procuring batches of its standard switchboard design via separate supply contracts. CCC Water issues switchboards to various installation contractors who are procured via a panel to undertake the site civil work and manage the installation of alternate power supplies to assist the commissioning phase.

For all new switchboards Council utilises its contracted SCADA integrator to code the Programmable Logic Controllers (PLC) and establish the new SCADA interface within Council's Operational Technology.

Review findings

Switchboards are a critical component of sewer pump stations, and approximately 95 per cent of switchboards in CCC Water's network currently have at least one critical defect. Switchboards in poor condition have the potential to impact the overall reliability of services. Based on this, the need for urgent renewals of these critical components is clear.

This program involves the systematic replacement of existing sewer pump station switchboards with an up-to-date standardised design, and therefore options assessment is not applicable across the board. Prioritisation is based on the condition of the existing asset ongoing rate of renewal and age-based backlog. The level of contingency applied based on the estimate type undertaken. For this program Schematic Design Estimates are undertaken, 40 – 50 per cent contingencies.

We note that the asset class business plan details a significantly higher level of funding required for the SPS asset class more broadly. The SPS renewals and switchboard programs have been combined in the asset class business plans, which has been based on a condition assessment and 20-year capital plan developed by AECOM. CCC Water has proposed a total expenditure reduction of approximately $19.7 million lower for both the SPS renewals and switchboard programs.

The 20-year capital program did not disaggregate the assets by electrical / mechanical or SPS replacement in sufficient detail to inform our evaluation of expenditure. As such, to develop the recommended adjustments for the SPS electrical switchboard replacement program, we:

- Calculated the proportion of the total expenditure for the SPS asset class contained in CCC Water's proposed capital program.
- Applied the proportion to the total capital plan value developed by AECOM.

Our recommended adjustments are set out in Table 45.

Table 45 Recommended adjustments to the SPS electrical switchboard replacement program

	2026-27	2027-28	2028-29	2029-30	2030-31	Total in 2026 Determination Period
CCC Water proposed 2026 Determination	1,200,000	1,236,000	1,273,080	1,311,272	1,311,272	6,331,624
CCC Water total project costs	1,200,000	1,236,000	1,273,080	1,311,272	1,311,272	6,331,624
Total lower bound	2,021,486	2,021,486	2,021,486	2,021,486	2,021,486	10,107,429
Lower bound adjustment	821,486	785,486	748,406	710,214	710,214	3,775,805
Total upper bound	2,021,486	2,021,486	2,021,486	2,021,486	2,021,486	10,107,429
Upper bound adjustment	821,486	821,486	821,486	821,486	821,486	4,107,429

Water and Sewer Works in Kind (WIKA)

Prudency	●	The purpose of CCC Water's Water and Sewer Works in Kind Agreement (WIKA) is to ensure that there is a transparent and consistent approach to the lodgement, assessment and conditioning of works in kind which permits CCC Water to collect water and sewerage developer charges. The WIKA establishes the value of costs to be recovered through developer servicing plans which are subsequently registered with IPART.
Efficiency	●	We have sighted the governance documentation related to WIKA and an example of a WIKA project. We consider that CCC Water is following an efficient process related to WIKA assets.
Scope		Works in Kind Agreement (WIKA) projects offer an avenue for developers to deliver their own water and sewer assets to service new areas of growth. Any WIKA proposal is evaluated using criteria set out in the WIKA Guideline, ensuring transparent and consistent assessment.

	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Water – proposed expenditure ($M)	-	1.6	-	2.6	-	4.1
Sewer – proposed expenditure ($M)	-	3.1	3.0	6.8	-	12.9
Proposed delivery timeframe	Ongoing program of works.					

Background

The CCC Water Works in Kind Agreement (WIKA) provides a framework through which developers may deliver infrastructure works to offset all or part of their Water Supply and Sewerage Developer Charges. The WIKA Policy states that CCC Water is committed to ensuring:

- The delivery of water supply and sewerage infrastructure occurs as required to serve the needs of its growing population.
- The provision of such is well-planned, appropriately timed and delivered, meets relevant construction and quality standards, and represents value for money.
- That any WIK proposals are assessed in an equitable and transparent manner.

Project need and timing

WIKA projects are growth-driven as they are delivered by developers in new growth areas to service growing population. The timing of delivery of WIKA assets relates specific growth-driven projects. As such, we consider this prudent.

Customer values

The WIKA Guidelines provide a clear and consistent assessment approach for new proposals, which aligns with the customer value of transparency.

Optioneering

The WIKA Guideline does not provide detailed description of the level of optioneering required by new proposals. Options considered by CCC Water relate to whether the assets are delivered by a developer or whether CCC Water develops the infrastructure directly. Recommendations are made based on considering impacts to the development and program-related issues (such as completing civil works during construction).

Cost estimation

Developer-supplied cost estimates are validated by CCC Water through a QS. The validation is completed through a bottom-up assessment, where a cost estimate is developed and then compared against the developer-supplied cost estimate. A contingency value is not applied to the estimate completed by the QS, in-line with industry standard.

Advice from the QS also includes reviewing proposed payment approaches to CCC Water to ensure risk is adequately managed and cost savings can be delivered to CCC Water.

Procurement

CCC Water does not procure under this agreement.

Review findings

We consider that CCC Water is following a robust process in relation to WIKA assets. We do not propose any adjustments to WIKA assets.

6.3 Our assessment of systemic issues

Based on our review of the sampled projects, we have identified the following systemic issues.

6.3.1 Proposed 2026 capital plan appears to reflect a trend of under-investment that is not well-supported by evidence-based rationale

The CCC Water pricing submission's capex build-up cannot be reconciled with the renewal program and major project business cases. In multiple instances, the pricing submission requests significantly less funding than what is outlined in the corresponding business cases, creating a material inconsistency. The justification for the reduction in expenditure is not clearly demonstrated, nor is the risk of proceeding with reduced expenditure clearly documented or justified.

We recognise that CCC Water has undertaken a deliverability assessment, which considered a workforce assessment of capacity and capability, along with a review of contractor performance and ability to ramp-up works. CCC Water stated that the methodology it used to complete the deliverability assessment was based on developing a quantitative assessment of historic delivery against historic resourcing levels (considering vacancy rates) over a 6–7-year period to establish a trend of baseline sustainable delivery within existing resourcing levels. This then enabled CCC Water to set the forward capital plan for the 2026 Determination Period based on the historic baseline, to allow time for a sustainable ramp-up in delivery and further exploration of efficiency options. This has included a review of contractor capacity, procurement approaches and requirements for support from operational teams (such as stakeholder engagement) for specific projects.

Over the 2026 Determination Period, we understand that CCC Water's asset condition planning tools will improve in accuracy as further condition assessments are completed, and data will be incorporated into planning and prioritisation tools. CCC Water stated it had incorporated risk considerations into planning, ensuring flexibility to adapt if condition assessments reveal further deterioration requiring additional work. Planned for an uptick in delivery toward the back end of the Determination Period, as asset condition data improves and contractor capability matures, enhancing safety and reliability.

While we have sighted the outcomes of the deliverability assessment on the capital plan, including the scenario analysis undertaken by CCC Water to identify a preferred capital plan approach, we have not either sighted the deliverability assessment nor been provided evidence to demonstrate how the deliverability assessment has resulted into a quantified and costed capital plan. We have further not sighted any evidence related to how risk has been incorporated into the deliverability assessment.

We have identified a systemic trend of proposed under-expenditure across key assets which differs from identified requirements in relevant asset class plans or business cases. We note that while there is a proposed increase in expenditure across most renewals programs, underinvestment may lead to continuing deterioration of critical water and wastewater assets, resulting in increased risk of asset failure, service interruptions, and potential public health and environmental impacts. Deferred investment can also drive higher long-term costs due to reactive maintenance, emergency repairs, and accelerated asset replacement needs. Furthermore, insufficient funding may limit the ability to address emerging risks identified through condition assessments, compromising safety and reliability objectives and reducing resilience against future demand growth and climate-related pressures.

We also note that costs within individual business cases do not reconcile internally or to CCC Water's proposed 2026 Determination period capital plan. Variances in cost estimates are not clearly documented or explained, making it difficult to validate the assumptions or understand the basis of the financial ask. This lack of alignment and transparency undermines confidence in the accuracy of cost forecasts and may embed risks of underfunding or misallocation of resourcing. Inaccurate or poorly substantiated cost estimates can have significant implications for capital planning and delivery, including the potential for budget shortfalls, delays in project execution, and compromised ability to meet service reliability and safety objectives. Over time, these issues may erode stakeholder confidence and increase the likelihood of reactive, high-cost interventions.

6.3.2 Lack of strategic portfolio planning before optioneering leading to an options identification process that is not robust

A key deficiency in the current planning process we have identified is the absence of strategic portfolio planning prior to the commencement of optioneering. This has been particularly evident for sewerage treatment plants and assets. Without a clear, portfolio-level strategy that defines priorities, objectives, and constraints, the options identification and development process lacks robustness and alignment with long-term goals and customer values.

This gap results in options being considered in isolation, without adequate assessment of interdependencies, resource implications, or alignment with broader asset management strategies. This can have material implications on efficiency, leading to higher cost capital solutions being preferred over lower-cost or operational solutions. It also limits the ability to apply consistent evaluation criteria during optioneering, reducing confidence in the selection of preferred options.

Over time, this may result in higher lifecycle costs, missed opportunities for economies of scale, and diminished capacity to respond to emerging risks or regulatory requirements.

6.3.3 Optioneering process may not lead to robust outcomes

Our review identified that project need is not consistently or clearly linked to the optioneering process. Options presented often lack explicit alignment with the underlying service drivers or strategic objectives that justify the project.

In several cases, the options analysis does not articulate how each option addresses the identified need, nor does it provide a comparative assessment of strengths and weaknesses in meeting that need. This disconnect reduces the robustness of the decision-making process and limits confidence that the preferred option delivers optimal value for customers.

The absence of a clear linkage between project need and options development also creates challenges for governance and assurance. Without a transparent rationale connecting the need to the proposed solution, it becomes difficult to validate whether the investment is justified, whether risks have been appropriately considered, and whether alternative approaches could deliver better outcomes. This gap may lead to inefficient allocation of capital, missed opportunities for cost savings, and reduced ability to meet service performance objectives.

We have also identified that the optioneering process, while generally following industry-standard practice (progressing from longlist to shortlist and then to a preferred option), has at times not been fit-for-purpose. In some instances, external technical reviews have resulted in a complete change in project trajectory, suggesting that the initial options identification and evaluation lacked sufficient rigor. This raises concerns about the robustness of the process and whether the preferred options selected truly represent the best value for money and alignment with service needs.

Although the framework for optioneering appears sound, the execution of the process is inconsistent. In some cases, the selection of the preferred option has not been supported by comprehensive financial analysis or a thorough consideration of alternative operating solutions that could be more cost-effective or better suited to the service driver. This limits confidence in the decision-making process and increases the risk of suboptimal investment outcomes.

Additionally, we observed that options assessments are often based on cost estimates that are materially lower than the total project estimate provided for the preferred option. Variances in costs are not clearly explained, and it is unclear whether these differences are driven by changes in scope or other factors. While the cost estimates applied during optioneering are generally of an appropriate estimate class for this stage of investigation, the lack of transparency in reconciling these figures undermines confidence in the financial robustness of the process. Sensitivity and scenario analysis on project costing also appears to be lacking, further undermining confidence in the level of costs provided.

6.3.4 Lack of transparency on how indirect costs, provisional sums and contingency are calculated undermines confidence in cost estimates

We have also identified a lack of transparency in how indirect costs, provisional sums, and contingency allowances are calculated within project cost estimates. In many cases, these components are presented as lump sums or percentages without supporting detail or rationale, making it difficult to validate whether they are reasonable, aligned with industry benchmarks, or consistent with the applicable estimate class. This lack of clarity creates uncertainty around the robustness of the cost estimates and raises questions about whether the allowances adequately reflect project complexity, risk exposure, and delivery constraints.

The absence of clear methodologies for calculating these cost components also limits the ability to compare options on a like-for-like basis during optioneering and compromises confidence in the financial integrity of the preferred option. For example, contingency allowances should be risk-based and proportionate to the level of uncertainty inherent in the estimate class, yet there is no evidence that such an approach has been consistently applied. Similarly, provisional sums and indirect costs appear to vary significantly between projects without documented justification, suggesting a lack of standardisation.

Without transparent and consistent approaches to calculating indirect costs, provisional sums, and contingency, there is an increased risk of cost overruns, underfunding, and misallocation of resources. This can lead to budget shortfalls during delivery, reactive adjustments that increase administrative burden, and reduced confidence in the capital planning process. Over time, these weaknesses may erode governance assurance and stakeholder trust in the accuracy and reliability of financial forecasts.

6.3.5 Consistent early failure and underperformance of STPs

We have identified a consistent theme of non-compliance with environmental licencing across CCC Water's STP portfolio. CCC Water currently holds three EPLs for its sewerage treatment plants.

- Bateau Bay Sewerage System (EPA 1942)
- Toukley Sewerage System (EPL 2647), which includes both Charmhaven and Gwandalan STPs
- Kincumber and Woy Woy Sewerage System (EPL 1802), which includes Kincumber STP.

These non-compliances are made up of both reporting- and performance-related issues. We understand that achieving environmental compliance across the board is one CCC Water's main priorities. Historic non-compliances are summarised in Figure 23.

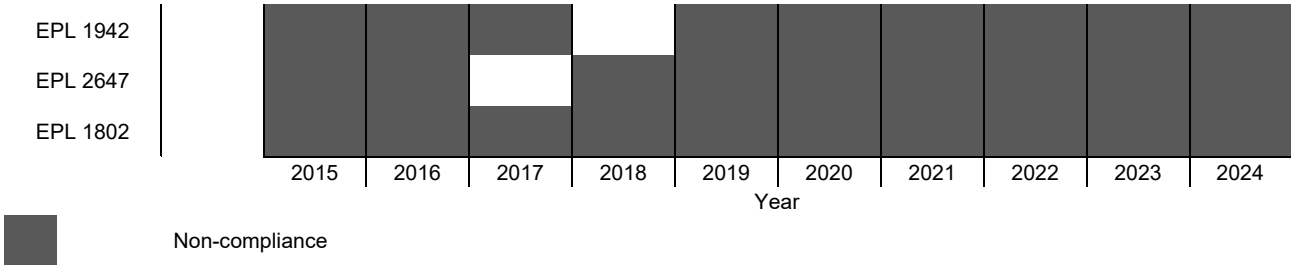

Figure 23 Summary of historic non-compliances across CCC Water's EPLs

Performance-related licence breaches present a threat to human and environmental health, and can be caused by heavy rainfall, inadequate plant capacity, and failing equipment. We note that issues being experienced at Kincumber STP are potentially occurring because of failing equipment, which has reached the end of its useful life early because of poor maintenance historically.

It is not clear that the investment planned in upgrades and renewals of STPs will sufficiently address the performance-related EPL compliance issues. Historically, performance-related non-compliances have been recorded across all three of these EPLs, as shown in Figure 24.

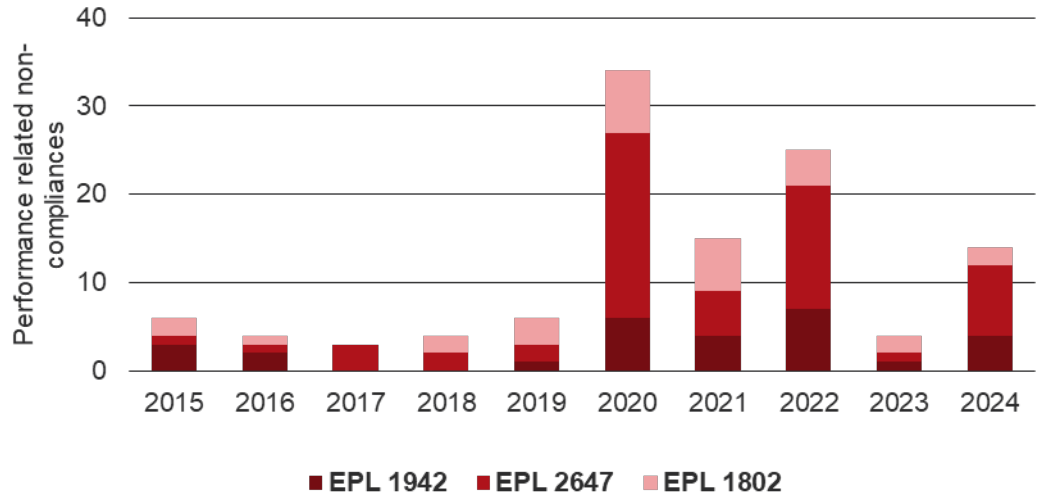

Figure 24 Historic non-compliances across CCC Water's sewage related EPLs

We note that upgrades and renewals may only address the performance related compliance issues, and not necessarily the non-compliances which relate to monitoring and reporting.

6.4 Recommendations

This section summarises our recommendations regarding the upper and lower bound of prudent and efficient capital expenditure for CCC Water over the upcoming regulatory period. It also summarises our recommendations as discrete actions CCC Water can take to drive further efficiency in its capital expenditure.

6.4.1 Bounds of prudent and efficient capital expenditure

We have developed an upper and lower bound forecast of CCC Water's proposed capital expenditure program over the 2026 Determination period. In developing the upper and lower bound forecasts, we have considered:

- CCC Water's historic capital delivery over the 2022 Determination period. Our analysis indicates that CCC Water has sustained an increase in capital delivery of around 20 per cent year-on-year (approximately $100 million) over the 2022 efficient capital costs. The over-spend has primarily occurred during 2024-25 and 2025-26 (refer section 6.1).
- CCC Water's proposed capital delivery over the 2026 Determination period. This shows a continued increase in in capital expenditure in 2026-27 and a marginal decrease in 2027-28, before a significant reduction in capital expenditure over the remainder of the determination period (see section 6.2).
- CCC Water's service performance for water and sewer assets, which indicates an increasing decline in service outcomes (particularly for sewer assets). While benchmarking indicates that CCC Water is towards the average service performance of similarly sized water utilities across Australia, we recognise that there is a trend of declining service which is linked to ageing and / or poorly performing assets.
- CCC Water's deliverability assessment and efficiency factor assessment and the discrepancy between CCC Waters submission and more recent costs included in business cases, particularly for renewals capital expenditure. CCC Water's pricing submission (as described by CCC Water) includes cost forecasts prior to and using less accurate information than what is identified in its AMPs and the major program business cases as required to maintain base levels of service. This has resulted in the proposed renewals budgets being materially lower than the budget forecasts indicated by CCC Water's internal planning tools, asset class business cases or condition assessment / capital planning completed by engineering consultants.
- The maturity and sophistication of CCC Water's current asset management tools, which we understand will be updated with improved condition data over the 2026 Determination period. The consequence of

improving these planning tools will be a more accurate prioritisation process for assets to be included in renewals programs.

- Our recommended adjustments to the projects for which we have completed a detailed review.
- Our findings on systematic issues that we have identified in the detailed review of projects we have completed and considered those which have a material impact on efficiency. We consider that CCC Water's lack of strategic portfolio planning before optioneering, CCC Water's current optioneering process and its current cost estimation practices have a material impact on efficiency.

In determining our recommended upper and lower bound of capital expenditure, we have applied:

- CCC Water's forecast renewals costs without the deliverability adjustment or efficiency factor adjustment CCC Water applied.
- Our recommended adjustments to the projects for which we have completed a detailed review, and
- An efficiency factor to apply to the overall capital program, based on the trend analysis we have completed and our findings on systematic issues.

To develop the efficiency factor to apply to the overall program, we have considered the extent of potential savings that can be realised throughout the project lifecycle, as illustrated in Figure 25.

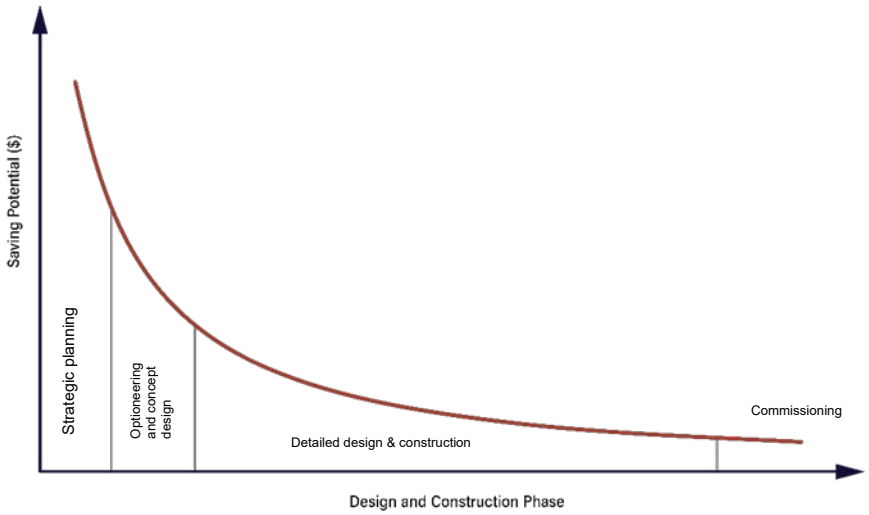

Figure 25 Savings potential during different stages of the project lifecycle

We consider that in the first two years of the 2026 Determination period; there are opportunities for CCC Water to embed lessons learned from project delivery over 2024-25 and 2025-26 into capital delivery to generate efficiency gains as the organisation becomes more mature and sophisticated in delivering large capital programs. We consider a year-on-year adjustment of between 1 per cent to 5 per cent as an appropriate estimate of this efficiency gain.

Our project review identified major projects that we did not consider prudent, for example the Gwandalan STP upgrade project (which represents approximately 13 per cent of CCC Water's proposed capital expenditure). We have also identified efficiency improvements related to optioneering, such as for the Charmhaven STP project (where our proposed adjustments represent approximately 8 per cent of total project costs).

These instances demonstrate opportunities to reduce capital expenditure on both a portfolio and project level. As such, we consider a year-on-year efficiency gain of 10 per cent to be a reasonable representation of savings achieved. We consider these savings will be realised through the improvement of pre-optioneering and optioneering and cost estimation processes (see section 6.4).

Our proposed lower bound adjustment excludes the capital costs for Gwandalan STP. As such, we consider a lower efficiency gain to be achievable across the rest of the capital program. We consider a 5 per cent year-on-year to be achievable for a lower bound efficiency gain.

Our proposed upper bound of $719.3 million and lower bound of $639.7 million, as set out in Table 46. The proposed capital budget of $577.7 million in CCC Water's pricing submission is materially different to the Major Project budgets in the business cases we reviewed – noting that the business cases were prepared more recently using mature forecasts. We have been unable to calculate the total value of the difference with certainty but recognise it is material based on the information we have sighted.

Both our calculated upper and lower bounds are materially higher than the proposed capital budget in CCC Water's pricing submission. We have adopted the budgets with the most recent and mature cost estimates as the basis of our analysis, taken from the CCC Water major project and asset program business cases. CCC Water has confirmed verbally that the costs in the business cases are higher than the costs used to build up its pricing submission. The source of the variances in costs is not explained in the business cases, and it is unclear whether these differences are driven by changes in scope or other factors.

Given the material increase in the costs, the associated deliverability risks and the potential affordability impacts, we recommend that the appropriate expenditure is the lower bound with the exception the Kiar Ridge reservoir project where we recommend our upper bound. This includes an additional allowance for a planning study (subsequent to modelling as part of the Water and Sewer Master Plan). Our recommended appropriate expenditure is $640.0 million.

Table 46 Recommended efficient level of capital expenditure over the 2026 Determination period

Expenditure	2026/27	2027/28	2028/29	2029/30	2030/31	Total
CCC Water proposed expenditure						
Water	12.2	19.1	21.6	30.9	29.1	**112.9**
Sewer	148.0	130.9	71.3	71.5	43.3	**464.9**
Total	**160.2**	**149.9**	**92.8**	**102.5**	**72.3**	**577.8**
Estimated Lower Bound						
Water	19.8	18.4	22.2	23.3	22.8	**106.4**
Sewer	141.4	187.5	90.9	81.5	50.3	**551.5**
Total	**161.1**	**205.9**	**113.0**	**104.8**	**73.1**	**658.0**
Efficiency adjustment on Lower Bound						
	1%	1%	5%	5%	5%	
Total Lower Bound	**159.5**	**203.8**	**107.4**	**99.6**	**69.4**	**639.7**
Estimated Upper Bound						
Water	25.7	24.1	26.6	26.1	22.8	**125.2**
Sewer	166.5	239.2	111.2	81.5	50.3	**648.7**
Total	**192.2**	**263.3**	**137.8**	**107.6**	**73.1**	**773.9**
Efficiency adjustment on Upper Bound						
	5%	5%	10%	10%	10%	
Total Upper Bound	**182.6**	**250.1**	**124.0**	**96.8**	**65.8**	**719.3**
Estimated Appropriate Expenditure						
Water	19.8	18.6	22.2	23.3	22.8	**106.7**
Sewer	141.4	187.5	90.9	81.5	50.3	**551.5**
Total	**161.1**	**206.1**	**113.0**	**104.8**	**73.1**	**658.2**
Efficiency adjustment on Appropriate Expenditure						
	1%	1%	5%	5%	5%	
Recommended expenditure	**159.5**	**204.1**	**107.4**	**99.6**	**69.4**	**640.0**

A.1 RFI Register

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
RFI 01-1	Documentation explaining Council's approach to strategic planning, including long-term investment planning. Business process/procedure documents that describe the project prioritisation process, including how projects are prioritised and reprioritised.	20/10/2025	31/10/2025	All received
RF1 01-2	Asset and risk management systems and accompanying process/procedure documentation.	20/10/2025	31/10/2025	All received
RFI 01-3	Procurement, contract management and delivery approach, including any accompanying procedure and governance documentation.	20/10/2025	23/10/2025	All received
RFI 01-4	Customer engagement approach and any accompanying process/procedure information, including any mechanisms for tracking and reporting on the delivery of customer-valued outcomes. Where possible, a sample of status reports related to the delivery of customer-value outcomes.	20/10/2025	28/10/2025	All received
RFI 01-5	Explanation of how Council has responded to the 2022 IPART Determination outcomes related to business processes and steps taken to address the findings. Where possible, a status report (or similar) showing the current status of Council's initiatives.	20/10/2025	28/10/2025	All received
RFI 01-6	How Council approaches opex/capex trade-offs (e.g., capital works vs increased maintenance expenditure).	20/10/2025	31/10/2025	Documents provided and some documents later deleted.
RFI 01-7	Council's risk appetite and how this drives its capex and opex proposal. Information on any changes to risk appetite between the current and upcoming regulatory periods.	20/10/2025	04/11/2025	All received
RFI 01-8	Explanation of capital planning process that informed the 2026 IPART submission and how key business processes (such as asset/project management and infrastructure planning) and customer values have been included/captured as part of the capital planning process.	20/10/2025	31/10/2025	Documents provided and some documents later deleted.
RFI 01-9	Detailed list of projects and associated capex included in the 2026 submission. The Annual Information Return 2024-25 (AIR) appears to include program-level information rather than detail at a project level. For example, the capex chapter describes the Kiar Ridge reservoir, but this information is not detailed in the	20/10/2025	29/10/2025	All received

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
	AIR. Identify which of those are intended to be delivered as a program vs standalone projects.			
RFI 01-10	Explanation of initiatives implemented by Council during the 2022 determination period (such as the critical inspection programs, Pressure Main Criticality Assessment and the Asset Management Improvement Plan) and how these have directly informed the 2026 submission/underlying capital plan.	20/10/2025	31/10/2025	All received
RFI 01-11	How Council is working towards DCCEEW's regulatory and assurance framework for local water utilities 2022 and a description of the steps taken to embed the framework into operations.	20/10/2025	31/10/2025	All received
RFI 01-12	Information on detailed review of deliverability and how this has informed the capex submission.	20/10/2025	31/10/2025	All received
RFI 01-13	Supporting information and further detail regarding the 2022-26 over-spend. Explanation of costs that have increased, including prioritisation of critical asset renewals, increased materials costs and contract rates (technical paper 4, p 9). Data on cost increases to be formatted as follows and separated by water and sewer: - budgeted costs by category - outturn costs by category - extent of cost increases driven by factors other than market conditions (e.g., change in scope) - reason for deviation from budgeted costs	20/10/2025	04/11/2025	All received
RFI 01-14	Explanation behind reason and business process for decision to defer Mardi Water Treatment Plant project	20/10/2025	28/10/2025	All received
RFI 01-15	Information on any other project deferrals/accelerations, including reason and decision process	20/10/2025	29/10/2025	All received
RFI 01-16	Reason for over-spend of water and sewer expenditure in current regulatory period, including prioritisation process to confine scope of overspend	20/10/2025	31/10/2025	All received
RFI 01-17	Information supporting $8.6 million reduction in minor water projects due to the reassessment of risk, including what led to reassessment of risk.	20/10/2025	29/10/2025	All received
RFI 01-18	Detail regarding how Council identified poorly performing sewer assets that required works to mitigate risk and maintain service continuity.	20/10/2025	29/10/2025	All received
RFI 01-19	Information on EPA prosecution and directives issued related to prosecution.	20/10/2025	23/10/2025	All received
RFI 01-20	Data underpinning 'base' opex calculation and adjustments in proposal (including reconciliation table showing all adjustments from 2024-25 actual opex ($141.3 million excl stormwater) to base opex ($133.2 million) – technical paper 5, table 18, pp 38-39). Additional details justifying	20/10/2025	23/10/2025	All received

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
	adjustments for items >$0.5 million. Relevant data appears to include Excel workbooks titled 'Opex by category Approach to Base Opex Based on FY25 Actuals' and 'Opex FY19-20 Onwards Feb 25 V1' referred to in 'CCC-IPART-Determination-Data'.			
RFI 01-21	Breakdown and explanation of the drivers of the following opex cost categories (for each of water and sewer) for each year of the current and next regulatory period (Excel workbook titled 'Central Coast Council Annual Information Return (AIR SIR) 2024-25_UNPROTECTED', sheet 'Opex by function'): - operations and maintenance, including reactive versus planned (if available) - treatment - other corporate; and - other controllable operating expenditure - Labour component of each of the above cost categories	20/10/2025	24/10/2025	All received
RFI 01- 22	Data and justifications underpinning the removal and addition of non-recurring opex (technical paper 5, table 22, pp 41-42).	20/10/2025	23/10/2025	All received
RFI 01-23	Explanation underpinning labour expenditure and strategy over the current and next regulatory period, including corresponding FTE over the next regulatory period (technical paper 5, figure 4, p 12).	20/10/2025	24/10/2025	All received
RFI 01-24	Data underpinning allocation of opex to community value topic (technical paper 11, p 17), including historical opex by community value topic.	20/10/2025	24/10/2025	All received
RFI 01-25	Corporate overhead allocation methodology, explanation of drivers of corporate overhead costs, demonstration that corporate overheads relate to provision of water and sewer services.	20/10/2025	28/10/2025	All received
RFI 01-26	FY2025 actual opex	20/10/2025	24/10/2025	All received
RFI 01-27	Data and explanation underpinning trend opex – methodology and supporting calculations by cost category	20/10/2025	23/10/2025	All received
RFI 01-28	Data and explanation underpinning step changes	20/10/2025	24/10/2025	All received
RFI 01-29	Any consultant's report underpinning estimation of trend component	20/10/2025	23/10/2025	All received
RFI 01-30	WSAA benchmarking quartiles	20/10/2025	28/10/2025	All received
RFI 01-31	Information provided to WSAA as part of its current (upcoming) benchmarking analysis	20/10/2025	28/10/2025	All received
RFI 01-32	Stochastic frontier analysis report and supporting data, calculations and results	20/10/2025	23/10/2025	All received

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
RFI 01-33	CCC's service performance each year for the last 10 years	20/10/2025	24/10/2025	All received
RFI 01-34	Expected service improvements from proposed opex and explanation of any expected efficiencies in opex from improved service performance	20/10/2025	03/11/2025	All received
RFI 01-35	Relationship between preventative maintenance expenditure increases and service outcomes	20/10/2025	03/11/2025	All received
RFI 02A-1	Central Coast Water Security Plan.	28/10/2025	30/10/2025	All received
RFI 02A-2	Water and Sewer Customer Charter and Complaints Management Framework.	28/10/2025	30/10/2025	All received
RFI 02A-3	The Willingness to Pay study that was undertaken (including the methodology).	28/10/2025	04/11/2025	All received
RFI 02A-4	Deliverability assessment undertaken.	28/10/2025	12/11/2025	All received
RFI 02A-5	Adaptive strategies referenced in the first interview session slides (21/10/2025).	28/10/2025	12/11/2025	All received
RFI 02A-6	Historic data from IPS related to planned vs. reactive job creation, as well as tracking of performance metrics.	28/10/2025	03/11/2025	All received
RFI 02A-7	Asset Management Improvement Plan, as well as the associated Asset Management Plans for the individual asset classes. Product based asset management plans, and associated asset class plans (12).	28/10/2025	04/11/2025	All received
RFI 02A-8	Asset Management documents as included in the hierarchy: - RACI matrix across the W&S Directorate - Strategic Asset Management Plan - Water & Sewer Asset Management Plan - Asset Class Management Plan - Asset Information Strategy - Operation & Maintenance Plan - Capital Investment Plan	28/10/2025	04/11/2025	All received
RFI 02A-9	Technical Memo Asset Management Improvements Status October 2025.	28/10/2025	04/11/2025	All received
RFI 02A-10	Condition assessment reports which support prioritisation, as well as the pressure main criticality assessment tool.	28/10/2025	04/11/2025	All received
RFI 02A-11	8 Focus Asset Class Business Cases (ACBCs).	28/10/2025	31/10/2025	All received
RFI 02A-12	Capital forecast development approach, including the technical paper which describes Council's approach to demand forecasting.	28/10/2025	21/11/2025	All received
RFI 02A-13	Underpinning assumptions and data used to build up the 4 scenarios presented in the second interview session slides (24/10/2025). With this, a list of all investments / cost items included in each scenario.	28/10/2025	06/11/2025	Incomplete
RFI 02A-14	The value for money study which is used to ensure efficient costs for the sole sourced minor work streams (Water Services and Construction,	28/10/2025	05/11/2025	All received

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
	Sewer Rehabilitation and Construction).			
RFI 02A-15	Council's procurement process documentation.	28/10/2025	24/11/2025	Incomplete
RFI 02B-A	Slides from 2 day capex interviews	17/11/2025	26/11/2025	All received
RFI 02B-B	Documentation related to the steps / process that the vendors need to take to get onto the panels.	17/11/2025	26/11/2025	All received
RFI 02B-C	Council's approach to Project Management and Governance for projects discussed at capex interviews. Evidence related to how items may be re-prioritised (if required) and what controls are in place to ensure projects are adhering to cost, time and scope schedules. We believe this information could be contained in minutes from Project Control Group meetings (or similar). We are seeking a specific example as opposed to general procedures / process information.	17/11/2025	26/11/2025	All received
RFI 02B-1	• Toukley Sewerage Scheme (EPL 2647) • Central Coast Regional Plan • Pollution Reduction Programs • AECOM Options Assessment Report • Concept Design Report • EOI Submission • Major Business Case – Gate 2 Phase	17/11/2025	25/11/2025	All received
RFI 02B-2	• Options Assessment Report- GHD Options Re-assessment • AECOM Concept Design • EPA and DCCEEW – Section 60 approvals	17/11/2025	25/11/2025	All received
RFI 02B-3	• Jacobs Report- Jacobs Route Alignment Study • AECOM Condition Assessment • BPIB documents • Hydraulic Assessment Reports	17/11/2025	25/11/2025	All received
RFI 02B-4	• Historic and forecast Renewal Plan • Water Main Asset Class Management Plan	17/11/2025	25/11/2025	All received
RFI 02B-5	• Gravity Sewer Renewal Program Plan • Pressure Main Renewal Program Plan • Condition Assessment Report • PMCA tool • Pollution Reduction Program • SWC/CCC WSAA Specs and Rezatec Tool LOF Module	17/11/2025	25/11/2025	All received
RFI 02B-6	• Condition Assessment Report • Options Assessment report • Geotechnical Baseline Report • ATS Heritage Assessment • EOI Submission	17/11/2025	25/11/2025	All received
RFI 02B-7	• EOI Submission • 2014 BECA H20r report • 2019 Options Assessment • 2022 Determination- Staging Review • 2023 Value Engineering & ECI Phase Report • P90 and QRA	17/11/2025	25/11/2025	All received

RFI Number	Information Requested	Date Requested	Date Provided	Information Received
RFI 02B-8	• Concept and Trial Design by GHD • Business Case • Performance Assessment • Options Assessment • Design reports of: RAS pumping station, sedimentation tank, clarifier, odour control and grit removal system • Section 60 Approval Requirements	17/11/2025	25/11/2025	All received
RFI 02B-9	• CA report for pipe • Environmental incident performance • Aboriginal Cultural Assessment report • Options Assessment • In the capex interviews, Council stated that there had only been two previous failures of the Gosford Rising Main, in 2020 and 2023. This led to it procuring a condition assessment report of the pipe to understand the cause of failure. Could Council please confirm our understanding of the timeline and confirm when the condition assessment was procured? Was it following the 2020 failure or the 2023 failure?	17/11/2025	25/11/2025	All received
RFI 02B-10	• AECOM Condition Assessment Report • SPS Asset Class Business Case • Options Assessment • Standardised switchboard designs and FAT requirements	17/11/2025	26/11/2025	All received
RFI 02B-11	• 2017 Options & Geotechnical report from GHD- NSW Reference Rates Manual • CC Regional Plan • Options Assessment • Wyong Water Distribution System Review 2008 • Hunter Transfers Hydraulic Modelling Report 2006 • Central Coast Water Supply Master Plan (CCWSMP)	17/11/2025	25/11/2025	All received
RFI 02B-12	• Options Assessment • Groundwater Asset Class Management Plan • Condition assessment reports • PFAS Risk Assessment Study	17/11/2025	25/11/2025	All received
RFI 02B-13	• Options Assessment • Central Coast Water Security Plan (CCWSP) • Section 60 Approval Requirements • PFAS Risk Management Strategy and Treatment Options	17/11/2025	28/11/2025	All received
RFI 02B-14	• WIKA Policy & Guideline • Provide an example of developer delivered water and sewer development servicing contracts that include contingency sums • Developer charges calculation model • Business case for WIKA Schemes	17/11/2025	25/11/2025	All received