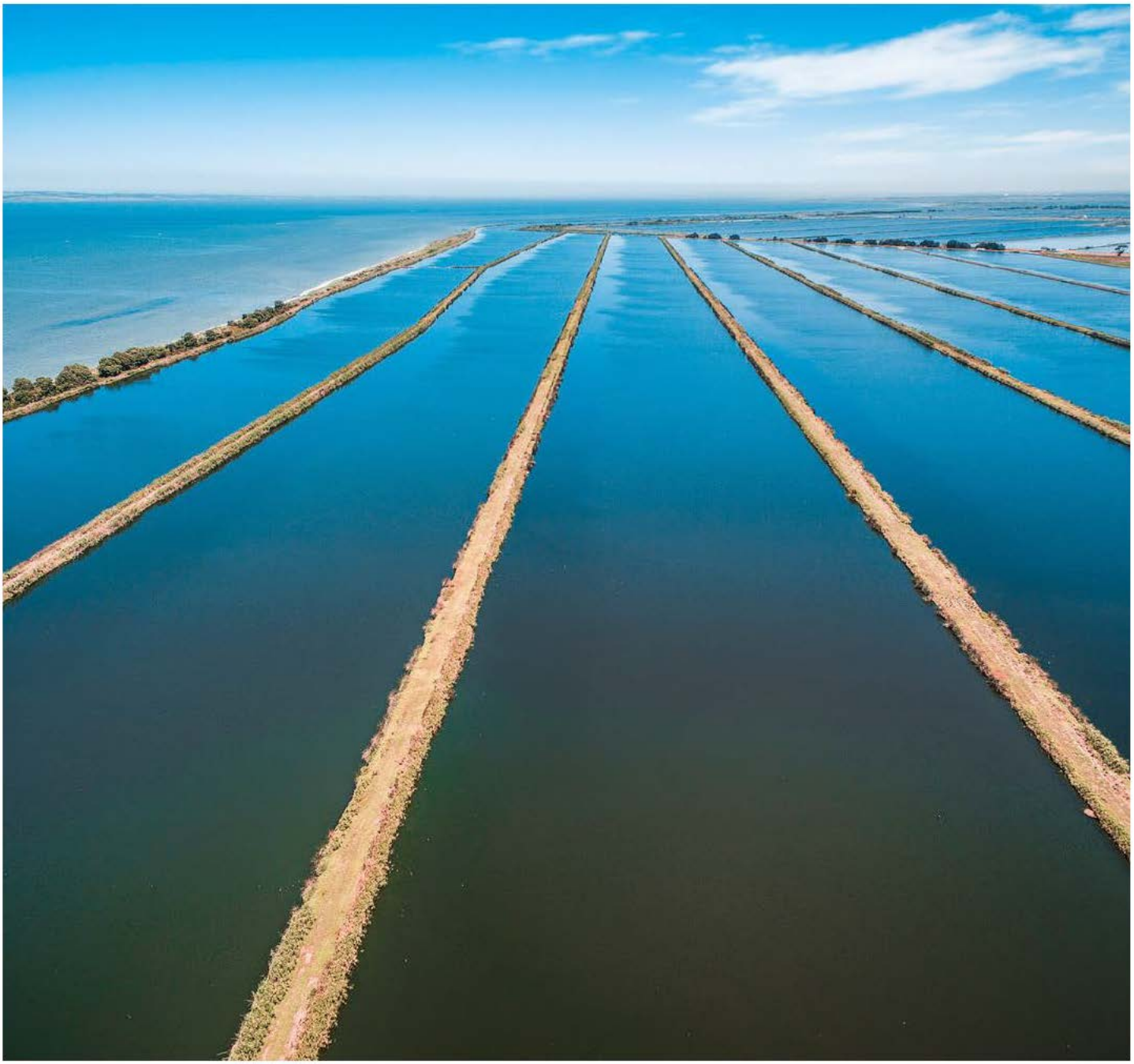

Prudency and efficiency review

Review of Gladstone Area Water Board's forecast capital and operating expenditure for 2025-30

A confidential final report prepared for the Queensland Competition Authority

4 October 2024

AITHER

Acknowledgment of Country

Aither (a Ricardo company) acknowledges First Nations people as the First Peoples of Australia and the Traditional Custodians of its lands and waters. We pay respect to the deep connection First Nations people hold with Country and celebrate the continuing effect of cultural knowledge and practices on Country and communities across Australia.

We pay our respect to Elders past and present, whose knowledge and leadership has protected Country and allowed First Nations spirituality, culture and kinship to endure through the ages.

We recognise the injustices and hardship faced by First Nations communities and reflect on opportunities for all Australians to play a part in reconciliation and the development of mutual understanding and respect across cultures.

Contents

Summary

Aither was engaged by the Queensland Competition Authority (QCA) to review the Gladstone Area Water Board's (GAWB) capital and operating expenditure as part of its 2025-2030 price investigation.

GAWB provided its submission to the QCA on 31 May 2024 setting out its:

- Business and operating context
- Current period outcomes (including historical expenditure)
- Demand forecast
- Regulated asset base
- Proposed capital and operating expenditure for the 2025-2030 period
- Rate of return
- Prior period adjustments, and
- Forecast revenue and proposed pricing.

To support its review of this submission, the QCA engaged Aither to carry out a review of the prudency and efficiency of GAWB's:

- Historical capital expenditure during the 2020-25 period
- Proposed capital expenditure for the 2025-30 period
- Proposed operating expenditure for the 2025-30 period, and
- Any strategic matters relevant to robustly reviewing prudency and efficiency of the subject capital and operating expenditure including governance frameworks, legal and regulatory requirements.

Our approach to this review, and the findings, are summarised below.

Approach

We approach any regulatory review with the same core principles. Ensuring we are:

- Robust
- Thorough, and
- Fair.

This means our approach is based on ensuring we have reviewed all the underpinning pillars of prudent and efficient capital and operating expenditure, without fixating on information or issues that would not have a material impact on expenditure, revenue or customer prices. We will, however, make recommendations where a business could improve those immaterial issues to the greater benefit of its customers, its employees and/or its regulatory processes. Regulatory reviews are an opportunity for independent analysis and continuous improvement. Our review will highlight where GAWB could improve on areas that may not materially impact the prudency or efficiency of expenditure, or the impact to customer pricing directly but could make its internal processes more robust and/or regulatory reviews more effective.

For that reason, our approach to this review was centred around understanding GAWB's capital and operating needs, the governance and controls around them, and assessing them for good practice and impact to its customers.

We designed a four-stage approach to drive:

- Collaboration and understanding with the QCA
- Detailed review and understanding of GAWB's submission, business and operating context
- Detailed review and analysis of GAWB's historical and proposed capital expenditure and proposed operating expenditure using trusted analytical methods discussed in section 1.3 of this report, and
- Detailed reporting to the QCA of findings founded on evidence, good understanding and fairness.

Our approach is based on good practice regulatory review methods for ex-post and ex-ante capital expenditure reviews, and base-step-trend operating expenditure analysis. It is also in accordance with the QCA's requirements for this review as well as recent regulatory precedent set by the QCA. Our full review approach is explained in detail in section 1.3 of this report.

In forming our views, it should be noted that we have relied on information that was available during the time of our review. All information provided was given fair and adequate consideration including information provided very close to finalisation of the report. In the future, more fulsome, complete information from the outset would assist in undertaking any similar review. It should also be noted that in undertaking this review, GAWB were positive to deal with and sought to willingly assist where it could in relation to the provision of information or discussions with key staff members.

Findings and recommendations

Capital expenditure

As a result of the detailed review carried out and discussed in section 2 of this report, we found:

- GAWB's forecast capital expenditure for the 2025-30 period is generally based on sound foundations of project management, governance and risk management. However, there were instances identified where GAWB has failed to maintain or apply its own policies and processes which have the potential to impact the prudency and efficiency of capital expenditure
- Neither prudency or efficiency of the three ex-ante projects reviewed were fully demonstrated in the documents provided or interviews undertaken with the reviewers (following our principles for demonstrating prudency and efficiency set out clearly in section 2.3 of this report)
- Efficiency was not demonstrated in two of three ex-post projects reviewed, and not fully demonstrated in the other, based on the documents provided and interviews undertaken
- GAWB is unlikely to deliver the proposed capital program in full given the substantial uplift and its current level of resource planning, internal capacity and reliance on external resourcing
- The apparent escalation rate applied to carryover projects from the 2020-25 period to the 2025-30 period appears significantly higher than that proposed by GAWB in its submission. There was

limited detail in the documents provided that related to how costs have been updated for the current period which makes precise quantification challenging

- The priority of projects in the forecast portfolio is not clear based on documents provided
- In general, the estimating tool[1] used by GAWB to develop capex estimates appears to use a thorough approach to estimating time and costs for itemised tasks. However, the basis for those estimates is not described in the documents reviewed (e.g. actual historic hours or costs, industry benchmarks). Contingency allowance appears to have been applied inconsistently across the projects reviewed, without explanation.

All of these findings, how they relate to prudency and efficiency, and their impact on our recommendations are explained in section 2 of this report. Our recommendations for capital expenditure as a result of these findings, are set out in Box 1 below.

Box 1 Recommendations of the capital expenditure review

- The cost estimates for the 23 carryover projects are reviewed and revised to more closely accord with GAWB's proposed approach to escalate capital expenditure, or detailed justification provided
- GAWB provides greater transparency over the implementation of its project prioritisation processes, including the role of governance bodies and documentation of decision making, to clearly demonstrate the prudency, efficiency and deliverability of projects in the forecast capital portfolio and allow a determination on which projects should have precedence for investment and delivery
- Completion of a substantive review of the project team capacity to deliver capital expenditure to ensure alignment with the proposed expenditure and to allow monitoring of the capacity through the regulatory period

Operating expenditure

GAWB took a top-down approach to determine its operating expenditure forecast, identifying and substantiating its step changes, consistent with the base-step-trend methodology. In doing so, GAWB also had regard to the approach used by the QCA in assessing Seqwater's forecast operating expenditure in its most recent bulk water price review, noting that Seqwater's actual baseline year expenditure was above the allowance previously assessed as prudent and efficient by the QCA.

In GAWB's case, its actual adjusted expenditure was below the QCA allowance previously assessed as prudent and efficient. Whilst actual expenditure in individual categories varied from the amounts previously assessed via the former bottom-up category, based approach, GAWB managed its costs within its total operating expenditure envelope.

Table 1 represents the operating expenditure step changes identified by GAWB as part of implementing the base-step-trend process. Broadly, there is a significant step-up in GAWB's operating expenditure. GAWB noted that "it is undertaking significant investments in the 2025-30 regulatory period in a fast-evolving environment, including the initial augmentations necessary to accommodate demand for the new hydrogen industry which is expected to represent another step-change in

[1] GAWB's *Estimating Tool - 21DEC23.xlxs*

Gladstone's investment cycle". At the same time, GAWB stated that it continues to experience significant cost pressures, impacting the existing network and business-as-usual activities.

Table 1 Operating expenditure step changes

OPEX steps	2025-26	2026-27	2027-28	2028-29	2029-30
Labour costs	5,937,791	6,662,545	6,662,545	6,662,545	6,662,545
Insurance	438,570	688,840	972,838	1,295,330	1,661,758
ICT	807,538	807,538	807,538	807,538	807,538
Chemicals	277,181	277,181	277,181	277,181	277,181
Network reform	802,156	272,024	846,470	454,202	(29,881)[2]
Hatchery	275,359	275,359	275,359	275,359	275,359
Tariff review	93,352	326,731	326,731	-	-
QCA cyclical review	102,687	-	-	746,815	2,446,769
Electricity	407,633	419,866	925,719	1,416,394	2,236,801
Total Steps	**9,142,266**	**9,730,084**	**11,094,381**	**11,935,364**	**14,338,069**

Our findings on each are discussed in detail in section 3 of this report and our recommendations are set out in Table 2 further below.

On GAWB's proposed efficiency factor forming part of the trend assumptions to its operating expenditure forecast for the 2025-30 period, we found:

- GAWB's proposed efficiency metric was based on a combination of a quantitative assessment of productivity growth rates for water distribution businesses using the National Performance Report (NPR) database and an assessment of recent regulatory precedents.
- While the methodology used by Frontier Economics for the quantitative assessment is commendable, ultimately the quality and availability of data limits the usefulness of these findings to the final decision. However, the quantitative assessment is a useful supplementary piece of evidence that should be used to support the efficiency metric in the medium and long term once data issues are resolved.
- The regulatory precedent has a relatively higher importance to the decision given the point above. We consider that the proposed efficiency factor of 0.2 per cent is too low, and this is based on the following:
  - The range of efficiency factors from regulatory precedent are, in general, higher than the proposed efficiency factor, with the only data point that is below 0.2 per cent being the

[2] This number differs from GAWB's original proposal of (403,228) which was due to a reporting error. GAWB addressed this issue and provided the revised value in its *'Maintenance RFI 38 and 39'* document. This is described in Section 3.4.4.

Seqwater example that also incorporated other factors. The revised range of regulatory precedents was 0.77 per cent and the median value was 0.7 per cent.

- We also note that a number of GAWB's proposed operating expenditure step changes include new approaches that will be implemented during the next regulatory period. This includes the Network Reform Program and the moderate (as opposed to lean) operating model. GAWB acknowledges that the benefits associated with some of these changes are difficult to measure. In our view, a relatively higher efficiency rate is a way to embed some of these difficult to measure benefits into the forecasts.

- We acknowledge that the approach taken has subjective elements. However, we believe that there is sufficient evidence to justify that the proposed 0.2 per cent efficiency factor is too low. We consider an efficiency factor of 0.7 per cent as being more appropriate for GAWB. This is marginally lower than the average efficiency factor across the identified relevant decisions, primarily given the inherent uncertainty in transferring efficiency metrics across businesses and time.

Our analysis underpinning these findings is discussed in greater detail in section 3 of this report, while Table 2 sets out our recommendations as a result.

Table 2 Summary of recommended changes to the operating expenditure step changes and efficiency factor

OPEX component	Recommended adjustment (All $ values are 2022/23 real)
Labour step change	The long service leave component of labour costs reduced the total cost of the step change of $3,840,500 to $2,304,300 over the 2025/26 – 2029/30 period.
Electricity step change	We do not recommend any changes to the electricity cost forecasts. However, these should be reconfirmed once the CAPEX forecasts are finalised.
ICT step change	We recommend that the annual ICT expenditure is decreased by $7,175 so the total of the subcomponent matches the summary table provided.
Maintenance step change	We recommend the network reform documentation expenditure are removed from the maintenance step change, resulting in a $233,380 reduction.
Hatchery step change	We recommend that the hatchery food and operations expenditure are reduced by $149,953 per annum.
Insurance step change	We do not recommend any changes to the insurance cost forecasts. However, these should be reconfirmed once the CAPEX forecasts are finalised and the RAB growth approach should be confirmed with the insurance company.
Chemical step change	We do not recommend any changes to the chemical cost forecasts.
QCA price investigation step change	We do not recommend any changes to the QCA price investigation cost forecasts.

OPEX component	Recommended adjustment (All $ values are 2022/23 real)
Review of tariff structure step change	We recommend that the tariff review expenditure is reduced by $746,815.
Efficiency factor	We recommend that the efficiency factor is increased from 0.2 per cent to 0.7 per cent.

The following provides a summary of the recommended adjustments to GAWB's proposed operating expenditure for the upcoming regulatory period. These changes result in a reduction of GAWB's proposed operating expenditure by approximately $6.5 million over the regulatory period, but still represents a material increase in costs relative to the base year.

Table 3 below summarises the recommended adjustments to GAWB's proposed operating expenditure for the upcoming regulatory period, based on our findings. These changes result in a reduction in GAWB's proposed operating expenditure by approximately $6.5 million over the regulatory period, but still represents a material increase in costs relative to the base year.

Table 3 Summary results of the recommended adjustments ($2022/23)

$2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
GAWB's proposed OPEX base	40,241,769	40,890,313	42,261,377	43,037,856	45,303,581
Recommended step change adjustments					
Labour	-307,240	-307,240	-307,240	-307,240	-307,240
ICT	-7,176	-7,176	-7,176	-7,176	-7,176
Maintenance	-233,380				
Hatchery	-149,953	-149,953	-149,953	-149,953	-149,953
Tariff structure reform	-93,352	-326,731	-326,731		
Revised OPEX base	39,114,559	39,702,377	41,066,674	42,234,388	44,637,093
Revised OPEX base, with escalator (real)[3]	39,681,620	40,413,802	41,879,775	43,084,232	45,469,903
Recommended efficiency factor adjustments					
Recommended efficiency factor (0.7%) savings[4]	-435,229	-723,053	-1,037,195	-1,361,145	-1,744,749
Total recommended operating expenditure	39,246,391	39,690,748	40,842,580	41,723,087	43,725,155

[3] Aither did not examine the appropriateness of the cost escalation rates

[4] GAWB's base-step-trend model captures the assumed efficiency savings from 2022/23 onwards. Our recommended efficiency rate (0.7 per cent) has been applied to the 2025/26 – 2029/30 period only.

Other recommendations

Both elements of the review (capital expenditure and operating expenditure) experienced challenges in reviewing and quantifying impacts of findings and recommendations as a result of unavailable, incomplete or conflicting information throughout the review. In some instances, the review teams have considered, on balance, the impacts of these are likely to be immaterial or cannot be understood and quantified reliably in order to make a sound recommendation based on evidence. Going forward, we consider that the earlier provision of more fulsome information and documentation would enable a more thorough expenditure review.

For this reason, we recommend both the QCA and GAWB monitor GAWB's progress over the next regulatory period concerning key observations made throughout this review, and resulting in the recommendations set out in Table 4 below.

Table 4 Additional recommendations for the QCA and GAWB to monitor

Issue	Recommendation
General recommendation	Going forward, we recommend that GAWB improve its internal process so that it can provide earlier, more fulsome information and documentation that will enable a more thorough expenditure review.
Labour step change	GAWB incorporate better information in its decision-making processes on the benefits to GAWB and its customers as a result of material increases in expenditure (such as a new operating model). This will assist in the justification for these increases in expenditure and ensure a more informed decision on the increased expenditure is implemented.
ICT step change	GAWB improves the documentation that demonstrates the drivers of ICT expenditure going forward, that demonstrates how additional roles are driving increases in ICT expenditure.
Maintenance step change	GAWB improve internal documentation to justify this type of change in expenditure to ensure the expected benefits and changes in value are better reflected in the decision-making
Hatchery step change	GAWB confirm its understanding around the treatment of the maximum permitted fingerlings in writing with the relevant Department to streamline future price monitoring reviews
Chemical step change	GAWB gather more contemporary data on chemical demanded for future reviews. This should also be broken down by the key demand drivers (such as from new assets) of chemicals used. We also recommend that the efficiency of GAWB's procurement process is demonstrated in greater detail.

Issue	Recommendation
Capital expenditure	GAWB improve its records management so it can demonstrate it follows its internal policies and procedures, and ISO 55000 certified processes, which underpin robust capital planning and delivery processes that should lead to prudent and efficient expenditure. Without consistent evidence it has been difficult for the review team to accurately assess and quantify the customer impacts of GAWB's historical capital expenditure and the appropriateness of its forecast going forward.

1. Introduction

The Queensland Competition Authority (QCA) requested an independent review of the Gladstone Area Water Board's (GAWB) proposed expenditure to deliver bulk water services in the Gladstone area for the period 1 July 2025 to 30 June 2030 (**the next pricing period**).

Independent review of the proposed expenditure will support the QCA in reaching a view on the maximum prices GAWB should charge its customers during the next pricing period.

The review included:

- Past and proposed capital expenditure
- Proposed operating expenditure, and
- Associated matters.

The past capital expenditure review covered the period 1 July 2020 to 30 June 2025 (to the extent information was available), while the review of the proposed capital and operating expenditure covered the period from 1 July 2025 to 30 June 2030.

1.1. Background

The Queensland Competition Authority (**the QCA**)

Bulk water supply requires significant and ongoing investment in infrastructure, to the benefit of many users.

Part of the QCA's role is to conduct price monitoring of bulk water services provided by GAWB for industrial, electricity generation, and local government customers in the Gladstone area of central Queensland. This price monitoring role is as directed by the Queensland Government and subject to the directions set out in a Notice of Referral.

To do this, the QCA has various review or assessment processes associated with price determinations. One such process is independent expenditure reviews, which help determine whether bulk water providers (such as GAWB) are incurring efficient costs to provide the services.

Expenditure reviews

Expenditure reviews aim to evaluate the prudency and efficiency of the provider's capital and operating expenditure, with a focus on ensuring that the costs incurred or forecast by the provider are efficient. Such reviews are necessary to ensure that proposed prices are based on investments and operations that are necessary to deliver against planning, customer, regulatory and other requirements, as well as to ensure those investments are being delivered at least cost.

In the context of this review, expenditure may be considered efficient when it is the best and most cost-effective means to meet the customer or community need and may be considered prudent when it is aligned with the circumstances existing at the time, and the longer-term expenditure plan and program objectives.

The Gladstone Area Water Board (**GAWB**)

GAWB was established in 1973 to support the Gladstone Town Council and the Calliope Shire Council in managing the increasing financial pressures resulting from the ongoing expansion of the area's water supply system due to industrial growth in the early 1970s. On 1 October 2000, GAWB commenced operations as a Category 1 commercialised Water Authority under the *Water Act 2000*. From 1 July 2008, GAWB became a registered service provider under the *Water Supply (Safety and Reliability) Act 2008*.

GAWB operates a water delivery system to supply customers in Central Queensland that includes both raw and treated water. The system comprises a network of over 200km of bulk water pipelines, pump stations, chlorination units and reservoirs for balancing storage. The network transports bulk water from Awoonga Dam storage, treats it and then distributes it via pipe networks owned and operated by GAWB. Most of the infrastructure for water delivery is located within pipeline easements, but there are also components situated on GAWB's freehold land and others within government reserves.

GAWB operates two drinking water schemes – the Gladstone and Yarwun WTP Schemes. From these schemes it provides bulk drinking water to the Gladstone Regional Council for reticulation to domestic users and to various industrial customers. In addition to supplying potable water to the Gladstone Regional Council and a number of domestic connections located around Lake Awoonga (which collectively represents approximately 20% of annual water supplied), GAWB provides raw and potable water to predominately export-oriented industrial customers. This water represents 80% of GAWB's annual water supplied and supports industries such as:

- Thermal electricity generation
- Liquefied natural gas (LNG) production
- Alumina/aluminium production
- Chemical production, and
- Coal export.

GAWB is also involved in servicing the emerging hydrogen industry developing around the Gladstone region.

1.2. Review objectives and scope

The objectives and tasks of this expenditure review included:

- A strategic review of GAWB's long-term investment plans (10 to 20 years), asset management systems and practices, including consideration of the appropriateness of governance arrangements
- A detailed review of GAWB's historical and forecast capital expenditure for prudency and efficiency, and
- A detailed review of GAWB's forecast operating expenditure for prudency and efficiency.

1.3. Review methodology

To meet the objectives of the expenditure review, in terms of scope and quality, we delivered the review in four main phases (explained further below):

1. Project initiation
2. Information discovery
3. Analysis and review
4. Reporting

These were based on key principles of:

- Initial collaboration, discussion, and agreement with QCA to determine a range of parameters influencing each task
- Initial information review and engagement with GAWB
- Detailed analysis, review and engagement
- Reporting

Underpinning our approach was a drive for efficiency and effectiveness. This was primarily achieved through deployment of two bespoke teams to undertake the capital expenditure and operating expenditure reviews respectively, supported by overarching project management and strategic advisory teams. This approach allowed for effective project management and oversight of all review activities, interdependencies, and opportunities for efficiencies to be realised.

We engaged in regular and clear communication to ensure rapid dissemination of information and decisions across review teams, as well as with the QCA and GAWB.

1.3.1. Stage 1 – Project initiation

During this stage the project was initiated by developing a project management plan aligned to the QCA's Terms of Reference and delivering the required outcomes. This stage included developing a shared understanding of roles and responsibilities, scope, and the review process amongst the project team and QCA, as well as confirming the approach to engagement with GAWB and other stakeholders and confirming the approach to information management and control.

Initial information was reviewed and additional requests for information were developed.

We also confirmed the sample of capital projects for review during this stage of the project. These were:

Ex post

- GWTP Filter Media Replacement & Filters (CAP2019-067)
- AWD conduit inspections and shutdown (CAP2020-100)
- Golegumma DN300 Pipeline replacement (CAP2020-076)

Ex ante

- Hydrogen customers enabling infrastructure (TBA312 & CAP2024-518) – a suite of related projects including:
  - TBA312A - [redacted] – Raw Water Pipeline
  - TBA312B - [redacted] - Raw Water Pump Station: Stage 2 Upgrade
  - TBA312C - [redacted] – Raw Water

- TBA312D - [redacted] – Raw Water Pipeline
- TBA312E - [redacted] (note: *captured as two projects in the Hydrogen Program Execution Plan)*
- TBA312F - [redacted] - Pump Redundancy Improvements
- TBA312G - [redacted]
- TBA312H - [redacted] - Raw Water
- TBA312I - [redacted] - Raw Water
- TBA312J - [redacted] – Raw Water Pipeline: [redacted]

- East End pipeline replacement (CAP2019-069)
- South Gladstone reservoir replacement (CAP2019-065)

1.3.2. Stage 2 – Information discovery

During this stage, we met with GAWB to discuss the topics in Table 5 and requested additional available information to support the expenditure review.

Table 5 GAWB interviews

Review	Interview topics
Opex	Opex budget development process
	Baseline operating adjustments
	Step changes – general
	Step change - labour
	Step change - electricity
	Step change - ICT
	Step change - maintenance
	Step change - hatchery
	Step change - insurance
	Step change - chemicals
	Step change – QCA investigations
	Step change – tariff review
Capex	Capex forecasting process (including sample projects)
	Hydrogen projects
	Historical expenditure (including sample projects)

Initially we engaged with GAWB on strategic matters and background information to test our understanding and assumptions before raising additional requests for information and seeking more specific interviews. This was in order to maximise both the efficiency and effectiveness of staff interviews. General information and understanding being sought was provided ahead of time to guide targeted discussions, followed by more specific and detailed requests (at project or activity level) during the analysis and review stage.

In total, 33 formal requests for information were made across these and other topics throughout the review, in addition to the information gathered through the interview process.

As expected, the quality of a review such of this is largely reliant on the availability of information so every attempt was made through this stage and others to work with GAWB on the provision of fit-for-purpose information that could lead to accurate and complete conclusions against the scope of this review.

1.3.3. Stage 3 – Analysis and review

This stage of the project involved the most in-depth and resource intensive delivery activities. It focused on delivering the substantive analysis and review requirements outlined in the terms of reference set by the QCA. It also included further detailed interviews with GAWB staff on deeper matters of relevance to the review not explored in the previous phase such as specific capital projects and the management details of various operational expenditure.

The tasks in this stage were designed to sequentially step through the detail required to form our assessments, from strategic or high level to greater degrees of detail.

To manage the varied demands of this stage of work effectively, our approach centred on communication and collaboration. We communicated regularly across our internal project team, with the QCA and with GAWB directly. We also worked to ensure all information was recorded and stored securely to protect GAWB's confidential information.

1.3.4. Stage 4 – Reporting

Our approach to reporting is comprehensive and client focused. We established a structure and format for the final report (via the draft report process) in accordance with the terms of reference to ensure outputs are easy to understand and link clearly back to evidence. Meticulous work was carried out to ensure all findings linked back to clear evidence and that:

1. GAWB had every opportunity to provide the information required to derive successful conclusions, and
2. We had understood the information provided and used it correctly in developing our findings.

1.4. Assessment framework

During these four project stages, we developed and applied an assessment framework to guide our review and ensure accurate, complete, fair and reasonable outcomes, supported by evidence that was complete and understood.

Below we set out our approach to the strategic review and the OPEX and CAPEX review, including details of the analytical approaches that were used to assess the prudency and efficiency of the proposed expenditure.

1.4.1. Strategic review

This task focused on addressing higher level strategic considerations consistent with the RFQ, including a review of matters that may be driving decisions, investments, and processes within GAWB including:

- Governance arrangements
- GAWB or Queensland Government policy requirements, and
- Regulatory and planning.

The relationship of proposed capital expenditure to government and regulatory obligations, customer service expectations, strategic plans, asset management plans, and risk management framework was also considered.

Importantly, we understand that this task presents a broad test of the efficiency and prudence of GAWB's proposal. Unless GAWB can demonstrate that effective processes are in place for the selection of priority projects and management of assets, then it is unlikely that the projects selected will be prudent. As part of this review component, we looked for evidence of clear linkages between proposed investment in assets and operations and the services that are valued by customers and required by regulation.

The results of this component of the review were used to inform subsequent tasks, such as determining if past or proposed capital or operating expenditure is aligned with internal or external planning, policy, regulatory or other requirements. Under this task we considered:

- Planning matters, including demand forecasts and estimates (this includes a consistency consideration with the demand review), key assumptions underpinning this, and how this is informing investment decisions.
- The regulatory and operating environment, including required levels of service and customer service obligations, the GAWB operating licence and associated conditions or requirements, environmental and public health regulatory requirements, and the implications of, or relationship between these elements for asset management decisions.
- The long-term capital investment strategy (20 years plus), and the 5-year capital expenditure program, including their relationship to planning estimates and regulatory requirements, as well as alignment and risks between the shorter- and longer-term capital expenditure plans, and the efficiency of the longer-term strategy.
- A range of processes associated with ensuring prudent and efficient capital or operating expenditure, including GAWB's approach to risk management for bulk water assets, procurement processes, whole of life cycle planning, and approach to capital and expenditure trade-offs.
- GAWB's approach to asset management including the use of risk-based assessments and condition assessments, data management, asset life determination, replacement prioritisation, the costs of reactive versus preventative maintenance and similar matters.

1.4.2. Capital Expenditure

We reviewed capital expenditure to address all related questions posed in the RFQ. The requirements of the RFQ were to:

… assess the prudence and efficiency of GAWB's capital expenditure – forecast and actual. In its assessment, the consultant should:

(1) Consider performing a desktop review of GAWB's governance arrangements, policies and procedures relevant to investment and expenditure decisions. Documentation reviewed should include but need not be limited to; asset planning and asset management policies; risk management approaches; procurement and investment decision-making frameworks. The consultant should form a view as to whether GAWB's governance, policies and procedures:

a. are consistent with good industry practice
b. apply appropriate governance, oversight and challenge of expenditures and decision making throughout the planning and delivery process,
c. are appropriately and consistently applied in developing and delivering its programs, and
d. are likely to result in efficient expenditure and investment decisions.

(2) if necessary, recommend potential improvements to governance arrangements, policies and procedures relevant to GAWB's expenditure decisions

(3) assess the reasonableness of GAWB's forecasting methodologies and their application, including inputs, assumptions and modelling. The consultant should form a view on whether GAWB's methodologies provide a reasonable basis for developing forecasts that reflect efficient costs

(4) take into account the uncertainty around projects at an early stage of development, and adopt a suitable assessment approach for dealing with risk and uncertainty (recognising that such projects will have relatively lower levels of documentation than more advanced projects).

(5) assess, and form a view on, the deliverability of GAWB's proposed capex programs

(6) identify the value of any expenditure that is considered to be inefficient and/or imprudent

(7) substantiate all findings and recommendations with comprehensive referencing to relevant benchmarks and information sources, as required.

Assessment of GAWB's forecast capex

The consultant will be required to assess the prudence and efficiency of a sample of forecast capital expenditure from 1 July 2025 to 30 June 2030.[2]

The QCA will work with the consultant to determine an appropriate sample of three key projects/programs to be reviewed. These may include:

- *a pipeline replacement or renewal project*
- *a reservoir replacement or renewal project*
- *network augmentation or expansion required to satisfy reasonably expected future demand.*

The consultant may desire to outline in its proposal how it will undertake an assessment of the abovementioned projects, and the relevant experience and expertise it can bring to these project assessments.

Assessment of GAWB's actual capex

The consultant will be required to assess the prudence and efficiency of a sample of actual capital expenditure from 1 July 2020 to 30 June 2025 (to the extent actual capital expenditure information is available).

The QCA will work with the consultant to determine an appropriate sample of three key projects/programs to be reviewed. These may include:

- *Gladstone Water Treatment Plant - Filter and media replacement*
- *Awoonga Dam conduit inspections and shutdown*
- *The Golegumma pipeline replacement project.*

The consultant may desire to outline in its proposal how it will undertake an assessment of the abovementioned projects, and the relevant experience and expertise it can bring to these project assessments.[5]

In undertaking our review, we assessed the application of GAWB's policies and procedures to the development of the proposed capital expenditure forecasts. The relationship of proposed capital expenditure to government and regulatory obligations, customer service expectations, strategic plans, asset management plans, and risk management framework were considered. Investment timing was considered along with the clear identification of the investment need, assessment of investment options for significant projects and programs, and the extent to which GAWB had considered substitution between capital and operating costs for optimised lifecycle costs of identified options.

A similar process was undertaken for past expenditure, including forecast expenditure in the final year of the current pricing period. In addition to sampling individual projects, actual expenditure was compared to proposed expenditure for insights and investigation.

For identified past projects we considered evidence of prudence and efficiency and requested evidence that procurement was efficient and led to the least cost way of meeting the service need.

For the projects examined in detail we built upon the higher-level review by considering supporting documentation dating back to the original project business case, approval to spend, or similar documents. The stated project scope and drivers were examined throughout the various documents provided to monitor if there has been any variance, e.g. between the initial business case and later feasibility study or concept designs. In our experience undertaking reviews of capital programs there is sometimes a disconnect between initial project needs and/or drivers and the final solution. More commonly, we see claimed drivers for expenditure not being in accordance with the regulatory framework.

Analysis was undertaken of GAWB's capital expenditure in the 2020-25 regulatory period, including identifying capital trends and understanding their impact on the forecast capital expenditure for the 2025-30 period in the form of carry-over, variation in delivery time and project cost from estimates, and factors contributing to cost escalation.

Closer examination of a selection of projects, both ex-post and ex-ante, was performed to ascertain whether GAWB's policies and procedures have been applied with consistency and rigour, and whether there is evidence that the project expenditure is prudent and efficient.

The deliverability of the proposed expenditure program was also evaluated, informed by evidence of past performance, internal policies and processes, and organisational strategies to manage risk and uncertainty.

The review consisted of desktop analysis of GAWB documents, including those provided via formal requests for information. Challenges included:

[5] QCA, Terms of reference l Gladstone Area Water Board: 2025–30 price monitoring investigation l 2005936, 1 February 2024, p. 3-4

- The redaction of information in hydrogen project documentation initially provided for review which made it difficult to fully understand what was being proposed
- Changing internal project management processes made it difficult to gain clarity around what was being used at various points in time for different projects, and
- Incomplete documentation provided to evidence consistent application of processes.

These challenges were discussed in a round of interviews with key GAWB staff which, in some instances, provided rich, detailed information that helped to guide additional, more incisive requests for specific evidence of prudency and efficiency in the proposed capital expenditure. Unredacted hydrogen project documentation was later provided and able to be assessed, and insight into GAWB's maturing project management framework was provided.

Our findings reflect the provision of important material in response to the challenges listed above including project schedules and an overview of CAPEX deliverability. In some cases, complete information was not provided, and this impacted our ability to make recommendations on the prudency and efficiency of GAWB's proposed capital expenditure.

A full list of documents reviewed is contained in Appendix A.

The outcome of detailed reviews of the sample of projects selected for review is contained within Appendix B.

The data and calculations used for analysis in this review is contained in separate document Appendix C.

1.4.3. Operating expenditure

Our approach to assessing GAWB's forecast operating expenditure for this review is based on our previous experience in undertaking similar reviews and previous guidance from the QCA in its reviews under the base-step-trend approach to forecasting operating expenditure. The QCA has previously provided guidance on assessing the prudency and efficiency of operating expenditure under the base-step-trend analysis method as follows:[6]

- A base year reflects total operating expenditure with one-off costs removed. If the proposed base year represents a typical year for the forecast regulatory period (that is, there are no fundamental changes to the business operating environment), the QCA considers actual operating expenditure as a starting point. If actual operating expenditure is:
  - lower than the approved allowance, we accept this as the prudent and efficient revealed operating expenditure and use the most recently completed financial year to establish the base year
  - higher than the approved allowance, we assess the reasons provided by the water corporation for this outcome to understand the outcomes. Where sufficient justification is not provided, the QCA determine an appropriate base year amount using available information.
- Step changes are included for future prudent and efficient incremental costs that:
  - Are necessary to fulfill new, or changed, binding statutory or regulatory obligations

[6] Queensland Competition Authority, *Seqwater Bulk Water Price Review 2022-26 – Final Report*, March 2022, p.17.

- Are reasonably required to achieve an outcome that is explicitly endorsed by customers (for example, specific reliability outcomes) or broadly accepted changes in community expectations in relation to corporate responsibility (such as commitment to climate change mitigation)
- Are not funded through other components of other approved allowances (to avoid double counting of costs)
- Represent cyclical activities that are not within annual business-as-usual budgets
- Are of sufficient materiality that the costs could not reasonably be met by an efficient entity operating within business-as-usual budget constraints, through prudent prioritisation of expenditures, or be otherwise mitigated.

- Trends reflect future cost escalation, ongoing efficiency savings and changes in demand.

The process for undertaking our assessment of the forecasting operating expenditure involved, amongst other things:

- reviewing GAWB's regulatory submission and attachments to identify key forecasting issues and assumptions
- providing GAWB with a list of information requests and questions related to its operating expenditure forecasts
- undertaking detailed interviews with GAWB staff to clarify issues in relation to underlying assumptions for the operating expenditure.

Selection of baseline year of operating expenditure

GAWB was required to submit its 2025-2030 pricing submission to the QCA by 31 May 2024. This meant that the last full year of actual operating expenditure for GAWB was 2022-23 with a gap of two full years before the first year of the forecast operating expenditure in 2025-26. In most other jurisdictions that apply a base-step-trend, the regulated corporations submit information later in the year which allows the penultimate year of the current regulatory period to be used as the baseline year for operating expenditure (this would be 2024-25 in GAWB's case).

This approach creates an additional year between the last year of actual information and the start of the regulatory period. This additional year has resulted in GAWB undertaking a different approach that combined step changes and trends between the regulatory periods.

Step changes and trends

In assessing the prudency and efficiency of step changes and trends for this review we applied the criteria set by the QCA above, namely:

- Step changes must be:
  - Necessary to fulfill new, or changed, binding statutory or regulatory obligations
  - Reasonably required to achieve an outcome that is explicitly endorsed by customers (for example, specific reliability outcomes) or broadly accepted changes in community expectations in relation to corporate responsibility (such as commitment to climate change mitigation)
  - Not funded through other components of other approved allowances (to avoid double counting of costs)
  - Cyclical activities that are not within annual business-as-usual budgets

- Of sufficient materiality that the costs could not reasonably be met by an efficient entity operating within business-as-usual budget constraints, through prudent prioritisation of expenditures, or be otherwise mitigated.

- Trends must reflect future cost escalation, ongoing efficiency savings and changes in demand.

During our analysis, we found it difficult to separate the impact of step changes and trends (namely, price changes) between the baseline year of operating expenditure and the first year of the upcoming regulatory period. For some step change proposals, the quantity of inputs demanded (which is generally linked to meeting increased demand or part-year operations in the base year) is coupled with changes to the unit costs of the inputs. The ideal approach for base-step-trend forecasting methods would be to separate the price change impacts into the trend component of the process, however GAWB has incorporated it within the step change to get to the appropriate starting point for the upcoming regulatory period. This has meant that GAWB has generally calculated the cost of a particular element and subtracted the base year cost to derive the net impact of the 'step change'. It has then sought to provide a further breakdown of the impact between different drivers. We would prefer that this was separated and treated independently, however we have accepted GAWB's approach for this review and considered the price impact within the step change assessment.

We note that, other than electricity and insurance, the price impact for the step change only relates to the two years between the actual expenditure of the baseline year and the first year of the upcoming regulatory period. Any price impact throughout the upcoming regulatory period is captured within the cost escalation of the trend component.

1.5. Information sources

A full list of the information provided by the QCA and GAWB, relied upon in preparing this report, is set out in Appendix A.

2. Assessment of capital expenditure

2.1. Overview

2.1.1. Summary of past and proposed capital expenditure

GAWB's actual capitalisation in the 2020-25 period was $84.16 million, just less than half of the $173.11 million forecast for the same period (48.6 per cent). A summary of GAWB's past capital expenditure is at Table 6.

Table 6 Summary of past capital expenditure 2020-21 to 2024-25

Capex category	Total Capex 2020-21 to 2024-25
Forecast capitalisation	$173.11 million
Actual capitalisation	$84.16 million
Variance between forecast and actual	($88.94 million)

GAWB's forecast capitalisation for the 2025-30 period is $504.95 million, representing an approximate six-fold increase in capital expenditure on the 2020-25 period. Of note, expenditure in just the first year of the forthcoming regulatory period is forecast to be slightly more than that capitalised over the 2020-25 period.

The expenditure is driven in large part by projects supporting the burgeoning hydrogen industry in Gladstone (approximately 55 per cent of forecast capital expenditure), in addition to the carryover of 23 projects from the 2020-25 period which make up 24 per cent of forecast capital expenditure. The primary driver for most of the remaining projects is replacement.

A summary of GAWB's forecast expenditure is at Table 7.

Table 7 Forecast capital expenditure 2025-26 to 2029-30

	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Forecast capitalisation	$86.5 million	$239.36 million	$124.66 million	$17.32 million	$37.12 million	$504.95 million

2.1.2. Findings

Key findings of this review are set out in Box 1 below and discussed in further detail in this chapter.

Box 1 Key findings of the capital expenditure review

- Forecast capital expenditure was generally based on sound foundations of project management, governance and risk management. However, there were instances identified where GAWB had failed to maintain or apply their own policies and processes which have the potential to impact the prudency and efficiency of capital expenditure.
- Neither prudency or efficiency of the three ex-ante projects reviewed were fully demonstrated in the documents provided or interviews undertaken with the reviewers.
- Efficiency was not demonstrated in two of three ex-post projects reviewed, and not fully demonstrated in the other, based on the documents provided and interviews undertaken.
- GAWB is unlikely to deliver the proposed capital program in full given the substantial uplift and their current level of resource planning, internal capacity and reliance on external resourcing.
- The apparent escalation rate applied to carryover projects from the 2020-25 period to the 2025-30 period appears significantly higher than that proposed by GAWB in its submission. There was limited detail in the documents provided that related to how costs have been updated for the current period which makes precise quantification challenging.
- The priority of projects in the forecast portfolio is not clear based on documents provided.
- In general, the estimating tool[7] used by GAWB to develop capex estimates appears to use a thorough approach to estimating time and costs for itemised task. However, the basis for those estimates is not described in the documents reviewed (e.g. actual historic hours or costs, industry benchmarks). Contingency allowance appears to have been applied inconsistently across the projects reviewed, without explanation.

2.1.3. Recommendations

Box 2 Recommendations of the capital expenditure review

- The cost estimates for the 23 carryover projects are reviewed and revised to more closely accord with GAWB's proposed approach to escalate capital expenditure, or detailed justification provided.
- GAWB provide greater transparency over the implementation of its project prioritisation processes, including the role of governance bodies and documentation of decision making, to clearly demonstrate the prudency, efficiency and deliverability of projects in the forecast capital portfolio and allow a determination on which projects should have precedence for investment and delivery.
- Completion of a substantive review of the project team capacity to deliver capital expenditure to ensure alignment with the proposed expenditure and to allow monitoring of the capacity through the regulatory period.

[7] GAWB's *Estimating Tool - 21DEC23.xlxs*

2.2. Past expenditure

Analysis was undertaken of GAWB's capital expenditure in the 2020-25 regulatory period, including identifying capital trends and understanding their impact on the forecast expenditure for the 2025-30 period in the form of carry-over, variation in delivery time and project cost from estimates, and factors contributing to cost escalation.

GAWB's actual capitalisation in the 2020-25 period was $84.16 million, just less than half the $173.11 forecast for the same period (48.6 per cent). The primary contributing factors to this from GAWB's Submission are understood to be:

- Disruption from domestic supply chain constraints and consequent impacts on the cost of resources, and
- Policy and legislative changes (especially the 2021 and 2023 updates to *Guidelines on Safety Assessment for Referable Dams (Queensland Government)*).

It was further noted in the interviews that a large number of projects were delayed due to:

- Complications related to land tenure / planning issues, and
- Delays associated with GAWB staff retention, project continuity and corporate knowledge.

These factors led to the following outcomes:

- Of the forecast projects project that were completed, an overspend of $9.98 million (or 31%) occurred ($42.50 million actual vs. $32.52 million projected)
- Of the projects that have commenced, but have not been completed, there is currently a $68.50 million underspend
- Of this, $41.02 million was related to deferral of the Awoonga Spillway Capacity Upgrade Project[8]
- Of the projects forecast to be completed in the 2020-25 period, 23 projects with a forecast cost of $40.91 million were deferred to the next regulatory period (2025-30) for a variety of reasons provided by GAWB. These projects now total $120.08 million in the forecast regulatory period, a growth of 194 per cent in value.

2.2.1. Macroeconomic context

GAWB's submission describes the significant negative impacts of inflation, electricity and resource constraints (materials and labour) and supply chain reliability on its operations, including delivery of its capital program.

It is widely accepted that many of the associated costs were uncontrollable (and faced by many Australian water utilities) because of the unprecedented labour market and supply chain conditions that developed through the early part of the regulatory period in Australia. The COVID-19 pandemic saw restrictions on travel within Australia, import restrictions for goods internationally, and substantial escalation of prices for a range of raw materials as global economic conditions were impacted by the war in Ukraine and other global economic circumstances. A high demand for skilled workers in the mid and later part of the period, particularly in construction, led to a highly competitive labour market

[8] Referred to as Awoonga Dam Improvement Project in GAWB's 2025-30 submission.

that saw substantial movement of workers to higher paid industries (e.g. mining) and WPI growth to a high of 4.75 per cent in 2023-24[9].

GAWB documentation, including a summary of projects forecast for the 2020-25 period and detailed review of documents for a selection of ex-post projects from the period, failed to adequately describe the impacts of these factors on specific projects. It is therefore unclear what the primary contributing factors to project delay, deferral and cost increases were. The resulting implication is that this review cannot reliably assess whether:

- the expenditure was prudent or efficient, and/or
- appropriate risk management has been undertaken to ensure those factors do not similarly impact proposed projects in the 2025-30 period, except in a general sense. This is discussed further in Section 2.5.

2.2.2. Boat Ramp at Boynedale Bush Camp

Although not one of the projects selected for detailed review, the Boat Ramp at Boynedale stood out as a project of note in the 2020-25 period due to the extreme variance between its forecast cost of $168,108 and capitalisation value of over $1.88 million in 2024[10]. This project was raised in interviews with GAWB, who provided an explanation of the cost increase in writing[11]. GAWB attributes the increase to a combination of factors:

- The impact of global supply chain constraints on the availability and costs of resources
- An increase from an estimated cost of $168,108 to $664,000 arising from more developed information informing the estimate
- A change in requirements/scope for the project that resulted in design variations and a change in preferred location for the project, leading to a further increase in costs, and
- Weather impacts causing additional costs and delays in delivery of the project.

Each of these factors, when considered individually, are an understandable reason for an increase in a projects' costs, and usually expected to fall within the +/- range of a class of estimate (refined as a project matures) and contingency allowance.

When taken together and considering the greater than ten-fold increase in costs from concept to delivery of the project, as well as widespread broader issues related to insufficient planning and scheduling of works by GAWB (see Section 2.3.2), this project appears to represent an unfortunate accumulation of internal and external issues for the project planning and delivery that ultimately cost GAWB's customers $1.7 million, or 1,000%, more than originally planned.

This example reinforces the importance of robust cost estimation, project and solution definition, planning and scheduling to achieve the desired benefits of a project for customers, at the most efficient cost.

[9] Estimates differ – noting GAWB's assumptions are WPI of 4.75% for 2023-24 from Queensland Treasury, *Budget Update 2023-24*, p. 14, *Frontier Economics*. Meanwhile, Zhou, I. (2023), *2023-24 Budget Review: Macroeconomic outlook*, Parliament of Australia, uses WPI of 4% for 2023-24.

[10] RFI011 *Summary of Progress of Significant Projects FY20 – FY25*

[11] RFI041 Further information on CAP2021-205

2.3. Capital project review

Projects for review were determined by QCA and include a mix of ex-post and ex-ante projects.

Ex-post projects were reviewed on the following basis to determine their prudency and efficiency:

- Forecast vs actual expenditure, and factors influencing any variance
- Forecast vs actual delivery timeframes, and factors influencing any variance
- Consistent application of GAWB's policies and processes, including robustness of capital planning and project scheduling
- Other matters of concern.

Ex-ante projects were reviewed on the following basis to make a determination on their prudency and efficiency:

- Consideration of options, including capital and operating expenditure trade-offs that result in a lowest overall cost over the expected life of an asset (for example through life cycle cost optimisation or life cycle costing analysis)
- Documented justification for project, including customer engagement
- Consistent application of GAWB's policies and processes
- Deliverability.

The capital project review uses the terms described in Table 8 to assess the efficiency, prudency and deliverability of projects.

Table 8 Capital project review terms

Subject	Term	What this means
Efficiency	**Demonstrated**	No issues were identified in relation to the project achieved in a least-cost manner, including consideration for capital and operating expenditure trade-offs.
	Not fully demonstrated	Potential or minor issues were identified in relation to the project achieved in a least-cost manner, including evidence not provided when it is expected to exist.
	Not demonstrated	Material issues were identified in relation to the project achieved in a least-cost manner, for example poor project scoping or planning requiring rework.
Prudency	**Demonstrated**	No issues were identified in relation to the project need, for example as a legal or regulatory requirement or as a result of customer engagement.

Subject	Term	What this means
	Not fully demonstrated	Potential or minor issues were identified in relation to the project need, including evidence not provided when it is expected to exist.
	Not demonstrated	Material issues were identified in relation to the project need, for example the project justification is weak or not supported by evidence.
Deliverability	**OK**	No issues were identified in relation to the project being delivered, including resourcing, scheduling and interdependencies.
	In doubt	Potential or actual issues were identified that are likely to impact successful project delivery, including exogenous factors.

The projects reviewed are listed below, with the summary results detailed in Table 10. Detailed results are at Appendix B - .

2.3.1. Ex-post projects

Projects from the 2020-25 regulatory period were reviewed ex-post. They were:

- GWTP Filter Media Replacement & Filters (CAP2019-067)
- AWD conduit inspections and shutdown (CAP2020-100)
- Golegumma DN300 Pipeline replacement (CAP2020-076)

Overall, in line with our assessment criteria outlined above, efficiency was not demonstrated in two of three ex-post projects reviewed (GWTP Filter Media Replacement & Filters), and not fully demonstrated in one (Golegumma DN300 Pipeline replacement), based on the documents provided and interviews undertaken by the reviewers with key GAWB staff. Prudency was demonstrated in two of the three projects reviewed.

In relation to efficiency, the projects reviewed do not demonstrate that they will minimise the long-term costs of the asset, either by having significant unexplained variance in cost between forecast and actuals, or additional costs that would likely have been avoided with more robust planning. A lack of upfront detailed scheduling was identified as a systemic issue in the review of ex-post projects.

Project options assessment did not show evidence of the consideration of both capital and operating solutions to problems. This means the lowest life cycle cost option may not have been selected.

In relation to prudency, two of three projects contained clearly documented evidence of project driver and justification. One of the three had clear justification (dam safety for AWD conduit inspections and shutdown) but lacked consideration of a full suite of options, and so was seen to have not fully demonstrated prudency.

Summary results of ex-post project reviews are in Table 9 below.

Table 9 Ex-Post Project Review Summary

	GWTP Filter Media Replacement & Filters	AWD conduit inspections and shutdown	Golegumma DN300 Pipeline replacement
Forecast cost ($202012)	$2.39 million	$1.15 million	$2.25 million
Actual cost ($real/nominal)	$4.29 million	$1.35 million	$5.11 million
Variance	$1.9 million	$200,000	$2.86 million
Justification	Increase in scope - necessary additional replacement works identified as project progressed.	Contract changes following identification of additional requirements.	Unclear
Driver	Replacement	Compliance (Dam Safety)	Renewal
Prudency	Demonstrated	Not fully demonstrated	Demonstrated
Efficiency	Not demonstrated	Not demonstrated	Not fully demonstrated
Other comments	Documents reviewed lacked detail about scheduling and planning. Delays in accessing the worksite led to variations which were likely avoidable were better project planning put in place.	Despite demonstrated need, a genuine suite of options was not seen to have been considered. The additional costs resulting from not including confined space entry requirements early in the project, at least $107,000, could reasonably have been avoided.	In options analysis there is no consideration of potential trade-offs between CAPEX and OPEX to understand the lowest lifecycle cost. From documents reviewed justification for cost increases was unclear. Noting this project is yet to be completed, project documents did not appear to be live, in that they had not been updated to show project progress.

[12] Cost forecast and actuals sourced RFI011 *Summary of Progress of Significant Projects FY20 – FY25*

2.3.2. Ex-ante projects

Ex-ante projects relate to projects from the forecast 2025-30 regulatory period. The selected projects for review were:

- the Hydrogen customers enabling infrastructure (TBA312 & CAP2024-518) – a suite of related projects including:
  - TBA312A - [redacted] – Raw Water Pipeline
  - TBA312B - [redacted] - Raw Water Pump Station: Stage 2 Upgrade
  - TBA312C - [redacted] – Raw Water
  - TBA312D - [redacted] – Raw Water Pipeline
  - TBA312E - [redacted] (note: *captured as two projects in the Hydrogen Program Execution Plan)*
  - TBA312F - [redacted] - Pump Redundancy Improvements
  - TBA312G - [redacted]
  - TBA312H - [redacted] - Raw Water
  - TBA312I - [redacted] - Raw Water
  - TBA312J - [redacted] – Raw Water Pipeline: [redacted]
- East End pipeline replacement (CAP2019-069)
- South Gladstone reservoir replacement (CAP2019-065)

Overall, the ex-ante review of the selected projects identified that both prudency and efficiency were not fully demonstrated for all of the three projects reviewed, and GAWB has not demonstrated ability to deliver forecast projects in full.

This finding as it relates to prudency is predominantly based on the lack of bilateral customer engagement records[13] sighted during the course of the review, meaning there is no evidence of whether, or how, the proposed capital works meet a requirement of GAWB's customers.

In relation to efficiency, the projects reviewed do not demonstrate that they will minimise the long-term costs of the asset. Projects either had a range of stated costs without clarity around which are current or why they differ, or failed to consider trade-offs between capital and operating expenditure in the assessment of options. A lack of upfront detailed scheduling was also identified as a systemic issue in the review of ex-post projects, contributing to a lack of efficiency in capital expenditure.

Ex-ante projects reviewed did have detailed schedules provided, though some appeared not to be regularly updated in relation to task completion (for example, *CAP2019-065 SGRR Reservoir Replacement Schedule.pdf*).

Delivery of the forecast capital portfolio in full is unlikely to be achieved by GAWB in the 2025-30 period, with further discussion on this issue in Section 2.7. GAWB is certainly capable of delivering some projects, but without more detail on the scheduling and prioritisation of delivery it is unable to

[13] Customer engagement records provided by GAWB as part of RFI 051 consisted only of communications from GAWB to customers, rather than two way engagement.

be predicted which ones stand the best chance of success. As a result, deliverability for the reviewed ex-ante projects has been characterised as 'in doubt' as a general assessment.

Summary results of ex-ante projects are in Table 10 below.

Table 10 Ex-Ante Project Review Summary

	Hydrogen Customers enabling infrastructure	East End pipeline replacement	South Gladstone reservoir replacement
Forecast cost ($2024[14])	$275.8 million	$[redacted]	$ 10.57 million
Driver	Network augmentation (to support industrial growth)	Replacement	Risk in the project list / Replacement in project documentation
Prudency	Not fully demonstrated	Not fully demonstrated	Not fully demonstrated
Efficiency	Not fully demonstrated	Not fully demonstrated	Not fully demonstrated
Deliverability	In doubt, see Section 2.7	In doubt, see Section 2.7	In doubt, see Section 2.7
Other comments	Inconsistent cost estimates and no customer engagement records make it difficult to establish prudency and efficiency for this suite of projects[15]. Direction from the Queensland Government to GAWB to support hydrogen industry development is clear. Concerns exist around the large discrepancies between costing in contemporaneous documents. Specifically, the STNA TOTEX Estimate Summary excel file provided and the Hydrogen Execution Plan differ by between 20% and 60% (or ~$85 million and ~$185 million) dependent on whether BPIC has been applied in the costs in the Hydrogen Execution Plan.	Significant increase in scope and cost ($3.15 million to $[redacted] from project inception to its current state is not clearly justified in the documents reviewed. Overarching project documentation (*e.g. CAP2019-069 EEPL Replacement Gate 1 Checklist.pdf*) shows the project development broadly conforms with GAWB's processes, but detailed evidence of this was not seen in the material provided.	Significant increase in budget from the project inception to present date is justified given the extent of the works were being developed through condition assessments. Overarching project documentation (*CAP2019-065 SGRR Replacement Gate 1 Checklist.pdf*) shows the project development broadly conforms with GAWB's processes, but detailed evidence of this was not seen in the material provided.

[14] Forecast cost source is *RFI026 Forecast Capex Summary*, costs are assumed to be in 2024$.

[15] It is noted that this suite of projects is dependent on a volatile new industry, which has potentially very high volumes of water demand associated with it, as well as significant uncertainty. Inconsistent cost estimates can be reasonably expected from this context.

2.4. Assessment of the forecast capital expenditure program

GAWB's forecast capitalisation for the 2025-30 period is $504.95 million, representing an approximate six-fold increase in expenditure on the 2020-25 period. This includes:

- 23 projects which are carried over from the 2020-25 period which make up $84.33 million[16] of the forecast capital expenditure
- A program of works aimed at supporting the burgeoning hydrogen industry in Gladstone also makes up a substantial portion of this expenditure, at approximately $275.8 million[17] or 55 per cent
- Most remaining capital expenditure is characterised as *Replacement*, at 270 of the 356 total capital projects or 75.8 per cent. To note, only 34 *Replacement* projects have a forecast value greater than $500,000 (the threshold considered material by GAWB)

Of primary interest to the reviewers was whether, and how, GAWB had addressed the factors that contributed to their significant underspend in the 2020-25 period to manage risk where possible for the 2025-30 period.

The review found that the forecast capital expenditure was generally based on sound foundations of project management, governance and risk management. This included:

- Procurement policies consistent with Queensland Procurement Policy (Queensland Government 2023)
- ISO 55001 certification for Asset Management valid until June 2025
- A new project management framework (PMF) (including risk consideration, planning, oversight and documentation) applicable to projects proportionately based on value and/or risk thresholds, to efficiently manage the associated administrative burden of Project Management
- A mature risk framework including a clearly articulated GAWB Board risk appetite statement and demonstration of its application in reviewed projects
- A risk-based prioritisation framework and policy
- A clear customer engagement process and regular schedule

However, there were instances identified where GAWB has failed to maintain or apply its own policies and processes which has the potential to impact the justification of prudence and efficiency of capital expenditure. This included:

- Documented asset management policies not being reviewed and updated in accordance with good practice or the documented review timeframes GAWB has set[18] (despite ISO 55001 certification) which presents a quality control issue regarding currency and adherence to defined review and update timeframes

[16] Comparison between RFI011 *Summary of Progress of Significant Projects FY20 – FY25* and RFI 026 *Forecast CAPEX Summary*

[17] RFI 026 *GAWB's Forecast CAPEX Summary*

[18] Eight of the eleven documents that make up GAWB's Asset Management System were identified as greater than 12 months out of date (that is, their nominated review/update time had lapsed at least 12 months prior to July 2024) including the *Strategic Asset Management Plan* and *Asset Management Plan Annexures 1, 2, 5, 6, 7, 8 and 9*.

- Partial evidence of consistent application of project management processes (including those related to project planning and scheduling) for the projects reviewed (see more on this in Appendix B -
- Despite a clear prioritisation policy, the consistent application of that policy was not able to be verified because neither contemporaneous nor current prioritisation records were provided to reviewers on request
- Customer engagement records sighted as part of this review consisted only of communications from GAWB to customers, not from customers describing their needs, so the proposed expenditure cannot be compared with those needs to understand whether it meets their requirements[19]

Of note, the forecast cost of the 23 carry-over projects has increased from $40.91 million in the 2020-25 period to $120.08 million in the 2025-30 period. GAWB, in its submission, proposes to escalate the capital expenditure allowance using a composite of forecast WPI (weighted at 70%) and CPI (weighted at 30%)[20], shown in Table 11.

Table 11 Cost Escalation on carryover projects

	2020-21	2021-22	2022-23	2023-24	2023-24	Average p/a
WPI[21] (%)	1.6	2.4	3.6	4.75*	3.75*	3.22
CPI (%)	2.1	5.3	7.3	4.1	2.00*	4.16
GAWB Capex escalation rate (%)	**1.75**	**3.27**	**4.71**	**4.555**	**3.23**	**3.57**

* Indicates forecast data[22]

The forecast capital expenditure increase represents an escalation rate of roughly 24.03 per cent, per annum, over the five-year period from their last submission to the present – a rate significantly higher than would be expected from GAWB's proposed approach - though the break-down of escalation factors, or review process for updating cost estimates, is not clear from the documents requested and sighted as part of this review.

Table 12 Cost Escalation on carryover projects

Forecast details	Capital expenditure
2020-25 GAWB Forecast (2020$)	$40.91 million
2025-30 GAWB Forecast (2024$) (24.03% average annual escalation)	$120.08 million
2025-30 Revised Forecast (2024$) (3.57% average annual escalation)	$48.75 million
Variance between 2025-30 GAWB Forecast and Revised Forecast	**($71.33 million)**

[19] It is recognised that the typical GAWB customer profile is industrial, with unique commercial interests and requirements that necessitates a range of tailored engagement approaches, and available records may vary accordingly.

[20] Attachment 2: Frontier Economics, 2024. *Real Price Escalators: A Report for Gladstone Area Water Board*, p. 25.

[21] WPI and CPI data sourced from Queensland Treasury, 2024. *Prices and Indexes.*

[22] Forecast data sourced from Queensland Government, 2024. *Budget Outlook 2024-25*.

This is summarised in Table 12, with the 2025-30 Revised Forecast indicating the capital expenditure for those 23 carryover projects if GAWB's proposed CAPEX escalation rate was applied, and no other factors impacted the forecast expenditure.

It is recommended that the costings for these projects are revised to more closely accord with GAWB's proposed approach, which would increase the efficiency of the forecast capital expenditure by reducing the average annual escalation to an expected rate of ~3.57 per cent over the period 2020-25. If there are other contributing factors to the significant cost increase for carry-over projects they should be documented.

2.5. Deliverability of capital expenditure

When considering the deliverability of GAWB's proposed capital expenditure for the 2025-30 period we undertook analysis of GAWB's past delivery history, internal policies and processes, and organisational strategies to manage risk and uncertainty.

Through this we found:

- GAWB delivered less than 50 per cent of forecast capital expenditure during the 2020-2025 period reviewed
- The proposed expenditure for 2025-30 is so substantially greater than that undertaken in the 2020-25 period that material changes in supporting governance, project management processes and resourcing would be required to deliver it in full

For example, the capital expenditure proposed for the 2025-26 year alone ($86.5 million) is greater than that delivered in the entire 5-year period from 2020-25 ($84.16 million)[23].

Issues identified that impacted delivery of the 2020-25 capital program were:

- Constraints on supply chains and resources, including materials and resources, because of geopolitical instability and the COVID-19 pandemic response
- Policy and legislative changes (especially the 2021 and 2023 updates to *Guidelines on Safety Assessment for Referable Dams (Queensland Government)*)
- GAWB retention, recruitment and procurement of contract staff resulting from labour shortages and competition with other industries in the Gladstone region for skilled workers
- Project delays associated with planning approvals, land tenure and heritage matters

GAWB's submission assumes that "while pressures on material costs may moderate in the medium-term as inflation subsides globally, higher costs, labour shortages and increased competition for resources across sectors are expected to continue into the FY2025-30 regulatory period"[24].

These have been seen to be partially addressed for the forthcoming period through:

- A revised PMF process
- Contracts and Procurement Reform Program

[23] *GAWB 2026-30 Pricing Submission*, p. 86 and p. 88.

[24] *GAWB 2026-30 Pricing Submission*, p. 28.

- Identification of scheduling risks in project planning, and implementation of some controls[25]
- Review and update of remuneration packages for GAWB staff, and
- Resourcing strategy for hydrogen projects, which constitute 55 per cent of forecast capital expenditure, including a contracting model of labour hire to satisfy the short-term uplift in resourcing requirements in project planning and delivery[26]

Further concerns related to deliverability of the 2025-30 capital program were related to capacity constraints within GAWB to deliver such a substantial increase in capital expenditure. It would be reasonable to see the creation of new project management positions, increases in contract management capability or capacity, or similar, to support this. We note the establishment of the Hydrogen business area, albeit with extremely limited resources[27], and process efficiencies achieved through the update of the PMF, but no evidence has been sighted that shows GAWB has undertaken sufficient planning or made appropriate preparations to support the step change in delivery uplift.

While GAWB's apparent strategy to ensure delivery of its capital projects is to use a balance of internal and external resources, anecdotal evidence from interviews suggests GAWB continue to face challenges to fill existing positions with experienced staff, and continue to compete with more lucrative local industries for external contract staff for construction. The evidence from the interviews regarding the actions to deal with these challenges gave the impression of a business-as-usual approach, rather than a response to the step change in the 2025-30 capital program. Other material reviewed mentions "resourcing for these project teams have been established (i.e. in the case of the East End Pipeline Project) or is currently being planned for,"[28] but no detailed evidence has been seen to support this.

GAWB provided good verbal articulation of the approach to deliverability of the Hydrogen Program during interviews, supported by the description of delivery scenarios and supporting documents in *RFI 47, 49, & 50 – Capex Checklists and Schedules*. However, in the context of a very large component of capital expenditure, to be delivered by a very small internal team, and substantial competition with other industry for local external resources means that significant delivery risk remains.

The conclusion is then that GAWB is unlikely to deliver the proposed capital program in full given their current level of resource planning and internal capacity.

2.6. Recommended capital expenditure

2.6.1. Limitations to recommendations

Carryover projects from the 2020-25 period appear to have a significantly higher level of cost escalation, estimated at an average annual rate of 24.03 per cent, than would be expected if GAWB's proposed capital cost escalation rate had been applied, estimated at an average annual rate of 3.57 per cent. As no further explanation or detail on the cost estimation was provided it is challenging to

[25] Risk mitigation related to delays around land tenure and approvals was described during GAWB interviews, and mentioned in *RFI 31 – Capex Deliverability* but no detailed evidence was seen in material provided.

[26] Resourcing strategy was described during GAWB interview on Hydrogen Projects, but no documentation sighted.

[27] *RFI 002 Corporate Structure* shows the Hydrogen Business Unit with 2 current resources, assuming the contract end date of 30/06/2024 for the additional consultant is correct.

[28] RFI 31 Capex Deliverability

make a specific recommendation for expenditure for these projects, though it is apparent these estimates should be substantially lower than those proposed by GAWB.

As clear evidence was not provided on the risk profile of projects provided or on the prioritisation scores of the forecast projects for the 2025-30 period, or any other factors informing their selection or priority in the forecast capital portfolio provided in the Regulatory Submission, it is difficult to make specific recommendations on which projects should have precedence over others, including deferral of the Awoonga Dam Improvement Project.

Also, the precise impacts of various factors that led to the project delays and under-capitalisation in the current regulatory period i.e. supply chain disruption, policy and legislative changes, complications related to land tenure / planning issues and staff retention / project continuity have not been well documented by GAWB. There is clear evidence of efforts by GAWB to manage capital delivery risk for the 2025-30 period, in important albeit incremental ways. It is unclear what impact these changes will have, and therefore it is unclear what proportion of the forecast capital expenditure GAWB can confidently be said to be able to deliver. It is clear GAWB's capacity for delivery is less than that proposed for the 2025-30 period.

2.6.2. Recommendations

As a result of the above limitations, it is recommended for the 2025-30 regulatory period:

1. The cost estimates for the 23 carryover projects are reviewed and revised to more closely accord with GAWB's proposed approach to escalate capital expenditure, or detailed justification provided
2. GAWB provides greater transparency over the implementation of its project prioritisation processes, including the role of governance bodies and documentation of decision making, to clearly demonstrate the prudency, efficiency and deliverability of projects in the forecast capital portfolio and allow a determination on which projects should have precedence for investment and delivery
3. Completion of a substantive review of the GAWB Project Team's capacity to deliver capital expenditure is undertaken to ensure alignment with the proposed expenditure and to allow monitoring of the capacity through the regulatory period

3. Assessment of operating expenditure

3.1. Overview

This section discusses GAWB's forecast operating expenditure, and more specifically, our opinion as to whether the forecast expenditure should be considered prudent and efficient.

3.2. Overview of GAWB's forecasting approach

GAWB developed its forecast operating expenditure for the 2025-30 regulatory period using the base-step-trend approach. Application of this methodology is required by the Referral Notice and is consistent with general trends in economic regulation, including in the water sector. This is the first time that the base-step-trend approach has been applied by GAWB.

Transitioning to the base-step-trend approach at the current time has some challenges. As the QCA comments in its Final Report for Seqwater's FY2023-26 bulk water price review, actual operating expenditure is the starting point for establishing prudent and efficient base year expenditure if it "represents a typical year for the forecast regulatory period"[29].

The base-step-trend approach serves as a robust and transparent approach for forecasting GAWB's prudent and efficient operating expenditure. GAWB implemented the base-step-trend forecast consistent with the standard methodology and having regard to the approach applied in the QCA's review of Seqwater's bulk water prices for the FY2023-26 regulatory period. This involved the following key steps.

1. Determine a prudent and efficient base year of operating expenditure.
    a. The starting point for this is revealed expenditure for the most recently completed financial year, which is 2022-23.
2. Identify prudent and efficient step changes
3. Apply trend factors that may account for demand or output growth, and input cost escalation
4. Determine if and how incentives need to be provided for efficiency improvements.

The following sections provide a summary of GAWB's approach to each of these forecasting elements.

3.2.1. Baseline operating expenditure

The last year of actual operating expenditure for GAWB prior to submitting its pricing proposal was 2022-23. This year was selected as the baseline year for that reason. For regulatory purposes it is important to ensure that the operating expenditure for the baseline year reflects a 'typical' year and also does not include any non-recurrent expenditure that would not otherwise be incurred going forward.

[29] QCA (2022). Final Report, Seqwater Bulk Water Price Review 2022-26, March, p.16.

Budget development process

GAWB undertakes regular budgeting processes to ensure due process in budget development. The budget is developed as a zero-base budget, with operating expenditure preparation and review throughout the process to integrate budget risk management into the process. Figure 1 represents the operating expenditure budgeting process as provided by GAWB. The governance of the budgeting process below highlights multiple reviews of the budget and explicit iteration steps.

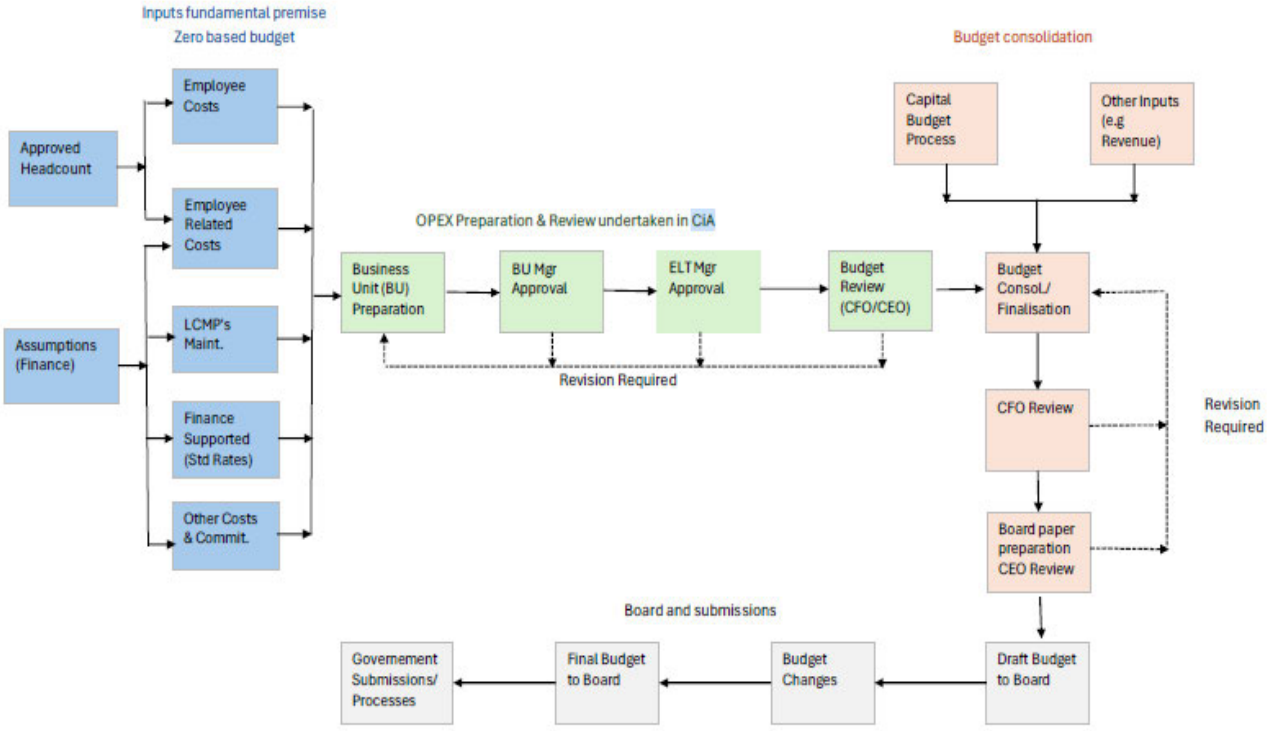

Figure 1 OPEX budget process and risk management diagram

Budget tracking processes and performance dashboard

Unlike most other businesses subject to economic regulation, GAWB does not currently have, or maintain, a set of regulatory accounts. GAWB has also not historically monitored performance against the approved expenditure forecasts assumed for the purposes of customer pricing.

With the start of the current regulatory period (i.e. 1 July 2020 to 30 June 2025), GAWB developed a Regulatory Dashboard to provide actual performance in the areas of capital and operating expenditure, against the QCA approved expenditure values that were used to set customer prices.

The key trend for the reporting period (up to 31 March 2024) is that operating expenditure is above QCA forecast levels. GAWB notes that the key contributors to this variation for the financial year to date are expenditure on employee costs (due to implementation of the revised remuneration and benefits strategy) and supporting the emerging hydrogen industry (these costs are largely captured in the functional area of contractors and professional services).

Figure 2 presents the baseline operating expenditure and the respective operating expenditure categories. Employment represents the largest portion of the budget, followed by IT, service delivery contractors and contract labour.

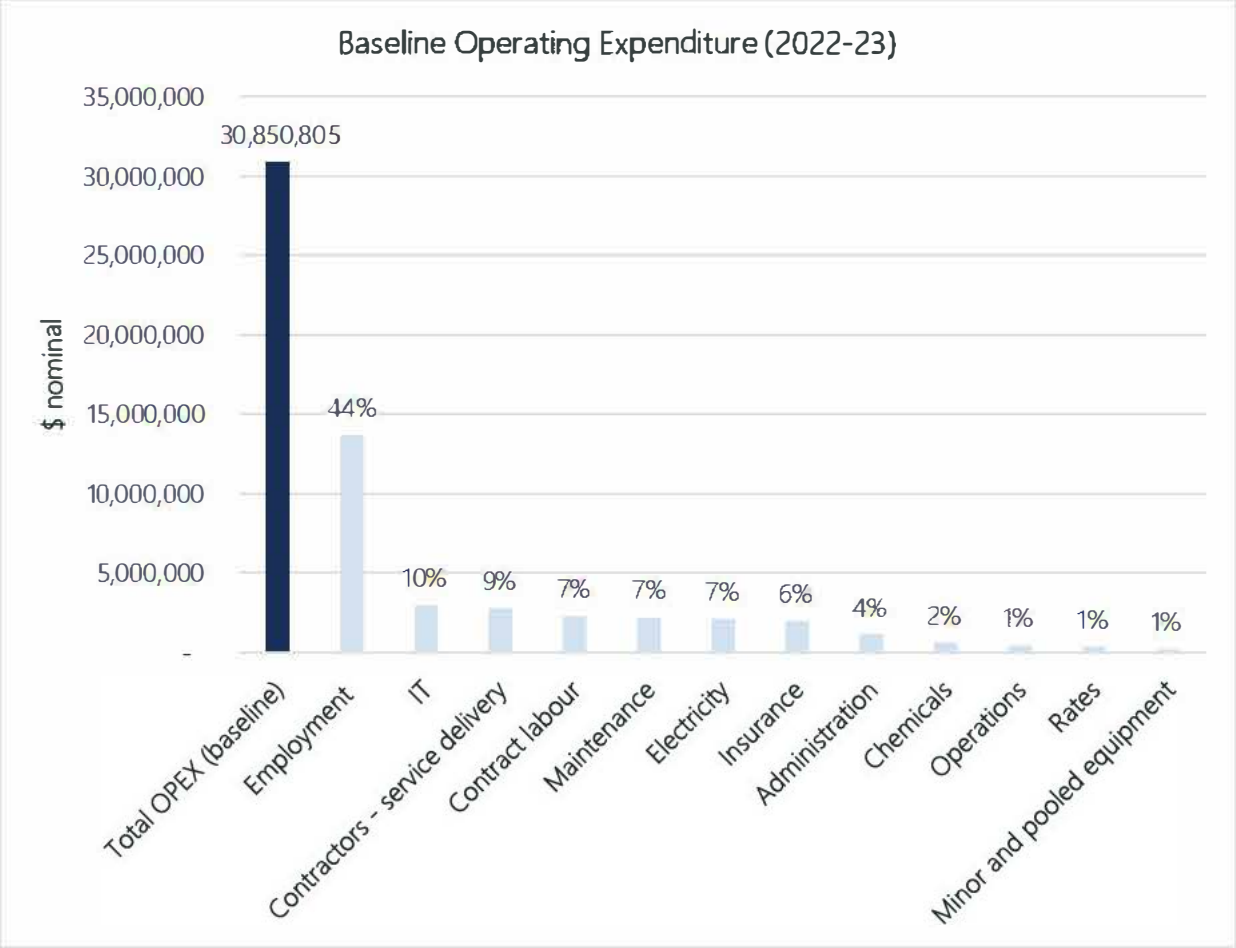

Figure 2 GAWB Baseline OPEX (2022-23)

Adjustments to the baseline operating expenditure

Adjustments are then made for non-recurrent expenditure and/or any normally recurring items of expenditure that were not incurred in the baseline year. Table 13 present the adjustments that have been made by GAWB for the 2022-23 baseline operating expenditure.

Table 13 GAWB OPEX adjustments

Adjustment	Value($)
Update to capital project governance frameworks	(120,642)
Risk and Safety ICT system implementation costs	(139,631)
50th birthday celebration	(201,760)
SOCI risk review	(111,203)
Motor vehicle lease costs	315,824
Deferred preventative maintenance	170,000

Adjustment	Value($)
Net adjustments to baseline operating expenditure	**(87,412)**

GAWB proposed baseline operating expenditure

Table 14 presents GAWB's adjusted 2022-23 baseline operating expenditure after net adjustments to GAWB's actual expenditure.

Table 14 GAWB's Adjusted 2022-23 Baseline Year Expenditure ($2022-23)

QCA allowance	31,038,956
GAWB's actual expenditure, before adjustments	30,850,804
Net adjustments to GAWB's actual expenditure	(87,412)
Adjusted base year expenditure	**30,763,392**
Difference between GAWB's adjusted baseline year expenditure and the QCA allowance	(275,564)

GAWB submits that the adjusted baseline for 2022-23 period of $30.76 million ($2022-23) should be accepted as prudent and efficient baseline year expenditure, as it's less than the QCA allowance. This operating expenditure baseline forms the basis for identifying steps changes across the operating expenditure categories.

3.2.2. Step change operating expenditure

GAWB has taken a top-down approach to determine its operating expenditure forecast, identifying and substantiating its step changes, consistent with the base-step-trend methodology. In determining the approach, GAWB also had regard to the approach used by the QCA in assessing Seqwater's forecast operating expenditure in its most recent bulk water price review, noting that its actual baseline year expenditure was above the allowance previously assessed as prudent and efficient by the QCA.

In GAWB's case, its actual adjusted expenditure was below the QCA allowance previously assessed as prudent and efficient. Whilst actual expenditure in individual categories varied from the amounts previously assessed via the former bottom-up category, based approach, GAWB managed its costs within its total OPEX envelope.

Table 15 represents the operating expenditure step changes that have been identified by GAWB after the base-step-trend process has been completed. Broadly, there is a significant step-up in GAWB's operating expenditure. GAWB noted that "it is undertaking significant investments in the 2025-30 regulatory period in a fast-evolving environment, including the initial augmentations necessary to accommodate demand for the new hydrogen industry which is expected to represent another step-change in Gladstone's investment cycle. At the same time, GAWB stated that it continues to experience significant cost pressures, impacting the existing network and business-as-usual activities."

Table 15 Operating expenditure step changes

OPEX steps	2025-26	2026-27	2027-28	2028-29	2029-30
Labour costs	5,937,791	6,662,545	6,662,545	6,662,545	6,662,545
Insurance	438,570	688,840	972,838	1,295,330	1,661,758
ICT	807,538	807,538	807,538	807,538	807,538
Chemicals	277,181	277,181	277,181	277,181	277,181
Network reform	802,156	272,024	846,470	454,202	(29,881)[30]
Hatchery	275,359	275,359	275,359	275,359	275,359
Tariff review	93,352	326,731	326,731	-	-
QCA cyclical review	102,687	-	-	746,815	2,446,769
Electricity	407,633	419,866	925,719	1,416,394	2,236,801
Total Steps	**9,142,266**	**9,730,084**	**11,094,381**	**11,935,364**	**14,338,069**

For the existing core business activities, the focus of GAWB's substantiation of the quantum of the step is the increase in expenditure above the baseline year. In very limited cases, if the expenditure represented a new or one-off activity (such as the tariff review), the step change was developed as a bottom-up build.

3.2.3. Trend operating expenditure

GAWB has not proposed any allowance for output growth in the trend factor due to its unique demand profile, given it is primarily comprised of a small number of large industrial customers. GAWB has reflected any impact of change to demand on operating expenditures in the step changes.

GAWB's forecast CPI was developed using the QCA's approach while its WPI forecast was applied based on Queensland Treasury's Queensland WPI forecasts and the 10-year average of the Queensland WPI for the remainder of the price monitoring. Table 16 outlines the escalation rates used across the forecast period.

Table 16 OPEX escalation rates (CPI, WPI, WPI forecast plus premium)

OPEX escalation rates	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
CPI	3.800%	3.200%	2.600%	2.567%	2.533%	2.500%	2.500%
WPI	4.750%	3.500%	3.256%	3.012%	2.769%	2.525%	2.281%

[30] This number differs from GAWB's original proposal of (403,228) which was due to a reporting error. GAWB addressed this issue and provided the revised value in its *'Maintenance RFI 38 and 39'* document. This is described in Section 3.4.4.

OPEX escalation rates	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
WPI forecast plus premium	4.900%	3.650%	3.376%	3.102%	2.829%	2.555%	2.281%

Based on the application of the escalators presented in Table 16 and the respective operating expenditure in each category, the total weighted escalation rates and factors are outlined in Table 17.

Table 17 Total weighted escalation rate and factor

	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Total weighted escalation rate	4.5%	3.5%	3.1%	2.9%	2.7%	2.5%	2.4%
Total weighted escalation factor	1.0	1.1	1.1	1.1	1.2	1.2	1.2

It should be noted that the scope of our review did not consider these escalation factors. The review of these escalation factors was undertaken by the QCA. Our assessment of the forecast trend in operating expenditure from GAWB is therefore focused on the proposed efficiency factor.

GAWB efficiency factors

GAWB procured Frontier Economics to provide advice on the forecast efficiency factor for operating expenditure for the upcoming regulatory period. This report recommended an efficiency factor of 0.2 per cent per annum to apply to the total forecast operating expenditure for 2025-2030 regulatory period, noting this includes controllable and uncontrollable expenditure. The efficiency factor was based on a consideration of analysis of the National Performance Review dataset (NPR) and from a range of regulatory decisions for water businesses between 2017 and 2023.

3.3. Assessment of baseline operating expenditure

Aither assessment

GAWB provided detailed transaction lists of actual operating expenditure for the FY2022 and FY2023 (i.e. the baseline year) which provides evidence that any costs associated with non-relevant business units (e.g. Fitzroy to Gladstone Pipeline business unit) have been excluded from its adjusted baseline year. GAWB's base year operating expenditure was under the operating expenditure allowance previously assessed as efficient by the QCA as part of the 2020 price monitoring investigation. This aligns with QCA guidance on whether the baseline operating expenditure is deemed to be efficient.

GAWB has made adjustments (both increases and decreases) to the baseline operating expenditure of 2022-23. Any operating expenditure in the base year will be recovered by GAWB for every year of the

upcoming regulatory period, it is therefore important to ensure that all non-recurrent operating expenditure is removed and it reflects a 'true' baseline level of operating expenditure. Based on a review of the general ledger FY23 costings, Aither's assessment is that the adjustments made to the base year are reasonable.

3.4. Assessment of step change operating expenditure

This section presents a summary of GAWB's proposed step changes and our assessment of their prudency and efficiency.

3.4.1. Labour step change

The step change is composed of a re-benchmarking of remuneration against market conditions and increased workforce requirements. The two main drivers of the step change are:

- A Board-approved remuneration and benefits strategy applying from 1 July 2023, to improve recruitment and retention in the challenging labour market conditions
- GAWB's movement from a lean to 'moderate operating model' as it responds to the demands of its changing operating environment.

These two main drivers are analysed in more detail below.

Remuneration and Benefits Review

In recent years, the effects of a tightening and highly competitive employment market in Gladstone (and Brisbane) have directly impacted GAWB's capacity to attract and retain a quality workforce:

- GAWB's annualised staff turnover more than doubled between 2018-19 and 2022-23, from 16.3 per cent to 32.8 per cent.
- the average employee age is 47.4, and 16 employees currently have or will reach preservation age prior to 2026.
- the average days to fill roles was 78.5 and 69.5 days in 2021-22 and 2022-23, respectively.

Mercer were engaged by GAWB to undertake an Annual Remuneration Review in April 2022 to effectively benchmark GAWB's remuneration and benefits against market trends and industry comparators. The subsequent Board-approved remuneration approach provided an assessment of comparator market applicability and percentage uplift per employee, ranging from [redacted]. The salary increases and board approval were finalised as of 1 July 2023 and constitute a change to the baseline operating expenditure. GAWB noted that a [redacted] Wage Price Index (WPI) market movement was excluded from the proposed step change to ensure that there was no double-counting and the figures represent step changes.

A key component of the salary revisions involved benchmarking to the General Market and Resources, Construction and Engineering (RCE) markets. Staff were grouped according to their recommended comparator group for existing roles in 2023-24. The following criteria was used in determining the appropriate comparator market:

- General Market – typically applies to roles where the labour competes in the open market, and not considered "hard to fill"

- RCE market – reserved for roles that are considered as 'hard to fill' and requires competitive remuneration to and /or retain quality talent, or
- RCE market – reserved for roles where GAWB directly competes with employment competitors from within the RCE market for talent.

The salaries and superannuation revisions resulted in employee relativity to midpoint benchmark salaries in the applicable Salary Grade increase on average by [redacted]

Provision for leave

The Board-approved remuneration and benefits package now entitles employees to long service leave after 5 years of service (formerly 10 years). GAWB has assumed in its forecast cost of the step change that all employees take up this entitlement.

Employment-related costs

Table 18 provides a breakdown of the difference between budgeted FY26 and actual FY23 expenditure, as per GAWB's supporting information. Employment-related costs are driven by increased medical, health-related benefits and leave provisions as part of the revised remuneration and benefits strategy, as well as an increase in Fringe Benefit Tax (FBT) because of the change in cost.

Table 18 Additional employment-related costs (labour step changes)

Category	Difference ($2022/23)	Rationale
Medical and health related	432,649	Under new benefits package, annual health checks and private health insurance of $3,000 per employee available
Mandatory Health Checks	18,670	This is a new benefit that is available to employees as agreed with team leader.
Transition to retirement	14,003	Provided on a targeted basis for identified employees. Up to $3,000 per employee available for financial advice in transitioning to retirement.
Short Term Reward & Recognition	148,528	Employee performance incentives, as budgeted by team leaders.
FBT	387,624	Consequent increase in FBT associated with additional benefits.
Labour Hire	-412,888	This allows for temporary labour hire other than Contractors and Professional Services. This is lower than FY23.
Recruitment & Relocation	155,844	As budgeted based on recruitment needs. Increase recognises that more attractive benefits need to be offered to attract new employees.

Category	Difference ($2022/23)	Rationale
Courses/Seminars/Conferences	18,078	Based on needs identified by team leaders in budget process.
Memberships	35,679	Based on needs identified by team leaders in budget process.
Health & wellbeing	-13,931	This represents limited allowances for medical and health related expenses now covered above, paid in FY23. This has been removed to ensure that only incremental expenditure covered.
Total employment-related costs	784,256	

Transition to moderate operating model

GAWB has undertaken a transition from what it describes as a lean operating model to a 'moderate operating model' which is a key driver of the increased workforce. GAWB provided the following rationale for this transition: *"In July 2022 and September 2022, the Board and Management considered GAWB's then lean operating model whereby a large volume of work is outsourced. It was acknowledged that GAWB's establishment (as measured by FTEs) was low by industry standards. It was also identified that several additional positions were required to meet increasing demands as a result of changing legislative/policy/regulatory obligations and increased stakeholder expectations (including customers)."*

Further information was provided in the supplementary documentation provided to QCA and Aither. A number of GAWB Board papers,[31] and the supporting step change business case were provided which included references to the operating model changes:

- Additional resources were flagged as required to meet increasing demands as a result of changing legislative/policy/regulatory obligations and expectations
- obligations and increased stakeholder expectations (including customers)
- Several Board strategic sessions were referenced which included discussions of GAWB's current lean operating model and a general acknowledgement of GAWB's establishment being low by industry standard
- Management proposed for a resource uplift due to the tightening labour market and preparing for the Network Reform work program
- The additional resources are intended to lessen the workload increases associated with key drivers
- They anticipate a greater return on investment for their customer and for the community
- GAWB requiring a dedicated and suitably skilled resource to lead the hydrogen portfolio to ensure GAWB is appropriately positioned and ready for the acceleration of hydrogen projects within Central Queensland

[31] The [redacted] Board meeting contained the most substantial information related to the new operating model.

- [redacted]

Table 19 details the additional employment roles compared to the base year (2022-23) and the proportion of the cost that is proposed to be capitalised. This represents a considerable change and aligns with GAWB's narrative to transition from a lean to a moderate operating model.

Table 19 Additional employment roles compared to Base year

Additional roles - compared to Base Year	% Capitalised
Deputy CFO	0%
Communications & Community Relations Manager	0%
Contracts & Systems Officer	0%
Network Planning Specialist	0%
SCADA & Control Systems Specialist	5%
Sustainability Lead	10%
Network Operations Field Officer Trainee	0%
Facilities Maintenance Field Officer	0%
Facilities Maintenance Specialist	0%
Asset Data Officer	0%
Electrical Engineer	80%
Mechanical Engineer	80%
Grounds & Catchment Officer	1%
Trainee Hatchery Technician	0%
Senior Legal Counsel	0%
Construction Supervisor	80%
Project Controller	80%
General Manager Customers	0%
Asset Planning Manager	0%
Water Policy Advisor (from 2026/27 onwards)	0%
Industrial Relations Manager (from 2026/27 onwards)	0%
Total Salary + Superannuation ($2024/25)	$3,217,851 (operating) $3,943,544 (Total)

Step change operating expenditure

Table 20 details the labour step change components for the forecast period 2025-2030 in $2022-23.

Table 20 Labour step change components

Labour Step Changes ($2022/23)	2025-26	2026-27	2027-28	2028-29	2029-30
1. Salary and superannuation increases for existing staff from 1 July 2023	2,106,264	2,106,264	2,106,264	2,106,264	2,106,264
2. Additional roles (including related superannuation)	2,279,170	3,003,924	3,003,924	3,003,924	3,003,924
3. Provision for leave	768,100	768,100	768,100	768,100	768,100
4. Employment-related costs	784,256	784,256	784,256	784,256	784,256
Total Step change ($2022/23)	**5,937,791**	**6,662,545**	**6,662,545**	**6,662,545**	**6,662,545**

Aither assessment

Aither's assessment of the remuneration plan and the new operating model are discussed below.

Remuneration and Benefits Plan

We understand the narrative of the competitive recruitment position that GAWB finds itself in. The overall approach taken by GAWB is understandable and reflects a corporation responding to the labour market. [redacted]

GAWB has provided anecdotal evidence of improvements in company metrics that reflect the impact of the implementation of the remuneration and benefits strategy. Since its implementation in 30 June 2023, the vacancy time for open positions has reduced considerably, from 50 days to 28 days. As well as the staff retention rate improving from 77 per cent in FY23 to 90 per cent in FY24. This would support the rationale for increasing the competitiveness of GAWB in the market.

While we acknowledge the competitive nature of the employment market that GAWB operates in, there is minimal information provided to substantiate how the significant increase in labour operating expenditure will translate into best outcomes for customers. Rather, the narrative mainly focuses on maintaining the existing levels of service by retaining staff and improving employee satisfaction. Justification documentation would benefit from more extensive justification on the value for customers and the potential benefits that would be generated through the implementation of the new approach.

While we note that it is in response to changing market conditions, further justification would assist in understanding why the final recommended increases in expenditure are the most efficient outcome, including:

- Potential consequences for GAWB of not adopting the remuneration and benefits strategy or implementing different options for the strategy
- It is not clear whether any location specific factors were considered based on the existing information – in other words, whether staff based in Gladstone versus other areas of Queensland received different increases based on market information.

One element of the remuneration and benefits plan which we consider to be overestimated is the forecasted expenditure provision for long service leave. It is assumed that the actual operating expenditure reflects the actual costs incurred by GAWB in relation to long service leave and does not include any expenditure provisions. However, a forecast that incorporates expenditure provisions would be appropriate so long as it reflects the expected actual cost for that provision that is likely to be incurred.

We appreciate that the allowance adjustment for this benefit (from 10 years to 5 years) was undertaken to improve the competitiveness of GAWB's hiring process, which is understood. However, GAWB has assumed all employees take up this benefit. GAWB's 2022/23 Annual Report[32] indicates that its average workforce tenure is 4.97 years, implying that not all employees would stay at GAWB long enough to require access to long service leave. We believe that including all employees within this benefit is overestimating the cost. Without having information on the distribution of GAWB's workforce tenure, a reasonable and conservative approach would be to assume 60 per cent of workers would have access to this benefit. Table 21 summarises this recommended adjustment which decreases the annual cost from $768,100 to $460,860.

Table 21 Long service leave provision adjustment

Provision for leave ($2022/23)	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
GAWB proposed expenditure	768,100	768,100	768,100	768,100	768,100
Aither's recommended expenditure	460,860	460,860	460,860	460,860	460,860
Difference	**307,240**	**307,240**	**307,240**	**307,240**	**307,240**

Transition to moderate operating model

The transition from a lean to moderate operating model is supported by some documentation provided by GAWB, but in a less substantive manner than the remuneration and benefits plan. Several Board papers and the Mercer report were useful in assessing the remuneration plan, while relatively fewer documents deal with the change in operating model. This is surprising given the strategic nature of such a change and makes it difficult to assess the step change given it has already been implemented by the business. An important document for our assessment was the October 2022 Board Paper related to the Restructure to align to Strategy. This document:

[32] https://www.gawb.qld.gov.au/wp-content/uploads/2023/09/GAWB-Annual-Report-2022-23-2.pdf

- States that the outworkings of the Board Paper links directly back with GAWB's strategic plans, however it would have been beneficial to explore the overarching rationale for switching the operating model in greater detail
- Summarises the impact of various projects (such as the Fitzroy to Gladstone Pipeline) on the executive team's resources and outlines the need for additional resources well. For example, this information was useful for confirming the need for a Deputy CFO
- Highlights the financial impact of the new appointments on GAWB's forecasted FY2023 operating expenditure and provides a good assessment of why an amendment to the GAWB Corporate Plan is not necessary

GAWB did provide useful information describing each new role and how the role would assist in delivering on certain activities. The strength of the rationale for each role varied and some were difficult to assess within the wider team context. For example, several new roles were justified by the current position's workload, but the incremental need for each role was difficult to assess. It would have been beneficial to better establish a need for the proposed new operating model with a detailed review of the current approach and a systematic prioritisation of what roles need to be brought in-house and whether any external requirements were driving these new roles and/or activities. This upfront approach could then be followed by a transition plan to ensure the implementation of the new operating model is undertaken efficiently.

Several elements were mentioned in the supporting documentation, which would have been useful to explore in further detail, including:

- Further information on the Board's strategic sessions related to the operating model
- Further information on the anticipated greater return on investment for customers and the community
- Basic information on the forecast FTE levels under the current lean operating model compared against the proposed moderate model. We appreciate that the 21 roles were identified, and their costs forecast over time, however we would have welcomed a broader view of the total FTE count and cost with and without the operating model.[33]

In seeking to better understand the drivers for this change, we requested information from GAWB on its performance against its service standards, or key performance measures. Of the Key Performance Measures that GAWB reports against, there was only one measure that it did not achieve for 2022-23 – staff retention rate. This aligns with the implementation of the retention and benefits plan discussed above, however from this information it is not clear that an inability to meet Key Performance Measures was a driver for this change in operating model.

Overall, we consider that there is possibly merit in GAWB adopting a new operating model, however, it is difficult based on the information provided to understand whether the new operating model that has been adopted is the most efficient operating model for the business. Better information as part of the decision-making would enable a clearer understanding of the justification for the change in approach and potential benefits that are likely to be realised. Given this difficulty and the uncertainty of the benefits, we have considered this further in the efficiency factor of the trend which is assessed in Section 3.5.

[33] Some documentation included an FY25 FTE budget of 122.26 and a FY24 Establishment FTE budget of 119.26. (GAWB Board Paper 21 March 2024)

Recommended changes

On balance, our assessment recommends:

- The long service leave expenditure provision is reduced from $768,100 to $460,860, reflecting an assumption that 60 per cent of employees take up this benefit.
- That GAWB incorporate better information in its decision-making processes on the benefits to GAWB and its customers resulting from material increases in expenditure (such as a new operating model). This will assist in the justification for these increases in expenditure and ensure a more informed decision on the increased expenditure is implemented.

3.4.2. Electricity step change

GAWB is forecasting an increase in electricity operating expenditure over the next regulatory period. This is based on an increase in electricity consumption and a forecast increase in cost inputs. The impact of these changes is modelled using an electricity forecasting model. The model and assumed model changes are summarised below.

Electricity forecasting model

GAWB has developed a whole-of-business electricity cost forecasting model that is used to monitor, reconcile and forecast its electricity costs by site. The forecast electricity costs are a function of:

- Forecast future electricity consumption and demand per site
- Actual or forecast market retail electricity rates
- Actual or forecast network tariffs (applying Ergon Network's published indicative network tariffs and rates)
- Actual or forecast environmental certificate costs (Large Scale Generation Certificates and Small-scale Technology Certificates
- Actual or forecast metering charges, market charges and retailer fees, and
- Forecast Ergon Retail's retail tariffs (for the non-market sites).

To inform both the market contract re-contracting decision and the forecast total electricity costs beyond the contracted period, GAWB procured an independent expert report from ACIL Allen on the wholesale electricity market outlook to 2029-30.

The resulting profile of forecast electricity costs shows an increase in 2025-26 compared to the base year primarily as a result of the increased costs under a new market contract for the contestable sites and increasing non-market retail tariffs and network tariffs (Figure 3 and Figure 4). A small increase in forecast electricity costs is forecast in 2026-27 with costs increasing significantly after 2026-27 due primarily to the new pumping capacity required for hydrogen customers. Projected increases in line with Ergon Energy's forecast increases in network tariffs, GAWB's increased electricity usage assumptions, and forecast changes in wholesale electricity prices also contribute to rising costs.

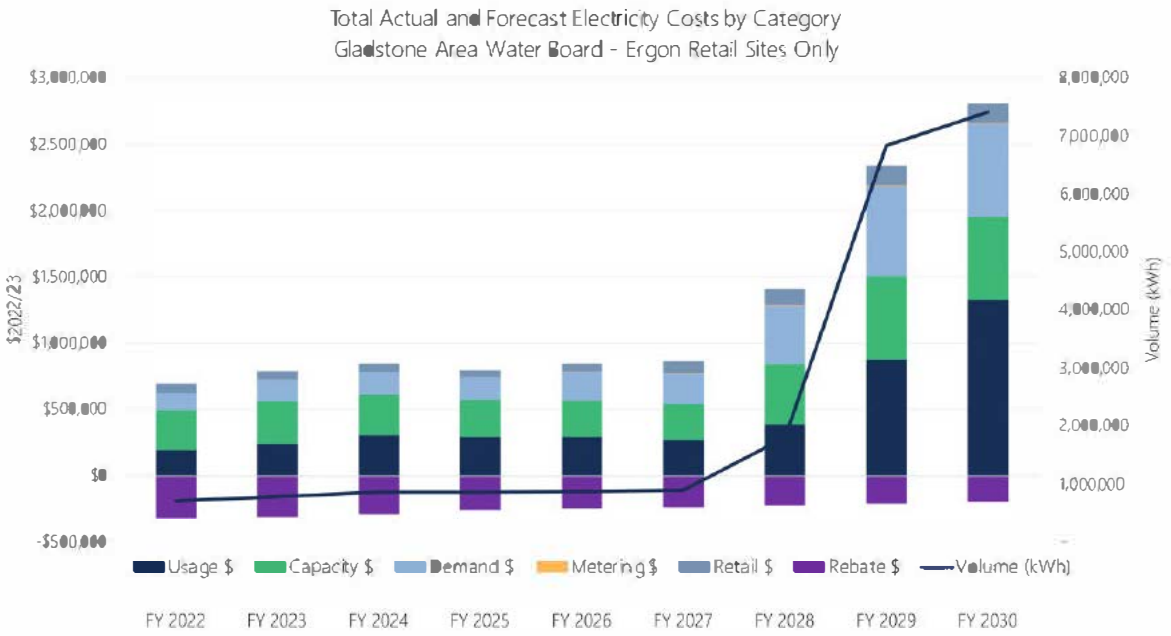

Figure 3 Actual and forecast retail electricity costs and volume

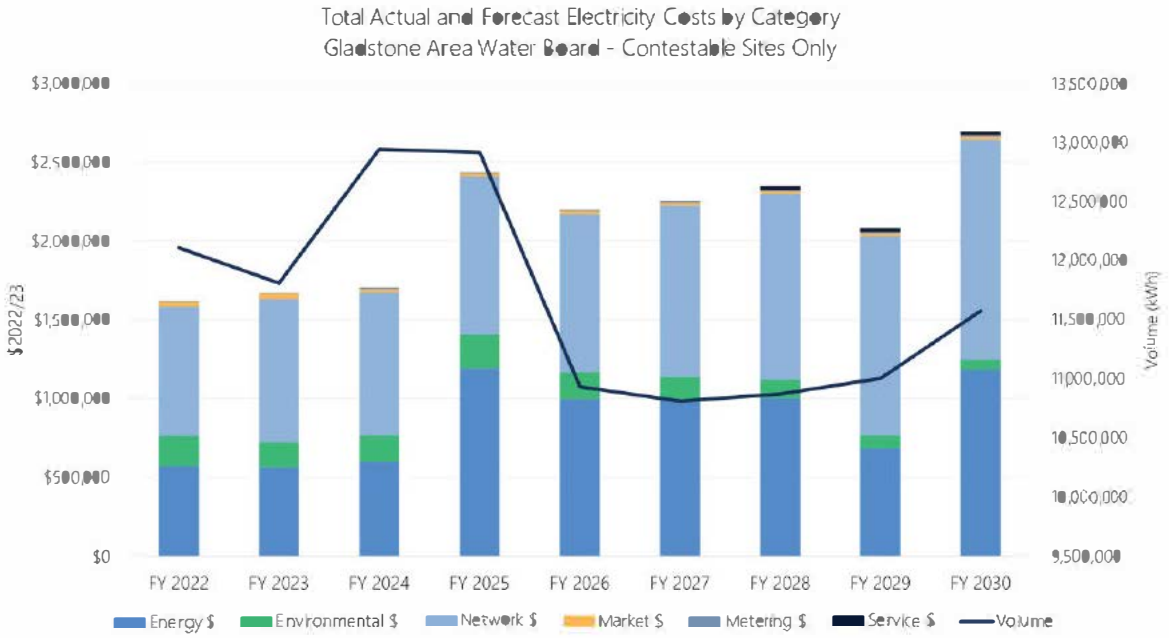

Figure 4 Actual and forecast contestable sites electricity costs and volume

The figures above also display the volume (kWh) that are driving the cost increases. This allows for the $/kWh to be calculated. Interestingly, the $/kWh is falling for the Ergon retail sites while it is increasing for the contestable sites (shown below).

Table 22 Cost per kWh for Ergon retail sites and contestable sites

$/kWh ($2022/23)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Ergon retail sites	0.53	0.61	0.64	0.62	0.68	0.70	0.66	0.31	0.35

$/kWh ($2022/23)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Contestable sites	0.13	0.14	0.13	0.19	0.20	0.21	0.22	0.19	0.23

Key input assumptions

The two main drivers for electricity costs are:

- Cost increases - Electricity costs to GAWB have materially increased compared to the 2022-23 base year.
- New National Meter Identifiers (NMIs) and load increases – water demand has increased compared to the 2022-23 base year, at both existing and new sites.

Underlying this are the following:

- Wholesale electricity prices have significantly increased since the base year which is reflected in the cost increases for both contestable and regulated sites.
- Network tariff costs continue to increase year on year since the base year which is reflected in the cost increases for both contestable and regulated sites.
- Increasing water demand is increasing the electricity operational costs for existing sites, particularly at the Awoonga Dam Pump Station.
- New water demand for the hydrogen industry necessitates GAWB augmenting and expanding its delivery network, including adding new pumping capacity, which in turn drives an increase in electricity consumption. The associated increase in demand is expected in FY28.

Table 23 summarises the proposed operating expenditure step change for electricity.

Table 23 Electricity step change ($2022-23)

Forecast in $2022-23	2025-26	2026-27	2027-28	2028-29	2029-30
Variable Costs	1,441,714	1,427,395	1,566,259	1,723,368	2,552,584
Fixed Costs	1,099,337	1,125,889	1,492,879	1,826,445	1,817,635
Total Electricity	2,541,052	2,553,285	3,059,138	3,549,813	4,370,220
Actual FY23 expenditure (base year)	2,133,419	2,133,419	2,133,419	2,133,419	2,133,419
Step change ($2022/23)	407,633	419,866	925,719	1,416,394	2,236,801

Aither assessment

The model provides detailed information about actual historical and forecast electricity consumption and demand in aggregate and by major connection site, including break downs of peak and off-peak

consumption and demands. A detailed review of the electricity model was undertaken by QCA and Aither and resulted in a number of revisions by GAWB. These revisions were immaterial to the electricity step changes. As such, the electricity forecasting model and the basis for the step changes can be considered prudent and efficient.

The model leverages the previous twelve months' (Base Year FY23) electricity consumption. This can be considered the most reasonable assumption. While uncertainty of future consumption patterns always exists, this approach reflects the most recent consumption patterns on a seasonal basis. Where there is planned or forecast activity which is known to have a material impact on future consumption – such as forecast changes in customer demand, the impact of new solar installations, or the impact of new connections such a pumps – these impacts have been captured within the modelling based on the best available information.

The procurement strategy for retailers is deemed to be prudent and efficient based on available information. This resulted in GAWB entering a three-year contract for FY2025-27 period with the most competitive retailer (AGL). The decisions to remain on regulated tariffs versus contestable contracts are also deemed to be prudent and efficient. GAWB provided additional information as to why it is not currently possible to conduct a sufficiently accurate assessment of whether the sites will be financially better off on a regulated retail tariff or a contestable arrangement. As such the default is to apply the best currently available regulated retail tariff when forecasting costs.

A major driver of the step change arises from the timing for the Phillips Street project. The timing of new augmentation seems reasonable and align with capital expenditure program review. Additional information supporting the decision-making and modelling was provided by GAWB in relation to tariff optimisation process and modelling.

While step changes are considered prudent and efficient, it does rely on the forecast capital expenditure which, at this stage, won't reflect any commentary by QCA on its appropriateness. The electricity forecasts may therefore need to be updated to reflect any changes to the forecast capital projects.

Recommended changes

We do not recommend any changes to the electricity cost forecasts subject to the approved capital projects for the upcoming regulatory period.

3.4.3. ICT step change

The ICT step change relates to increases in technology costs to further support, improve, secure, and automate selected processes within GAWB's operations. It reflects the costs of implementing GAWB's 2024-2029 ICT Strategy.

Actual ICT operating expenditure in 2022/23 was $2,928,707 ($2022/23). Step changes proposed by GAWB represent additional ICT operating expenditure to this base year expenditure. A summary of the ICT step changes and a description of each step change item is provided in Table 24.

Table 24 Summary of ICT step changes

Item	$2022/23	What this includes
TechOne - upgrade of ERP system	351,298	Additional license and hosting fee increases, as per the new contract entered into in December 2023

Item	$2022/23	What this includes
Upgrade of Historian system	117,623	Additional ongoing licence fees + the costs of ongoing initiatives to leverage the data in GAWB's operations, including billing and analytics
Analytics, Information Management and Business Intelligence data remediation	52,277	Dashboard development (energy, billing, process), connecting SaaS systems and investigating machine learning data
Cyber security	52,591	Additional costs associated with further cyber security remediation and managed services improvement activities
Engineering software	34,073	Comprises two applications: (1) high resolution aerial imagery (costs shared with GRC); (2) InfoWorks WS -2500 Links Infocare support and maintenance
SaaS hosting costs	20,817	Increase in the costs of SaaS hosting and supply, which has been above inflation
Other support licencing costs	61,340	Increase in support licensing costs across a number of applications
Communications	110,343	This category includes internet, data, telephones, radio communications, satellite communications and mobile phones. The uplift is driven by the costs associated with the additional employees, along with expenditure to take advantage of emerging technologies to improve the robustness of the communications of the Water Network and improve the reliability of communications in emergency situations.

GAWB relies heavily on the application of technology to meet its operational and regulatory requirements. GAWB's 2024-2029 ICT Strategy recognises the impacts of several factors that will drive increases in ICT costs over the 2025-30 regulatory period. These include:

- Increasing recognition of the value of data and information and how it can be used to improve the level of service delivered to customers
- Higher community and governmental expectations related to managing escalating cyber security risks (GAWB is required to report quarterly on cyber security to the Department of Regional Development, Manufacturing and Water (DRDMW))
- An increased focus internally on Supervisory Control and Data Acquisition (SCADA) and automation services and recognition of the capability uplift needed to sustain and continuously improve the efficient use of technology, and

- The technology asset life cycle of GAWB's assets and the need for cyclical replacement of end-of-life assets.

Aither assessment

Overall, the approach to align GAWB with the ICT strategy is prudent and efficient. GAWB has provided detailed strategic and business drivers behind the key step change items. As well as information on how the forecasts were determined. These include the procurement process and timelines for the implementation of the TechnologyOne ERP system, Historian, Cyber security and Engineering software. Where available, costs have been forecasted based on contracted prices. And where information is not available, reasonable estimates of expenditure have been used.

The Communications item has the least substantive evidence based on its materiality. GAWB notes that the *"uplift is driven by the costs associated with the additional employees, along with expenditure to take advantage of emerging technologies to improve the robustness of the communications of the Water Network and improve the reliability of communications in emergencies."* The forecasts include:

- Data/internet: $205,568
- Telephone voice: $202,030

These costs reflect an increase in the cost per user along with the increase in the number of users, and total $110,343 in additional operating expenditure in each of the forecast years (relative to the base year). An indicative assessment reflecting the proposed 21 new roles, implies a communications cost of over $5,000 per new employee, which is reasonable.

Additional information regarding the breakdown of this charge is required to fully consider the costs as additional to the base year. For example, the 'internet' component of this operating expenditure – presumably the internet for GAWB's office environments has the potential to be fixed and not necessarily be impacted by staff numbers. As well as this, it should also be noted that some of the additional costs are premised on securing additional roles associated with the transition to the moderate operating model.

There is also some ambiguity around the costs associated with 'taking advantage of emerging technologies to improve the robustness of communications' and whether this can currently be deemed as prudent and efficient.

Some elements of the ICT plan which are used to justify the step-change could likely be considered to be captured within business-as-usual activities. For example, the increased recognition of the value of data and its usage could be considered part of a longer-term trend which most businesses are experiencing. Similarly, increasing focus on SCADA systems and other automation services could be considered as part of this longer-term trend. Both of these items could arguably be considered as part of a business-as-usual budget. Further to this, some of the additional costs would be better incorporated as a cost escalation trend rather than a step change, however noting the challenges facing GAWB with the extended timeframe from the base year to the start of the regulatory period we have accepted the treatment of this as a step change.

There is also a minor difference between the total cost of the reconciled ICT drivers as shown in Table 24 and in the supporting step changes summary spreadsheet provided. The table above has a total step-change to $800,362 while the quoted step-change in GAWB's submission and summary spreadsheet equals $807,538. While minor, it is unclear where this difference comes from.

Recommended changes

We recommend that:

- The forecast ICT expenditure is updated to match the total of the individual components of the step-change, i.e. the total of $800,362 is adopted. This implies a total ICT expenditure of $3,729,069 per annum
- GAWB improves the documentation that demonstrates the drivers of ICT expenditure going forward, that demonstrates how additional roles are driving increases in ICT expenditure.

3.4.4. Maintenance step change

GAWB has proposed a step change in maintenance operating expenditure which is comprised of two elements:

- Preventative maintenance related to cleaning the Awoonga Dam embankment and spillway
- Improvements to maintenance practices related to the Network Reform Program which aims to modernise and enhance the way GAWB managed its assets and maintenance practices.

These are discussed below.

Preventative maintenance of Awoonga Dam

GAWB is required to undertake cleaning of the embankment and spillway foundation drains at Awoonga Dam. This is a significant preventative maintenance activity that is required to be undertaken periodically. This maintenance of the dam was last undertaken in 2021 and cost $558,432.

The contractor for the works in 2021 produces a report summarising the activity and making recommendations for future work. This report highlights the need for further works to maintain the effectiveness of the spillway. This was deemed critical and recommended to be addressed as soon as practical. GAWB has therefore included the preventative maintenance expenditure in 2025/26 and has budgeted $575,000 which is based on the actual cost of the previous maintenance activity.

Improvements to maintenance practices

GAWB recently embarked on a major internal review of its maintenance program – the Network Reform Program. This reform stemmed from a desire to modernise and enhance the way that GAWB manages its assets and undertakes maintenance activities and responds to previous concerns from the QCA that GAWB may have a bias towards asset replacement rather than maintenance or refurbishment. The forecast step change in maintenance costs for the 2026 -30 regulatory period from this reform program are based on:

- Condition assessments to improve the data integrity of GAWB's lifecycle maintenance plans.
- Asset criticality reviews to better understand how maintenance strategies can be used to manage procurement risks, which have heightened due to COVID-19
- Pipeline and easement management programs due to population and investment growth
- Manuals and procedures updates which are required to finalise the suite of documents related to network operations and maintenance.

GAWB anticipates that these improvements will lead to better planning and investment decisions including optimising the trade-off between capital and operating expenditure, but acknowledges the difficulty in measuring these benefits. Table 25 summarises the maintenance operating expenditure

forecasts. The 2029/30 contractors and professional services value has been adjusted to amend the error highlighted by GAWB in its response to information requests. This was due to the omission of easement management expenditure in 2029/30 of $373,407 ($2022/23). This value has been added into the table below.

Table 25 Summary of maintenance operating expenditure step changes

Forecast in $2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
Preventative maintenance	536,773				
Contractors & professional services	1,482,545	1,489,187	2,063,632	1,671,364	1,271,835[34]
Total	**2,019,318**	**1,489,187**	**2,063,632**	**1,671,364**	**813,874**
Step change compared to 2022/23 expenditure	802,156	272,024	846,470	454,202	-29,881

Aither assessment

Awoonga Dam preventative maintenance

From our assessment, we consider that the proposed step change relating to the Awoonga Dam to be prudent and efficient. It is a material cyclical activity that was not included in the baseline operating expenditure and the estimated cost for the activity is based on the previous cost incurred by GAWB. The necessity of the maintenance is well documented, with the consultant report and the Dam Safety review being provided to Aither for the assessment. Basing the cost estimates on the previous maintenance activity is reasonable and the planned timing of this maintenance reflects the recommendations of the consultants.

Network Reform Program

The rationale for establishing the Network Reform Program is linked to recommendations from QCA during the 2020 price monitoring investigation as well as investigating strategic initiatives in the same year. The QCA recommendation identified a potential bias towards asset replacement as opposed to maintenance, which the Network Reform Program aims to address. The overarching rationale for the Program is reasonable, however, further justification for the quantum of expenditure and the associated benefits to customers and businesses is needed.

GAWB acknowledges that the benefits associated with the Program are difficult to measure. Given this difficulty, a more conservative approach which allowed for the impacts of the Program to be assessed may be more appropriate.

GAWB has provided additional information related to the cost of the Network Reform Program and how these contribute to the maintenance step change. GAWB has outlined the different approaches used to calculate the forecast maintenance expenditure, Network Reform expenditure, and the top down and bottom-up approaches. Table 26 summarises the costs associated with the Network Reform Program expenditure as provided by GAWB in subsequent responses to RFIs.

[34] This value reflects the amended value provided in GAWB's response to the Maintenance RFI 38 and 39.

Table 26 Summary of Network Reform Program expenditure

Forecast in $2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
Easement maintenance	373,407	373,407	373,407	373,407	373,407
Condition assessment	27,912	124,671	138,161	149,083	148,896
Network Reform documentation	233,380				
Total	**634,699**	**498,078**	**511,568**	**522,490**	**522,303**

Each element is discussed below:

- **Easement maintenance –** GAWB indicates that it will require greater access to easements given the forecast CAPEX program and its current prioritised approach is no longer suitable. Easement issues can delay capital works delivery, and cultural or heritage assessments need to be undertaken prior to construction. We recommend that the easement maintenance costs are approved.
- **Condition assessment –** GAWB highlights the need for additional conditions assessments with reference to the recommendations as part of the 2020 Price Monitoring Investigation. This expenditure is reasonable.
- **Network Reform documentation –** GAWB committed to significant expenditure in developing supporting documentation related to the Network Reform Program during the current regulatory period. GAWB expected to finalise this task in FY25. However, $233,380 of the planned expenditure has now been shifted into the next regulatory period and is proposed as a step change. In our view, this expenditure was originally planned to be absorbed by GAWB during the current regulatory period and should therefore not be included as a step change in the next period. GAWB had proceeded with the project on the basis that all the expenditure would be absorbed within the business and therefore is considered a business-as-usual expenditure and not a step change.

The general narrative about adopting a proactive, data driven approach to maintenance is reasonable and likely represents the right direction for GAWB. However, the justification for the quantum and timing of these changes is lacking, particularly when weighed against the uncertainty of the benefits. GAWB states that:

"this [the Network Reform Program] will lead to better planning and investment decisions, including optimising the trade-off between capital and operating expenditure. It is difficult to quantify these expected benefits as it will ultimately depend on the optimal solution that is identified in each case, however efficiencies should be realised in capital and operating expenditure over the long term."[35]

GAWB also point to the reduction in maintenance expenditure in 2029/30 as a demonstration of the benefits of these initiatives. It would have been beneficial for GAWB to estimate the expected monetary benefits of the program in more detail, even with the inherent uncertainty and given GAWB already attributed some cost savings to the Program. This line of analysis could then be used to help justify the quantum and timing of the expenditure. Broader benefits outside of monetary savings, such

[35] Maintenance Step Change Business Case, GAWB

as service standard improvements or addressing compliance issues, would also have been beneficial to explore.

It would be assumed that it should result in performance improvements for GAWB however there is limited documentation that justifies why the level of proposed change in maintenance expenditure is efficient and how customers will benefit from the change in approach. While we have not considered any further adjustments to the proposed increase in maintenance expenditure, this uncertainty in the benefits has been further considered in the efficiency factor which is assessed in Section 3.5.

Recommended changes

We recommend that:

- No changes are made to the preventative maintenance for the Awoonga Dam spillway as it is sufficiently justified
- No changes are made to the easement maintenance or conditions assessment expenditure forecast
- The expenditure on the network reform documentation is removed from the operating expenditure step change as this was originally budgeted for 2024/25 and was therefore planned to be absorbed by GAWB as part of business-as-usual and therefore does not need to be a step change
- GAWB improve internal documentation to justify this type of change in expenditure to ensure the expected benefits and changes in value are better reflected in the decision-making

3.4.5. Hatchery step change

This step change captures the increase in costs following the commissioning of GAWB's new hatchery facility, which has the capacity to enable GAWB to meet its regulatory obligations that were a condition of the approval of the raising of the Awoonga Dam Wall in 2001. The fish stock conditions for the dam wall raise are based on a maximum number of fingerlings per hectare per annum.[36] This limit was increased in 2014 and since then GAWB has stocked significantly below this maximum.

The capital expenditure associated with the relocation, design and construction of GAWB's new hatchery was included in GAWB's capital expenditure forecast for the FY2020-25 regulatory period. This project was also reviewed by the QCA as part of the 2020 Price Monitoring Investigation.

The forecast is based on GAWB's corporate plan forecast that was approved by the Board in April 2024. The two main cost components, which have been forecast on a bottom-up basis, are:

- Hatchery food, which is based on the unit costs of food inventory and the quantities required to meet annual production targets, and
- Hatchery operations, which includes a range of items used in the production process, including technology for analysing and optimising production runs. The budget has been built on an item-by-item basis, specifying quantities, input costs and the frequency of the expenditure (the majority of which recurs annually).

Table 27 presents the total forecast hatchery costs across food, operations and broodstock movements. GAWB has quantified the step change by forecasting the total hatchery costs for the

[36] This also includes size and species requirements

upcoming regulatory period and then subtracting the hatchery costs in the baseline ($140,057) to derive a net change in the expenditure.

Table 27 Summary of Hatchery operating expenditure step changes

Forecast in $2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
Hatchery Food	182,036	182,036	182,036	182,036	182,036
Hatchery Operations	214,709	214,709	214,709	214,709	214,709
Broodstock Movement	18,670	18,670	18,670	18,670	18,670
Total	415,416	415,416	415,416	415,416	415,416
Step change compared to 2022/23 expenditure	275,359	275,359	275,359	275,359	275,359

Aither assessment

Permit and plan interpretation

The fundamental basis for the hatchery operating expenditure is to achieve restocking targets aligned with GAWB's fisheries licence and associated Fisheries Management Plan. According to GAWB, *"there are no mandated minimum re-stocking quantities. However, there is an expectation that GAWB will manage its production target with the objective of achieving its maximum target each year. It is important to note that these maximum targets have been set by the Queensland Government based on maintaining fish levels within Awoonga Dam. It is therefore assumed that targeting restocking levels below the maximum restocking target would not achieve the levels necessary to maintain long-term fish levels in the dam."* Our review of GAWB's fisheries permit and the Management and Stocking Plan for Awoonga Dam (2022-2025) identified ambiguities around the interpretation of the maximum stocking quantities:

- "In the absence of more specific data, and to keep this plan simple the 200 fish per hectare per year level is used to calculate the recommended ***maximum*** stocking levels" (emphasis in original text).
- "At a recommended stocking level of 200 fingerlings per hectare per annum..."
- "Fingerling numbers represent the maximum annual permissible releases of fingerings in each size category and it is not expected that fish will be stocked at this level".

It should also be noted that the business case for the Hatchery Relocation project in the 2020 Price Monitoring Investigation, albeit driven by the need to relocate the hatchery facility, supports the objective of achieving a production capacity that would allow GAWB to consistently meet the maximum restocking target.

GAWB's response to the RFI also provided significant useful information on how the maximum stocking rate should be interpreted, including references to ongoing discussions with the relevant Department.

Finally, GAWB has provided additional information to substantiate any revenue generated through the sale of additional fish stock. *"Depending on the results of each batch run, GAWB may have surplus*

fingerlings that are not required for restocking purposes or are not able to be released (e.g. GAWB's fish stocking management plan specifies sizing constraints for released fingerlings). Any sales of fingerlings are a result of surplus stock that may occur during a batch run undertaken for the purposes of fulfilling GAWB's regulatory obligations. That is, the level of operating costs that is incurred by GAWB in the production of fingerlings to meet its regulatory requirements will be the same, regardless of whether those batch runs result in surplus fingerlings, which may then be sold or discarded."

Including the revenue earned from by-product sales as part of the regulated income is appropriate. GAWB's response to the relevant RFI indicates that it does not undertake batch runs for the purposes of supplying third parties. However, it is unclear whether the capacity of the new hatchery is resulting in this by-product production or whether it is incidental. We appreciate that GAWB's fish stocking management plan specifies size constraints of fish and that there is inherent uncertainty in the survival modelling, meaning that some by-product is expected.

Based on this information, our assessment considers that there is some ambiguity around how the hatchery should be managed in the context of the maximum stocking level as quoted in the relevant Plan and permit. However, we appreciate that a broader understanding between GAWB and the Department, as well as actions and operations to-date, reflect a stocking level close to the prescribed maximum. We recommend that this understanding is agreed in writing between both parties and provided to QCA.

Modelling

GAWB has provided an extract from its Production Feed model, which demonstrated the key inputs into the production process (as relevant to the hatchery food and hatchery operations categories) and an estimated production cost per fingerling. It also shows the rationale behind how production numbers are set based on the planned release numbers of fingerlings. GAWB has also indicated that key food and operations inputs have experienced unit cost increases: broodstock specialist diet increased 6 per cent while pumps and filter bags have seen increases of 44 per cent and 29 per cent respectively.

In 2022-23, hatchery production achieved 867,554 fingerlings from a total cost of $140,057. In the current 2023-24 year, GAWB is on track to meeting the maximum restocking target of 1,147,500 barramundi fingerlings. This annual target, along with the sea mullet and mangrove jack target, is expected to be met in the upcoming regulatory period with an annual cost of $415,416 and a total fingerling production of 1,350,000. This means that, from 2022-23 to 2024-25, a 56 per cent increase in fingerling production is expected to result in a 197 per cent increase in operating expenditure for the hatchery. From the information provided by GAWB it is not possible to reconcile this considerable increase in the hatchery costs compared to the baseline expenditure.

Our review found that while GAWB has models and processes in place to plan and manage its annual production process we were unable to sufficiently compare the cost of inputs from the base year on the information provided. Given this, we cannot recommend the significant increase in costs as being efficient.

In finding that the increase is not efficient and in the absence of this ability to reconcile the information, we have sought to derive a high-level estimate of the forecast hatchery costs utilising the baseline operating expenditure and information provided by GAWB. We acknowledge that this is not an ideal approach to estimating the efficient cost of any step change for the hatchery operating expenditure, however given the difficulties in reconciling GAWB's information we consider that it better reflects an efficient estimate based on the actual expenditure incurred in 2022-23.

To develop this high-level estimate for the step change, we have been required to calculate the value based on the approach used by GAWB – that the value of the step change is the net difference between the total forecast expenditure and the baseline expenditure. This has resulted in the following calculation:

- Baseline operating expenditure for the hatchery in 2022/23 of $140,057. We have assumed this is comprised of the same sub-components (food, operations, broodstock movements) in the same proportions as the forecast (44 per cent for food, 52 per cent for operations, remainder on broodstock movement)
- Adjustment for the increase in production of 56 per cent applied to all sub-components (hatchery food, operations costs and broodstock movement) for an additional $77,941, totalling $217,997
- This is then adjusted for the changes in input costs split across the cost components: an additional 7 per cent for hatchery food reflecting the unit cost increases of broodstock specialist diet provided by GAWB[37], and a 37 per cent increase in hatchery operations unit costs reflecting the average growth of pump costs and filter bags as provided by GAWB[38] (an additional $47,466, totalling $265,463)[39]
- Removing the baseline operating expenditure results in a step change value of $125,407 per annum

Recommended changes

We recommend that:

- The hatchery expenditure forecasts include a step change value of $125,407 per annum above the base year expenditure. This represents an annual reduction of $149,953 compared to GAWB's forecast annual expenditure
- GAWB confirm its understanding around the treatment of the maximum permitted fingerlings in writing with the relevant Department to streamline future price monitoring reviews

3.4.6. Insurance step change

GAWB's insurance costs have exhibited sustained annual growth over the 2019-20 to 2023-24 period, in line with general market conditions. GAWB's insurance cost increases have two main drivers:

- Insurance premium increases, resulting in rising costs of insuring the same asset base, and
- Increases in the size of GAWB's asset base.

Each of these element is discussed below.

GAWB's forecast insurance costs are based primarily on inputs from its insurance broker, Marsh. Marsh provided a supporting report that outlined the state of the insurance market using in-house pricing indexes as well as supplementary sources. Insurance prices saw large quarter on quarter increases since 2019, peaking at 22 per cent in 2020Q4. The latest quarter presented (2023Q4) had a moderate inflation rate of 2 per cent. Similar trends are presented for the pacific property market and

[37] Hatchery Step Change business case, GAWB

[38] Ibid.

[39] We note that this is only a limited sample of price increases, however we would expect that any price increases that were not identified by GAWB would be lower than those examples provided and therefore is a conservative approach.

the liability insurance market. These recent year trends are overlayed against longer term insurance costs in the global natural disaster market. Marsh summarises that it considers the insurance market to be transitioning to a period of *"flat insurance rates, albeit not necessarily rate decreases"*, while noting GAWB is expected to experience premium increases due to its higher-than-average risk. Marsh provided GAWB with a FY26 insurance premium estimate and recommended a CPI + 2 per cent growth rate.

The preceding paragraph essentially concerns growth of the unit-cost that is applied to GAWB's asset base, which is forecast to grow over the next regulatory period. Marsh provided GAWB with an estimated FY26 premium of $2,543,000. The insurance premium paid by GAWB is comprised of Industrial Special Risk (ISR) and non-ISR components, the former being impacted by the growth in GAWB's RAB. GAWB has assumed that the ISR component grows at 12 per cent, reflecting the average annual growth rate of the RAB.[40] This growing ISR component is added to the static non-ISR component, and the combined total is then escalated using Marsh's recommended growth rate from the preceding paragraph. These mechanics are shown in Table 28 below.

Table 28 Application of RAB growth (Insurance step change) – components of the step change

All values $2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
Premium baseline (without RAB or above-CPI growth)					
Premium (total)	**2,380,472**	**2,380,472**	**2,380,472**	**2,380,472**	**2,380,472**
Premium (ISR component), 68% of total	1,615,630	1,615,630	1,615,630	1,615,630	1,615,630
Premium (Non-ISR component)	764,842	764,842	764,842	764,842	764,842
Premium with RAB growth					
Premium (total)	**2,380,472**	**2,574,348**	**2,791,489**	**3,034,686**	**3,307,067**
Premium (ISR component), 12% growth rate	1,615,630	1,809,506	2,026,646	2,269,844	2,542,225
Premium (Non-ISR component)	764,842	764,842	764,842	764,842	764,842
Premium with RAB and above-CPI growth					
Premium (total), 2% above CPI growth	**2,428,082**	**2,678,352**	**2,962,350**	**3,284,842**	**3,651,270**
Premium (ISR component), **2% above CPI growth**	780,139	795,742	811,657	827,890	844,448
Premium (Non-ISR component), **2% above CPI growth**	1,647,943	1,882,610	2,150,693	2,456,952	2,806,822

[40] The RAB is forecast to grow at 10%, 27%, 11% and 1% across FY26, FY27, FY28, and FY29.

A summary of GAWB's proposed insurance step change is shown in the table below. GAWB has quantified the step change by forecasting the total insurance costs for the upcoming regulatory period and then subtracting the insurance costs in the baseline ($1,989,512) to derive a net change in the expenditure.

Table 29 Summary of insurance step changes

	2025/26	2026/27	2027/28	2028/29	2029/30
Forecast in $2022/23	2,428,082	2,678,352	2,962,350	3,284,842	3,651,270
Step change compared to 2022/23 expenditure ($2022/23)	438,570	688,840	972,838	1,295,330	1,661,758

Aither assessment

GAWB procures its insurance cover through an external broker, Marsh. This is subject to a detailed review process as part of each annual renewal, which includes:

- A review of GAWB's coverage requirements
- A review of market conditions and how this is impacting the availability, and
- Cost of cover, as well as policy terms and conditions; and insurance premiums

This information provides a robust and specific forecast for the purposes of GAWB's operating environment. Aither's assessment is that GAWB's process for estimating insurance expenditure forecasts appear robust and the forecast appears reasonable.

Marsh also provided advice to GAWB in relation to forecast RAB growth and the impact of asset growth on premium. This impact will primarily be via the Marsh's Industrial Special Risks (ISR) premium policies, which accounts for approximately 70 per cent of GAWB's total insurance premiums in 2023-24. Marsh concludes that, assuming no change in the insurance rate applicable to GAWB, there will be a one-for-one correlation between the ISR premium and asset growth.

The proposed approach is prudent as it reflects the changing nature of the insurance market and the size of GAWB's asset base. However, some features should be noted:

- GAWB's modelling approach applies the average annual growth rate of its RAB to the ISR component of its insurance premium. This is a simplifying assumption given the large variation in the RAB growth rate (2027/28 of 27 per cent, 2029/30 of 1 per cent)
- GAWB's modelling approach relies on forecast RAB values which, at this stage, won't reflect any commentary by QCA on the appropriateness of the asset base. These calculations may need to be updated if any changes are made to the capital expenditure forecasts and subsequent RAB

Recommended changes

We recommend that the proposed insurance costs are approved, subject to the costs being updated if the approved RAB changes are materially different from that proposed as this will impact the premium levels.

3.4.7. Chemicals step change

This step change relates to contracted chemical price increases from external suppliers, additional chemical quantities and incidental costs associated with a forecast increase in production volumes relative to the base year.

There are three key drivers of this step change:

1. Contracted chemical price increases from external providers not already captured in the trend component of the base-step-trend:
   a. Sodium Hypochlorite (increase of around 20.4%)
   b. Soda Ash (increase of around 47.1%)
   c. Aluminium Sulphate (increase of around 22.1%).
2. Increased use of chemicals associated with a forecast increase in production compared to the base year, along with costs associated with the recommissioning of GAWB's Powder Activated Carbon plant
3. Increase in consumables related to chemical use (for example cleaning equipment, chemical delivery costs) associated with an increase in production. This accounts for a relatively small component of the increase

This has resulted in step changes to the operating expenditure for chemicals, as shown in Table 30. This compares to a 2022/23 expenditure of $632,952.

Table 30 Summary of chemical step changes

	2025/26	2026/27	2027/28	2028/29	2029/30
Forecast in $2022/23	910,132	910,132	910,132	910,132	910,132
Step change ($2022/23)	277,181	277,181	277,181	277,181	277,181

Aither assessment

GAWB has provided details about the quantity and prices of the chemicals within the forecast period. Aither acknowledges that there have been upward cost pressures on chemicals, however, there needs to be further evidence about the increases in costs from external providers.

GAWB provided a supplementary spreadsheet outlining the change in chemical expenditure broken down by chemical and with both the quantity and price provided. Approximately 40 per cent of the increase in expenditure is due to price changes, 50 per cent from quantity increases, and the remainder from increased consumables. While the comparison between the base year and FY25 is useful, it would have been beneficial to review the actual expenditure during FY24 and whether the actual impact of the Powder Activated Carbon (PAC) plant and the Kirkwood Reservoir is evident.

Further information regarding GAWB's procurement process would have been beneficial, however we understand that chemicals are purchased in bulk quantities and replenished as needed. Sources for the FY25 unit prices would have been useful to assist the review.

As outlined previously, the extended timeframe between the base year and the start of the regulatory period has created problems for GAWB in identifying and quantifying step changes. In some cases, GAWB has incorporated the impact of price changes within the step change component. In an ideal

world, these changes in price would be considered through the trend component of the base-step-trend analysis and not as a step change. For the purposes of our review, we have accepted GAWB's treatment of the price change however we would prefer these impacts to be treated separately by GAWB going forward.

While we accept that the increases are necessary, GAWB's proposal would have benefitted from better documentation to justify the increases.

Recommended changes

We recommend that:

- The proposed chemicals step change expenditure is approved as its overarching necessity was justified
- GAWB gather more contemporary data on chemical demanded for future reviews. This should also be broken down by the key demand drivers (such as from new assets) of chemicals used. We also recommend that the efficiency of GAWB's procurement process is demonstrated in greater detail.

3.4.8. QCA price investigations step change

GAWB face cyclical costs related to QCA's regulatory investigations. These costs are incurred due to the regulatory process and are outside of its business-as-usual budget. These costs are associated with participating in the forward-looking price setting process (i.e., the process that this report is part of) as well as the planned mid-term review. GAWB breaks down these costs into two categories:

- **QCA fee:** the QCA charges fees to regulated entities that it monitors. The approach and methodology for calculating these fees are outlined in the QCA's fee framework.[41] The QCA has not informed GAWB of the fee at the time of writing. GAWB states that these costs are generally finalised at the end of the current regulatory period
- **External consulting fees:** GAWB has also included external consulting fees for procuring specialist advice to assist with its participation in the price monitoring process. While GAWB has an in-house regulatory team, it is reliant on external expertise for technical areas

Table 31 summarises the QCA price investigation step changes. There was no expenditure under this category in 2022/23.

Table 31 Summary of QCA price investigation step changes

Forecast in $2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
QCA fees	28,006	-	-	186,704	2,073,361
Consultants	74,681	-	-	560,111	373,407
Total	**102.687**	**-**	**-**	**746,815**	**2,446,769**
Step change compared to 2022/23 expenditure	**102.687**	**-**	**-**	**746,815**	**2,446,769**

[41] https://www.qca.org.au/wp-content/uploads/2019/06/qca-fee-framework-revised-2018.pdf

Aither assessment

GAWB has provided further detail on the breakdown of the QCA price investigation step change which was useful for assessing the prudence of this expenditure. Conceptually, these costs represent a cyclical activity that are not within the baseline operating expenditure and justified as a mandatory activity of an entity within QCA's regulatory framework. GAWB's assumed costs are similar to the approved costs for Seqwater's bulk water price investigation in 2022, QCA approved $2.2 million in 2025/26 to cover QCA fees.[42]

The requirement for external assistance in undertaking this cyclical activity is also acknowledged. The quantum of these forecasts reasonable given the external costs that are generally incurred by regulated water utilities in developing pricing submissions.

Recommended changes

We do not recommend any changes to the QCA price investigation cost forecasts.

3.4.9. Review of tariff structure step change

GAWB has planned to review its tariff structure following a suggestion from QCA in its 2020-25 GAWB Price Monitoring Final Report to consider alternative approaches that balance simplicity and cost reflexivity. GAWB expects the tariff review process to be complex and uncertain, arguing that a range of specialist activities will be required including economic analysis, stakeholder engagement, options assessment, price modelling, legal reviews, and an implementation plan.

The proposed step change captures the forecast costs that GAWB would incur in undertaking a comprehensive review of its tariff structure in the upcoming regulatory period. The forecast costs represent external resources and consultants that GAWB would need to engage to assist in completing this review. GAWB provided a supplementary spreadsheet that broke down the expected costs by its sub-components. A summary of the operating expenditure step changes for the review of the tariff structure is shown in Table 32.

Table 32 Review of tariff structure step change ($2022/23)

	2025/26	2026/27	2027/28	2028/29	2029/30
Forecast operating expenditure $2022/23	93,352	326,731	326,731	-	-

Aither assessment

We agree with GAWB's assessment that reviewing the tariff structure is a complex task that will likely require external expertise. We note that while it was suggested in the 2020-25 GAWB Price Monitoring Final Report that customer prices are reviewed, this does not imply that undertaking the reform itself is a mandatory obligation or that it will automatically be approved as a step-change. It would be expected that the benefits of undertaking tariff reform would need to be demonstrated to justify its inclusion.

[42] *Seqwater Bulk Water Price Review 2022-26*, QCA, March 2022. Page 27.

Examining GAWB's 2022/23 expenditure on external consultants[43] shows a cost of $1,146,232, which forms the basis of the base year expenditure forecast. This equates to $5,731,161 over the regulatory period for engaging external resources.

In assessing the step change, we have considered two examples from Victoria where the base-step-trend approach for operating expenditure is also in place.

- In its 2021 pricing submission, Melbourne Water proposed to undertake a significant review of its tariff structure. Consistent with GAWB, this project required the use of external resources to deliver the tariff reform. However, Melbourne Water did not propose any step change in operating expenditure but rather it would be funded as part of its baseline operating expenditure.
- Greater Western Water (and its previous incarnation, City West Water) undertook tariff reform in the previous regulatory period and has proposed to undertake new tariff reforms in the current regulatory period. In both of these instances, Greater Western Water did not propose any additional step change costs associated with undertaking the reform programs.

While the nature of these various tariff reform projects is likely to be different, the key issue to be considered is whether undertaking a tariff reform project necessitates a step change in the baseline operating expenditure for GAWB.

Based on the analysis above, we recommend that the cost of this proposed step change be covered through baseline operating expenditure. Our assessment has not focused on whether the proposed level of the expenditure in the step change is appropriate, but rather whether it should be captured as a step change in the first place.

Recommended changes

We recommend that the review of tariff structure step-change is removed from the forecasts as it should be captured as part of the baseline operating expenditure.

3.5. Assessment of trend operating expenditure

As outlined in Section 3.2.3, the focus for our assessment of the trend operating expenditure is on the efficiency factor that has been applied by GAWB. This is due to QCA undertaking its own assessment of the cost escalation factors proposed by GAWB. The following provides our assessment of GAWB's proposed efficiency factor. GAWB's proposed efficiency factor is based on a report produced by Frontier Economics.[44]

3.5.1. Frontier shift versus catch-up efficiency

Frontier Economics and GAWB make the distinction between catch-up efficiency and frontier shift efficiency throughout their submissions. Catch-up efficiency focuses on **firm-specific** productivity improvements to get the firm to the efficient frontier for similar businesses, while frontier shift efficiency measures **industry-wide** productivity improvements reflecting shifts in the productivity frontier itself. These are concepts within the base-step-trend regulatory framework used by the QCA.

Much of the analysis provided was concerned with isolating the industry-wide productivity improvements as Frontier Economics based its analysis on the assumption that GAWB's base year

[43] General ledger code GL 76101.

[44] Frontier Economics, *Estimation of Gladstone Area Water Board's productivity growth rate,* May 2024

operating expenditure (relative to QCA's allowed operating expenditure) implied that no catch-up efficiency is required.

While we accept the broad framework adopted by Frontier Economics, there are some limitations that should be noted:

- Focusing on frontier shift efficiency improvements would imply that a single industry-wide value should be applied to all regulated businesses within the same industry. The existence of different estimates and applied efficiency factors (even when isolating for frontier shift improvements) highlights the challenges and limitations with isolating the impact
- In practice, firms are heterogeneous and information asymmetry exists, meaning that the shape of the curve and the ability for individual firms to shift along the curve is not known with certainty
- There are inherent measurement challenges and data quality issues with certain datasets, as flagged by Frontier Economics in its quantitative analysis section

In short, the objective of focusing solely on industry-wide productivity improvements is reasonable but its limitations should also be noted.

3.5.2. Key elements of GAWB's submission

The Frontier Economics report is comprised of two analytical components: (1) a quantitative assessment of productivity growth rates for similar businesses and (2) an assessment of the regulatory precedent. The following sub-headings highlight elements of interest across both components.[45]

Quantitative evidence

Frontier Economics estimates productivity growth rates from the National Performance Review dataset (NPR) using data from water distribution businesses. A stochastic frontier analysis (SFA) method is selected and the number of connections[46] is used to determine real operating expenditure within the model.

A number of model inputs are tested and results are generated using a SFA method. The model inputs include different combinations of business sizes (based on number of connections) and different degrees of data cleaning (removing outliers). Further model tests are conducted, including testing different model specifications by including more independent variables (such as water supplied and mains length) and using sample data over different time periods.

All model results across all tests showed a negative productivity estimate, ranging from -0.3 to -1.1 per cent.[47]

[45] A full description of the methodological approach can be found in Frontier Economics' supporting report

[46] The number of connections is used as the independent variable for most of the model runs. However, a subset of model runs also included water supplied. Frontier Economics' indicated that they tested their analysis by including all three potential output variables (number of connections, water supplied, and mains length). The model with a greater number of independent variables yielded similar results.

[47] Figure 1 in the Frontier Economics report incorrectly shows a range of +0.3% to -1.1% which is presumably a notation error.

Regulatory precedent

The quantitative analysis is supplemented by an assessment of the regulatory precedent across a number of regulatory decisions in recent price reviews. Frontier Economics provides an initial long list of relevant regulatory decisions which are then short-listed based on:

- An assessment of whether they are likely to include catch-up efficiency
- The comparative context across the regulated businesses (for example, the differences in demand)
- The comparative context across the regulatory regime (for example, the incentive structures within the PREMO framework in Victoria)
- Previous QCA positions
- The size of the efficiency improvement for certain businesses

The shortlist of regulatory decisions included decisions by ERA (WA), ESCOSA (SA), IPART (NSW), and QCA (QLD). All decisions from the ESC (VIC) were excluded due to the use of the PREMO framework. The shortlisted decisions had a productivity growth rate range from 0 to 0.8 per cent.[48]

Proposed efficiency factor

The Frontier Economics report proposed an efficiency factor of 0.2 per cent based on the evidence and as a reflection of a frontier shift productivity. They also noted that this is consistent with rates approved by the QCA for Seqwater and Sunwater in previous regulatory reviews.

3.5.3. Aither assessment

Quantitative evidence

The approach taken by Frontier Economics is sound but is limited by the data available. A number of limitations of the quantitative evidence should be noted (some of which is already noted by Frontier Economics):

- The use of water distribution businesses as opposed to bulk water businesses was a necessary adjustment given the quality and quantity of bulk water business data. This change limits the applicability of the findings to GAWB.
- The use of asset value as the basis for selecting the comparator businesses is again due to the lack of comparability across bulk water and distribution businesses. However, the testing of different model inputs, including different business grouping comparators, helps with this limitation.

The extent to which the quantitative evidence is used to inform the final recommended productivity factor is unclear.

Regulatory precedent

Our assessment of the regulatory precedent has focused on two elements of the analysis: (1) an assessment of the appropriateness of excluding ESC decisions, and (2) an assessment of the 2022 Seqwater decision.

[48] QCA's Seqwater's 0% productivity assumption excludes any savings from the credible efficiency program.

Excluding ESC decisions

A key aspect of the regulatory precedent analysis is the shortlisting process, which excluded all decisions from the ESC. Two of the key shortlisting approaches implemented by Frontier were assessing whether the efficiency factor is likely to include catch-up efficiency (one measurement being whether the base year operating expenditure is less than the approved level from the previous regulatory period), and the incentives within the regulatory regime. In our view, these approaches may be overly restrictive:

- Focusing on simply the difference between the base year operating expenditure and the approved operating expenditure ignores the changing circumstances that may have occurred over the last five years. It may therefore be important to consider the extent to which the base year operating expenditure differs from the approved level and that a simple approach of equal to or less than is automatically efficient while an actual spend higher than the previously approved allowance is automatically inefficient.
- The specific incentives within a regulatory regime such as PREMO need to be assessed in greater detail. These incentives can be applied in unique ways from business to business and need to be assessed in greater detail.

Notwithstanding these issues, if we accept Frontier's approach conceptually, there may still be adjustments that can be made. These are explored in more detail below. The box below summarises the rationale presented by Frontier Economics for excluding the ESC's regulatory decisions and provides commentary.

Rationale for excluding ESC decisions

The rationale for excluding ESC decisions from the shortlist of regulatory precedents is summarised below.

- Frontier Economics states that *"...the ESC's approach is likely to result in businesses including firm-specific efficiency targets that go beyond the productivity growth rate or frontier shift that is to be reflected in GAWB's trend component."* and that *"...The ESC does **not** make any adjustment for catch-up efficiency to the actual base year opex incurred by the business. Rather, the catch-up efficiency target is incorporated into the ongoing efficiency target."*

The ESC undertakes a review of the base year operating expenditure and notes that they consider a prudent and efficient operating expenditure forecast as having a baseline year expenditure that is reflective of efficient operating costs. In our view, this includes both catch-up and ongoing efficiency. This means that the base year operating expenditure will capture catch-up efficiency, while subsequent forecast years will reflect ongoing efficiency.

- Frontier Economics states that *"the water businesses regulated by the ESC are rewarded, through the allowed rate of return, for pursuing and delivering ambitious efficiency improvements. This means that the efficiency improvements targeted by water businesses under a PREMO framework are likely to reflect a combination of catch-up efficiency and frontier shift efficiency."* and that *"The efficiency targets set by the ESC do not reflect frontier shift alone, so would not be a reliable basis on which to set a pure frontier shift target for GAWB."*

We agree that the efficiencies targeted under the PREMO framework may include both catch-up and frontier shift efficiency, but that is likely only if the regulated businesses base year operating

expenditure materially exceeds the ESC's approved level. That is, there will be some catch-up efficiency getting a business's operating expenditure to the base year level, then ongoing efficiency across the forecast years.

We agree that including all ESC decisions is at risk of capturing both catch-up and frontier shift efficiency.

While we do not necessarily agree with Frontier's assertion that all efficiency factors under the PREMO framework include both catch-up and ongoing efficiencies, we have adopted Frontier's approach to identify whether there were any Victorian businesses that would satisfy Frontier's criteria (rather than dismiss all businesses within the framework). We have identified businesses that:

- Had a baseline that was less than, or quite close to, the previously approved baseline operating expenditure, and
- Did not apply an Advanced PREMO rating in their pricing submission.[49]

We have assessed all of ESC's 2024 and 2023 decisions against these two criteria which is summarised below.

Table 33 Assessment of ESC regulatory decisions

ESC regulatory decision	Baseline operating expenditure less than, or close to, approved level?	Advanced PREMO rating?
GMW (2024)	Yes	No (standard)
GWW (2024)	No	No (standard)
Barwon Water (2023)	No	Yes
Central Highlands Water (2023)	No	No (standard)
Coliban Water (2023)	No	No (standard)
East Gippsland (2023)	No	No (standard)
Gippsland (2023)	Yes	Yes
GVW (2023)	No	Yes
GWM (2023)	No	Yes
LMW Rural (2023)	Yes	No (standard)
LMW Urban (2023)	No	No (standard)
SEW (2023)	Yes	Yes, but SEW did not include the incentives within its modelling

[49] An Advanced PREMO rating results in a higher allowance in terms of return on equity. This means that businesses will be permitted to recover more revenue than under a lower PREMO rating. This makes it complicated to include an 'advanced' business' assumed efficiency growth as this will be offset by the higher return on equity.

ESC regulatory decision	Baseline operating expenditure less than, or close to, approved level?	Advanced PREMO rating?
South Gippsland (2023)	Yes	No (standard)
Southern Rural (2023)	No	No (standard)
Wannon Water (2023)	No	No (standard)
Westernport (2023)	No	No (standard)
Yarra Valley Waer (2023)	No	Yes

We have brought forward the following decisions based on the assessment criteria:

- GMW (2024)
- Lower Murray Water, Rural (2023)
- South East Water (2023)
- South Gippsland Water (2023).

Based on Frontier's approach, businesses that satisfy these conditions can be deemed to be applying operating efficiencies reflective of frontier shift rather than catch-up efficiencies. Table 34 summarises recent ESC decisions that had a baseline year operating expenditure less than, equal, or close to the previous determinations operating expenditure, followed by a description of the business.

Table 34 Relevant ESC regulatory decisions

	Baseline operating expenditure ($nominal)			Efficiency
Business	**Baseline year OPEX (controllable), $m**	**Previous determination OPEX, $m**	**Difference (%)**	**Assumed efficiency rate (%)**
GMW (2024)	$76.89	$77.18	-0.4%	0.0% (implied net saving of 1.9% based on consultant report)
LMW Rural (2023)	$17.51	$17.65	-0.8%	1.1%
SEW (2023)	$144.41	$140.59	2.7%	2.0%
South Gippsland (2023)	$22.44	$22.50	-0.3%	1.4%

The assumptions underlying each business are summarised below:

- **Goulburn-Murray Water's** price review included no overarching cost efficiency variable. Instead, productivity and efficiency savings have been included as step changes. The associated expenditure review consultant report states:

Goulburn-Murray Water's proposed productivity and efficiency savings step changes equates to an average saving of $3.6 million per annum over the PS6 period. This represents an implied net annual saving of 1.9 per cent per annum on adjusted baseline expenditure.[50] This is higher than any of the net average annual savings in operating expenditure proposed by the [Victorian] water businesses in the 2023 Price Review. [51]

- **Lower Murray Water (Rural)'s** price review included an overarching cost efficiency variable of 1.1 per cent per annum which was used to offset a growth rate of 1.1 per cent. The business' base year operating expenditure was 0.8 per cent less than the approved level from the preceding price determination. The associated expenditure report states:

  Lower Murray Water is forecasting average growth in operating expenditure of 1.1 per cent per year and an (average) efficiency factor of 1.1 per cent per year over the PS5 regulatory period. [52]

- **South East Water**'s price review included an efficiency assumption of 2.0 per cent. However, the business base year operating expenditure was almost 3 per cent greater than the approved level. While SEW does not strictly conform to the assessments outlined above, its efficiency assumption of 2 per cent equates to a total savings of $14.1 million. The base year operating expenditure was above the approved level by only $3.8 million, meaning that the majority of this efficiency assumption could be considered as frontier efficiency.

- **South Gippsland**'s price review included an efficiency assumption of 1.4 per cent. The businesses base year operating expenditure was 0.3 per cent less than the approved level from the preceding price determination.

Seqwater's 2022 decision

GAWB's submission and Frontier Economics' supporting document refers to the QCA's decision to approve a zero per cent efficiency factor for Seqwater in 2022. This was framed as the lower bound of the regulatory precedent range, though the wider context of this approval is acknowledged (i.e., approved alongside a credible efficiency program). Frontier Economics' states:

> *The QCA has most recently applied no efficiency target (i.e., a 0% productivity rate) for Seqwater's bulk water price review in 2022 as Seqwater had proposed a credible efficiency program setting out a pathway to reveal efficient costs over the regulatory period.*

In our view, this means it may not be appropriate to include the Seqwater 2022 decision within the regulatory precedent. A number of items should be noted:

- The approved costs in the final decision also include certain items which could be considered as efficiency gains. There are energy efficiency and solar projects savings included in the approved prices, equalling $10.1 million in nominal terms of the 2022 to 2028 period.

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50 We have not been able to independently verify this per annum efficiency value.

51 FTI Consulting, *Goulburn-Murray Water: Review of expenditure forecasts*, February 2024 (https://www.esc.vic.gov.au/sites/default/files/documents/2024-water-price-review-Review-of-Goulburn-Murray-Water%27s-Expenditure-Forecasts-FTI-Consulting.pdf)

52 FTI Consulting, *Lower Murray Water: Review of expenditure forecasts,* February 2023 (https://www.esc.vic.gov.au/sites/default/files/documents/Lower%20Murray%20Water%20Review%20of%20Expenditure%20Forecasts%20FINAL%20REPORT.pdf)

- Frontier Economics' proposed a 0.2 per cent efficiency savings as part of Seqwater's initial submission to QCA. However, we appreciate that Seqwater fundamentally revised its submission to the QCA[53] based on the initial round of feedback.
- GAWB acknowledges in its submission that the credible efficiency program approach is not appropriate for the scope and pace of change in GAWB's business:

> *It is noted that the approach accepted by the QCA for Seqwater in its FY2022-26 bulk water price review was to apply an efficiency factor of zero, accompanied by a 'credible efficiency plan'...The potential scope and pace of change in GAWB's business and operating environment means that this is not considered an appropriate strategy for GAWB at the current time.*

These reasons, in our view, mean that the Seqwater 2022 decision may not be appropriate for the regulatory precedent shortlist.

Summary of regulatory precedent analysis

Figure 5 summarises the assumed efficiency rates across all relevant regulatory decisions. This includes the 15 decisions identified by Frontier Economics (navy dots) and the 4 ESC decisions (orange dots) identified above. The red line indicates the average efficiency assumption level, while the green line shows GAWB's suggested level. The mean efficiency assumption across the revised regulatory precedent was 0.77 per cent and the median value was 0.7 per cent.

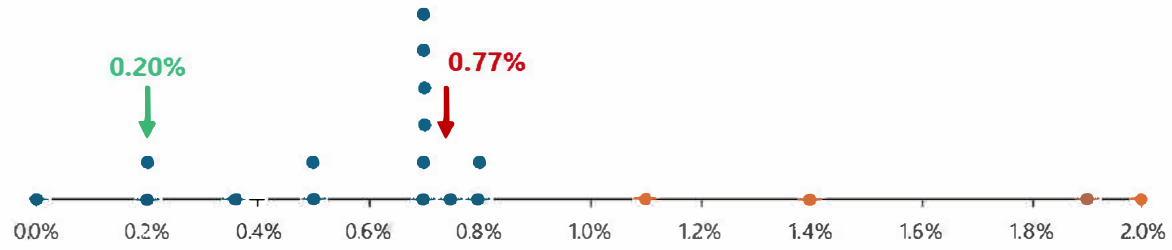

Figure 5 Plot of efficiency assumptions across relevant regulatory decisions

Note Green arrow represents GAWB's proposed efficiency metric, red arrow represents the average across all relevant regulatory decisions.

Summary of operating expenditure efficiency findings

Aither's views on the operating expenditure efficiency metrics are summarised below:

- GAWB's proposed efficiency metric is partly driven by a quantitative assessment of productivity growth rates for water distribution businesses using the National Performance Report (NPR) database. While the methodology used by Frontier Economics is commendable, ultimately the quality and availability of data limits the usefulness of these findings to the final decision. However, the quantitative assessment is a useful supplementary piece of evidence that should be used to support the efficiency metric in the medium and long term once data issues are resolved.

[53] This involved the application of a base step trend approach applied to all OPEX as opposed to isolating fixed and variable costs, setting the base year to reflect the previously approved expenditure, and justifying proposed step changes that address QCA concerns.

- The regulatory precedent has a relatively higher importance to the decision given the point above. We consider that the proposed efficiency factor of 0.2 per cent is too low, this is based on the following:
  - The range of efficiency factors from regulatory precedent is, in general, higher than the proposed efficiency factor with the only data point that is below 0.2 per cent being the Seqwater example that incorporated other factors. The revised range of regulatory precedents was 0.77 per cent and the median value was 0.7 per cent.
  - We also note that a number of GAWB's proposed operating expenditure step changes include new approaches that will be implemented during the next regulatory period. This includes the Network Reform Program and the moderate (as opposed to lean) operating model. GAWB acknowledges that the benefits associated with some of these changes are difficult to measure. In our view, a relatively higher efficiency rate is a way to embed some of these difficult to measure benefits into the forecasts.
- We acknowledge that the approach taken has subjective elements. However, we believe that there is sufficient evidence to justify that the proposed 0.2 per cent efficiency factor is too low. We consider an efficiency factor of 0.7 per cent as being more appropriate for GAWB. This is marginally lower than the average efficiency factor across the identified relevant decisions, primarily given the inherent uncertainty in transferring efficiency metrics across businesses and time.

3.6. Recommended operating expenditure

We have recommended a number of adjustments to the proposed OPEX step changes and efficiency factor above. Table 35 summarises these recommendations, while the rationale for these changes can be found in the preceding sections.

Table 35 Summary of recommended changes to the operating expenditure step changes and efficiency factor

OPEX component	Recommended adjustment (All $ values are 2022/23 real)
Labour step change	The long service leave component of labour costs reduced the total cost of the step change of $3,840,500 to $2,304,300 over the 2025/26 – 2029/30 period.
Electricity step change	We do not recommend any changes to the electricity cost forecasts. However, these should be reconfirmed once the CAPEX forecasts are finalised.
ICT step change	We recommend that the annual ICT expenditure is decreased by $7,175 so the total of the subcomponent matches the summary table provided.
Maintenance step change	We recommend the network reform documentation expenditure is removed from the maintenance step change, resulting in a $233,380 reduction.
Hatchery step change	We recommend that the hatchery food and operations expenditure are reduced by $149,953 per annum.

OPEX component	Recommended adjustment (All $ values are 2022/23 real)
Insurance step change	We do not recommend any changes to the insurance cost forecasts. However, these should be reconfirmed once the CAPEX forecasts are finalised and the RAB growth approach should be confirmed with the insurance company.
Chemical step change	We do not recommend any changes to the chemical cost forecasts.
QCA price investigation step change	We do not recommend any changes to the QCA price investigation cost forecasts.
Review of tariff structure step change	We recommend that the tariff review expenditure is reduced by $746,815.
Efficiency factor	We recommend that the efficiency factor is increased from 0.2 per cent to 0.7 per cent.

The following provides a summary of the recommended adjustments to GAWB's proposed operating expenditure for the upcoming regulatory period. These changes result in a reduction of GAWB's proposed operating expenditure by approximately $6.5 million over the regulatory period, but still represents a material increase in costs relative to the base year.

Table 36 Summary results of the recommended adjustments ($2022/23)

$2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
GAWB's proposed OPEX base	40,241,769	40,890,313	42,261,377	43,037,856	45,303,581
Recommended step change adjustments					
Labour	-307,240	-307,240	-307,240	-307,240	-307,240
ICT	-7,176	-7,176	-7,176	-7,176	-7,176
Maintenance	-233,380				
Hatchery	-149,953	-149,953	-149,953	-149,953	-149,953
Tariff structure reform	-93,352	-326,731	-326,731		
Revised OPEX base	39,114,559	39,702,377	41,066,674	42,234,388	44,637,093
Revised OPEX base, with escalator (real)[54]	39,681,620	40,413,802	41,879,775	43,084,232	45,469,903
Recommended efficiency factor adjustments					
Recommended efficiency factor (0.7%) savings[55]	-435,229	-723,053	-1,037,195	-1,361,145	-1,744,749

[54] Aither did not examine the appropriateness of the cost escalation rates

[55] GAWB's base-step-trend model captures the assumed efficiency savings from 2022/23 onwards. Our recommended efficiency rate (0.7 per cent) has been applied to the 2025/26 – 2029/30 period only.

$2022/23	2025/26	2026/27	2027/28	2028/29	2029/30
Total recommended operating expenditure	39,246,391	39,690,748	40,842,580	41,723,087	43,725,155

Appendix A - Information sources

Operating expenditure (including strategic review)

CHEM-1_Chemicals step change
Chemicals Step Change Business Case
RFI 71, 72 & 73 - Chemicals
ELEC-1_GAWB-Electricity-Cost-Forecasting-Model-QCA-RFI
ELEC-2_ACIL Allen electricity market outlook report_25 March 2024
Electricity Step Change Business Case
RFI 055 Opex Electricity Step Change
23GLACT_detail transaction listing 17.07.24
HATCH-1_Permit - 261430
Hatchery Step Change Business Case
Management Stocking Plan Awoonga Dam 2022-25
Other Income
Policy for Fish Stocking in Qld (Dec 2020) - Qld Gov
Production Feed Model 710-SSB-005 (Extract)
RFI 33-35 & 67-69 - Hatchery
ICT Step Change Business Case
RFI 065 and 066_ICT
ICT-3_ICT System Upgrade Tech1 Business Case (Final)
INS-1_Insurance Pricing Report - Marsh (16 May 2024)
Insurance Step Change Business Case
LAB-1_CONFIDENTIAL_07 Item 2.03 Remuneration & Benefits Strategy
LAB-2_2022 Annual Remuneration Advice
LAB-3__2 (1)
LAB-4_CONFIDENTIAL_Item 2.03 Restructure to Align to Strategy (1)
LAB-5_CONFIDENTIAL_Item 5.01 2023-24 Budget
LAB-6_CONFIDENTIAL_Item 4.01 2024-25 Budget (2)
Labour Step Change Business Case
Item 4.01 Network Reform Board Paper
Item 4.01 Network Reform Presentation - Attachment 1
MAIN-1_ECM_6175388_v1_RF001474 - Terms and Conditions incl Scope of Works
MAIN-2_ECM_6177010_v1_CON-000735 - Fully Executed Variation 4 incl justification
MAIN-3_Awoonga Dam Safety Review 2022
Maintenance Step Change Business Case
RFI 37, 40 & 70 - Network Reform Program
RFI 38 & 39 - Maintenance Step
RFI 75 - Accounting Treatment
TAR-1_Tariff review costing
Tariff Review Step Change Business Case
GAWB regulatory submission - Attachment 3 - GAWB productivity growth rate frontier economics - May 2024(2021084.1)

Capital expenditure (including strategic review)

009A Hydrogen-BOARDP~1.PDF
009A Hydrogen-Hydrogen Program Execution Plan_Redacted.pdf
009A Hydrogen-NIZ System Augmentations Feasibility Hydraulic Modelling Report_Redacted.pdf
009A Hydrogen-Project Mandate - Hydrogen Short Term Capital Program - signed_Redacted.pdf
1.Board Paper Hydrogen Program Execution Plan.pdf
10.NIZ Sys Aug Feasibility Hydraulic Modelling Report.pdf
11.OLS Storage Update.pdf
1-1262~1.PDF
12.STNA TOTEX Estimate Summary DRAFT QCA SUMMARY 20240718.xlsx
12587476-EST_April_2023.pdf
126223~1.PDF
126223~2.PDF
126223~3.PDF
12622309-REP-0_AWD PS Pump 3 Concept Design Report.pdf
12622309-REP-0_Feasibility Report - T6 [redacted]_Redacted.pdf
13.AWD PS Pump 3 Concept Design Report.pdf
14.Feasibility Report - T6 [redacted].pdf
15.GAWB Board Resolution Hydrogen.pdf
16.Hydrogen Program Execution Plan June 2024.pdf
2.Hydrogen Program Execution Plan Dec 23 to Jun 24.pdf
2019-065 SGR PJP and EA 01AUG19.pdf
2022 GAWB Network Condition Assessment Results - 17NOV22.pdf
2-1262~1.PDF
22GLACT_detail transaction listing 17.07.24.xlsx
3.Project Mandate - Hydrogen Short Term Capital Program - signed.pdf
3-1262~1.PDF
4. Feasibility Report - T3 [redacted].pdf
4-1262~1.PDF
5.Feasibility Report - R2 [redacted].pdf
5-1262~1.PDF
6.Feasibility Report - T2 [redacted].pdf
6-1262~1.PDF
7.Feasibility Report - R1 [redacted].pdf
8[redacted] Concept Design Report.pdf
9.Feasibility Report - T4 [redacted].pdf
AMP - Annexure 1 - Asset Portfolio.pdf
AMP - Annexure 2 - Asset Management Improvement Plan.pdf
AMP - Annexure 3 - Reliability - Based Maintenance Strategy.pdf
AMP - Annexure 4 - Overview of Maintenance Improvement Tools.pdf
AMP - Annexure 5 - Lifecycle Maintenance Plans Revision Process.pdf
AMP - Annexure 6 - Asset Management KPIs in TechOne.pdf
AMP - Annexure 7 - LCMP Integration with TechOne.pdf
AMP - Annexure 8 - Compliance Related PM Solution - TechOne Configuration.pdf
AMP - Annexure 9 - Asset Portfolio - Roles and Responsibilities.pdf
AMP - Asset Management Plan - 2023.pdf
AMS 640276 - ISO 55001 Certification 2022-2025.pdf
Asset Capitalisation Management Policy.pdf
Authorities and Delegations Manual.pdf
Authorities and Delegations Procedure.pdf
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CAP2019-065 Fully Executed Memorandum - 31MAR20.pdf
CAP2019-065 GHD Concept Design 10AUG23.pdf
CAP2019-065 New Idea Form - 21MAR19.pdf
CAP2019-065 New South Gladstone Reservoir EA 04.10.22 - signed.pdf
CAP2019-065 Project Charter - signed.pdf
CAP2019-065_SGR Replacement Options Analysis - Signed.pdf
CAP2019-067 Asset Cost Breakdown - 16JUN23.pdf
CAP2019-067 Aurecon Scoping Report - 28FEB20.pdf

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CAP2019-067 Expenditure Authorisation for Business Case Variation - 18JUL19.pdf
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CAP2019-067 Internal Memorandum for Contract Award - 20MAY21.pdf
CAP2019-067 Justification for Contract Variation 1 - 29NOV19.pdf
CAP2019-067 Justification for Contract Variation 10 - 13JUN22.pdf
CAP2019-067 Justification for Contract Variation 11 - 28JUN22.pdf
CAP2019-067 Justification for Contract Variation 12 - 06JUL22.pdf
CAP2019-067 Justification for Contract Variation 13 - 29JUL22.pdf
CAP2019-067 Justification for Contract Variation 14 - 30AUG22.pdf
CAP2019-067 Justification for Contract Variation 15 - 21SEP22.pdf
CAP2019-067 Justification for Contract Variation 16 - 01DEC22.pdf
CAP2019-067 Justification for Contract Variation 17 - 3JAN23.pdf
CAP2019-067 Justification for Contract Variation 18 - 06FEB23.pdf
CAP2019-067 Justification for Contract Variation 3 - 10JUN21.pdf
CAP2019-067 Justification for Contract Variation 5 - 23MAR22.pdf
CAP2019-067 Lifecycle Maintenance Plan LCMP0012 - GWTP Filters - 4DEC18.docx
CAP2019-067 New Idea Project Form - 21MAR19.pdf
CAP2019-067 Project Closure Report - 26MAR24.pdf
CAP2019-067 Project Justification and Plan - 9JUL19.pdf
CAP2019-067 Project Specification - 1APR21.pdf
CAP2019-067 Variation 10 Notice to Duratec Limited - 13JUN22.pdf
CAP2019-067 Variation 1 & Justification for Contract Variation 1 - 15JUL21.pdf
CAP2019-067 Variation 14 Notice to Duratec Limited - 21SEP22.pdf
CAP2019-067 Variation 15 Notice to Duratec Limited - 05OCT22.pdf
CAP2019-067 Variation 16 Notice to Duratec Limited - 01DEC22.pdf
CAP2019-067 Variation 17 Notice to Duratec Limited - 04JAN23.pdf
CAP2019-067 Variation 18 - Board Resolution - 28JUN22.pdf
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CAP2019-067 Variation 3 - 28JUN21.pdf
CAP2019-067 Variation 3 & Justification for Contract Variation 3 Rev 1- 21DEC21.pdf
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CAP2019-067 Variation 6 & Justification for Contract Variation 6 - 22MAR22.pdf
CAP2019-067 Variation 7 & Justification for Contract Variation 7 - 31MAR22.pdf
CAP2019-067 Variation 8 & Justification for Contract Variation 8 - 3MAY22.pdf
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CAP2019-069 Board Resolution 202223-06-02.pdf
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CAP2019-069 Budget Reallocation CAP2022-265.15 - 20JAN23.pdf
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CAP2019-069 CAPEX Reallocation - 14OCT19.pdf
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CAP2019-069 Internal Memo to Award Contract AECOM Australia Pty Ltd - 07AUG23.pdf
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CAP2019-069 Scope of Work - Detailed Design.pdf
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CAP2020-100 CON-000704 - CN-02 - Change Notice - SMEC Signed - 19AUG20.pdf
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CAP2020-100 Email Attachment - HSEF0304.8 Hazard Study Record Sheet V2 - 28MAR19.xls
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CAP2020-100 Expenditure Authorisation - 20APR20.pdf
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CAP2020-100 GHD Awoonga Dam Conduit Condition Assessment Summary Report Discharge Conduits SP2 - 24NOV21.pdf
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CAP2020-100 GHD Inspection and Repair Scoping of Awoonga Dam Conduit - 18MAY21.pdf
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CAP2020-100 Internal Memorandum to Award Contract - 18JUN20.pdf
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CAP2020-100 Request for Quote RF001344 Terms and Conditions QTender release.pdf
CAP2020-100 Risk Register - Awoonga Dam Conduit Inspection.png
CAP2020-100 Scope of Work - Conduits Isolation Risk Assessment - 21SEP20.pdf
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CAP2020-100 Scope of Work - Scope B - 4DEC19.pdf
CAP2020-100 Scope of Work ROV Inspection V1.1 - 17SEP20 .pdf
CAP2020-100 Scope of Works RF001343 - Scope A - 4DEC20.pdf
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CAP2020-100 SMEC 30032595-SIP-Awoonga Dam Conduits-Site Inspection Plan - 20JUL20.pdf
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CAP2020-100 Variation 1 & Justification for Contract Variation 1 - 18AUG21.pdf
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GAWB Medium Projects Delivery Placemat v0.3.pdf
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GAWB PMF Governance Guideline.pdf
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GAWB Risk Matrix.pdf
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Project Initiation Workflow 06.02.24.pdf
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RFI 006 Master List - 2025 Submission.pdf
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RFI 009C Master List - 2025 Submission.pdf
RFI 009D Master List - 2025 Submission.pdf
RFI 010A Master List - 2025 Submission.pdf
RFI 010B Master List - 2025 Submission.pdf
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RFI 026 - Forecast Capex Summary.xlsx
RFI 41 – Boynedale Boat Ramp.pdf
RFI 42 - Water Security.pdf
RFI009B CAP2019-069 summary.pdf
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RFI009C CAP2023-425 summary.pdf
RFI009D TBA277 summary.pdf
RFI009E CAP2019-065 summary.pdf
RFI010A CAP2019-067 summary.pdf
RFI010B CAP2020-100 summary.pdf
RFI010C CAP2020-076 summary.pdf
RFI010C Master List - 2025 Submission.pdf
Risk Appetite Statement.pdf
Risk Assessment Procedure.pdf
Risk Management Policy.pdf
Risk Management Standard.pdf
Stakeholder Requirements Specification (SRS) Final Rev - MAR24.docx
STNACA~1.PPT
STNATO~1.XLS
Strategic Asset Management Plan.pdf
Summary of Progress of Significant Projects FY20-FY25.xlsx
T1-CAL~1.XLS
T2-MTM~1.XLS
T3-ALD~1.XLS
T4-LAN~1.XLS
TBA277 Lifecycle Maintenance Plan LCMP0046 - Reservoir -Mt Miller Potable Water - 10MAR23.pdf
TBA277 Vinisi Partners - Inspection of Mount Miller and Fitzsimmons 50ML Reservoirs External CFRP Laminates - 26NOV20.pdf
TBA277 Vinsi Partners Memorandum - Inspection of External Carbon Fibre Laminates and their Protective Coating - 17APR13.pdf
TBA277 Vinsi Partners Memorandum - Mount Miller Reservoir Visual Condition Inspection 2018 - 11FEB19.pdf
TBA277 Vinsi Partners Memorandum - Status of Reservoir Inspections - 3SEP15.pdf
TBA277 Vinsi Partners Mount Miller Reservoir Internal Wall Surface Remedial Repair Specification - 1NOV18.pdf
TBA277 Vinsi Partners Specification - Mt Miller Reservoir - Concrete Repair Specification General - 1APR11.pdf
RFI 31 - Capex Deliverability.pdf
RFI 047, 049, 050 - Capex Checklist and Schedules
CAP2019-065 SGRR Replacement Gate 1 Checklist.pdf
CAP2019-065 SGRR Reservoir Replacement Schedule.pdf
CAP2019-069 EEPL Replacement Gate 1 Checklist.pdf
CAP2019-069 EEPL Replacement Gate 2 Checklist.pdf
CAP2019-069 EEPL Replacement Schedule Rev 1.pdf
CAP202~2.PDF
CAP202~3.PDF
CAP2025-550 STNA Stage1 Gate 1 Checklist.pdf
H2RELA~1.PDF
H2RELA~2.PDF

RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf
TBA277~1.PDF

Appendix B - Capital projects detailed review

Ex-post projects

a. GWTP Filter Media Replacement & Filters (CAP2019-067)	
Criteria	**Rating and Comment**
Prudency	Demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	Condition Assessments completed at the commencement of the project, as well as throughout the works as discovery of latent conditions occurred, provided ample demonstration for the need of the works.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	The project only looked at a Do Nothing and a like for like renewal / replacement plan. Whilst the assessment of more options would typically be expected, it is acknowledged that there may not have been any other reasonable options available to GAWB and it is most likely that the approach taken would not have had a material impact on the outcomes.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	Unlike Awoonga conduit inspection (RFI-10B Response), Project Phase Checklists were not provided, nor were many of document detailed in said checklists, which suggests that GAWB's process has not been followed; note that GAWB have subsequently indicated in **RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf** that this project was completed prior to the implementation of the of the Project Phase Checklists in the PMF however as discussed in the AWD conduit inspections and shutdown (CAP2020-100) review below Aither have concerns around the actual timing of the inclusion the Project Phase Checklists in the PMF. Regardless of the Project Phase Checklist, the lack of a schedule which was requested as part of the same RFI request is concerning. The lack of options and the lack of thorough assessment of the options does not align with GAWB's current approach however it is acknowledged that GAWB's procedures have changed since this project was initiated and the project guidelines that applied at this time are not known to Aither, despite requests. Additionally, as noted above in review of the options assessment, this is not expected to have had a material impact on the outcomes.
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	As discussed above, whilst a thorough suite of options was not assessed, it is still more likely than not that the best option was selected.
Efficiency	Not demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	As per above, condition assessments completed at the commencement of the project as well as throughout the works as discovery of latent conditions occurred provided ample demonstration for the need of the works.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	Not completed. As noted above though, this is unlikely to have had a material impact.
Project Synergies Considered	Doesn't appear to be the case.
Benchmarking Completed	Not assessed.
Unit costs vs market rates (are estimated costs realistic and justified)	Estimated costs seemed reasonable but were not met due to significant scope creep as the project developed and latent conditions were discovered. Further, delays in accessing the worksite led to variations which were likely avoidable should better project planning have been in place.
Red flags	As noted above, the lack of thorough Options assessments is a red flag, even if it did not have a material impact in this instance. Another red flag was the low level of planning and scheduling of works that was apparent from the information provided. This aligns with concerns around other projects reviewed as part of this assessment by Aither.

a. GWTP Filter Media Replacement & Filters (CAP2019-067)	
Review of contingencies	Contingencies seemed reasonable when reviewing budget costs. The significant budget increase caused by latent conditions went well beyond what one could expect to be covered by budget contingency.

b. AWD conduit inspections and shutdown (CAP2020-100)	
Criteria	**Rating and Comment**
Prudency	Not fully demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	The need for the project is clearly demonstrated in Project Justification and Plan document with reference to the need to meet Dam Safety Regulations.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	Only two options appear to have been considered; Do Nothing and the selected option. There may be reasons that preclude another other options, such the used of remote operated submersible vehicles (ROV) to complete the inspections but these were not evident in the documentation provided. Accordingly, it is not accepted that a genuine suites of options was considered.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	The Phase 2 - Scoping Phase Checklist provided indicates that at the scoping phase at least, all GAWB requirements were met. It is noted however that much of the documentation listed in this checklist has not been provided to Aither following requests. The lack of evidence of a Gantt Chart in particular is noted as the scheduling outlined in the Project Plan does not provide the level of detail expected. The Phase 3 - Planning Phase Checklist was also provided however it is noted that this was an in progress document date 31/01/2020 - a final version was not provided. As with previous projects assessed as part of this work by Aither, it is noted that GAWB standards have changed over time however the lack of evidence of a Project Management Plan being completed is particularly concerning. Following the above assessment, a further response was received from GAWB in the form of **RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf** that stated that amongst other projects, **AWD conduit inspections and shutdown (CAP2020-100)** did not have completed checklists as it was completed before the Project Phase Checklists were incorporated into the PMF. This is clearly not true for, **CAP2020-100** as evidenced by the signed and scanned checklist received dating back to 2019. As other projects noted as missing these checklists are contemporaneous with **CAP2020-100** Aither are concerned that a mistake may have been made in the response to RFI 49, 49 and 50 by GAWB and a subsequent RFI has since been issued.
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	From the information provided it is difficult to make a determination on this.
Efficiency	Not demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	As a noted above, the project need was justified however with better planning in the early phases of the work it is expected that the capital efficiency could have been improved. The decision in the early phases of the work to not require confined space entry as part of the execution or engineering by an RPEQ is hard to justify, especially since the risk assessment completed, "CAP2020-100 Email Attachment - HSEF0304.8 Hazard Study Record Sheet V2 - 28MAR19.xls" acknowledges the potential need but appears to dismiss it without adequate justification or further assessment being completed. This oversight led to the need to terminate two existing contracts and led to $107k of the capital budget being recast as OPEX. The full cost impact is unknown.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	Not considered
Project Synergies Considered	Not considered
Benchmarking Completed	-
Unit costs vs market rates (are estimated costs realistic and justified)	Not provided. A reference is given in the Project Justification and Plan document to a time and material built up estimate however it was not found in the information provided to Aither by GAWB.
Red flags	As noted, major concerns were around the limited number or options considered in the planning phase as well as the lack of scrutiny around the confined space risk.

b. AWD conduit inspections and shutdown (CAP2020-100)	
Review of contingencies	25% Contingency is used which is accepted as reasonable though it is noted that this amount differs across the various projects reviewed as part of this assessment by Aither with no evident basis for the variance.

c. Golegumma DN300 Pipeline replacement (CAP2020-076)	
Criteria	**Rating and Comment**
Prudency	Demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	The business case and referenced documents, such as the scoping study and pipeline condition assessment, clearly showed that the pipeline had reached the end of its design life, as evidenced by sectional corrosion assessment. Given the high rate of failures that were occurring as well as the critical nature of the pipeline, the project was need was demonstrated.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	A genuine suite of Options was included as of the Scoping Study, including full pipeline replacement, two options looking at targeted replacement of critical sections of the pipeline and Option 4 that involved adding mechanical protection to sections of the pipeline that have been identified as being at high risk of failure should they experience a mechanical impact or where flooding and inundation are likely. Whilst a Do Nothing option was not strictly assessed, the nature of Option 4 met this requirement in that it dealt with the specific risks in the lowest capitally intense approach and involved no replacement of assets. The weightings used for the MCA appeared relatively sound with consideration of construction risk, asset resilience and longevity, environmental risk, safety and financial. One concern around the financial element was that only Capital Cost was considered, not Opex, though this is not expected to have had a material impact on the selected option. It is worth noting that the weightings used were again unique to this project (differing from other projects reviewed); it is recommended that GAWB use a consistent approach in its evaluation criteria. Another concern on the MCA approach is that no sensitivity analysis appears to have been carried out to test the impact of the weightings selected; whilst this isn't stipulated in GAWB standards and is not expected in this instance to have had a material impact on the selected option, it is best practice.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	Unlike Awoonga conduit inspection (RFI-10B Response), Project Phase Checklists were not provided which suggests that GAWB's process has not been followed. As with previous projects assessed, this is difficult to assess when acknowledging that GAWB's Approach has changed since this project was initiated and that full extent of the changes over time are not known by Aither. A PMP was completed in late 2022 which is one of the primary deliverables of the current PMF, however it would be expected that this task would have been completed earlier in the process. Subsequent to the above review being completed, GAWB provided an additional response in the form of **RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf** that included Gate 2 and Gate 3 checklists for this project but stated that Gate 1 was completed prior to the implementation of the of the Project Phase Checklists in the PMF however as discussed in the AWD conduit inspections and shutdown (CAP2020-100) review above Aither have concerns around the actual timing of the inclusion the Project Phase Checklists in the PMF. The Gate 2 and Gate 3 checklists did not include the sign off component of the checklist which makes it impossible to verify when they were completed.
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	The scoping study provided adequately demonstrates that the best option was selected.
Efficiency	Not fully demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	As discussed above, the project need was adequately demonstrated. Regarding expense, it is concerning that the initial QCA approved budget was 2,250,000 was more than doubled to 5,112,345 following the completion of detailed design in Feb 2022. As Aither do not have the outputs from the detailed design consultant it is difficult to assess the cause of the spike in costs and to determine whether better planning in the concept stages could have produced a more accurate estimate when the initial budget was approved. It is accepted that COVID pandemic, which commenced after the initial concept design and initial budget approval, would have had a major impact on the cost of all of the options assessed in the scoping study. To determine whether a material impact was caused, the MCA completed in the

c. Golegumma DN300 Pipeline replacement (CAP2020-076)	
	scoping study was revisited. It is noted that were more *accurate* costs used for the selected option, Option 3, the outcome of the MCA would not have changed.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	-
Project Synergies Considered	Doesn't appear to be relevant
Benchmarking Completed	Not assessed.
Unit costs vs market rates (are estimated costs realistic and justified)	Unit costs used in the scoping study appear realistic with the design consultant relying on a mixture of recent project pricing, industry rates and some budget pricing, though no evidence of this is provided.
Red flags	Issues with the scheduling, as with other projects assessed. Not that in the instance of this project a schedule was provided late in the review process however it was evident that it had not been updated with work complete and the level of detail set out was lower than would be expected for a project of this scale.
Review of contingencies	20% Contingency is used which is accepted as reasonable though it is noted that this amount differs across the various projects reviewed as part of this assessment by Aither with no clear basis for the variance.

Ex-ante projects

d. Hydrogen customers enabling infrastructure - (TBA312 & CAP2024-518)	
Criteria	**Rating and Comment**
Prudency	Not fully demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	It is evident from "Hydrogen Program Execution Plan_Redacted.pdf" and the modelling referred to in the "NIZ System Augmentations Feasibility Hydraulic Modelling Report" and commentary given in the "Project Mandate - Hydrogen Short Term Capital Program" that there is a need for network augmentation to meet the needs of new and existing water users, however, given the significant amount of redacted information (i.e. Table 14 in "Hydrogen Program Execution Plan_Redacted.pdf" which provides demands in terms of ***Ultimate Volumes*** is fully redacted) it is not possible for a sound assessment of the need to be made. The **"Hydrogen Program Execution Plan_Redacted.pdf" provides an instantaneous new demand.** It's also unclear how GAWB moved from the from the various water demands to the [redacted] There is a likely logical connection based on the geographical location of the new water users and their specific volumetric demands however no assessment / review is possible with the information at hand. Unredacted current Hydrogen Execution Plan shed some light on this – but significant uncertainty remains.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	The various Feasibility Reports provided all reference out to Multi-criteria Assessment Options Summary Report and Preferred Options Memorandums that were completed however as these were not received following requests to GAWB, Aither were unable to determine whether a genuine suite of Options was assessed. Whilst it is apparent that an Options Assessment did indeed occur, it is not clear that a genuine suite of options was considered.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	Review of the Information provided for the various projects against GAWB Major Projects Delivery Placemat and the Gate Checklists (noting that all projects in the Hydrogen suite of projects meet the Major Project threshold) indicates that the approach is not consistent with GAWB's stated approach. Subsequent to the above review being completed, GAWB provided an additional response in the form of **RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf** that included a Gate 1 checklist for the Stage 1 Hydrogen project signed on the 20/8/2024.

d. Hydrogen customers enabling infrastructure - (TBA312 & CAP2024-518)	
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	As already noted, Options Summary Report and Preferred Options Memorandums were completed and are referenced in the Feasibility Studies provided however these were not received. Regarding MCAs, these Feasibility reports provided all outlined the same MCA criteria providing the following weightings: - Network planning [redacted] weighting) - Siting and Location [redacted] weighting) - Design and Construction [redacted] weighting) It is concerning that this does not appear to consider capital or operational efficiency. Note that whilst GAWB don't appear to have a policy on criteria and related weightings used for these sort of assessments, it is worth noting that in the only other MCA outcomes assessed as part of this review (see East End Pipeline Replacement), OPEX and CAPEX were used as criteria. Regarding project need, as detailed earlier, this is difficult to determine given the extent to which the provided Hydrogen Program Execution Plan was redacted.
Efficiency	Not fully demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	As per the notes on prudency, there is a lack of available information on the need which makes assessment of proportionality difficult.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	Not able to assess with the information provided.
Project Synergies Considered	Given the nature of the Hydrogen Program, it is reasonable to say the Project Synergies have been considered.
Benchmarking Completed	Not available.
Unit costs vs market rates (are estimated costs realistic and justified)	Unit rates provided in the excel estimates provided seem reasonable however a basis / justification was not provided within the estimates. Further, some of the estimates still contain unaddressed review comments which appear to apply across all other estimates which raises concern about the maturity of the estimates being relied upon for the submission. As noted below in the red flags, discrepancies in the total Hydrogen Program cost exist between the various documents provided. Following on from this, the estimates provided do not align with the list of Hydrogen Projects provided by the QCA.
Red flags	The information on the total cost of the Hydrogen Program of works and the listing of projects varied significantly across the documents provided - this is acceptable given the live nature of the program however when clarification was sought the responses showed that this was the case with different contemporaneous documents such as latest revision of the Hydrogen Execution Plan and the Project Forecast. In additional to divergence in cost there was divergence in naming of projects and the number of projects. Detailed Scheduling of works for the individual projects in the program have not been provided raising concerns in line with other project reviews.
Review of contingencies	[redacted] used in all projects which accepted as reasonable. Note that Contingency was excluded for [redacted] - ***Raw Water Pump Station;*** the reason for this is not given. It is recommended that this is re-assessed.

e. East End pipeline replacement (CAP2019-069)	
Criteria	**Rating and Comment**
Prudency	Not fully demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	Clear evidence was provided for the initial project, value at $3.1465 million with asset condition assessment provided however as the project has progressed the scope has gradually and then in a stepped fashion expanded to include significant network augmentation. The most recent Business Case, submitted in February 2024 has the total cost of the work budgeted at [redacted]. The specific need for the augmentation work was noted in the *CAP2019-069 East End Pipeline Replacement RFI 009B* document provided by GAWB however detailed Stakeholder Engagement and the long-term planning documentation was not available in the supplied documents where the need for the works appears to be implicit.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	The initial proposal contained an MCA process for 3 options that included, Do Nothing, Prioritise Renewals, and Replacement of the Entire Main. These appeared to be a genuine suite of options. The later expanded scope included significantly more options however detail on the specific options was not in the information provided.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	GAWB has provided the gate checklist which lends itself to indicating they aligned with its organisational strategy however as most of the documents noted as 'completed' in the checklist were not provided, Aither was unable to confirm this. Further to this, the key milestones set out in section 2.9 of the 2024 Business Case do not indicate that a schedule to the level stipulated in the GAWB Major Projects Delivery Placemat V0.5 has been completed. Note: following the above assessment a schedule was provided by GAWB very late in the assessment process. The detail was to the level expected however it is noted that this does not appear to have translated in Business Case which is concerning.
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	As noted above, this appears to be the case for the initial project scope however detail on the MCA process was only provided at a particularly high level for the later works. The criteria used, as well as specific detail on the options assessed, was not evident.
Efficiency	Not fully demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	The need was clear for initial works however as the scope has expanded dramatically, the level of commentary used to justify the increase expenditure is not commensurate with the expense.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	Not able to assess with the information provided.
Project Synergies Considered	Not able to assess with the information provided.
Benchmarking Completed	Not able to assess with the information provided.
Unit costs vs market rates (are estimated costs realistic and justified)	Unit costs were not available in the estimates provided.
Red flags	This schedule in the original business case appeared to be very light on in detail - at a minimum this should be broken down into work parts however it would be more prudent to include an MS Project or P6 schedule. The Projects Delivery Placemat and the Gate Checklist indicate that this is a GAWB requirement. Note: following the above assessment a schedule was provided by GAWB very late in the assessment process. The detail was to the level expected however it is noted that this does not appear to have translated in Business Case which is concerning.
Review of contingencies	[redacted] used which appears to be acceptable given the risk profile indicated in the 2024 Business Case and the increased maturity of the scope versus the project outlined in the Hydrogen Program projects.

f. South Gladstone reservoir replacement (CAP2019-065)	
Criteria	**Rating and Comment**
Prudency	Not fully demonstrated
Demonstrated need, with evidence provided (e.g. from long term planning documents, asset condition assessment, etc)	The condition assessments and the asset performance referred to as well as the asset age versus its expected life indicate that the asset is indeed due for remediation or replacement.
Genuine suite of Options (including base case/do nothing, non-infrastructure options etc)	The Scope Study Provided (GHD October 2019) Considers two options - remediate the existing tank and replace with a like-for-like tank at an adjacent site. A do nothing approach is likely not appropriate in this instance given the tank has reached the end of expected serviceable life and the risk associated with failure however it is expected that more options would have been considered.
Consistent with GAWB's Approach (aligned with organisational strategy and planning)	Unlike other projects, GAWB did not provide the gate checklist which suggested that it did not align with its organisational strategy. Irrespective of having this checklist however, Aither was unable to confirm from the documents provided that organisation requirements were adhered to, despite requests for this information. Subsequent to the above review being completed, GAWB provided an additional response in the form of **RFI 47, 49 & 50 - Capex Checklists and Schedules.pdf** that included Gate 1 checklists for this project. As with CAP2020-076 checklist did not include the sign off component of the checklist which makes it impossible to verify when it was completed.
Best Option Selected (e.g. most effective option to meet demonstrated need, option clearly justified)	The MCA appears to robustly assess the two options and select the best option overall. Unlike other projects reviewed, capital cost was considered though OPEX was not. It is likely that were OPEX included as part of the assessment, a new tank would have come out further ahead due to the reduction in maintenance that could be expected so its omission is not material.
Efficiency	Not fully demonstrated
Need being met (is the capital expense justified by a proportionate benefit to customers)	The importance of this tank to the system is clearly articulated and the cost is proportionate for a vessel of this size.
Highest NPV (with consideration of lifecycle costs where relevant and applicable)	Not able to assess with the information provided.
Project Synergies Considered	Not able to assess with the information provided.
Benchmarking Completed	Not able to assess with the information provided.
Unit costs vs market rates (are estimated costs realistic and justified)	Unit rates provided appear to be sound.
Red flags	As with other projects assessed there is an apparent lack of detail on project scheduling completed for the planning and for the works. This is concerning as it raises doubts about the ability to plan resourcing for the overall works program. Note: following the above assessment a schedule was provided by GAWB very late in the assessment process however the detail in the schedule was not of the level expected for a project of this size.
Review of contingencies	~20% used which appears to be acceptable given the risk profile indicated.

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We believe in what we do.

- We're passionate about a better future for our planet.
- We believe we can make a difference through great work.

We flow better together.

- We do our best work when we leverage diverse skills and backgrounds.
- This only works if everyone feels they belong.

We learn through challenge.

- We believe that the best opportunities to learn are through doing.
- We create opportunities to grow and to learn from mistakes.
- Feedback isn't put on the back burner. It's given and received with respect and intent.

We care for one another.

- We invest the time and energy to understand one another.
- We care about our lives outside of work.
- We support each other in the way each person needs.

Document History

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