Queensland Competition Authority

Final report

Gladstone Area Water Board price monitoring 2020–25 Part A: Overview

May 2020

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EXECUTIVE SUMMARY

We undertook a price monitoring investigation of the Gladstone Area Water Board (GAWB) and the prices GAWB proposed for the next five-year regulatory period (1 July 2020 to 30 June 2025). We also investigated measures to address GAWB's revenue under-recovery, which accumulated over time as the prices GAWB charged did not allow it to fully recover its prudent and efficient costs.

This report sets out our findings. We consider that GAWB's pricing practices, its proposed prices for the 2020–25 regulatory period and the proposed measures to address the revenue under-recovery are broadly appropriate. However, based on our investigation, we find that some adjustments should be made, in particular to operating and capital expenditure and to the proposed measures to address the revenue under-recovery.

Background

GAWB provides bulk water to the Gladstone Regional Council and to industrial and power generation companies in the Gladstone region of Central Queensland. As some of GAWB's business activities have been declared monopoly business activities, the QCA provides regulatory oversight of the prices GAWB charges customers to promote access to bulk water at prices that reflect prudent and efficient costs.

On 28 June 2019, the Treasurer directed us to conduct a price monitoring investigation of GAWB and to provide advice on measures to address GAWB's accumulated under-recovered revenues.

GAWB's regulatory submission, which we received on 30 September 2019, sets out its proposed pricing framework, forecast operating and capital expenditure, revenue requirement and regulatory framework. GAWB also proposed measures that it said would address its revenue under-recovery.

Price monitoring 2020–25

We used a building block approach to estimate GAWB's efficient costs of supplying bulk water and calculate indicative prices, as we have done in previous reviews of GAWB's pricing practices.

Our estimate of GAWB's revenue requirement for the 2020–25 pricing period ($303 million) is lower than what GAWB proposed ($319 million).

Compared to GAWB's current prices, our indicative prices in 2020–21 are lower for six pricing zones, including the Awoonga pricing zone, and higher for 13 pricing zones.[1] These indicative prices have been updated for recent inputs, including the CPI forecast, debt risk premium and market risk premium, which have likely been affected by the covid-19 pandemic.

GAWB proposed a five-year price smoothing approach, which is different to previous reviews. We find this appropriate, as it aligns the price smoothing and the regulatory periods and prevents a further accumulation of under-recovered revenue.

We also examined GAWB's total demand forecast for raw and treated water in the 2020–25 pricing period, which reflects a slight reduction from current levels.

[1] Price movements calculated relative to GAWB's 2015–20 prices indexed to 2020–21. See Table 37 in Chapter 10 for more detail.

Under-recovery of revenue

GAWB's accumulated revenue under-recovery balance has grown rapidly. At $124.7 million in 2020, it is more than double our estimated 2019–20 revenue requirement for GAWB of $56.3 million. To avoid a significant price shock to GAWB's customers at some stage in the future, our advice is for GAWB to:

- prevent the further accumulation of under-recovered revenue by aligning its regulatory and price smoothing periods over five years. We find the under-recovered revenue balance should be capped at $124.7 million as at 1 July 2020
- reduce the existing balance of revenue under-recovery by:
  - capitalising the under-recovery balance associated with raising Awoonga Dam (estimated at $23.1 million) and recouping it through its prices from existing and future customers
  - negotiating repayment arrangements with its existing customers to recoup the remaining under-recovery balance (estimated to be $101.6 million)
- manage the impact on customers through negotiated repayment arrangements between GAWB and its customers (e.g. via annuities or lump-sum upfront payments). If negotiations fail, we propose the use of annuities as the default option, with terms of at least 30 years for industrial customers and 100 years for the Gladstone Regional Council, and with the benchmark cost of debt as the interest rate.

We also explored other possible measures that could reduce the balance of accumulated under-recovered revenue, but we concluded that those are not options we would advise.

This summary should not be relied on as a substitute for the detailed analysis in the main body of this report.

Way forward

This price monitoring report will form the basis for negotiations between GAWB and its customers during the five-year regulatory period starting 1 July 2020. We have provided some views and expectations on future reviews of GAWB in Chapter 11. These include:

- a mid-term review in 2023, requested by the Treasurer, which will compare actual prices charged by GAWB with the findings in this report
- the possible next review of prices, for the 2025–30 regulatory period.

Public involvement is a key part of our investigations. We are giving early notice to customers and other stakeholders that they will have an opportunity to make written submissions on the mid-term review by **31 May 2023**.

We also consider GAWB will promote transparency and accountability, should there be a review of pricing in the 2025–30 regulatory period, if it:

- starts consulting with stakeholders well before submitting its proposal
- provides detailed relevant information in its proposal, particularly on operating and capital expenditure.

THE ROLE OF THE QCA—TASK, TIMING AND CONTACTS

The Queensland Competition Authority (QCA) is an independent statutory body which promotes competition as the basis for enhancing efficiency and growth in the Queensland economy.

The QCA's primary role is to help prevent monopoly businesses that operate in Queensland from abusing their market power through unfair pricing or restrictive access arrangements for key infrastructure.

Task, timing and contacts

We are investigating the prices that the Gladstone Area Water Board (GAWB) is planning to charge for the period 2020–25, under direction from the Queensland Treasurer. In particular, we are assessing whether the total cost of the bulk water services GAWB provides is prudent and efficient. We will consider a range of matters including:

- the prices that provide GAWB with sufficient revenue to recover prudent and efficient costs
- the accumulation of under-recovered revenues and its impact on customers.

Key dates

Action	***Date***	***Status***
The QCA published a notice of investigation	1 July 2019	☑
Initial submissions and GAWB's proposal were due	30 September 2019	☑
Stakeholder submissions on GAWB's proposal were due	28 October 2019	☑
The QCA released confidential information	4 November 2019	☑
The QCA published its draft report	25 February 2020	☑
Submissions on the draft report were due	27 March 2020	☑
The QCA provided its final report to the government	29 May 2020	☑
Stakeholder submissions on GAWB mid-term pricing are due	31 May 2023	
GAWB's mid-term pricing submission is due	31 July 2023	
The QCA will publish its mid-term pricing review	31 October 2023	

Registration of interest

GAWB's customers and other stakeholders can register to receive ongoing information about the investigation, by following this link and choosing the option 'Water'.

Contacts

Enquiries regarding this project should be directed to:

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http://www.qca.org.au/contact/

1 INTRODUCTION

The Treasurer directed the QCA to conduct a price monitoring investigation of the monopoly business activities of the Gladstone Area Water Board (GAWB) for the period from 1 July 2020 to 30 June 2025 and to provide advice on GAWB's accumulated under-recovered revenue.

1.1 An overview of the Gladstone Area Water Board

GAWB is a commercialised statutory authority owned by the Queensland Government. It was established in 1973. Some of GAWB's activities were declared to be government monopoly business activities in September 2000 (see Appendix B). These activities relate to bulk water storage, delivery and treatment services, as well as supplying bulk water to another person, other than supplying bottled or containerised water.

GAWB owns and operates Awoonga Dam on the Boyne River, together with a network of pipelines, treatment plants and other distribution infrastructure. It provides bulk raw and potable water to its customers located in Gladstone, Central Queensland, and surrounding communities. It also provides services to the community, including providing recreational facilities.

1.1.1 Customers

GAWB provides bulk water to industrial and power generation companies, as well as the Gladstone Regional Council (the council). GAWB services a limited number of customers, many of which are significant contributors to the economies of both the Gladstone region and the state of Queensland. About 80 per cent of contracted water reservation is supplied to industrial customers in the form of raw and potable water, and the remaining 20 per cent is supplied to the council in the form of potable water.

Some of GAWB's customers operate in, or support, key industries including aluminium production, electricity generation and liquefied natural gas (LNG) production. A number of those industries service both domestic and international markets. GAWB notes that although water is not a major cost component for most of its industrial customers, it is an essential input, and the operations of many of these customers depend on a constant, reliable supply of water. GAWB therefore sees security of supply as a priority for its customers.[2]

1.1.2 Statutory obligations

GAWB is a category 1 water authority[3], subject to commercialisation.[4] GAWB has a statutory obligation for its objectives to adhere to the Water Act 2000 (Qld) (Water Act).[5] Accordingly, GAWB should aim to provide goods and services in an efficient and effective manner, while taking into consideration community service. The Water Act gives GAWB the power to levy charges on its customers to carry out its business functions.[6] GAWB seeks to implement these objectives

[2] GAWB, sub. 1, p. 25.
[3] Section 548 of the *Water Act 2000* (Qld) and s. 93 of the Water Regulation 2016. A category 1 water authority operates on a much larger scale than a category 2 water authority.
[4] Section 639 of the Water Act.
[5] Section 640 of the Water Act.
[6] Section 572(1) of the Water Act.

through its strategic water plan[7] and reports to the Minister for Natural Resources, Mines and Energy.

1.1.3 Key infrastructure

GAWB sources its water from Awoonga Dam, Queensland's fourth largest dam, which has a capacity of 777,000 megalitres (ML). GAWB's maximum allowable extraction is 78,000 ML a year. GAWB owns and manages Awoonga Dam along with more than 200 kilometres of bulk water pipelines and related infrastructure in the Gladstone region. Its delivery network includes pipelines, treatment plants, quality testing facilities, raw and potable water pumping stations and raw and potable water reservoirs (Figure 1).

In the 2015–20 regulatory period, GAWB constructed an offline water storage facility to provide an independent supply of water to GAWB's customers for up to 14 days and reduce their supply risk. The offline water storage facility also allows Awoonga Dam to be taken out of service for inspection and maintenance activities, including some that are required by regulation.

Figure 1 Awoonga Dam location

Source: QCA.

1.2 Price monitoring

As a declared monopoly business, GAWB is subject to the prices oversight regime under Part 3 of the Queensland Competition Authority Act 1997 (QCA Act). Since GAWB's services were declared, we have investigated GAWB's pricing practices on three occasions (for the 2000–05, 2005–10, and 2010–15 regulatory periods)[8] and undertaken one price monitoring investigation (for the 2015–20 regulatory period)[9], as GAWB has reset its prices every five years. This is our second price monitoring investigation.

Following the 2015 price monitoring investigation, GAWB introduced a revenue cap with a 10 per cent deadband[10]—in contrast to the price cap form of regulation that applied in previous pricing

[7] GAWB, *Strategic Water Plan*, 2013.
[8] Pursuant to s. 23 of the QCA Act.
[9] Pursuant to s. 23A of the QCA Act.
[10] This hybrid revenue cap form of regulation is explained in Chapter 7 (in Part A) of this report.

practice investigations. In addition, under-recovered revenues were rolled over for the following 20-year period under the principle of price smoothing.

1.2.1 This investigation

In this price monitoring investigation, we examined GAWB's proposed prices for the next five-year regulatory period (2020–2025). Key aspects are:

- calculating adequate revenue for the regulatory period
- assessing whether the prices proposed by GAWB are based on prudent and efficient costs
- advising on the treatment of under-recovered revenue from past regulatory periods.

1.2.2 Directions

On 28 June 2019, we received a direction from the Treasurer[11] to conduct a price monitoring investigation of the monopoly business activities of GAWB for the period from 1 July 2020 to 30 June 2025, pursuant to ss. 23A and 24 of the QCA Act (see Appendix A). Our indicative prices, which GAWB's customers may use as a reference point for negotiations with GAWB, are a key output from this investigation (see Chapters 2 and 10 of Part A of this final report).

We were also directed to provide advice on GAWB's accumulated under-recovered revenue. A mechanism was put in place in the first QCA review (in 2002) to defer full cost recovery until dam capacity was taken up, which resulted in accumulation of revenue that GAWB has not recovered. This balance has grown in each regulatory period due to additional under-recoveries and the compounding of the under-recovery balance at the weighted average cost of capital (WACC).

Our advice focuses on measures to prevent the further accumulation, and reduce the existing balance, of the under-recovered revenue. We considered comments from GAWB and its customers, as well as measures to manage the impact on customers. Our suggestions for the treatment of the under-recovered revenue are discussed in Part B of this report.

1.2.3 Regulatory process

We received GAWB's proposal and initial stakeholder submissions on 30 September 2019. We invited submissions on GAWB's proposal for the period 1 July 2020 to 30 June 2025 and the additional information on GAWB's proposed treatment of accumulated revenue under-recoveries, which GAWB had claimed as confidential. We published our draft report on 25 February 2020 and invited further submissions.

This final report considers GAWB's proposal and the views and submissions of all stakeholders, which are published on our website. We also discuss in further depth our expectations concerning:

- the 2023 price monitoring report (Part D, cl. 1.2 (c) of the Directions)
- a possible 2025–30 price review
- several points to consider in future reviews.

The timeline of our investigation is summarised below (Figure 2).

[11] This report has been prepared during the terms of two Treasurers. References to 'the Treasurer' in this report apply to the actions of either or both Treasurers, as applicable.

Figure 2 Investigation timeline

Source: QCA representation.

2 REGULATORY FRAMEWORK AND APPROACH

In this chapter, we explain the framework for our review and describe our approach for this price monitoring investigation into GAWB's prices for the 2020–25 period.

2.1 Legislative framework for price monitoring

Sections 23A and 24 of the QCA Act provide the basis for our price monitoring investigation. The way in which we conduct the investigation, and the matters we must consider, are set out in the referral and direction notice dated 28 June 2019 (the Directions[12]—Appendix A) and the QCA Act.

Under the QCA Act, a price monitoring investigation is an ongoing investigation of a monopoly business activity, in which the QCA monitors pricing practices[13] relating to the activity, and reports periodically to the Treasurer about the results of the investigation.[14] The general objective of price monitoring is to present incentives that constrain the provider of a monopoly service from exercising its market power.[15] In our price monitoring, we investigate prices to provide information to the Treasurer and stakeholders about the costs of supply, and assess revenues against estimated prudent and efficient costs.

Our periodical reports on price monitoring investigations typically report on the findings of our investigation only, unless we have been directed by the Treasurer to make recommendations.[16] These findings have an informative rather than deterministic purpose and do not directly bind the monopoly business.

The Treasurer has not directed the QCA to make formal recommendations during this price monitoring investigation. Moreover, while we are not precluded from providing our own recommendations as considered appropriate, we have not deemed it necessary to provide recommendations for the purposes of this final report.

2.2 The Treasurer's Directions

The Treasurer's Directions under s. 24 of the QCA Act identify the matters that we must consider when conducting our investigation (Appendix A). In summary, these matters are:

- prices that allow recovery of the prudent and efficient costs incurred in providing bulk water supply services
- an appropriate weighted average cost of capital (WACC)
- roll-forward of the regulated asset base (RAB), using the QCA's previously adopted methodology
- the revenue carryover calculation, using the QCA's previously adopted methodology

[12] As context requires, we use 'Directions' to refer to both the referral and direction notice.
[13] Under the QCA Act, pricing practices are defined as the level and structure of prices, or anything that affects the level and structure of prices, including for example, service quality, costs of production and levels of performance relating to the business activity.
[14] Section 22 of the QCA Act.
[15] Explanatory notes to the *Queensland Competition Authority Amendment Bill 2008*, p. 3.
[16] The effect and consequences of report recommendations are set out within s. 36 of the QCA Act.

- prudency and efficiency of capital and operating costs, based on a sample of costs that are material to price changes.

We may also consider any other matter if we consider it likely to have a material impact on the price to customers.

The Treasurer has also sought advice on measures to address GAWB's growing accumulation of under-recovered revenue. In providing this advice, we are to consider measures that:

- prevent the further accumulation of under-recovered revenue
- reduce the existing balance of accumulated revenue under-recoveries
- manage the impact on customers of any proposed measures developed to address the two issues above.

2.3 The QCA Act

In addition to the requirements of the Directions, we must have regard to the matters listed in s. 26 of the QCA Act when undertaking this price monitoring investigation. These include:

- economic or efficiency factors, including the cost of providing the goods or services in an efficient way, the need for efficient resource allocation, and the protection of consumers from abuses of monopoly power[17]
- non-economic factors, including social welfare and equity considerations, economic and regional development issues, demand management, the availability of goods and services to consumers and the social and environmental impacts of pricing practices.[18]

We briefly explore the relevance of some of these considerations below.

We may also have regard to any other matters we consider appropriate in undertaking our investigation.[19]

2.3.1 Economic factors

Economic efficiency is usually considered in three contexts:

- allocative efficiency—requires allocating scarce resources to their most highly valued uses
- productive efficiency—requires producing output at minimum cost
- dynamic efficiency—the achievement of allocative and productive efficiency over time.

In the absence of excess demand, these efficiency objectives are generally achieved where prices are:

- cost-reflective—that is, they reflect the fixed costs of providing a good or service at a specified standard (including a return on capital invested) and the marginal cost of producing each additional unit
- forward-looking—that is, they represent the least-cost way of providing the requisite level of service over the relevant planning period

[17] Sections 26(1)(a), (c), (d) of the QCA Act.
[18] Sections 26(1)(g), (i), (m) of the QCA Act.
[19] Section 26(3) of the QCA Act.

- sufficient to generate adequate revenues to provide appropriate incentives for investment and efficient operation.

Prices that reflect prudent and efficient costs, and are transparent, help to signal the efficient cost of providing water supply services to customers. This in turn may help to encourage efficient consumption and investment decisions. Prices that reflect prudent and efficient costs also help to protect consumers from abuses of market power.

The allocation of risk is relevant to establishing efficient costs and the return on capital. As a general principle, risks should be allocated to the party best placed to manage them. This needs to take into account the risk preferences of the parties and their relative costs of managing risks. Risk can be allocated through the choice of a pricing structure and/or a form of regulation.

2.3.2 Non-economic factors

Social and equity considerations

Under s. 26 of the QCA Act, we are required to consider broader public interest matters, including equity and social welfare. These issues are often associated with the broad concept of 'fairness'.

Fairness is not a concept defined in the QCA Act, nor does it have a rigorous economic definition. In pricing inquiries such as this, where essential services are involved, it is generally associated with providing for community members to obtain the goods and services they require at prices they can afford. These are notions that generally relate to individual consumers rather than businesses.

In relation to industrial supply, there are many cases when efficient prices can also be described as fair. Setting prices that reflect the cost to society of producing a good or service is fair in the sense that the existence of lower prices would imply that the beneficiary is not paying a fair share. Similarly, prices above cost would imply that the producer is receiving a benefit at the expense of the consumer. Equity and fairness issues also arise in relation to how common costs are allocated to different customer groups.

The 'user pays' and 'impactor pays' principles are consistent with the idea that it is fair for any given user of a service, or individual/ entity that causes costs to be incurred, to pay for the costs directly associated with their use or action. The concept of 'beneficiary pays' represents another potential test of fairness when considering who should pay for a particular service.

Where we consider it relevant to have regard to equity issues in a pricing investigation, it is important to weigh economic costs of pursuing non-economic fairness goals and consider alternatives before arriving at a conclusion. However, there are cases where achieving equity and social objectives comes at the expense of economically efficient outcomes and other policy instruments may be preferable. We generally share the view of the Productivity Commission in its inquiry into Australia's urban water sector:

> For low-income households, the affordability of water and wastewater services and other essential goods and services is most efficiently achieved through non-concession elements of Australia's tax and transfer payments system.[20]

[20] Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, 2011, p. 222.

and

> Efficiency gains can be made by replacing or amending water and wastewater concessions with direct payments to targeted households or rebates on the fixed component of water and wastewater service bills.[21]

Economic and regional development

The Gladstone region is home to a range of significant industries, including liquefied natural gas (LNG) production, alumina processing, chemical manufacturing and power generation. Queensland's largest multi-commodity port by volume is also located there.[22] These industries make a significant contribution to the Queensland economy. In 2019, the gross regional product for the Gladstone region was estimated at $5.6 billion, which represented 1.6 per cent of gross state product.[23]

Economic and regional development is promoted when the competitiveness of existing industry and new entrants is enhanced. While we understand that the costs imposed by GAWB are a small proportion of production costs for most customers, pricing practices that minimise barriers to entry and expansion will support regional and economic development objectives.

Impact of prices on environmental outcomes

For the most part, environmental and ecological outcomes relevant to GAWB's business are addressed through regulatory instruments outside the pricing framework. For example, the Queensland Government maintains a water management plan for the Boyne River Basin that defines the volumes of water available to GAWB and prescribes minimum environmental flows.[24]

In estimating efficient prices and revenues, it is important that GAWB is able to recover the efficient costs of complying with all regulatory obligations to address environmental externalities. Examples may include the costs of managing GAWB's fish hatchery and restocking operations, and the costs of managing the impacts of recreational activities at Lake Awoonga.

Considerations of demand management

Demand management for a business like GAWB typically involves establishing efficient price structures such as two-part tariffs or non-price demand management strategies. As a general principle, prices should signal the impacts of consumption to users and encourage demand management options as a cost-effective alternative to augmenting infrastructure. About 95 per cent of GAWB's costs are fixed. This is relevant when considering how the costs of augmenting storage and delivery should be signalled through a combination of volumetric, capacity and maximum demand charges.

Non-price demand management efforts could also result in deferral of augmentation. For example, there may be opportunities to negotiate arrangements directly with customers to encourage investment in onsite capture and storage, water-use efficiency measures, or other means of reducing contracted volumes.

2.3.3 Balancing relevant considerations

The matters we are required to consider in undertaking this investigation are diverse and may represent competing objectives. The QCA Act does not provide guidance on how to assign weight

[21] Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, 2011, p. 221.
[22] Gladstone Regional Council, *2018/19 Annual Report*, p. 5.
[23] .id Consulting, *Gladstone Regional Council: economic profile*, viewed 20 May 2020, https://economy.id.com.au/gladstone.
[24] Queensland Government, *Water Plan (Boyne River Basin) 2013*, 6 December 2016.

to respective considerations before applying them to any given issue. It is a well-accepted proposition that in the absence of a statutory indication of the weight to be given to various considerations, it is generally for the decision-maker and not the court to determine the appropriate weight to be given to the matters which are required to be taken into account in exercising that statutory power.[25]

As such, in carrying out this investigation, we have had regard to all the matters set out in s. 26 of the QCA Act, as well as the stated matters we are required to consider in the Directions. We have used judgement in determining those considerations that are most relevant to each matter in our investigation, and have weighted them accordingly. We have also been guided by stakeholder submissions in forming a view on relevant considerations and their relative weight.

In this review, unless otherwise stated, we have given priority to economic efficiency considerations when forming a view on GAWB's pricing practices. Prices that reflect prudent and efficient costs, and that are transparent, help to signal the efficient cost of providing bulk water services. This in turn promotes efficient resource allocation, including efficient investment and consumption decisions, and helps protect consumers from abuses of monopoly power.[26] This reflects the interpretation that economic efficiency promotes the overall public interest under the assumption that social and other non-economic objectives are best addressed by other government policies.

2.4 Review methodology

For this investigation, our general approach has been to consider the pricing proposal within GAWB's regulatory submission against the requirements of the QCA Act and the Directions. GAWB's pricing proposal reflects its interpretation of the Directions. For some matters, GAWB's proposed approach represents a different interpretation of the Directions than in previous reviews. Most notably, GAWB has proposed a 5-year price smoothing approach along with a separate annuity to recoup accumulated under-recoveries, rather than the 20-year smoothing period that had been used in the past.[27]

While not stated explicitly, we understand the Directions intended to require the QCA to consider continuing the 20-year smoothing approach (cl. 1.1(d)). However, this is not how GAWB has chosen to develop its pricing proposal. As such, the data required to estimate prices using a 20-year smoothing approach have not been provided by GAWB. Notwithstanding this constraint, we have, as required by the Directions, considered the use of a 20-year smoothing period, and have formed the view that this approach is no longer appropriate. Our consideration of this issue is detailed in Part B.

We have formed views concerning GAWB's pricing practices that reflect our assessment of the prudent and efficient costs required for GAWB to provide bulk water services while meeting its statutory and regulatory obligations. Consistent with the Directions, we have made findings on the prudency and efficiency of expenditures based on a review of a sample of GAWB's capital projects and operating costs. We have not focused on expenditures that are not material contributors to GAWB's prices and have not expressed a view on such expenditures. A key output from this process is our schedule of indicative prices (Chapter 10). These act as non-binding

[25] *Minister for Aboriginal Affairs v Peko-Wallsend Ltd* (1986) 162 CLR 24, 41. Also see *Telstra Corporation Ltd v ACCC* [2008] FCA 1758.
[26] Sections 26(1)(a), (c) of the QCA Act.
[27] GAWB, sub. 7, pp. 6–7.

reference prices that customers may use when negotiating terms and conditions of supply with GAWB.

2.4.1 Estimating indicative prices

Consistent with previous reviews concerning GAWB's pricing practices, we have used a building block approach to calculate GAWB's estimated efficient costs of supplying bulk water, and indicative prices, for each year in the period 1 July 2020 to 30 June 2025. The building block approach involves developing forecasts that reflect our assessment of the prudent and efficient costs of the following cost components (the 'building block costs'):

- operating expenditure (opex)—to reflect the ongoing costs of running the business and maintaining assets (Chapter 3)
- a return on assets—to reflect an appropriate return on investment in assets used to provide bulk water services. It reflects our assessment of capital expenditure (capex) (Chapter 4), the value of GAWB's RAB (Chapter 5), and an appropriate rate of return (Chapter 6)
- depreciation and tax—to recover the cost of capital investments over the useful life of the assets, and an allowance to reflect estimated tax liabilities, consistent with our post-tax nominal approach to WACC (Chapter 10).

The sum of the building block costs is the estimated revenue to be recovered by GAWB through prices for bulk water services each year. We refer to this as total revenue. As a number of GAWB's pricing parameters are volumetric (i.e. prices apply to each kilolitre (kL) of water used) we have also considered water demand forecasts (Chapter 7). Our findings on indicative prices for GAWB are provided in Chapter 10.[28]

2.4.2 Measures to address accumulated revenue under-recoveries

GAWB's regulatory submission sets out its preferred approach to addressing the accumulated under-recovery. In summary, GAWB's approach involves:

- ceasing the 20-year price smoothing period in favour of a 5-year period
- removing under-recoveries from smoothed prices
- recouping under-recovered revenues from customers through annuities.[29]

In assessing GAWB's proposed annuity approach, and other potential options, we were guided by the matters set out at clause 1.3 of the Directions, and the relevant considerations at s. 26 of the QCA Act. The application of these assessment criteria is discussed in Part B.

2.5 The QCA's investigation process

On 1 July 2019, pursuant to s. 25 of the QCA Act, we published a notice of investigation to formally commence the price monitoring investigation. We invited initial submissions by 30 September 2019. All public submissions we received, including GAWB's regulatory proposal, were published on our website. We published our draft report on 25 February 2020 and invited submissions by 27 March 2020.

[28] Unless otherwise stated, all costs and prices presented in this report are in nominal terms, and figures are reported as mid-year values.
[29] GAWB, sub. 1, pp. 52–75.

During our investigation, we have:

- published GAWB's regulatory proposal and sought stakeholder submissions
- issued multiple requests for information to GAWB
- met with GAWB staff and GAWB's customers to gain a further understanding of matters relevant to the investigation
- participated in information sessions with GAWB staff to further develop our understanding of GAWB's business and its regulatory proposal
- sought further stakeholder submissions on GAWB's proposed approach to resolving the accumulated revenue under-recovery
- commissioned advice from independent consultants on technical issues including efficient costs and the cost of capital
- visited a number of GAWB's facilities.[30]

We have considered the submissions and views of all parties, as set out within Appendix C, in preparing this final report.

[30] The QCA Board Members and various staff participated in these visits.

3 OPERATING EXPENDITURE

The Directions require us to provide our view on whether GAWB's operating expenditure (opex)—including costs associated with catchment management and recreation management—is prudent and efficient.

Opex includes recurrent expenditure such as labour and external services costs, maintenance expenditure, expenditure on water treatment chemicals and electricity, and administration and other operating costs. Opex is a major component of GAWB's building block costs, at nearly 50 per cent of the total proposed building block costs during the 2020–25 pricing period.

The QCA reviewed GAWB's opex and found:

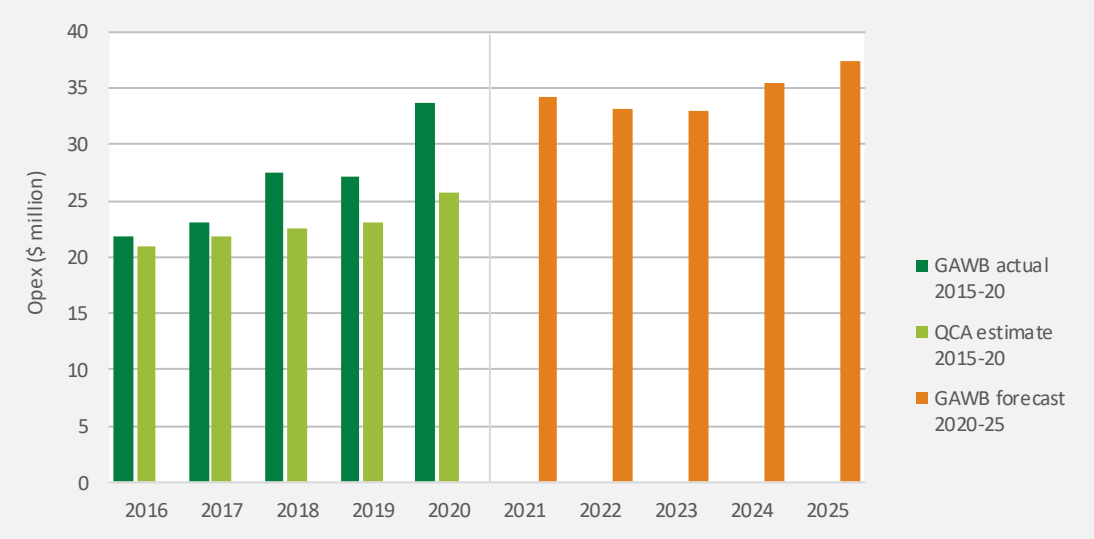
- GAWB's policies, procedures and governance frameworks are sound
- a prudent and efficient opex allowance for the 2020–25 period is estimated at $157.4 million, compared with GAWB's proposal of $173.2 million.[31]
- Our estimated prudent and efficient opex forecast is lower than GAWB's forecast due to the application of:
  - revised cost escalators
  - adjustments for some changes in expenditures that we found are not sufficiently justified
  - a more challenging efficiency target.

3.1 GAWB's operating expenditure proposal

GAWB expects to spend $133 million in opex during 2015–20, which is around 17 per cent higher than our estimate of prudent and efficient opex determined at the time of our 2015 investigation. GAWB attributed the expected overspends during 2015–20 to higher than anticipated costs associated with professional services, information systems, and staffing.[32] GAWB also forecast a 30 per cent increase in total opex for the 2020–25 period compared with actual expected expenditure in the current period (Figure 3).

[31] The value of $173.2 million reflects GAWB's proposed opex, including the impact of its proposed efficiency factor of 1 per cent per year, as indicated in GAWB's building block model (September 2019).
[32] GAWB, sub. 1, pp. 89–92.

Figure 3 GAWB's opex for 2015–20 and forecast opex for 2020–25



Note: 2020 values represent GAWB projections.

Source: GAWB, QCA RFI 85–86, 95–114.

Gladstone Regional Council (the council) raised concerns with GAWB's overspends during 2015–20 and questioned the appropriateness of the additional expenditure. The council said there should be an ex post assessment of historic projections where expenditure is consistently underestimated, and variations from the QCA's forecasts should be questioned. The council also questioned the increases in GAWB's proposed expenditure for 2020–25, despite modest demand projections.[33]

Other stakeholders expressed concerns about GAWB facing no incentives to remain within forecast allowances or to further control and optimise its costs.[34] ConocoPhillips suggested that the pricing structure should be revised to include incentives for GAWB to optimise and control its costs.[35] CS Energy sought more transparency and regular updates on GAWB's opex during the 2020–25 period.[36]

The Directions do not ask us to review GAWB's 2015–20 opex. As such, we have not formed a view on the prudency and efficiency of these costs. Nonetheless, in reviewing forecast opex, we have looked at all key categories of expenditure, including those in which GAWB incurred higher than expected costs during 2015–20. CPM said that while 2015–20 opex should be included in the review, it was confident in the approach applied to reviewing the 2020–25 opex costs.[37]

3.2 GAWB's 2020–25 forecast operating expenditure

In its September 2019 submission, GAWB proposed an opex forecast of $173.2 million in aggregate over the 2020–25 period. This is around 30 per cent higher than actual opex in the 2015–20 period, and 52 per cent higher than the QCA's estimated opex in the 2015–20 period.

[33] GRC, sub. 15, pp. 2–3.
[34] WICET, sub. 13, p. 1; ConocoPhillips, sub. 16, p. 2.
[35] ConocoPhillips, sub. 16, p. 2.
[36] CS Energy, sub. 22, p. 1.
[37] CPM, sub. 31, p. 1.

GAWB's total opex forecast included annual efficiency savings of 1 per cent per year, which applied to costs that GAWB considers controllable (section 3.9). Table 1 sets out GAWB's forecasts by activity.

Table 1 GAWB's proposed opex for 2020–25

Category ($m)	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
Operations	2.14	2.23	2.29	2.38	2.43	**11.47**
Maintenance	4.01	4.31	3.79	4.20	4.13	**20.45**
Electricity	3.04	3.10	3.16	3.32	3.38	**16.00**
Chemicals	0.72	0.74	0.78	0.81	0.83	**3.87**
Employment costs	13.04	13.42	13.89	14.21	14.74	**69.29**
Rates	0.51	0.53	0.54	0.56	0.57	**2.71**
Insurance	1.55	1.52	1.61	1.80	1.80	**8.26**
Information systems	3.29	2.86	3.00	3.18	3.09	**15.42**
Professional services	4.50	2.55	2.42	3.33	4.79	**17.59**
Administration	1.73	2.19	1.78	1.88	1.92	**9.50**
Subtotal ($m)	**34.52**	**33.44**	**33.25**	**35.65**	**37.69**	**174.56**
Efficiency savings [a]	(0.26)	(0.25)	(0.25)	(0.27)	(0.29)	**(1.33)**
Total ($m) (including proposed efficiency savings)	**34.26**	**33.19**	**33.00**	**35.38**	**37.41**	**173.23**

a Estimated efficiencies as implied in GAWB's building block model (September 2019).

Note: Totals may not add due to rounding.

Source: GAWB, QCA RFI 95–114; KPMG analysis.

In March 2020, GAWB submitted a revised opex forecast of $165.4 million, which is around 5 per cent lower than its original forecast. This reduction is the result of revised forecasts for electricity, insurance and professional services costs; acceptance of our proposed approach to efficiency factors; and the impact of updated cost escalators (Table 2).

Table 2 GAWB's proposed opex for 2020–25—original and revised

Category ($m)	*Original proposal*	*March 2020 submission*	*Difference*
Operations	11.47	11.37	**(0.10)**
Maintenance	20.45	20.08	**(0.37)**
Electricity	16.00	13.11	**(2.88)**
Chemicals	3.87	3.86	**(0.01)**
Employment costs	69.29	69.23	**(0.07)**
Rates	2.71	2.68	**(0.03)**
Insurance	8.26	7.80	**(0.46)**
Information systems	15.42	15.29	**(0.13)**
Professional services	17.59	16.70	**(0.89)**
Administration	9.50	9.41	**(0.08)**
Subtotal ($m)	**174.56**	**169.54**	**(5.02)**
Efficiency savings [a]	(1.33)	(4.13)	**(2.80)**
Total ($m) (including proposed efficiency savings)	**173.23**	**165.40**	**(7.83)**

a Estimated efficiencies as identified in GAWB's building block models (September 2019 and March 2020).

Note: Totals may not add due to rounding.

Source: GAWB, QCA RFI 95–114; GAWB, Opex indexation and allocation model, submission, March 2020; KPMG analysis.

3.3 Assessment approach

The Directions require us to form a view on the prudency and efficiency of forecast opex in any function by:

- using an appropriate sample size, and
- focusing on areas that would give rise to material price changes rather than matters that are likely to have a minor or inconsequential impact.[38]

3.3.1 Prudency and efficiency

We consider opex is:

- prudent if it can be justified by reference to an identified need or cost driver[39]
- efficient if it minimises GAWB's long-term costs of providing water supply services.

3.3.2 Consultant review

We considered the advice of our consultant, KPMG, in forming a view on the prudency and efficiency of GAWB's proposed opex. Where we concluded that a cost forecast is not efficient, we

[38] Referral and direction notice, section 1.1(f).

[39] For example, to meet legal or regulatory obligations, new growth, renewal of existing infrastructure, or an increase in the reliability or the quality of supply that is explicitly endorsed or desired by customers.

considered KPMG's advice, and made our own assessment of the available information, to arrive at an alternative estimate that we consider appropriate.

KPMG's review of GAWB's opex involved:

- reviewing previous expenditure to identify any issues or actions recommended by the QCA and its consultants, which GAWB has sought to address over the course of the 2015–20 regulatory period
- assessing historical and forecast expenditure, including forecasting methods, to understand drivers of deviations from previous forecasts and historic trends. This involved reviewing:
  - historical expenditure trends and performance against forecasts
  - GAWB's forecasts against historical trends and assessment of rationale for deviations from trend
- further investigating particular cost categories to provide more detailed assessments of whether forecasts are prudent and efficient. This included a detailed review of forecasting methods (where provided) and supporting documentation to assess whether these reflect good industry practice and provide robust justifications for the proposed expenditure.[40]

To assess some costs, KPMG had to establish a reasonable baseline, particularly where forecasts were based on extrapolations of historical costs. To achieve this, KPMG considered historical expenditure and trends as well as information provided by GAWB that explained significant cost increases and variances from historical trends. KPMG also considered benchmarking, but in most cases did not find data that could be used for these purposes.[41]

Regulatory guidelines

GAWB expressed concerns regarding a lack of regulatory guidelines supporting the QCA's review process. GAWB submitted that this created misunderstandings about how information should be presented and the methodologies to be used to develop expenditure forecasts. GAWB said this resulted in KPMG setting out its recommendations for future reviews—for example, the use of templates to improve the information gathering process.[42]

GAWB also expressed concerns regarding KPMG's recommendations for how a regulated water business should engage with its customers. GAWB said that while several of the recommendations reflect current trends in economic regulation, they do not reflect regulatory practice or policy as it applies to Queensland water businesses. GAWB said that these expectations set an unfair basis for the assessment of a Queensland water business's expenditure forecasts.[43]

We offer some observations and suggestions for improving future review processes in Chapter 11. We would welcome the opportunity to work with GAWB to develop guidelines in advance of the next investigation. Such guidelines would likely support a more efficient information-gathering process and better alignment of expectations among stakeholders.

[40] KPMG, *GAWB expenditure review*, final report, May 2020, p. 127.
[41] KPMG, *GAWB expenditure review,* final report, May 2020, p. 131.
[42] GAWB, sub. 33, p. 22.
[43] GAWB, sub. 33, p. 22.

3.3.3 Materiality and sampling

In considering GAWB's opex to be included in the forecast revenue, we note the Directions require us to consider the materiality of impacts of these expenditures on prices. Relevantly, the interpretation of a 'material' impact is a matter for us to form a view on, as is the selection of the sample of costs we choose to review. We did not consider it appropriate to rely on GAWB's views as to which of its operating costs are material or otherwise. GAWB's initial regulatory submission did not contain sufficient information for us to form a view on what opex categories could be considered material contributors to prices. We therefore did not instruct KPMG to form a view on materiality of operating costs for the purposes of its review. GAWB expressed concerns with the scope of KPMG's review and submitted there was limited regard given to materiality as prescribed in the referral notice.[44]

In a number of instances, KPMG did not have information that was sufficiently detailed, or in a suitable form, to form a view on prudency and efficiency of costs. Consequently, KPMG and the QCA needed to issue a significant number of requests for information (125 in total) in order to gather the information necessary to form a view on GAWB's costs and therefore prices. This also meant we considered GAWB's forecasts in more detail than might have been the case if complete information had been provided at the outset.

For this review, we did not consider that materiality of any specific cost needs to be strictly defined. We also note we may form a view on prudency and efficiency in any function. In this instance, we considered it is preferable to apply judgement, having regard to a range of factors, in deciding whether GAWB's forecasts are reasonable estimates of prudent and efficient costs. This approach acknowledges that while some identified inefficiencies may not be material in isolation by GAWB's definition, they can be significant contributors to prices when considered in aggregate.[45]

GAWB disagreed with our approach and submitted that we were not compliant with the Directions as we examined costs that GAWB considers are immaterial. GAWB said we had assumed a more detailed, heavy-handed role relative to that intended for a prices oversight review. GAWB said that our final report should not adjust indicative prices for individual differences that do not give rise to material price changes.[46]

Moreover, while the Directions request us to focus on areas that are material to prices, we consider this focus need not be to the exclusion of any other cost that we find appropriate to review, regardless of materiality in isolation.

We also consider that it is appropriate, and consistent with section 26 of the QCA Act, and the Directions, to conduct the investigation into expenditures to a level of detail and rigour that we consider necessary to form a view about GAWB's proposed costs and prices, and to offer sufficient pricing transparency to customers. In our view, the level of scrutiny we applied is appropriate, particularly in light of GAWB's proposed 30 per cent increase in opex compared with actual costs in the current period, and customers' concerns regarding the efficiency of GAWB's expenditures and the lack of incentives for GAWB to incur efficient costs.[47]

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[44] GAWB, sub. 33, p. 7.

[45] Relevantly, both GAWB and the QCA were unable to clearly link expenditures to individual zonal pricing impacts, in part because of the change in price smoothing horizon, but also because of the level of complexity of GAWB's prices and modelling (Chapter 10).

[46] GAWB, sub. 33, pp. 19–21.

[47] For example; GRC, sub. 15, pp. 2–3; WICET, sub. 13, p. 1; ConocoPhillips, sub. 16, p. 2.

Relevantly, GAWB is not bound by our findings. It is ultimately GAWB's decision as to whether it accepts our findings when it sets prices.

3.4 Key issues

We considered all aspects of GAWB's proposed opex and had regard to matters raised by stakeholders. The key issues for this investigation are:

- GAWB's policies, procedures and governance
- cost escalation
- prudency and efficiency of individual functional cost forecasts (operations, maintenance, chemicals, electricity, etc.)
- ongoing efficiency savings.

3.5 Policies, procedures and frameworks

With the assistance of KPMG, we reviewed GAWB's supporting policies and procedures, detailing its overarching governance, procurement, capital planning and asset management frameworks. We also sought to test the application of GAWB's frameworks used to develop its expenditure proposals.

KPMG found that GAWB maintains a robust and detailed procurement plan, to satisfy its obligations under the Queensland Government's procurement policy.[48] The procurement plan is supported by a detailed suite of frameworks, manuals and templates that document and guide procurement processes. Overall, KPMG considered that GAWB's procurement process reflects a high standard and provides a strong foundation to the efficiency of the forecasts.[49]

As part of its asset management strategies, GAWB developed Life Cycle Management Plans (LCMPs) for each of its asset classes to optimise life cycle cost, risk and performance of each of its assets. These LCMPs are intended to align with GAWB's asset management strategy and GAWB identifies them as being a key tool in estimating operating and capital costs, including the need and timing of maintenance expenditure.

KPMG found that GAWB's LCMP framework represents a significant improvement to past asset management practices and reflects the implementation of a leading practice asset management approach. However, KPMG considered there was not currently a clear link between the LCMPs and GAWB's asset management objectives and customer service delivery outcomes.[50] KPMG was not able to fully verify the links between maintenance cost forecasts and the LCMP maintenance schedules (discussed in section 3.8.2). During our own review of GAWB's supporting information, we encountered similar issues in confirming the basis of these forecasts. Nonetheless, we share KPMG's view that GAWB demonstrates a commitment to continuous improvement of its asset management systems and alignment with leading practice frameworks.[51]

KPMG made additional findings on GAWB's governance and capital planning frameworks, which are noted in Chapter 4. GAWB said it will have regard to the areas identified by KPMG for potential improvement, noting that any measures implemented need to be appropriate given the size and

[48] KPMG, *GAWB expenditure review*, final report, May 2020, pp. 18–22.
[49] KPMG, *GAWB expenditure review*, final report, May 2020, p. 22.
[50] KPMG, *GAWB expenditure review*, final report, May 2020, p. 14.
[51] KPMG, *GAWB expenditure review*, final report, May 2020, p. 11.

scope of GAWB's operations.[52] We consider KPMG's recommendations on these matters are reasonable and we encourage GAWB to consider these in the future.

Based on our review of GAWB's documentation, and KPMG's advice, we consider GAWB broadly demonstrates sound policies, procedures and frameworks that are likely to support the development of prudent and efficient cost forecasts, and sound asset management practices. Where we have identified specific issues (for example maintenance costs), these are noted in our findings on the relevant functional cost categories (section 3.8).

Finding A3.1—Policies, procedures and frameworks

The QCA finds that GAWB has robust procurement processes and is moving towards best practice asset management.

While there may be some areas for improvement, including improving transparency around the derivation of bottom-up cost estimates, the QCA has not seen evidence to suggest systemic flaws or significant deficiencies in GAWB's policies, procedures and frameworks relating to opex. The QCA encourages GAWB to consider the potential areas for improvement identified by KPMG.

3.6 Forecasting methodology

Opex forecasts are typically developed using either a 'bottom-up' or a 'base-step-trend' approach. GAWB has characterised its forecasting approach as a 'bottom-up' method. GAWB said it adopted this approach due to changes during the 2015–20 period that mean past actual expenditure will not reasonably reflect future efficient expenditure. For example, GAWB noted the following key changes affecting future costs: the transition to a LCMP-supported budgeting process, implementation of a new enterprise resource system, additional compliance and governance obligations, and transition to cloud-based information technology.[53]

GAWB said its forecasts were developed at the individual business unit level, taking account of:

- activities identified in its LCMPs (section 3.5.)
- historical costs
- strategic objectives, board decisions and corporate commitments
- compliance obligations
- demand forecasts.[54]

GAWB also applied efficiency savings of 1 per cent per year to its controllable opex forecasts (section 3.9).

While GAWB provided an overview of its forecasting approach, it did not provide details on the actual forecasting methods it adopted. GAWB's approach appears to be based on:

- developing baseline forecasts in real 2018–19 dollar terms, using either a bottom-up approach or an extrapolation of a base year cost

[52] GAWB, sub. 33, pp. 7, 10.
[53] GAWB, QCA RFI 57, Opex forecasting methodology, p. 1.
[54] GAWB, QCA RFI 57, Opex forecasting methodology, p. 3.

- applying nominal cost escalators to convert the forecasts from real 2018–19 dollar terms to nominal values.

During our investigation, both the QCA and KPMG faced challenges in verifying GAWB's opex forecasts. This was largely due to a lack of transparency of the forecasting methods applied, or a lack of detailed examples illustrating the build-up of its forecasts and application of the methods it described. In light of this, KPMG attempted to develop alternative estimates of prudent and efficient costs by extrapolating costs from a reasonable base year with the use of appropriate escalators and efficiency factors.

Based on our review of GAWB's proposal and supporting information, we consider it reasonable to develop alternative forecasts using a base year approach. In the absence of detailed information that transparently illustrates how GAWB's bottom-up forecasts were derived, we consider this an appropriate alternative method. It is also widely used and accepted by other regulated entities and regulators.

The QCA considers GAWB should explore ways to more transparently demonstrate the derivation of its bottom-up forecasts, or alternatively consider adopting base-step-trend forecasting methods, where appropriate. Simpler, more transparent forecasting methods would support a less intrusive and burdensome regulatory review process in future.

3.7 Cost escalation

3.7.1 GAWB's proposed escalators

To produce nominal forecasts across the 2020–25 period, GAWB's bottom-up estimates are inflated by measures of expected growth in input prices. GAWB commissioned Deloitte Access Economics (DAE) to develop cost escalators for this purpose (Table 3).

GAWB's proposed escalators were informed primarily by estimates of growth in wages and general prices, based on DAE's macroeconomic forecasting model. DAE also developed specific escalators for insurance, electricity, chemicals and council charges (rates) based on other data sources.

The council was of the view that the cost escalation factors appear excessive, given the current economic environment, implied inflation and the economic outlook.[55]

In March 2020, GAWB provided updated cost escalators developed by DAE in response to our draft report (Table 3).[56] These escalators reflected more recent data and changes, particularly regarding escalators for maintenance costs, electricity and council rates.

[55] GRC, sub. 15, p. 3.
[56] GAWB, sub. 35.

Table 3 GAWB's proposed nominal cost escalators—compound annual growth rates (CAGR)

Escalator	*Annual change (%)*		
	September 2019 proposal (CAGR 2020–21 to 2024–25)[a]	*March 2020 submission (CAGR 2019–20 to 2024–25)*	*March 2020 submission (CAGR 2020–21 to 2024–25)*
Consumer price index (CPI)	2.30	2.13	2.22
Wage price index (WPI)	3.04	2.87	3.05
Insurance	5.70	5.54	5.63
Chemicals	3.03	1.69	4.02
Council charges (rates)	2.82	2.67	2.80
Employee costs (wages)	3.22	3.12	3.24
Professional services (engineering)	3.04	2.87	3.05
Contract labour costs	3.04	2.87	3.05
Contractors (service delivery)	3.04	2.87	3.05
Other materials and services	2.85	2.69	2.85
Electricity	2.06	(1.56)	0.96
Maintenance	2.98[b]	2.65	2.80

a. GAWB/DAE's September 2019 escalators were presented as 2020–21 to 2024–25 CAGRs only. GAWB's March 2020 submission models adopted the DAE 2019–20 to 2024–25 CAGR escalators.

b. QCA estimate based on GAWB's proposed method of which escalates maintenance costs using 'Contractors' (70%) and 'Other materials and services' (30%) escalators.

Sources: GAWB, sub. 4, p. 8; GAWB response to KPMG working draft, 6 January 2020, Attachment A: Indexation Model; GAWB, sub. 35, p. 13.

3.7.2 Assessment of escalators

With the assistance of KPMG, we reviewed GAWB's proposed escalators and consider it appropriate to make a number of revisions.

KPMG found GAWB's March 2020 revised escalators mostly reasonable, with the exception of the CPI and WPI forecasts. KPMG maintained that chemicals costs should be escalated by CPI rather than a crude oil price escalator (section 3.8.9), and also recommended further reductions to GAWB's revised escalators for electricity costs (section 3.8.3). Our own analysis and conclusions on GAWB's proposed escalators are presented in the assessment of individual opex functions, where relevant (section 3.8).

CPI and WPI estimates

DAE's CPI and WPI inflation forecasts are key components of GAWB's proposed escalators. DAE develops these forecasts quarterly as part of a broader set of macroeconomic forecasts.

The March 2020 DAE estimates are based on macroeconomic forecasts that underpin DAE's December 2019 Business Outlook publication, which takes account of September 2019 data from

the Australian Bureau of Statistics. The escalation factors presented in DAE's August 2019 report were based on its March 2019 Business Outlook.[57]

In its March 2020 report to GAWB, DAE noted the uncertainty of forecasting in the current environment:

> The outbreak of COVID-19 and the 2019-20 bushfires in eastern Australia will have a significant impact on the economic outlook. Since the forecasts presented in this report were finalised, there have been adverse developments in relation to these situations – in particular, the spread and flow-on effects of COVID-19. The full impact of the bushfires, COVID-19 and the related stimulus measures are not captured in the forecasts presented in this report. These forecasts should be treated with caution against a backdrop of heightened uncertainty around the economic outlook.[58]

KPMG reviewed GAWB's revised CPI and WPI forecasts and considered they were already out of date and recommended alternative estimates, which it used in its final recommended escalators.[59] We share this view and note that GAWB's revised CPI and WPI forecasts were developed before the impacts of the covid-19 pandemic were understood.

In our draft report, we expressed our preference for forecasts that are transparent and publicly available, where possible. However, for the purposes of the draft report, we provisionally adopted KPMG's recommended inflation and WPI forecasts, which were based on updated DAE forecasts. Given our concerns, we noted our intent to further consider the appropriateness of using DAE forecasts and indicated that we would review our position for the final report.

In response to our draft report, GAWB submitted it believes full transparency of DAE's forecasts was achieved through KPMG's and the QCA's review. GAWB said it will continue to use DAE's escalation factors for the purpose of calculating nominal expenditure forecasts.[60]

During our review of GAWB's inflation proposal and stakeholder submissions, we identified two concerns regarding the use of the DAE forecasts for inflation and WPI:

- *Transparency*—as DAE forecasts are derived using a proprietary macroeconomic model, we are unable to verify how its forecasts are derived. Also, DAE's forecasts tend to be licensed, subscription-based products. This means they are not freely available or in the public domain otherwise, and their broader public use is subject to limitations.
- *Term of the inflation forecast*—GAWB submitted an inflation forecast based on a five-year horizon. GAWB did not provide an argument to support this choice. We have concerns with using an inflation forecast based on a five-year horizon. GAWB's nominal WACC includes an implicit level of inflation in the nominal risk-free rate, which is estimated over a 10-year bond term (see Chapter 6). We therefore consider it appropriate for forecast inflation to be based on a 10-year horizon, consistent with the term of the risk-free rate and standard financial and regulatory practice.

In recent price investigations, we forecast inflation using publicly available data from the Reserve Bank of Australia (RBA).[61] This forecast method takes the 10-year geometric mean of the short-term RBA inflation forecast a year and two years out, and the midpoint of the RBA's medium-

[57] GAWB, sub. 35, p. 5.
[58] GAWB, sub. 35, p. 5.
[59] KPMG, *GAWB expenditure review*, final report, May 2020, pp. 29–38.
[60] GAWB, sub. 33, pp. 32–33.
[61] QCA, *Aurizon Network's 2017 draft access undertaking*, final report, December 2018; QCA, *Rural irrigation price review 2020–24*, final report, January 2020; QCA, *Queensland Rail 2020 draft access undertaking*, final report, February 2020.

term inflation target range for the remaining eight years of the forecast period. We consider that this forecast method is simple, transparent, and replicable—with all necessary information being publicly available.

There is no 'right' method to forecasting inflation, and accurately forecasting inflation beyond one or two years is more problematic than for shorter periods. However, the RBA one-year and two-year forecasts have good accuracy relative to other forecasting methods[62], and the RBA's medium-term inflation target midpoint is relevant for longer periods. The RBA, being the agency responsible for Australia's monetary policy, is the subject-matter expert and sets the cash rate to achieve its inflation target. We consider the RBA method is transparent and provides regulatory certainty. In our view, an important principle of price monitoring investigations is to provide transparency of pricing to customers—proprietary forecasts are inconsistent with this principle.

Therefore, we calculated our inflation forecasts based on the RBA's latest short-term inflation forecasts outlined in its May 2020 Statement on Monetary Policy (SMP) and the midpoint of the RBA's medium-term inflation target range (2.5%). This produces a 10-year inflation forecast of 2.42 per cent, which we consider should apply over the 2020–25 period.

Adopting RBA figures and a 10-year horizon increases forecast inflation from 2.0 per cent in our draft report to 2.42 per cent. This will have the net effect of reducing GAWB's total allowable revenue relative to our draft report. This is because the forecast is used to reduce GAWB's nominal return on capital through the inflationary gain adjustment in the RAB, as per Chapter 5.[63] This adjustment outweighs the impact of higher cost escalation over the 2020–25 period.

Finding A3.2—Inflation forecast

The QCA considers GAWB's proposed use of Deloitte Access Economics' data for forecast inflation is not appropriate.

The QCA considers that GAWB should use:

- a 10-year forecast of inflation
- the RBA forecast method, which takes the 10-year geometric mean of the short-term RBA inflation forecast a year and two years out, and the midpoint of the RBA's medium-term inflation target range for the remaining eight years of the forecast period.

This measure of forecast inflation should be used for all purposes in GAWB's pricing model, including to reduce the nominal return on capital, escalate costs, and smooth prices.

We have the same concerns regarding the transparency of DAE's WPI forecast. Therefore, we produced a WPI forecast using Queensland Treasury's most recent forecasts of the Queensland WPI up to and including 2022–23.[64] For the remaining two years of the regulatory period, we used

[62] P Tulip & S Wallace, *Estimates of Uncertainty around the RBA's Forecasts*, research discussion paper 2012–07, Reserve Bank of Australia, November 2012.

[63] GAWB's pricing model applies a nominal WACC to calculate the return on capital. As GAWB's WACC is a nominal WACC, it includes an implicit level of forecast inflation. The pricing model removes an estimate of forecast inflation from the return on capital, to avoid compensating GAWB for inflation twice—once in the return on capital allowance and once via end-of-period indexation. Effectively, GAWB receives a real return on capital in its allowed cash flows and inflation compensation via RAB indexation. Therefore, the higher the estimate of forecast inflation, the lower the resulting real WACC and the lower the allowed return on capital.

[64] Queensland Treasury, *Queensland Budget 2019–20, Budget Strategy and Outlook, Budget Paper No. 2*, June 2019, p. 35; Queensland Treasury, *Mid-Year Fiscal and Economic Review 2019–20*, Dec 2019, p. 7.

the 10-year average of the Queensland WPI of 2.73 per cent. We consider this approach is simple, transparent and replicable, and is consistent with our approach in recent price investigations.[65]

3.7.3 QCA conclusions

Based on our review of GAWB's proposed escalators, and KPMG's analysis, we have adopted most of KPMG's recommendations regarding the composition of the escalators and their application to forecast costs. We substituted our alternative CPI and WPI assumptions to update these escalators.

Our findings on specific escalators are discussed further in the assessments of individual opex functions, where relevant (section 3.8). Table 4 summarises our conclusions on cost escalation methods and assumptions.

The economic impacts of the covid-19 pandemic cannot be fully reflected in our estimated escalation factors at this time. Nonetheless, our final position on escalators reflects the latest information available at the time of preparing this final report.[66]

Table 4 Assessment of GAWB's cost escalator methods and assumptions

Escalator	*GAWB's original proposal*	*QCA position*
CPI	DAE forecast: 2.3% (Brisbane CPI)	2.42% based on 10-year geometric mean of RBA short-term inflation forecasts for the first two years, and target inflation band mid-point for remaining 8 years
WPI	DAE forecast: 3.04% (Qld WPI)	2.73% based on Queensland Treasury's Queensland WPI forecasts up to and including 2022–23, and the 10-year average of the Queensland WPI of 2.73% for the remaining two years
Insurance	5.7% based on DAE's 'Brisbane CPI' plus a premium of 3.4%, reflecting the observed difference between general CPI and insurance	CPI plus historical insurance cost growth premium of 3.4%
Chemicals	DAE crude oil price forecast of 3.03%	CPI
Council charges (rates)	2.82% , which is a composite escalator based on 2017–18 council cost proportions: • 41% for materials and services (75% Qld WPI & 25% CPI) • 31% for employee costs (Qld WPI plus public sector premium) • 24% for depreciation and amortisation (CPI) • 4% for finance (CPI)	Weightings updated to reflect cost shares identified in Gladstone Regional Council 2018–19 annual report: • 43% for materials and services (as per 'other materials and services') • 31% for employee costs (as per 'employee costs') • 23% for depreciation and amortisation (CPI) • 3% for finance costs (CPI)

[65] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018; QCA, *Aurizon Network's 2017 draft access undertaking, final report*, December 2018; QCA, *Rural irrigation price review 2020–24*, final report, January 2020.

[66] To escalate GAWB's 2018–19 base year operating expenditures to the start of the 2020–25 period, we have used the RBA short term CPI forecast for the year ending June 2020 of –1.0 per cent. This reflects the RBA's views on the impact of covid-19 in the short term and has a notable impact on forecast opex. This reduction in base year costs largely outweighs the impact of a higher CPI forecast (2.42%) for the remaining years of the 2020–25 period.

Escalator	*GAWB's original proposal*	*QCA position*
Employee costs (wages)	DAE WPI forecast plus premium, reflecting the difference between 2018–19 public sector WPI growth and general WPI The premium declines linearly to zero in 2024–25	As per DAE method, updated for QCA WPI estimate
Professional services (engineering)	DAE forecast: 3.04% (WPI)	WPI
Contract labour costs	DAE forecast: 3.04% (WPI)	WPI
Contractors (service delivery)	DAE forecast: 3.04% (WPI)	WPI
Other material and services	DAE forecast: 2.85%. Weighted average of Qld WPI (75%) and Brisbane CPI (25%)	WPI (75%) and CPI (25%)
Maintenance	70% 'contractors (service delivery)' 30% 'other materials and services'	70% labour (WPI) 30% materials costs (CPI)
Electricity	Component forecast (CPI based)	Not applicable; nominal forecasts adopted (see section 3.8.3)
Operations	DAE CPI for all items, except 'trade waste charges', which attracts the council charges escalator	As per GAWB proposal, with updated CPI
Information systems and administration	DAE forecast: 2.3%	CPI

Sources: GAWB, sub. 4, pp. 8–9; KPMG, GAWB expenditure review, final report, May 2020, pp. 23–24; QCA analysis.

Table 5 Cost escalators—QCA findings

Escalator	*2019–20*	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*
CPI	(1.00)	2.42	2.42	2.42	2.42	2.42
Chemicals	(1.00)	2.42	2.42	2.42	2.42	2.42
WPI	2.25	2.50	2.50	2.75	2.73	2.73
Professional services (engineering)	2.25	2.50	2.50	2.75	2.73	2.73
Contract labour costs	2.25	2.50	2.50	2.75	2.73	2.73
Contractors (service delivery)	2.25	2.50	2.50	2.75	2.73	2.73
Employee costs (wages)	2.43	2.64	2.61	2.82	2.77	2.73
Council charges	1.11	2.52	2.50	2.65	2.63	2.62
Insurance	2.40	5.82	5.82	5.82	5.82	5.82
Other materials and services	1.44	2.48	2.48	2.67	2.66	2.66
Information systems and administration	(1.00)	2.42	2.42	2.42	2.42	2.42

Escalator	*2019–20*	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Maintenance	1.28	2.48	2.48	2.65	2.64	2.64
Electricity	Not applicable; nominal forecast applied (section 3.8.3)					
Operations	CPI for all items, except 'trade waste charges', which attracts the council charges escalator.					

Sources: KPMG modelling; QCA analysis based on RBA and Queensland Treasury data (CPI and WPI).

Finding A3.3—Cost escalation

The QCA considers GAWB's proposed cost escalators are not appropriate and should be revised to reflect updated components and weightings, and the use of publicly available CPI and WPI estimates set out in Table 5. The QCA's findings on cost escalators for opex reflect these adjustments and updates.

3.8 Forecast operating expenditure by function

GAWB's proposed opex for 2020–25 comprises forecasts for 10 different business functions. The QCA and KPMG considered each of these individual forecasts.

In its March 2020 submission, GAWB rejected our draft findings on the functional cost categories that it considers to be non-material (operations, administration, chemicals and council charges). GAWB said it intended to adopt the forecasts for these cost categories as submitted in its regulatory submission.[67] In most cases, GAWB did not provide any new information on these costs. With the exception of updates for revised cost escalators, our findings on these costs have not changed from our draft report.

Further information that GAWB provided relating to insurance, electricity, professional services, information systems and maintenance costs has led us to revise our draft report findings in some instances.

3.8.1 Operations

GAWB adopted a combination of bottom-up estimates and an extrapolation of 2018–19 costs, escalated by relevant DAE escalators, for its operations expenditure forecasts. For the 2020–25 pricing period, GAWB forecast its operations expenditure to grow by 26 per cent, from $1.9 million in 2018–19 to $2.4 million in 2024–25.

KPMG considered that GAWB's baseline operations costs in 2018–19 were reasonably efficient and found that the proposed increases were prudent and reasonable in magnitude. KPMG found that GAWB's proposed operations costs were largely reasonable, subject to its revised efficiency factor being applied (section 3.9). KPMG recommended an adjustment to water quality costs to reflect its recommendation on forecast chemical costs (section 3.8.9) on the basis that changes in these two cost categories should align.[68]

GAWB applied its CPI escalator to produce nominal forecasts for most operations costs. However, trade waste charges were escalated by its council rate escalator. As trade waste services are provided by the council, KPMG found this was reasonable and recommended that its updated CPI

[67] GAWB, sub. 33, p. 23. We note that GAWB has revised its forecasts to reflect updated cost escalators.
[68] KPMG, *GAWB expenditure review,* final report, May 2020, p. 140.

and council rate escalators be applied.[69] Based on our own analysis, we formed the same view as KPMG.

GAWB rejected our findings, as it considered operations costs to be immaterial.[70] GAWB did not provide further information to support its forecasts and revised its forecasts for updated escalation factors only.

Based on our analysis of GAWB's proposal and supporting information, and KPMG's advice, we consider GAWB's forecast operations expenditure is prudent and likely reasonably efficient, subject to an adjustment to water quality costs and a revised efficiency factor. We have further updated these forecasts using our revised cost escalators (Table 6).

Table 6 Operations costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	2.14	2.23	2.29	2.38	2.43	**11.47**
GAWB March 2020 submission ($m)	2.12	2.21	2.27	2.35	2.41	**11.37**
QCA findings ($m)	2.07	2.14	2.20	2.27	2.32	**11.01**

Note: All values are before the application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.4—Operations costs

The QCA finds an appropriate total forecast for GAWB's operations costs during 2020–25 is $11.01 million.

3.8.2 Maintenance

GAWB developed its forecast maintenance costs using a bottom-up approach, informed by its LCMPs. It forecast an increase in maintenance costs of around 26 per cent between 2018–19 and 2020–21, with costs to remain generally at these higher levels for the 2020–25 period. In aggregate, GAWB's forecast maintenance expenditure of $20.4 million for 2020–25 is around 60 per cent higher than its actual expenditure in 2015–20 ($12.8 million).

GAWB attributed the forecast increase in maintenance spend to the timing of long-term major condition assessments and the age profile of the delivery network.[71] GAWB said that while these assessments occur periodically, there is a disproportionate number of significant assessments and inspections due in the 2020–25 period. GAWB stated that the increased expenditure is appropriate, given the approximately 20 per cent increase in the RAB since the start of the current pricing period.[72]

KPMG noted that, in general, increases in maintenance costs might be expected when:

- a change in standards or industry practice leads to increases in maintenance
- the volume of works remains constant, but input costs increase

[69] KPMG, *GAWB expenditure review*, final report, May 2020, p. 141.
[70] GAWB, sub. 33, pp. 7, 23.
[71] GAWB, sub. 1, p. 95.
[72] GAWB, sub. 1, p. 95.

- a material and structural problem with an asset class is identified that triggers the need for more maintenance
- an increase in maintenance activities leads to savings in other costs categories (e.g. capex).[73]

KPMG considered that there were no strong justifications for GAWB's proposed increase in maintenance expenditure, and that it was unclear whether GAWB's:

- LCMP maintenance interventions and funding models are aligned with its maintenance strategies
- assessment of criticality relates to its asset management objectives and customer service delivery outcomes. KPMG suggested GAWB should consider updating the approach to detail alignment between risk categories, asset management objectives and customer outcomes.[74]

Because of these concerns and challenges, KPMG's draft report recommended an alternative maintenance forecast based on GAWB's budgeted maintenance spend in 2019–20 as a base year cost, plus a 10 per cent margin to accommodate any legitimate increase in maintenance spend during the 2020–25 period. KPMG did not apply its recommended efficiency factor to maintenance spend to avoid eroding the 10 per cent margin.[75] Based on our own assessment of GAWB's proposal, and KPMG's analysis, we consider this a reasonable approach in the absence of further justification for GAWB's forecasts. We consider it reasonable to allow a 10 per cent margin and apply no efficiency factor to GAWB's maintenance costs. This should provide GAWB with sufficient funding to undertake necessary maintenance activities. This is a conservative approach that we consider will provide GAWB with a sufficient overall maintenance budget, within which it can reallocate resources during the 2020–25 period according to its priorities.

GAWB rejected the QCA's draft findings on maintenance costs and submitted that not all information provided had been considered. GAWB submitted that the maintenance expenditure forecast is prudent and efficient.[76]

In January 2020, GAWB provided additional information that it said demonstrated the link between LCMPs and its maintenance cost forecasts. This information could not be fully assessed for the draft report due to time constraints. KPMG reviewed this additional information for its final report and found it did not provide any further justification for the proposed increase in maintenance expenditure. KPMG maintained that GAWB had not demonstrated that its maintenance strategies have been developed and implemented as described.[77]

GAWB applied its proposed escalator for 'contractors (service delivery)' to 70 per cent of the forecast and its escalator for 'other materials and services' to the remaining 30 per cent. KPMG noted that this approach overstates the labour escalation component, as the 'other materials and services' escalator is already a composite escalator, reflecting a 75 per cent weighting to labour (WPI based) and 25 per cent materials (CPI based). KPMG recommended a revised escalator for maintenance costs weighted at 70 per cent labour (WPI) and 30 per cent CPI, using its updated forecasts.[78] GAWB acknowledged this and adopted KPMG's revised escalator in response to the draft report.[79]

[73] KPMG, *GAWB expenditure review*, final report, May 2020, p. 145.
[74] KPMG, *GAWB expenditure review*, final report, May 2020, p. 145.
[75] KPMG, *GAWB expenditure review*, draft report, February 2020, p. 136.
[76] GAWB, sub. 33, p. 25.
[77] KPMG, *GAWB expenditure review*, final report, May 2020, p. 147.
[78] KPMG, *GAWB expenditure review*, draft report, February 2020, p. 136.
[79] GAWB, sub. 33, p. 36; sub. 35, p. 7.

It is clearly prudent for GAWB to incur some amount of maintenance expenditure. However, based on the available information, we are unable to conclude that GAWB's proposed maintenance costs are prudent and efficient. Specifically, we consider there is not a clear linkage between GAWB's maintenance strategies and its cost forecasts. For these reasons, we consider that a maintenance cost forecast based on 2019–20 budgeted costs as the base year, and a 10 per cent margin, represents a reasonable alternative allowance, after adjusting for our revised CPI and WPI escalators (section 3.7.3). To preserve the 10 per cent margin, we have not applied our efficiency factor to forecast maintenance costs.

Our estimate of an appropriate maintenance cost allowance is around 18 per cent lower than GAWB's proposed forecast (Table 7). However, it provides for a significant increase of 32 per cent in maintenance spend during the 2020–25 period, compared with the 2015–20 period. We consider this provides sufficient scope for GAWB to deliver its maintenance priorities through prudent reallocation of expenditures.

Table 7 Maintenance costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	4.01	4.31	3.79	4.20	4.13	**20.45**
GAWB March 2020 submission ($m)	3.96	4.25	3.72	4.11	4.03	**20.08**
QCA findings ($m)	3.18	3.28	3.38	3.46	3.56	**16.85**

Note: The QCA has not applied its efficiency factor to maintenance costs. Totals may not add due to rounding.

Finding A3.5—Maintenance costs

The QCA finds an appropriate total forecast for GAWB's maintenance costs during 2020–25 is $16.85 million.

3.8.3 Electricity

Electricity is a key component of GAWB's operating costs. Most of GAWB's electricity use is attributed to five sites—Awoonga Dam pump station, Gladstone water treatment plant, Yarwun water treatment plant, the administration centre on Goondoon Street and GAWB's offline storage facility.

GAWB secures electricity supply for its contestable sites through a broker. The broker obtains multiple proposals from vendors and presents at least five proposals to GAWB for consideration. Retail agreements are sourced and executed in accordance with GAWB's procurement policies. KPMG considered this process is appropriate and allows GAWB to obtain electricity at competitive market rates.[80] GAWB's non-contestable connections are supplied by Ergon Energy at notified (regulated) prices.

GAWB forecast a significant nominal increase in electricity costs between 2018–19 and 2020–21. The fixed component of the electricity costs is then forecast to remain stable in real terms over the 2020–25 period. The variable component is forecast to increase by 0.93 per cent in real terms, with a step change from 2022–23 to 2023–24 onward.

[80] KPMG, *GAWB expenditure review*, draft report, February 2020, p. 138.

GAWB attributed the increase in 2023–24 to the anticipated commissioning of its proposed ultraviolet (UV) disinfection systems. We do not consider this project to be prudent at this stage, and we have excluded the project cost from the 2020–25 capex forecast (Chapter 4).

In its draft report, KPMG found there was limited information on the drivers for GAWB's forecast electricity costs and how the forecast was derived. KPMG also said it was not clear:

- how GAWB's forecasts were informed by forecast demand for electricity (e.g. due to energy efficiency initiatives or operational changes)
- whether the forecast reflects general expectations of decreasing electricity costs, for example, based on recent findings of the Australian Energy Market Commission (AEMC) and the Australian Energy Regulator (AER).[81]

For these reasons, KPMG considered that the base cost in 2019–20 was not justified and could be reduced by 15 per cent. KPMG considered this was a conservative reduction and should provide allowance for any specific cost drivers affecting GAWB.[82] KPMG also considered the proposed step change in 2023–24 was not justified.

GAWB applied a nominal annual cost escalator of 2.06 per cent to its electricity forecasts for the 2020–25 period, based on DAE's analysis.[83] The electricity escalator is –0.23 per cent in real terms, relative to DAE's CPI inflation escalator of 2.30 per cent. KPMG considered that DAE's escalation approach was appropriate, but that it should be updated to reflect the AEMC's 2019 report on residential electricity price trends[84] and the AER's draft determination on Ergon Energy's network tariffs over the 2020–25 period.[85] While noting that residential price trends are not a perfect indicator of GAWB's electricity costs given its characteristics,[86] KPMG considered the AEMC estimates were nonetheless reflective of cost trends in the Queensland energy sector more generally.[87]

We note that the AEMC has projected a decrease in Queensland wholesale prices of 12.4 per cent between 2018–19 and 2021–22, driven by an influx of renewable generation. During the same period, the AEMC also projects a reduction in environmental costs[88] of around 33 per cent.[89] Furthermore, the AER's draft decision on Ergon Energy's regulated revenues for the 2020–25 regulatory period indicates a 14.8 per cent reduction to revenue in the first year of the 2020–25 period. The AER's draft decision also indicates an estimated real decrease in average distribution charges of about 3.8 per cent per year over the 2020–25 period.[90]

Network charges and wholesale energy costs represent the majority of GAWB's total electricity costs associated with its main connection sites.[91] As such, we consider that expected movements in these two components provide a reasonable indication of likely changes in GAWB's electricity

[81] KPMG, *GAWB expenditure review*, draft report, February 2020, pp. 139–41.
[82] KPMG, *GAWB expenditure review*, draft report, February 2020, p. 138.
[83] GAWB, sub. 4, p. 8.
[84] AEMC, *Residential Electricity Price Trends 2019*, final report, December 2019.
[85] AER, *Ergon Energy Distribution Determination 2020 to 2025: Overview*, draft decision, October 2019.
[86] For example, GAWB's wholesale energy contracting strategy and specific network tariffs are not reflective of residential electricity supply arrangements.
[87] KPMG, *GAWB expenditure review,* draft report, February 2020, p. 138.
[88] Environmental costs include costs of the large-scale renewable energy target and small-scale renewable energy scheme.
[89] AEMC, *Residential Electricity Price Trends 2019*, final report, December 2019, p. 6.
[90] AER, *Ergon Energy Distribution Determination 2020 to 2025*, draft decision, Attachment 1: Annual revenue requirement, October 2019, pp. 13–14.
[91] Based on the QCA's review of GAWB electricity invoices.

prices. Based on expected decreases in network and wholesale costs indicated in the AEMC's report and the AER's draft decision, KPMG's draft report recommended an alternative electricity cost forecast reflecting:

- a 2019–20 base year cost, reduced by 15 per cent (both fixed and variable components)
- a 7.5 per cent reduction to fixed charges from the beginning of the 2020–25 period, remaining flat in nominal terms for the rest of the period.[92]
- a 4 per cent annual reduction in nominal variable costs over the first two years of the 2020–25 period, with costs remaining constant in nominal terms for the rest of the period.[93]

We accepted KPMG's recommendation in our draft report.

Revised electricity forecasts—March 2020

In response to the draft report, GAWB submitted that forecast electricity expenditure does not represent a material cost by its own definition, but acknowledged it is a significant cost.[94] GAWB provided updated forecasts that included the following amendments:

- a revised base year (2019–20) reduction of 5.69 per cent, in recognition of current electricity prices, and having regard to the trend in electricity prices, and the nature and number of its connections[95]
- revised cost escalators developed by DAE, which take into account the findings of the AEMC's 2019 price trends report (including an expected reduction in networks costs as set out in the AER's 2019 draft determination for Ergon Energy)
- exclusion of electricity costs associated with the proposed UV disinfection capital project, which the QCA has found not prudent or efficient (Chapter 4).[96]

KPMG considered the revised reduction in 2019–20 provides a better indication of the net change in prices during the 2015–20 period. KPMG acknowledged that while there has been a decline in wholesale and network costs, there have been increases in retail, renewable and metering charges.[97]

DAE noted that referencing the AEMC's estimated price changes for small businesses will overstate the impact of changes in network charges, and understate the impact of changes in wholesale costs, for a business such as GAWB.[98] In recognition of this, DAE recommended that the 2018–19 assumed share of wholesale costs be increased from 36 per cent to 55 per cent of total costs, and the assumed share of distribution costs be reduced from 42 per cent to 17 per cent. DAE noted this is broadly in line with KPMG's assessment and better reflects the structure of GAWB's electricity costs[99]

[92] Based on the AER's proposed 14.8 per cent reduction to Ergon Energy's revenues in the first year of the 2020–25 regulatory period. KPMG considered it reasonable that half of this expected reduction would be passed through to GAWB's prices. See AER, *Ergon Energy Distribution Determination 2020 to 2025*, draft decision, Attachment 1: Annual revenue requirement, October 2019, pp. 13–14.
[93] KPMG, *GAWB expenditure review*, draft report, February 2020, p. 141.
[94] GAWB, sub, 33, p. 28.
[95] GAWB, sub. 33, p. 29.
[96] GAWB, sub. 33, pp. 11, 30.
[97] KPMG, *GAWB expenditure review*, final report, May 2020, p. 153.
[98] GAWB, sub. 35, p. 8.
[99] GAWB, sub. 35, p. 8.

The re-weighted 2018–19 cost components were escalated by the AEMC's expected price changes for each cost component between 2019–20 and 2021–22. After 2021–22, DAE has assumed that costs will increase in line with CPI.[100]

KPMG found the revised DAE escalators appropriate to apply for the period up until 2021–22. KPMG maintained that costs in 2022–23 to 2024–25 should be held constant in nominal terms, given current trends and uncertainty about future electricity prices.[101] We reviewed GAWB's supporting information and DAE's analysis, and consider the revised forecasts represent a more accurate representation of likely changes in GAWB's electricity costs over the short term.

Based on our analysis of GAWB's proposal and supporting information, and KPMG's advice, we consider GAWB's revised forecast electricity costs are prudent; however, there are indications of more significant decreases in electricity prices over the 2020–25 period than GAWB's forecasts suggest. For this reason, on balance, we consider it appropriate to hold costs constant in nominal terms from 2022–23 onwards is reasonable, noting that we have not applied our efficiency factor adjustment to GAWB's fixed electricity charges (section 3.9). We have also adjusted GAWB's forecast for our revised CPI and WPI escalators (Table 8). Due to a delay in the release of the AER's final determination for Ergon Energy's network prices for the 2020–25 period, we have been unable to reflect the impact of final network prices in this final report.[102]

Table 8 Electricity costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	3.04	3.10	3.16	3.32	3.38	**16.00**
GAWB March 2020 submission ($m)	2.71	2.66	2.62	2.58	2.54	**13.11**
QCA findings ($m)	2.57	2.49	2.49	2.49	2.49	**12.54**

Note: The values are before the application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.6—Electricity costs

The QCA finds an appropriate total forecast for GAWB's electricity costs during 2020–25 is $12.54 million.

3.8.4 Employment costs

Employment costs are the largest component of GAWB's forecast opex, representing nearly 40 per cent of the overall opex forecast for 2020–25. These costs include salaries, wages, superannuation, leave, penalty and overtime payments.

GAWB forecast employment costs of $69.3 million for 2020–25, which is around 18 per cent higher than the actual employment costs in the 2015–20 period. GAWB expected a step increase in employment costs between 2018–19 and 2020–21, followed by an average annual increase of 3.1 per cent through to 2025. This increase is largely driven by an anticipated growth in recruitment and payroll costs during the 2020–25 period.

[100] GAWB, sub. 35, p. 8.
[101] KPMG, *GAWB expenditure review*, final report, May 2020, p. 153.
[102] AER, AER delays final decision for SA Power Networks, Energex, Ergon Energy, Directlink and Jemena Gas Networks, https://www.aer.gov.au/communication/.

The council submitted that GAWB's proposed increase in employment costs sought at the 2015 price investigation was due to insourcing of maintenance, on the basis this would lead to lower costs in future. The council said GAWB's proposed increase for 2020–25 contradicts this, and a detailed ex post review is required.[103]

KPMG noted that GAWB's actual employment costs in 2015–20 were higher than forecast. GAWB attributed this to increased staffing numbers associated with implementing the LCMP process, a larger capital program and a delay in recovery of expected efficiencies.[104]

GAWB applied DAE's labour cost escalator to its employment costs, which is the sum of forecast Queensland WPI and a premium based on recent observed differences between the Queensland WPI for the private and public sector. This approach recognises the relatively faster rate of recent growth in public sector wages. The premium is assumed to disappear by the end of the 2020–25 period. Other costs within the employment costs category were escalated using forecast CPI, except labour hire, which was based on DAE's proposed escalator for contract labour costs (based on forecast Queensland WPI). KPMG considered the escalation approaches reasonable; however, it recommended updating the underlying CPI and WPI forecasts for more recent DAE estimates (section 3.7). We consider the general approach is reasonable and note that the premium between private and public sector WPI is not assumed to be sustained indefinitely.

KPMG noted that GAWB's annual employment cost forecasts for 2020–25 remain within 1 per cent of actual employment costs in both 2017–18 and 2018–19 (in 2018–19 dollar terms). KPMG recommended that we adopt GAWB's forecast employment costs, but apply KPMG's recommended efficiency factor to those costs. KPMG considered this appropriate, given that expected efficiencies from business improvement initiatives have not yet been realised.[105] KPMG noted that this would effectively reduce total employment costs to 2016–17 levels, in real terms, by the end of the 2020–25 period.[106] On review of GAWB's proposal and supporting information, we formed the same view as KPMG. We adopted GAWB's forecast, adjusted for our alternative efficiency factor and escalators.

GAWB submitted revised employment cost forecasts in March 2020, reflecting updated cost escalation factors.

Based on our analysis of GAWB's proposal, and KPMG's advice, we find GAWB's forecast employment costs are prudent, and mostly efficient. (Table 9). We have further updated these forecasts for our revised cost escalators (section 3.7.3). While the difference due to escalators is not material, these escalators apply to costs more broadly and we consider it reasonable to update these values to reflect the most recent available data. We note the council's concerns regarding overspending and consider our approach represents a reasonable and balanced outcome that allows GAWB to recover its prudent and efficient employment costs for the 2020–25 period.

[103] GRC, sub. 15, p. 2.
[104] GAWB, sub. 1, p. 93.
[105] KPMG, *GAWB expenditure review*, final report, May2020, p. 160.
[106] KPMG, *GAWB expenditure review*, final report, May 2020, p. 160.

Table 9 Employment costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	13.04	13.42	13.89	14.21	14.74	**69.29**
GAWB March 2020 submission ($m)	13.01	13.40	13.87	14.20	14.75	**69.23**
QCA findings ($m)	12.90	13.22	13.66	13.94	14.43	**68.15**

Note: The values are before application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.7—Employment costs

The QCA finds an appropriate total forecast for GAWB's employment costs during 2020–25 is $68.15 million.

3.8.5 Professional services

GAWB engages external professional services for various purposes, including audit, consulting and engineering services. GAWB forecast total professional services costs for 2020–25 of $17.6 million, which is around 19 per cent higher than its costs in 2015–20.[107] Professional services costs are forecast to increase in 2020–21, followed by a reduction in the remaining years to levels largely consistent with costs incurred in 2017–18 and 2018–19.

GAWB applied DAE's recommended WPI escalator to its forecast professional services costs. KPMG considered this appropriate, and applied its updated WPI forecast. However, KPMG raised concerns with GAWB's forecast, including the limited justification for most of its proposed expenditures, the large number of strategic initiatives being proposed and the proposed timing of expenditure to review the LCMP processes.[108] KPMG acknowledged that professional services expenditure can be lumpy and recommended adopting average spend during 2015–20 as the baseline for 2020–25, including budgeted spend in 2019–20. On review of GAWB's proposal and supporting information, we formed the same view as KPMG regarding the limited justification for the forecast professional services costs. We consider that using average spend is an appropriate alternative base cost in the absence of further justification.

In response to our draft report, GAWB accepted the use of the average spend in 2015–20 as the baseline for the 2020–25 forecast. However, GAWB argued that the forecast should include discrete allowances for professional services associated with the Lake Awoonga recreational strategy, which were not captured in the historical average spend.[109] We found the forecast capex associated with this program is mostly prudent and efficient (Chapter 4). We consider it reasonable that the associated professional services costs be included in the revised opex forecast.

KPMG also reviewed a sample of procurement process documentation GAWB provided in response to the draft report. Based on this, KPMG noted some apparent reliance on sole-source procurement and suggested that GAWB's procurement practices could be improved by ensuring:

[107] The detailed cost data provided by GAWB differed from its public regulatory submission. We confirmed that the difference is largely attributable to differing recognition of the QCA regulatory fee and costs associated with the QCA regulatory process.
[108] KPMG, *GAWB expenditure review*, final report, May 2020, p. 176–77.
[109] GAWB, sub. 33, pp. 26.

- procurement policies are adhered to (e.g., obtaining a minimum of three quotes when required)
- adequate market testing is performed prior to committing to sole-sourcing
- more rigorous review and documentation of justifications for awarding sole-source contracts.[110]

KPMG recommended that the baseline forecast be reduced by 5 per cent, which reflects its view on potential cost savings from improved procurement practices.[111]

We consider a 5 per cent adjustment is reasonable, particularly as similar concerns regarding the use of sole sourcing were raised in our 2015–20 investigation.[112] While GAWB faces challenges in securing some specialist services due to its location and limited market depth, the lack of market testing means we cannot conclude whether its actual, or proposed, professional services costs are efficient.

GAWB's forecast of professional services costs included nominal amounts totalling $2.1 million for costs associated with regulatory processes. This includes an estimate of the QCA's regulatory fees for the 2020–25 period. Based on projections of QCA fees for the 2020–25 period at the time of finalising this report, we consider GAWB's proposed allowance is reasonable and sufficient to meet these costs. We understand GAWB intends to seek further advice from the QCA regarding expected fees, prior to setting prices for 2020–25.[113]

On balance, we consider GAWB has not demonstrated that its professional services expenditure is prudent or efficient. Based on our own assessment of GAWB's proposal and supporting materials, we consider KPMG's recommended adjustments are appropriate. In our view, this will provide GAWB with a sufficient overall budget, within which it can reallocate resources during the 2020–25 period according to its priorities in any given year (Table 10).[114] We have applied our efficiency factor to professional services costs in recognition of proposed initiatives that are expected to deliver efficiencies, and have updated these forecasts using our revised cost escalators.

Table 10 Professional services costs—QCA findings

	2020–21	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***Total***
GAWB's proposal ($m)	4.50	2.55	2.42	3.33	4.79	**17.59**
GAWB March 2020 submission ($m)	3.76	2.64	2.70	3.09	4.52	**16.70**
QCA findings ($m)	3.51	2.50	2.59	2.96	4.37	**15.92**

Note: The values are before the application of efficiency adjustments. Totals may not add due to rounding.

[110] KPMG, *GAWB expenditure review*, final report, May 2020, p. 180.
[111] KPMG, *GAWB expenditure review*, final report, May 2020, p. 180.
[112] Jacobs, *GAWB 2015–20 Review of capex and opex*, final report, 29 May 2015, p. 46.
[113] GAWB, sub. 33, p. 26.
[114] KPMG used GAWB's forecast for QCA fees and related expenditure, adjusted for its recommended update to the CPI only.

Finding A3.8—Professional services costs

The QCA finds an appropriate total forecast for GAWB's professional services costs during 2020–25 is $15.92 million.

3.8.6 Information systems

GAWB's forecast information systems expenditure in the 2020–25 period is $15.4 million, which is around twice the level of its expenditure in 2015–20.

GAWB said it recently approved its ICT (information and communications technology) Strategic Plan for 2019–24. The strategy reflects a move toward an 'ICT-as-a-service' environment, which is a key driver of increased information systems expenditure for 2020–25. GAWB said that this strategy aligns with the Queensland Government's cloud computing strategy.[115]

Overall, KPMG found it difficult to assess GAWB's forecast. While GAWB stated that its information systems requirements will be procured in accordance with GAWB's procurement framework, KPMG did not have access to the relevant business cases or detail on how the forecasts were derived. KPMG said that although information technology trends in the utilities sector indicate that an increase in expenditure may be justified, the efficiency of those costs cannot be justified based on the information provided by GAWB.[116]

KPMG said that while there is a sense that oversight and governance of GAWB's ICT expenditure is good, it was not able to consider and advise on whether:

- there is a clear need for the expenditure, or whether the proposed timing of the expenditure is optimal
- the cost forecast has been developed in accordance with efficiency principles and reasonable assumptions
- the projects will deliver net benefits for customers
- GAWB has a robust system for monitoring, evaluating and reporting on achievement of the intended outcomes for ICT expenditure throughout the regulatory period.[117]

Notwithstanding these concerns, KPMG recommended that we do not apply any reductions to GAWB's proposed forecast at this stage. KPMG acknowledged that increases in information systems expenditure will be required, but it was not able to identify an alternative forecast that could be credibly justified.[118] GAWB accepted that no reduction should be applied to GAWB's proposed forecast for information services.[119] On review of GAWB's proposal and supporting information, we shared KPMG's view and considered it appropriate to adopt GAWB's forecast ITC costs, subject to adjustments for our alternative efficiency factor and cost escalators.

KPMG recommended that GAWB commit to increased reporting and assessment of information systems projects during 2020–25 to allow a review of actual expenditures at the end of the period.[120] We share this view.

[115] GAWB, sub. 1, p. 94.
[116] KPMG, *GAWB expenditure review*, final report, May 2020, p. 172.
[117] KPMG, *GAWB expenditure review*, final report, May 2020, p. 172.
[118] KPMG, *GAWB expenditure review*, final report, May 2020, p. 172.
[119] GAWB, sub. 33, p. 26.
[120] KPMG, *GAWB expenditure review*, final report, May 2020, p. 172.

In response to the draft report, GAWB provided additional context to its information systems planning, governance and procurement.[121] We reviewed the additional material provided and maintain that there is no strong basis for adjusting GAWB's proposed ICT cost forecast.

Based on our assessment of GAWB's proposal and supporting information, we accept that an increase in ICT costs for 2020–25 is likely required and is consistent with industry trends. We also note the expenditure can be expected to deliver longer-term efficiencies and productivity benefits across GAWB's business. In the absence of an alternative forecast, we consider it is reasonable to adopt GAWB's forecast, subject to updating the CPI cost escalator (Table 11).

While the difference due to revised escalation is not material in isolation, the CPI escalator applies to costs more broadly, and we consider it reasonable to update these values for the most recent available data.

Table 11 Information systems costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	3.29	2.86	3.00	3.18	3.09	**15.42**
GAWB March 2020 submission ($m)	3.27	2.84	2.97	3.15	3.05	**15.29**
QCA findings ($m)	3.19	2.78	2.91	3.09	3.01	**14.97**

Note: The values are before application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.9—Information systems costs

The QCA finds an appropriate total forecast for GAWB's information systems costs during 2020–25 is $14.97 million.

3.8.7 Insurance

GAWB holds commercial insurance policies for risks including motor vehicle, travel, crime, liability, cargo and transport and industrial special risks. It forecast insurance costs of $8.3 million for 2020–25, which is $3.6 million, or around 75 per cent, higher than its total insurance costs during 2015–20.

GAWB forecast an increase in insurance costs between 2018–19 and 2020–21. This was attributed to the outcomes of recent negotiations with underwriters, which have resulted in a significant increase in premiums.

GAWB's forecast is based on its most recent negotiated insurance outcome, and includes periodic asset valuation costs. To derive nominal forecasts over the 2020–25 period, GAWB applied an annual escalator of 5.7 per cent based on advice from DAE. This represents DAE's annual CPI inflation escalator of 2.3 per cent, plus a premium of 3.4 per cent. The premium reflects the observed 10-year historical difference between overall CPI growth and growth in the insurance sub-category within CPI. The proposed escalator reflects GAWB's expectation that insurance costs premium increases will continue to exceed CPI growth. GAWB said this is consistent with historical experience.[122]

[121] GAWB, sub. 33, pp. 26–28.
[122] GAWB, sub. 1, p. 98.

KPMG agreed that current risks, particularly climate-related risks, are likely to see insurance costs grow at a faster rate than CPI.[123] KPMG recommended we adopt GAWB's budgeted insurance spend in 2019–20, escalated using the DAE escalator (based on an updated CPI forecast), plus the forecast costs associated with the asset valuation in 2020–21 and 2023–24.[124]

We are aware of recent challenges faced by GAWB and other water businesses in securing insurance for industrial special risks, particularly coverage for dams. Given that GAWB has worked closely with its broker to conduct a competitive process in selecting insurers, and noting the recent cost drivers underlying its insurance costs, we consider GAWB's budgeted insurance costs in 2019–20 are a reasonable basis to develop forecasts.

In our draft report, we noted that GAWB's insurance cost escalation rate was estimated before the impacts on Australian insurance markets of recent fire and storm events on the east coast of Australia became apparent. In March 2020, GAWB submitted a revised insurance cost forecast and escalators that drew on DAE's updated CPI forecast.

GAWB also proposed to adopt actual insurance costs, escalated by the updated DAE escalation factors. GAWB proposed to use:

- actual industrial special risk costs for the 2020–21 year, escalated by the updated DAE escalator for the remaining years of the regulatory period
- actual combined general liability costs for the 2019–20 year, escalated by the updated DAE escalator for the regulatory period.[125]

GAWB said that prices to apply from 1 July 2020 would be updated with these revised inputs when the data becomes available.[126]

KPMG recommended that actual costs for 2020–21 should not be endorsed as a base year cost without further review. We share KPMG's view and maintain it is appropriate in this instance to adopt the budgeted 2019–20 insurance costs as the base year cost, given that GAWB's insurance costs for 2020–21 are not yet known and therefore could not be considered as part of this investigation. We consider that using 2019–20 budgeted costs is appropriate and transparent as these costs are based on outcomes of a recent procurement process through an insurance broker.

In its draft report, KPMG noted a step change in GAWB's insurance costs in 2020–21 that GAWB attributed to a compliance obligation to procure cyber-security insurance. GAWB said this insurance covers cyber-related events that cause loss or damage to ICT systems, and amounts it may be liable to pay to third parties due to a 'cyber' event or data breach.[127] GAWB provided information in support of this expenditure in January, but KPMG could not fully consider this before finalising its draft report.

Based on our assessment of GAWB's additional information, and KPMG's advice, we consider GAWB's proposed cyber-security insurance expenditure is acceptable. We note that holding cyber-security insurance does not appear to be a binding regulatory obligation on GAWB; however, it is considered a legitimate and reasonable expense. We share KPMG's view that in the future GAWB should conduct risk assessments so that the level of insurance is commensurate

[123] KPMG, *GAWB expenditure review*, final report, May 2020, p. 166.
[124] KPMG, *GAWB expenditure review*, final report, May 2020, p. 166.
[125] GAWB, sub. 33, pp. 30–31.
[126] GAWB, sub. 33, pp. 30–31
[127] GAWB, sub. 33, p. 31.

with the risk, particularly if cyber-security insurance costs increase.[128] We have adopted GAWB's updated insurance cost forecast based on 2019–20 budgeted insurance costs and DAE's escalation approach, updated for our alternative CPI estimates (Table 12). Given the emerging pressures in insurance markets and the uncertainty of forecasting it is possible that GAWB may need to recover higher insurance costs in future years. In recognition of this, we have not applied our efficiency factor to GAWB's insurance costs in this instance (section 3.9).

We note GAWB's intention to use actual 2020–21 insurance costs as base year costs, when that information becomes available. It is ultimately at GAWB's discretion to do this—however, we are unable to provide any assurances regarding the efficiency of such costs, as these costs were not known or available for scrutiny prior to concluding our investigation. As such, should GAWB choose to adopt 2020–21 actual costs as base year costs, it is our expectation that GAWB would transparently explain these actual costs to its customers.

Table 12 Insurance costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	1.55	1.52	1.61	1.80	1.80	**8.26**
GAWB March 2020 submission ($m)	1.47	1.44	1.52	1.69	1.69	**7.80**
QCA findings ($m)	1.43	1.40	1.49	1.67	1.67	**7.66**

Note: The QCA has not applied its efficiency savings to GAWB's insurance costs. Totals may not add due to rounding.

Finding A3.10—Insurance costs

The QCA finds an appropriate total forecast for GAWB's insurance costs during 2020–25 is $7.66 million.

3.8.8 Administration

GAWB's administration costs are varied and include, among other things, telecommunications, cleaning and waste removal, freight, community relations, accommodation, travel and records management expenses. GAWB proposed administration costs of $9.5 million for the 2020–25 period. This represents an increase of around 27 per cent over 2015–20 expenditure.

GAWB applied DAE's CPI inflation escalator to derive nominal forecasts for most administration cost items. GAWB's 'pooled and minor asset purchases' are an exception, and these costs attracted DAE's recommended escalator for 'other materials and services' (section 3.7). KPMG considered that other materials and services should be escalated by the same escalator as other materials, which was based on CPI inflation. KPMG recommended CPI escalation apply to all administration cost items, using its updated CPI forecast.

KPMG examined each cost category within the administration function and recommended adjustments to a number of specific costs, which are detailed in its report.[129] KPMG's recommended adjustments were made with reference to historical expenditure and other information provided by GAWB.

[128] KPMG, *GAWB expenditure review*, final report, May 2020, p. 167.
[129] KPMG, *GAWB expenditure review*, final report, May 2020, pp. 183–84.

KPMG found limited information on the assumptions and drivers underpinning the proposed administration cost expenditures. KPMG said that many costs are forecast to increase over the 2020–25 period, but minimal explanations are provided, and in some cases it is not clear from the description that the cost items are prudent and would deliver value for customers.[130]

KPMG recommended an alternative forecast that is consistent with the average expected spend during the 2015–20 period. This forecast is around 15 per cent lower than GAWB's proposal, but around 7 per cent higher than actual expected costs in 2015–20. We reviewed GAWB's proposal and supporting information, and noted the limited information in support of the proposed administration cost increases. For this reason, we considered KPMG's proposed approach of using average spend during 2015–20 was an appropriate alternative in the absence of further justification for GAWB's forecasts.

The council submitted that GAWB has expanded its administrative and office overheads during the 2015–20 period, with two offices in Gladstone and one in Brisbane. The council said its residents should only be responsible for funding prudent administrative overheads, and as such, the current office overheads appear excessive for the size of the business.[131]

We note that GAWB is in the process of selling its former office premises in Gladstone. With regard to the Brisbane office, we consider this a reasonable expense, provided the cost is not excessive.

On balance, we consider GAWB has not demonstrated the prudency and efficiency of its forecast administration costs overall. Based on our assessment of GAWB's proposal and supporting information, and KPMG's advice, we consider that an alternative forecast based on average actual spend during 2015–20 is reasonable, subject to updating for our revised escalators and efficiency factor (Table 13). GAWB considered administration costs to be immaterial and did not provide further information to support its forecasts.[132] GAWB's revised forecast reflects updated escalation factors only.

Table 13 Administration costs—QCA findings

	2020–21	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***Total***
GAWB's proposal ($m)	1.73	2.19	1.78	1.88	1.92	**9.50**
GAWB March 2020 submission ($m)	1.72	2.18	1.76	1.86	1.89	**9.41**
QCA findings ($m)	1.55	1.54	1.58	1.65	1.66	**7.98**

Note: The values are before application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.11—Administration costs

The QCA finds an appropriate total forecast for GAWB's administration costs during 2020–25 is $7.98 million.

[130] KPMG, *GAWB expenditure review*, final report, May 2020, p. 183.
[131] GRC, sub. 15, p. 3.
[132] GAWB, sub. 33, pp. 8, 23.

3.8.9 Chemicals

GAWB uses a range of chemicals to store, deliver and treat water and in its fish hatchery activities. The consumption of chemicals is largely a function of water demand and water turbidity conditions.

GAWB forecast chemicals opex of $3.87 million for 2020–25. This is around 20 per cent higher than total expected chemicals costs during 2015–20.

GAWB's chemicals costs during the 2015–20 period were lower than originally forecast. GAWB attributed this to a combination of a low level of inflows, limited severity of weather events (i.e. cyclones or significant weather depressions can result in high levels of turbidity) and a limited presence of blue-green algae.[133]

GAWB developed its chemicals forecast using a bottom-up build of chemical quantities based on historical usage and the expected cost of purchasing these chemicals. GAWB considered that its actual costs in the 2015–20 period are not representative of normal chemical consumption, due to uncharacteristic weather.[134] GAWB forecast chemicals costs for the 2020–25 period on the same basis as in previous reviews, when there was a more normal distribution of weather events.

GAWB applied DAE's annual escalator of 3.03 per cent, based on DAE's forecast crude oil price, lagged by one year. DAE forecasts crude oil prices as part of its regular macroeconomic forecasting. This escalator was adopted because DAE observed a correlation between the producer price index (PPI) for basic chemicals and chemical products, and movements in crude oil prices.

KPMG noted that GAWB did not provide a detailed breakdown of historic actuals and forecasts by prices and volumes that would allow it to test the efficiency of GAWB's forecast, or the basis for assuming a return to 'normal' weather conditions. However, KPMG noted that the forecast is lower than the forecast accepted in the 2015 investigation, after accounting for price increases and growth in water volumes during the 2020–25 period.[135]

KPMG examined GAWB's actual chemical costs in 2018–19 and noted that the costs were lower than previously forecast. In the absence of more detailed information, KPMG considered 2018–19 costs to be a reasonable basis for developing an alternative forecast. We consider this to be a reasonable alternative method, given we have been unable to verify the efficiency of GAWB's forecasts with reference to historical price and volume information.

KPMG found DAE's escalator was likely to be high, based on current market conditions. KPMG recommended that GAWB's chemical costs be maintained at 2020–21 levels in 2018–19 dollar terms, and that costs be escalated by forecast CPI only. GAWB did not accept the findings on cost escalation for chemicals costs and maintained the DAE escalator, based on the crude oil price, is appropriate.[136] GAWB's March 2020 revised forecast reflects updated escalation factors only.

KPMG acknowledged that the variability in chemical prices show a strong correlation with the variability in oil prices. However, KPMG noted that, for at least the past decade, growth in chemical prices have been well below growth in CPI. KPMG maintained that CPI was an appropriate escalator for GAWB's chemical costs, and considered it is likely to be a generous

[133] GAWB, QCA RFI 101–103.
[134] GAWB, QCA RFI 101–103.
[135] KPMG, *GAWB expenditure review*, final report, May 2020, p. 158.
[136] GAWB, sub. 33, p. 37.

escalator over the longer term.[137] We examined the relationship between CPI and chemical costs and share KPMG's view that CPI is a more appropriate escalator to apply.

Based on our assessment of GAWB's proposal and supporting information, we consider GAWB's chemicals costs are prudent but have not been demonstrated to be efficient. As the basis for GAWB's forecast could not be fully verified, we consider it reasonable to adopt an alternative forecast based on 2018–19 actual chemicals costs escalated by our revised CPI estimate (Table 14).

Table 14 Chemicals costs—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	0.72	0.74	0.78	0.81	0.83	**3.87**
GAWB March 2020 submission ($m)	0.73	0.75	0.78	0.79	0.81	**3.86**
QCA findings ($m)	0.68	0.70	0.72	0.73	0.75	**3.59**

Note: The values are before the application of efficiency adjustments. Totals may not add due to rounding.

Finding A3.12—Chemicals costs

The QCA finds an appropriate total forecast for GAWB's chemical costs during 2020–25 is $3.59 million.

3.8.10 Council charges

GAWB pays council charges (rates) to the Gladstone Regional Council. GAWB forecast council charges of $2.7 million for 2020–25, which is around 30 per cent higher than total actual rates during 2015–20.

KPMG noted that the actual council rates in the 2015–20 period were higher than anticipated at the time of the 2015 investigation. It considered that GAWB's forecast costs for 2020–21 are lower than the current 2019–20 costs and are a reasonable basis for forecasting.[138]

GAWB proposed to use DAE's proposed 'council charges' composite escalator of 2.82 per cent to derive nominal rates forecasts. KPMG found the escalator was reasonable, but recommended that the individual component weightings be updated with more recent 2018–19 data reported by the council (section 3.7). GAWB accepted this revision.[139] GAWB's March 2020 revised forecast reflects updated escalation factors only.

Based on our assessment of GAWB's proposal and supporting information, we consider GAWB's rates cost forecasts are prudent and efficient. Nonetheless, we have applied revised cost escalators based on updated weightings, and our revised CPI and WPI estimates. In our view, this reflects a more accurate and up-to-date composition of component costs, compared with GAWB's proposal. While the difference due to revised escalation is not material, the escalators apply to costs more broadly, and we consider it reasonable to update these values to reflect the most recent available data.

[137] KPMG, *GAWB expenditure review*, final report, May 2020, p. 159.
[138] KPMG, *GAWB expenditure review*, final report, May 2020, p. 162.
[139] GAWB, sub. 33, pp. 35–36.

Table 15 Council charges expenditure—QCA findings

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal ($m)	0.51	0.53	0.54	0.56	0.57	**2.71**
GAWB March 2020 submission ($m)	0.51	0.52	0.54	0.55	0.57	**2.68**
QCA findings ($m)	0.50	0.51	0.53	0.54	0.56	**2.65**

Note: Council charges are considered non-controllable costs and do not attract an efficiency adjustment. Totals may not add due to rounding.

Finding A3.13—Council charges

The QCA finds an appropriate total forecast for GAWB's council charges (rates) during 2020–25 is $2.65 million.

3.9 Efficiency factor

Regulators typically apply two types of efficiency adjustments to controllable opex:

- a catch-up efficiency—a firm-specific target to move a business closer to the efficient frontier (typically measured as the best performing comparable businesses)
- a continuing efficiency—an industry-wide target reflecting the movement of the efficient frontier over time as productivity improves, for example, due to innovation.

GAWB proposed to apply a static (non-compounding) continuing efficiency factor of 1 per cent per year to its controllable operating and maintenance costs.

3.9.1 Static vs compounding efficiencies

KPMG recommended that the efficiency factor be applied on a compounding, rather than static, basis. KPMG noted that compounding efficiency factors are more common regulatory practice. With a compounding factor, efficiency targets from previous years are locked into future years. A static factor simply nets off a constant efficiency percentage target from the base cost forecast each year. That is, the impact of previous years' efficiency targets is not carried forward into future costs.[140]

3.9.2 Application of efficiency factor

GAWB considered some of its opex costs to be uncontrollable and did not apply its efficiency factor to these costs (Table 16). GAWB said that these costs comprise around 24 per cent of its opex forecast.

KPMG recommended that we expand GAWB's definition of controllable opex to include most of these costs.[141] We consider this approach is reasonable and note it is consistent with our approach for Seqwater bulk water prices in 2018.[142] We consider that although GAWB may be a

[140] KPMG, *GAWB expenditure review,* final report, May 2020, p. 189.

[141] An efficiency factor is not applied to external audit and regulatory fees, council charges (rates), licences, fees, permits and land or subscriptions and publications as these are considered non-controllable. Maintenance costs also do not attract an efficiency factor for the reasons described in section 3.8.2.

[142] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, pp. 30–31.

price-taker for these costs to an extent, it does retain some control over the drivers for incurring these costs.

In response to our draft report, GAWB did not agree that land lease payments; electricity fixed charges; water treatment plant operators (employment costs) and insurance costs are controllable.[143]

KPMG acknowledged that, while GAWB has some ability to influence its electricity fixed charges, it faces material constraints in achieving savings within the 2020–25 pricing period.[144] We share KPMG's view in this instance and note that GAWB has limited control over its locational decisions for its electricity network and connection assets. Further, while there may be opportunities for GAWB to invest in distributed energy sources to reduce its network (and wholesale) costs, these will not always represent prudent and efficient solutions.

We also consider there is a case for not imposing efficiency targets on GAWB's forecast insurance costs at this time given recent catastrophic bushfire events, which will likely affect the insurance market in the near future. We maintain that insurance costs are at least partly controllable and note that GAWB has demonstrated it has control over the timing and manner in which it goes to market for cover. Nonetheless, we have taken a conservative approach and have not applied the efficiency factor to insurance costs at this time.

Table 16 GAWB controllable costs

Cost category	*GAWB proposal*	*QCA position*
Environmental compliance costs, handling of trade waste, water testing quality and management and land lease payments	✖	●
Fixed electricity charges	✖	✖
Chemicals	✖	●
Employment costs for water treatment plant operators	✖	●
Council rates	✖	✖
Insurance costs	✖	●
External audit fees and QCA regulatory fees	✖	✖

Note: 'x' denotes a non-controllable cost and 'o' denotes a controllable cost.

3.9.3 Level of efficiency adjustment

KPMG said that GAWB's proposed factor was on the lower end of the range of targets set by regulators and proposed by other water businesses. KPMG said there was a strong case for a higher efficiency adjustment, as it:

- reflects GAWB's proposed expenditure on systems improvement and new initiatives, which aim to improve the quality and efficiency of GAWB's delivery of services
- could reflect an element of both catch-up and continuous efficiency

[143] GAWB, sub. 33, pp. 38–41.
[144] KPMG, *GAWB expenditure review*, final report, May 2020, p. 138.

- is consistent with other regulators' practices and with what has been proposed and achieved by water businesses in similar circumstances to GAWB.[145]

KPMG recommended applying an efficiency factor of 1.8 per cent per year (compounding), based on the average adjustment proposed by Victorian water businesses in the 2018 PREMO review.[146]

QCA conclusion

Given the challenges that KPMG faced in verifying the prudency and efficiency of some of GAWB's opex estimates, we consider a more challenging annual efficiency factor may be appropriate.

We note the basis for KPMG's recommended efficiency factor. However, we are mindful that comparisons with efficiency factors applied in other specific contexts should be made cautiously. For example, some of the larger adjustments by the Victorian water businesses in the 2018 PREMO review may have been proposed in the context of growing retail demand forecasts, which is different to the demand for bulk water faced by GAWB in 2020–25 (Chapter 8). Consequently, we adopted a more conservative approach and applied GAWB's proposed efficiency target of 1 per cent, but applied it as an annually compounded, rather than static, adjustment. GAWB accepted this approach in response to our draft report. GAWB acknowledged the need to deliver its services more efficiently and ultimately at a lower price.[147]

We consider this conservative approach, along with an expanded definition of controllable opex, is reasonable and is within the range of approaches adopted by other Australian regulators.[148] This approach should also present a stronger, ongoing incentive to GAWB to reveal prudent and efficient costs during the 2020–25 period.

After making all other expenditure adjustments set out in this chapter, the application of this efficiency target results in an estimated total incremental reduction of $3.9 million to total forecast opex.

The council questioned what will happen if GAWB's efficiency targets are not met. The council noted GAWB's apparent history of overspending relative to cost projections, and prices being reset at new, higher cost levels at each review.[149]

We acknowledge that an efficiency factor is not a binding constraint on GAWB's actual expenditure, nor is it on any regulated utility—it merely restricts the costs passed through to consumers of the service. Under the existing regulatory framework, GAWB is not subject to ex post adjustments that would make it accountable for actual opex overspends, or carryover mechanisms that promote sharing of efficiencies with its customers. Such mechanisms could be considered in future. Nonetheless, it would be incumbent on GAWB to propose such arrangements, preferably with the support of its customers.

[145] KPMG, *GAWB expenditure review,* final report, May 2020, p. 192.
[146] PREMO (Performance, Risk, Engagement, Management, Outcomes) refers to the regulatory framework applying to water businesses in Victoria, established by the Essential Services Commission.
[147] GAWB, sub. 33, pp. 37–38.
[148] For example, in IPART's March 2020 draft report on WaterNSW prices, it applied a cumulative continuing efficiency of 0.8% per year. This is also consistent with IPART's approach for Sydney Water and Hunter Water. IPART, *Review of prices for Water NSW Greater Sydney from 1 July 2020*, draft report, March 2020.
[149] GRC, sub. 15, p. 3.

3.10 QCA findings

We have not seen compelling evidence that GAWB's proposed 30 per cent nominal (20% real) increase in total opex compared to 2015–20 is prudent and efficient, when considered in aggregate, and compared to actual historical costs and trends.

Based on our review, and considering KPMG's advice, we find that an overall opex forecast of $157.43 million is a reasonable estimate of prudent and efficient operating costs for the 2020–25 pricing period (Table 17). Our estimated opex is $15.8 million (9.1%) lower than GAWB's proposed opex due to:

- revised cost escalators, including updates to reflect more recent information
- adjustments to individual opex forecasts by function
- applying GAWB's proposed efficiency factor of 1 per cent per year on a compounded, rather than static, basis.

Nonetheless, our estimated opex allowance represents a nominal increase of around 18 per cent (9 per cent real), compared with GAWB's total actual opex during 2015–20. We consider GAWB should be able to operate within this allowance by prioritising expenditures, as required, to meet its operational requirements and the needs of its customers.

We share KPMG's view that GAWB should consider ways to more transparently document, and explain to customers, divergences from forecasts including drivers of those changes. Opex represents a major portion of GAWB's revenues, and overspending is a key concern that GAWB's customers have raised. We encourage GAWB to ensure its actual expenditure is transparently explained to its customers.

In modelling our estimated opex allowances, we were unable to fully replicate GAWB's allocation methods without making arbitrary assumptions about the allocation of our adjustments to individual cost components at the general ledger level. We did not consider it appropriate to make such assumptions. As such, our proposed adjustments may result in slightly different component opex values, should GAWB adopt our findings in its own pricing model. We do not consider these differences will be material.

Table 17 GAWB opex for 2020–25—QCA findings

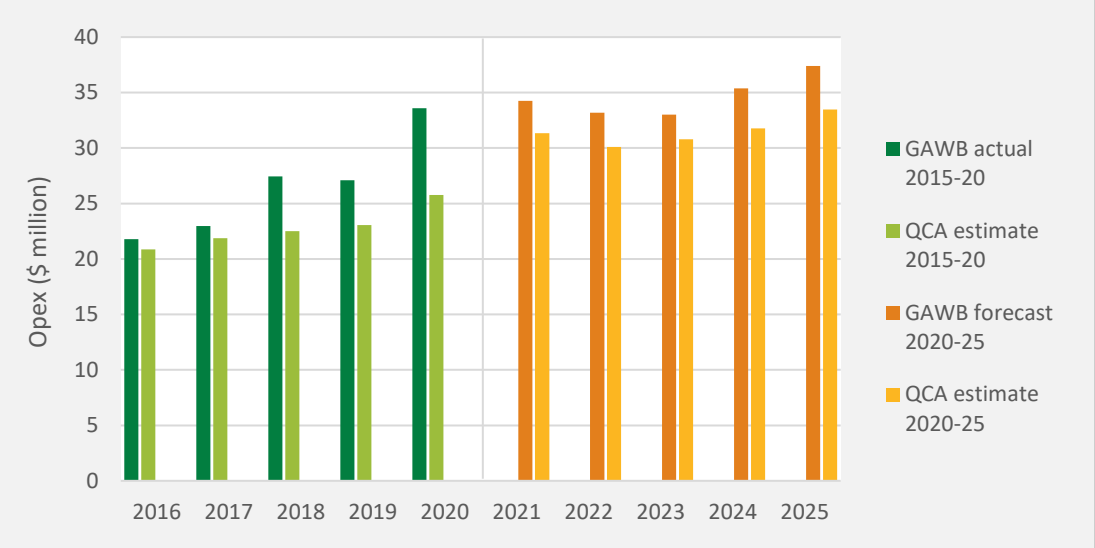
Category ($m)	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's forecast (before efficiency adjustments)	34.52	33.44	33.25	35.65	37.69	**174.56**
GAWB efficiency adjustments	(0.26)	(0.25)	(0.25)	(0.27)	(0.29)	**(1.33)**
GAWB's forecast (including efficiency adjustments)	34.26	33.19	33.00	35.38	37.41	**173.23**
QCA findings ($m)						
Operations	2.07	2.14	2.20	2.27	2.32	**11.01**
Maintenance	3.18	3.28	3.38	3.46	3.56	**16.85**
Electricity	2.57	2.49	2.49	2.49	2.49	**12.54**
Chemicals	0.68	0.70	0.72	0.73	0.75	**3.59**
Employment costs	12.90	13.22	13.66	13.94	14.43	**68.15**

Category ($m)	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
Rates	0.50	0.51	0.53	0.54	0.56	**2.65**
Insurance	1.43	1.40	1.49	1.67	1.67	**7.66**
Information systems	3.19	2.78	2.91	3.09	3.01	**14.97**
Professional services	3.51	2.50	2.59	2.96	4.37	**15.92**
Administration	1.55	1.54	1.58	1.65	1.66	**7.98**
Subtotal ($m)	31.58	30.58	31.54	32.81	34.81	**161.32**
Efficiency savings	(0.25)	(0.49)	(0.76)	(1.05)	(1.34)	**(3.89)**
Total ($m) (including proposed efficiency savings)	31.34	30.09	30.78	31.76	33.46	**157.43**

Note: We have not adopted KPMG's recommended project progression opex allowance relating to the UV disinfection capital project (see Chapter 4). Totals may not add due to rounding.

Source: QCA analysis.

Figure 4 GAWB's opex for 2015–20 and 2020–25—QCA estimates and GAWB actual/forecast



Note: 2020 values represent GAWB projections.

Source: GAWB, Responses to QCA RFI 85–86, 95–114; KPMG and QCA analysis.

Finding A3.14—Opex 2020–25

The QCA finds an appropriate opex forecast for GAWB for the 2020–25 period is $157.43 million.

The QCA considers GAWB should more transparently document divergences in expenditures from forecast, including identifying drivers of those changes. Overspending is a key concern that GAWB's customers have raised, and the QCA encourages GAWB to ensure its actual expenditure is explained clearly to customers.

4 CAPITAL EXPENDITURE

Capital expenditure (capex) includes expenditure to upgrade or replace an existing asset or build a new asset.[150] We assessed GAWB's policies, procedures and frameworks, along with GAWB's proposed historical capex from 2015–20 and forecast capex for 2020–25.

The QCA reviewed GAWB's capex and found that:

- GAWB's policies, procedures, frameworks and capital governance are sound (section 4.3.4)
- GAWB's capex from 2015–20 appears prudent and efficient, with the exception of an overstatement of the capitalised value of its corporate premises (section 4.4.5)
- GAWB's forecast capex for 2020–25 may be overstated by around $10.3 million[151] (section 4.5.1). This view is mostly due to:
  - insufficient evidence of prudency and/or efficiency for one capital project
  - an adjustment made by GAWB to the project scope and timing of two capital projects[152]
  - insufficient justification for the inclusion of a contingency allowance for recreational strategy investment
  - revised cost escalation and interest during construction.

Adjusting for these findings, we estimate a prudent and efficient capex allowance for the 2020–25 period of $168.5 million, which is 6 per cent lower than GAWB's original proposal of $178.8 million.

4.1 GAWB's capital expenditure proposal

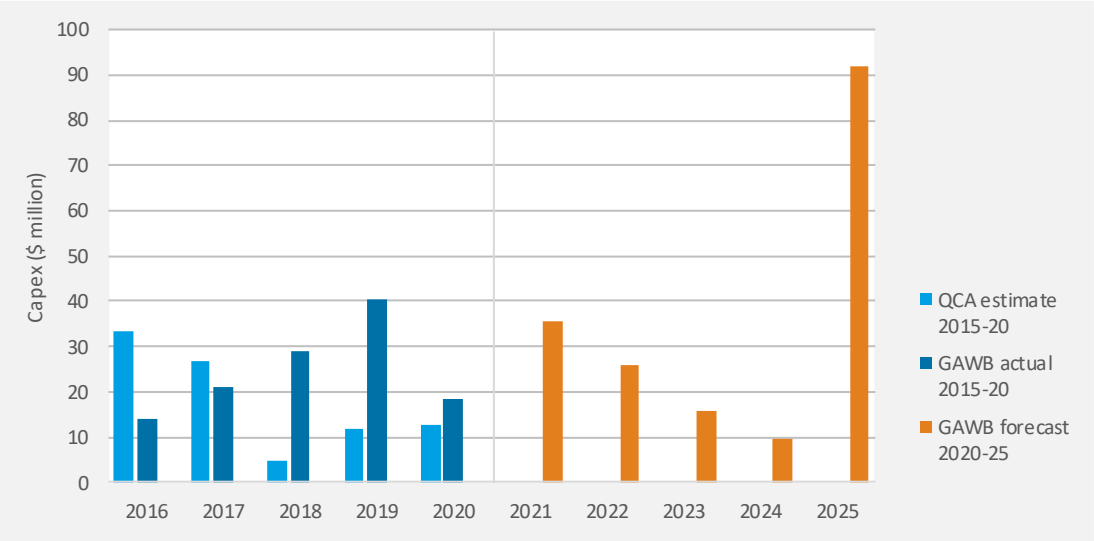
GAWB expects to incur capex during the 2015–20 period that is around 37 per cent higher than our estimate of prudent and efficient capex in the 2015 investigation. GAWB has also forecast a 46 per cent increase in total capex for the 2020–25 pricing period compared with actual expenditure for the 2015–20 period (Figure 5).

Stakeholders raised concerns with the prudency and efficiency of GAWB's capex, including that GAWB's expenditure exceeded its allowances in the 2015–20 period and with GAWB's proposed increases in capex for the 2020–25 period.[153] Stakeholders also expressed concerns that GAWB has no incentives to remain within forecast allowances or to further control and optimise its costs.[154] ConocoPhillips suggested that the pricing structure should be revised to include incentives for GAWB to optimise and control its costs.[155] CS Energy submitted it would welcome

[150] Capex may relate to a diverse program of capital works on a single asset or a program of capitalised works on a series of assets.
[151] Totals may not add due to rounding.
[152] In response to our draft report, GAWB brought forward the completion date of the expansion of the Boat Creek pump station and adjusted the scope and timing of the Calliope River bridge pipeline replacement. We found both of these revised projects to be prudent and efficient.
[153] GRC, sub. 15, p. 3; CS Energy, sub. 14, pp. 1–2; ConocoPhillips, sub. 16, p. 2; WICET, sub. 13, p. 1; Callide Power Management, sub. 11, p. 3.
[154] WICET, sub. 13, p. 1; ConocoPhillips, sub. 16, p. 2.
[155] ConocoPhillips, sub. 16, p. 2.

more transparency and regular updates on GAWB's capex program during the 2020–25 period to anticipate potential accumulated over- or under-recovery.[156]

Figure 5 GAWB's 2015–20 capex and forecast 2020–25 capex



Note: Capex includes interest during construction. The 2020 values include estimated capex. The step change in capex in 2025 is attributable to $61 million in Awoonga Dam spillway upgrade costs.

Sources: QCA RFI 33–34, 39–40; GAWB, Building Block Model, submission, September 2019; GAWB, Roll Forward Model, submission, September 2019.

Callide Power Management submitted that capex should yield benefits, either as improved productivity, reduced risk or reduced contingent liabilities. It said that the benefits of increased capex should be reflected in prices, or through improved service levels or reduced risk profiles. Callide Power Management also considered that security and reliability of supply should be appropriately balanced with the level of required capex and the customer's ability and desire to separately manage these risks.[157]

4.2 Assessment approach

The Directions ask us to form a view on prudent and efficient capex (including costs associated with catchment management and recreation facilities).[158] We began by reviewing GAWB's capital planning frameworks and governance procedures. In accordance with the Directions, our investigation then focused on assessing a sample of capital expenditures that are material to prices. We reviewed this sample of historical and forecast projects to test their prudency and efficiency and to assess the application of frameworks and governance processes in practice.

4.2.1 Prudency and efficiency

The QCA considers capex is prudent if it:

- is required as a result of a legal obligation (compliance), new growth, replacement or renewal of existing infrastructure, or
- achieves an outcome that is explicitly endorsed or desired by customers, external agencies, or participating councils (e.g. improved reliability or quality of supply of services).

[156] CS Energy, sub. 22, p. 1.
[157] Callide Power Management, sub. 11, pp. 3–4.
[158] Referral and direction notice, sections B(1.1)(a) and (e).

The QCA considers capex is efficient if:

- the scope of the works represents the best means of achieving the desired outcomes after having regard to the options available, including non-network solutions, and substitution possibilities between operating expenditure (opex) and capex
- the standard of the works conforms to technical, design and construction requirements in legislation, industry and other standards, codes and manuals
- the cost of the defined scope and standard of works is consistent with conditions prevailing in the relevant markets.

4.2.2 Consultant review

We engaged KPMG (in partnership with Arup) to provide technical advice to inform our assessment of GAWB's capex. KPMG's review involved:

- reviewing GAWB's policies and procedures (including frameworks for governance, procurement, capital planning, project management and asset management) for consistency with good practice, providing for appropriate controls (e.g. approvals) and the mitigation of potential risks
- reviewing GAWB's historical and forecast capex first at the portfolio level, then at the project level, based on a sample of representative and material projects
- identifying any systemic issues from the project reviews and drawing on the assessment of GAWB's governance, capital planning and asset management frameworks
- assessing potential trade-offs between capex and opex
- assessing the reasonableness of proposed cost escalation rates.

4.2.3 Key considerations

We considered all aspects of GAWB's proposed capex and had regard to matters raised by stakeholders. The key considerations for this investigation are:

- GAWB's policies, procedures and capital governance frameworks
- the prudency and efficiency of GAWB's historical capex for the period 1 July 2015 to 30 June 2020
- the prudency and efficiency of GAWB's forecast capex for the period 1 July 2020 to 30 June 2025, including cost escalations.

Specific capex projects and matters identified for further review are discussed in the relevant sections below.

4.3 Policies, procedures and frameworks

KPMG reviewed GAWB's supporting policies and procedures, detailing GAWB's overarching governance, procurement, capital planning and asset management frameworks. It then sought to test how GAWB applied the frameworks when developing its capex (and opex) proposals.

4.3.1 Procurement

GAWB maintains a detailed procurement framework, which is aligned with the Queensland Government's Procurement Policy 2018. GAWB's procurement framework is supported by a comprehensive suite of documents and templates.

KPMG found that GAWB's procurement and governance process indicated a robust end-to-end process, supported by guidelines and templates. KPMG noted that the procurement practices demonstrate a commitment to the Queensland economy. KPMG found that there was alignment between procurement strategies and business templates, which shows how strategic principles are embedded in procurement decisions.

4.3.2 Asset management frameworks

KPMG found that GAWB demonstrates a commitment to continuous improvement of its asset management systems and alignment with leading practice frameworks. This is evidenced by GAWB's implementation of asset management improvement initiatives, and certification against the international 'ISO 550001'[159] asset management standards. [160]

4.3.3 Capital planning and project management

GAWB maintains a project management framework to support the justification of its capital investment decisions. GAWB's framework identifies the need for capex projects based on the following drivers:

- risk—a project is required to address a credible risk in GAWB's current operating environment (the project will lower the existing residual risk rating to an acceptable level)
- regulation—a project is required to comply with a requirement of law or regulation
- replacement—a project is required to replace assets that are assessed as either at the end of their useful life or are no longer maintainable
- capacity—a project is required to meet increased customer demand through the augmentation of water sources or the delivery network
- business process improvement—a project is justified by expected efficiencies to GAWB's operations or an explicit request from the community or customers.[161]

GAWB applies a risk-based gateway approach to capital planning and approvals, which is described in its project management framework. Projects are assigned to one of four classifications, based on a risk assessment. Each risk classification requires a different project delivery model, which specifies different gateway and approvals requirements based on the degree of risk. This framework is supported by GAWB's Project Review Committee, which monitors the capital plan and determines expenditure priorities.

KPMG found that GAWB demonstrates a robust approach to capital planning. However, it identified a number of specific potential improvements to GAWB's capital planning and governance frameworks, which are detailed in its report for GAWB's consideration.[162] These potential improvements relate largely to:

- the level of detail and transparency in the framework documentation, and
- the potential for clearer alignment between strategic and asset management objectives and investment decision-making criteria.

[159] This standard is an international asset management standard that specifies requirements for asset-intensive organisations to implement better asset management practices.
[160] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. 11.
[161] GAWB, sub. 1, pp. 101–102.
[162] KPMG, *GAWB expenditure review 2020*, final report, May 2020, pp. 11–16.

4.3.4 QCA conclusion

While KPMG identified some opportunities for improvement in GAWB's capital planning and asset management framework, there is evidence that GAWB is committed to the continued improvement and refinement of its frameworks and their application. GAWB appears to maintain robust capital planning and governance frameworks, and we have not seen evidence to suggest systemic flaws or significant deficiencies that would introduce bias to GAWB's forecasting.

KPMG noted the significant divergence between forecast and actual expenditure on some projects during the 2015–20 regulatory period. KPMG suggested there may be a systemic issue with capital project delivery and recommended that GAWB maintain more careful documentation of capital delivery against budget.[163]

We note that GAWB has underspent significantly on replacement capex during the 2015–20 period. KPMG said that this could demonstrate that these projects were able to be deferred, and capital resources could be reallocated in favour of higher-risk projects. KPMG raised concerns that GAWB may need to apply more effort to the asset management elements of its capital planning framework.[164]

We acknowledge that GAWB made improvements in asset management and capital planning in recent years, including achieving ISO 550001 certification for asset management and the development of its project management framework. These improvements are ongoing and will invariably produce transitional challenges. We expect GAWB will be able to demonstrate further improvements in its framework and the application thereof in future reviews as its systems mature and are refined.

Evidence that robust capital planning and governance processes are in place and are being consistently applied provides some comfort about the reasonableness of a business's investment decisions. However, it is not a guarantee that expenditure included in regulatory forecasts for pricing purposes reflects prudent and efficient costs. For example, capital projects may be expected to take place during the forecast period, but may be in very early stages of the gateway process. This can introduce uncertainty around the cost and timing of delivery.

Finding A4.15—Policies, procedures and frameworks

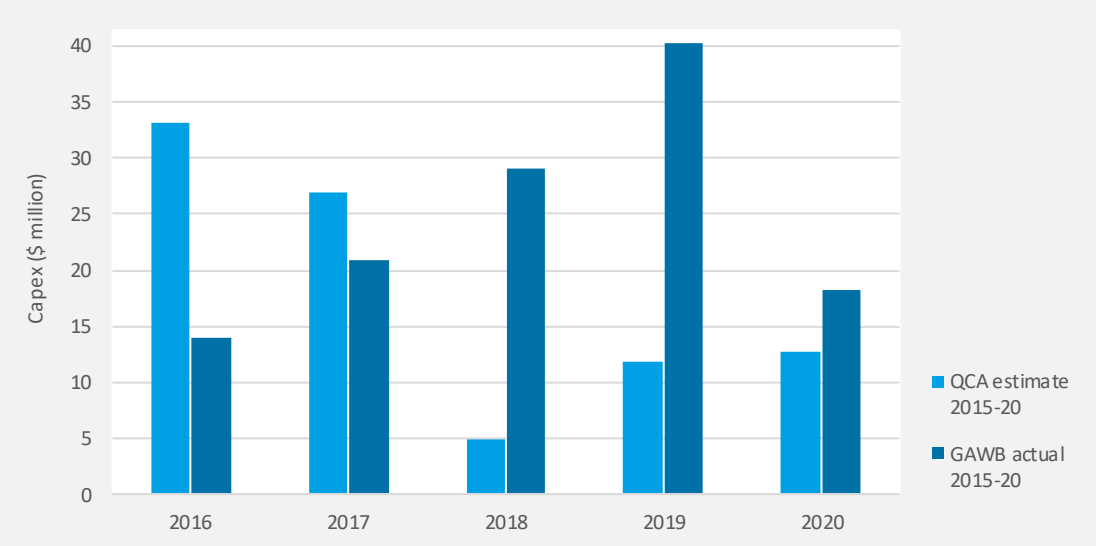
The QCA finds GAWB's capital planning and governance frameworks are robust. The QCA has not seen evidence to suggest systemic flaws or significant deficiencies that would introduce bias to GAWB's forecasting. However, the QCA encourages GAWB to consider the potential areas for improvement that KPMG identified in its report.

4.4 GAWB's 2015–20 capex

GAWB expects to incur $122 million in capex during the 2015–16 to 2019–20 pricing period.[165] This is $33 million (37%) more than the QCA's 2015 forecast estimate of prudent and efficient capex for this period (Figure 6). This additional expenditure appears largely attributable to the completion of GAWB's offline storage facility in 2018–19.

[163] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. xii.
[164] KPMG, *GAWB expenditure review 2020,* final report, May 2020, p. xii.
[165] Including estimated capex for 2019–20.

Figure 6 GAWB's 2015–20 capex—forecast and actual



Note: Capex includes interest during construction. The 2020 values include estimated capex.

Source: QCA RFI 33–34, 39–40; GAWB, Building Block Model, submission, September 2019; GAWB, Roll Forward Model, submission, September 2019.

Some stakeholders raised concerns with GAWB's overspend during the 2015–20 period.[166] The Gladstone Regional Council (the council) said that GAWB's historical forecasts should be subject to an ex post assessment if expenditure is consistently underestimated or divergent from the QCA's recommended expenditures.[167]

KPMG and Arup reviewed a sample of three capital projects (Table 18) that were undertaken during the current pricing period. In aggregate, the sample represents 43 per cent of the total costs that GAWB proposed to capitalise during the 2015–20 period.

Table 18 Sample of capex projects, 2015–20

Project	*GAWB's proposed capitalised amount ($m)*	*Driver*	*Pricing zone/category*
Awoonga Dam variable frequency drive replacement	6.66	Replacement	Awoonga to Toolooa
Offline storage and re-pump facility	38.04	Risk	Awoonga to Toolooa
Accommodation project	7.38	Business process improvement	Corporate
Total ($m)	52.08		

Note: Capex includes interest during construction.

Source: QCA RFI 33–34.

4.4.1 KPMG's key findings

KPMG and Arup undertook detailed engineering analysis of the prudency and efficiency of the sample projects. To the extent that prudent and efficient allowances for these projects were determined in previous QCA investigations, we asked KPMG to focus its review on any variation

[166] GRC, sub. 15, pp. 2–3; ConocoPhillips, sub. 16, p. 2; WICET, sub. 13, p. 1; Callide Power Management, sub. 11, p. 3.
[167] GRC, sub. 15, p. 2.

in scope and/or cost between the original allowance and the actual value that GAWB proposed to include in the RAB. Based on this analysis, KPMG found the sampled capex projects were prudent and efficient but recommended an adjustment to the capitalised value of the accommodation project (see section 4.4.4).

GAWB's actual spend on the 10 largest capex projects in the 2015–20 period reveals material overspends against GAWB's budgeted costs. KPMG said this raised potential concerns regarding the rigour of GAWB's capital planning and project management frameworks, and potentially the incentives it faces to control expenditure. However, KPMG acknowledged that exogenous factors, such as regulatory obligations, availability and costs of resources, and unknown costs may have contributed to these overspends.[168] It also acknowledged that overspends have been partially offset by underspends and savings in other projects. KPMG suggested that GAWB maintain more careful documentation of capital delivery against budgets.[169]

We considered KPMG's advice in forming our view on the prudency and efficiency of GAWB's capex for the 2015–20 period. We discuss our findings on the sampled projects in the sections below.

4.4.2 Offline storage and re-pump facility

During the 2015–20 pricing period, GAWB completed the construction of a 1,200 ML offline storage and re-pumping facility. This facility provides an additional supply of water for up to 14 days, independent of Awoonga Dam. The rationale for the investment was to enable GAWB to undertake condition assessments, maintenance and replacement of critical assets at Awoonga Dam, which is GAWB's sole source of bulk water supply for the Gladstone region.

During the 2015–20 price monitoring investigation, GAWB proposed to build the facility in the 2015–16 and 2016–17 financial years, at a total cost of $22.5 million, including interest during construction (IDC). In our 2015–20 investigation, we found this project to be prudent, but not efficient. Based on advice from our consultants (Jacobs), we concluded that a pontoon pump station may be a more efficient engineering solution. We considered an allowance of $13.91 million was appropriate, representing the estimated efficient cost of delivering the pontoon pump option.

GAWB maintained that the offline storage and re-pump facility was the preferred option, and completed construction of the project during the 2015–20 period at a total cost of $38 million. This represents an overspend of around 70 per cent compared with GAWB's original estimate of $22.5 million. GAWB attributed this overspend to obligations to upgrade the Gladstone/Benaraby and Skyring Hill Road intersection and to relocate essential services infrastructure. These requirements were not anticipated during project planning.[170]

KPMG found the additional capex incurred was prudent and efficient. While we previously considered a pontoon pump station to be the more efficient solution, we have seen sufficient evidence to support the offline storage facility as an appropriate option. We acknowledge that the cost of delivering the project exceeded GAWB's forecast due to unforeseen obligations imposed by the Department of Transport and Main Roads. Based on KPMG's advice, and our own review of GAWB's supporting information, we consider the project, and expenditure, is prudent and efficient.

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[168] KPMG, *GAWB expenditure review 2020*, final report, May 2020, pp. 43–44.
[169] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. xii.
[170] GAWB, sub. 1, pp. 103–104.

The council said that its own infrastructure provides up to four days of storage capacity to meet its demand. It noted GAWB's overspend on the project and submitted that residents should only pay a share of the costs required to deliver storage that is incremental to the council's existing storage capacity.[171] The council requested that GAWB consider a pricing discount in recognition of the council's ability to meet demand using its own storage for up to four days.[172] The council raised similar concerns during the 2015 price monitoring investigation. We maintain the view we expressed in the previous investigation, that this is a matter for GAWB to address in consultation with its customers.[173]

4.4.3 Awoonga Dam VFD replacement

In 2016–17, GAWB replaced two variable frequency drive (VFD) installations associated with pumps at the Awoonga Dam pump station. VFDs allow electric pump motors to be operated at variable speeds and can improve their efficiency.

GAWB submitted that the VFDs were nearing their end-of-life, and they were no longer supported with spare parts from the manufacturer.[174] We assessed this project as prudent in the 2015 investigation at an estimated cost of $4.21 million. GAWB completed this replacement at a capitalised cost of $6.66 million. We understand the additional expenditure was driven by delays due to weather, and the need to obtain further external assistance.

KPMG considered that the replacement, including the expenditure above the QCA's 2015 estimate, was prudent and efficient. Based on KPMG's advice and our own review of GAWB's supporting documentation, we consider the project and additional expenditure to be prudent and efficient.

4.4.4 Accommodation project

GAWB had previously maintained staff accommodation at two locations in Gladstone (147 Goondoon Street, and temporary demountable accommodation at the Gladstone Water Treatment Plant). GAWB proposed to purchase new accommodation at 136 Goondoon Street, sell 147 Goondoon Street and decommission the temporary accommodation at the water treatment plant. GAWB submitted that consolidating all staff at one location would offer a number of benefits, including space for growth and improved productivity through reduced staff travel time and vehicle costs.[175]

GAWB completed the purchase of 136 Goondoon Street in 2017. We understand the premises at 147 Goondoon Street has gone to market, but has not yet sold.[176] GAWB proposed to include a total of $7.38 million in the RAB for this initiative. KPMG found that the project was largely prudent and efficient, but considered that customers should not bear the cost of holding the unsold 147 Goondoon Street property. It recommended that the asset base be reduced by the expected minimum sale price of 147 Goondoon Street.[177]

In response to our draft report, GAWB submitted that the existing 147 Goondoon Street asset should be treated separately as an asset disposal; it should not be deducted from the capitalised project costs of the new premises. GAWB contended that a forecast of any disposal value will not

[171] GRC, sub. 15, p. 3.
[172] GRC, sub. 15, p. 3.
[173] QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, final report, May 2015, p. 32.
[174] GAWB, QCA RFI 38, Business Case Awoonga Dam VSD Replacement, p. 1.
[175] GAWB, QCA RFI 37, Accommodation Strategy Business Case, December 2016, pp. 13–14.
[176] As at February 2020.
[177] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. 62.

be captured in 2021–25 prices. Rather, an adjustment will be made as part of the RAB roll-forward and revenue adjustments at the end of the 2021–25 period.[178]

We consider KPMG's findings are correct in principle. However, we have not made an adjustment at this stage to reflect its recommendation, for two reasons:

- The impact of the adjustment on revenues and prices is not considered material in this instance.
- Making the adjustment would indirectly reveal GAWB's confidential information.

Nonetheless, we understand that since GAWB has completed the purchase of 136 Goondoon Street, the sale of 147 Goondoon Street is required—as per the business case for GAWB's accommodation strategy.[179] Therefore, we consider it is inefficient for GAWB to recover the cost of two premises from customers during the 2020–25 period. GAWB should make an appropriate adjustment through an asset disposal to the amount of the expected minimum sale price of 147 Goondoon Street before setting final prices for 2020–25. Otherwise, pricing outcomes for customers would be inefficient. Once the sale of 147 Goondoon Street has been finalised, an adjustment can be made for the realised sale value as part of the RAB roll-forward at the end of the relevant regulatory period.

4.4.5 QCA findings

Based on our review of GAWB's supporting documentation and KPMG's advice, we consider GAWB's capex for the 2015–20 pricing period is largely prudent and efficient.

We note KPMG's concerns regarding the capital overspends in the 2015–20 pricing period, but we are of the view that broader adjustments are not justified at this time. We do not consider there is evidence of systemic failures in GAWB's capital governance frameworks that would indicate biased forecasting or consistent overstatement of costs.

Variations in expenditure from forecasts are commonplace and do not necessarily indicate deficiencies in planning or governance processes. GAWB's actual capex delivered during 2015–20 differs significantly from expectations, both in scope and cost. This variation may be reasonable and indicative of prudent management responses to changing priorities or external drivers.

We consider GAWB is best placed to define its capital program and manage its delivery. It is our expectation that a prudent business would continually refine its capital program during the regulatory period and reallocate resources within its budget in response to new information and changing priorities.

Our approach under the price monitoring regime is to determine an ex ante capital forecast based on the estimated costs of delivering a prudent and efficient capital program. This approach usually results in over- or underspends and some changes in scope. We consider that ex post reviews are an appropriate mechanism to verify the prudency and efficiency of such variations.

We consider that as part of its capital management process, GAWB should consider ways to more transparently document divergences from forecast, including identifying drivers of those changes through internal ex post project reviews. Overspending on capex and opex is a key concern that GAWB's customers have raised, and we encourage GAWB to ensure its actual expenditure is explained clearly to customers.

[178] GAWB, sub. 33, pp. 42–46.
[179] GAWB, QCA RFI 37, Accommodation Strategy Business Case, December 2016, p. 3.

Finding A4.16—GAWB's 2015–20 capital expenditure

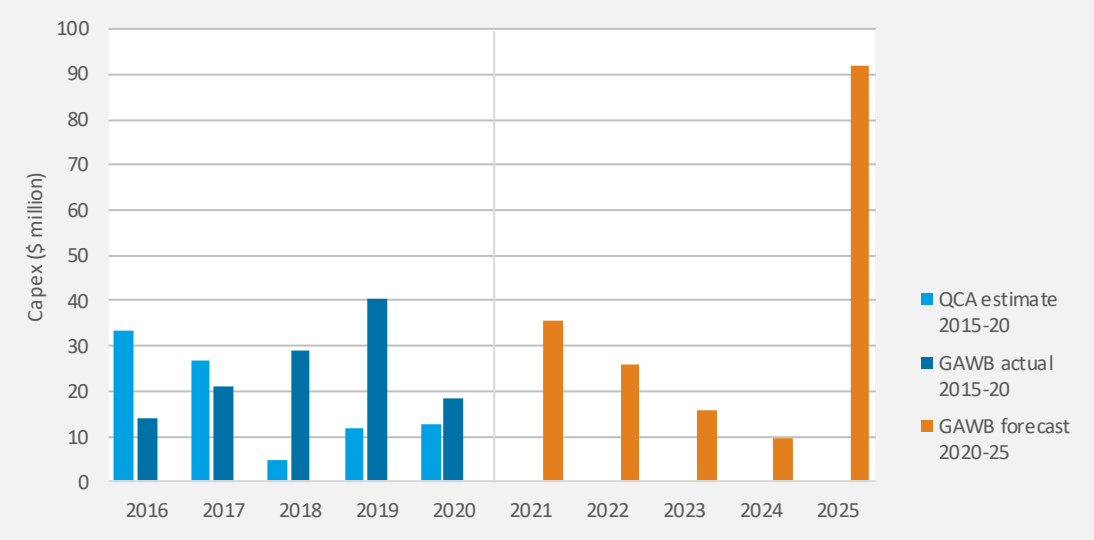
The QCA considers that an amount of $122 million of capex, expected to be incurred between 1 July 2015 and 30 June 2020, should be included in GAWB's opening RAB at 1 July 2020.

We encourage GAWB to consider ways to more transparently document divergences from forecasts, including identifying drivers of those changes, and to ensure that customers are informed of reasons for expenditures.

4.5 GAWB's 2020–25 forecast capex

GAWB proposed a capex program of $179 million in aggregate for the 2020–25 period. This is 46 per cent higher than actual capex in the 2015–20 period, and 100 per cent higher than the QCA's estimated prudent and efficient capex for the 2015–20 pricing period (Figure 7).

Figure 7 GAWB's 2015–20 capex and forecast 2020–25 capex

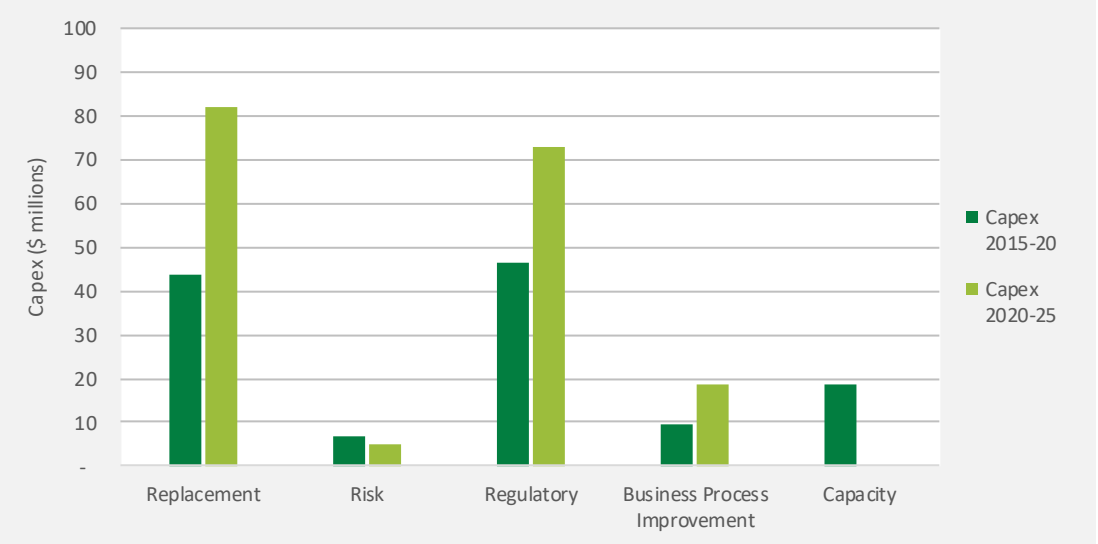


Note: Capex includes interest during construction. The 2020 values include estimated capex.

Source: QCA RFI 33–34, 39–40; GAWB, Building Block Model, submission, September 2019; GAWB, Roll Forward Model, submission, September 2019.

GAWB's forecast includes more regulatory, replacement and business process improvement capex , by value, compared with the 2015–20 period (Figure 8). While regulatory-driven projects represent a large contributor by value, the number of projects is expected to be lower than in 2015–20.

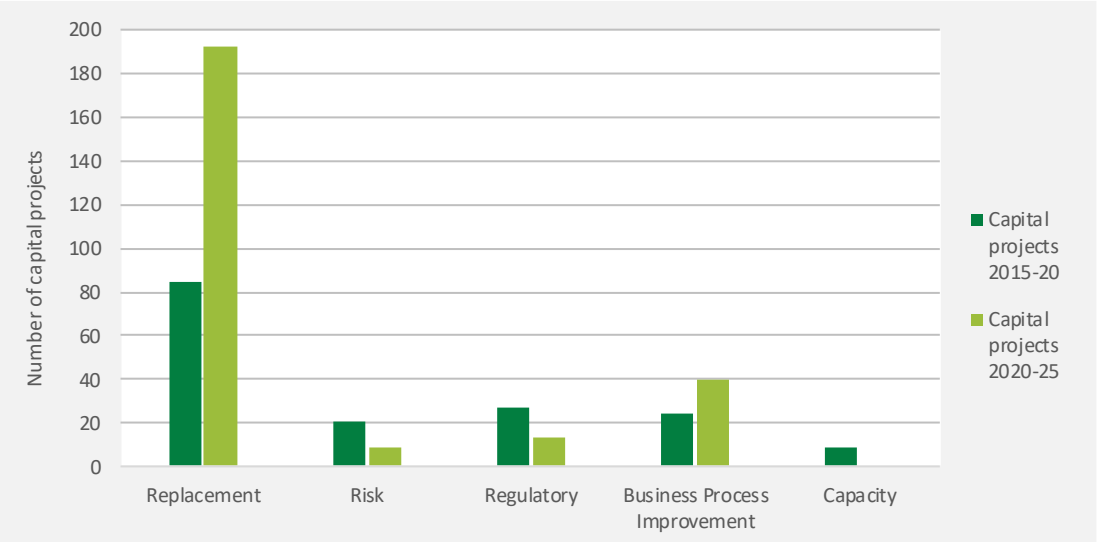
Figure 8 GAWB's capex by drivers and value—current and forecast period



Source: GAWB models provided to the QCA (QCA RFI 33–34, 39–40); QCA analysis.

By number of projects, replacement is the most significant activity, representing around 75 per cent of the total number of projects expected to be delivered during 2020–25 (Figure 9). GAWB expects close to 200 replacement projects in 2020–25—more than double the number of replacement projects undertaken during 2015–20. GAWB has not forecast any capacity-driven capex during the 2020–25 pricing period, which is consistent with GAWB's forecast for demand (Chapter 8).

Figure 9 GAWB's capex by drivers and number of projects—current and forecast period



Source: QCA analysis; GAWB models provided to the QCA (QCA RFI 33–34, 39–40).

The proposed overall increase in capex for 2020–25 is largely driven by a single capital project—the Awoonga Dam spillway upgrade ($61 million). Absent this expenditure, we estimate the forecast capex for 2020–25 would be around 4 per cent lower than the actual 2015–20 capex.

We engaged KPMG to review a sample of seven capex projects proposed for the 2020–25 pricing period (Table 19). The sample reflects a cross-section of GAWB's major asset classes and cost drivers for the period, capturing GAWB's core business activities. To determine the sample, we considered materiality at a broad level. We did not attempt to isolate the impact of individual

capital projects on prices in GAWB's individual pricing zones, or apply defined materiality thresholds. Using this approach, we identified a sample of projects with a projected value of $98 million, which represents 55 per cent of the total proposed capital program.

The seven selected projects range in value from $3.7 million to $60.7 million. The Awoonga Dam spillway upgrade is the largest single capital project proposed, and represents 34 per cent of GAWB's total forecast capex program by value. More than 62 per cent of the sample (by value) is attributable to the Awoonga Dam pricing zone. As that zone is the furthermost upstream pricing zone, all customers share the costs of capital expenditure in that zone.

Table 19 Sample of capex projects, 2020–25

Project	*Proposed capex ($m)*	*Capitalisation year*	*Asset class*	*Driver*	*Pricing zone*
Awoonga Dam spillway capacity upgrade—Stage 2 & 3	60.693	2025	Storage	Regulatory	Awoonga
South Gladstone Reservoir replacement	11.550	2025	Potable	Replacement	Gladstone WTP to South Gladstone
Connection to Gladstone Regional Council/Kirkwood Reservoir	7.057	2021	Potable	Business Process Improvement	Calliope
Expansion of Boat Creek pumping to increase resilience of the northern sector[a]	6.627	2025	Potable	Regulatory	Boat Creek to East End
Calliope River Bridge pipeline replacement [b]	4.306	2022	Potable	Replacement	Calliope
Gladstone Water Treatment Plant to South Gladstone Reservoir Stage 3	4.018	2021	Potable	Replacement	Gladstone WTP
Ultraviolet (UV) disinfection	3.698	2024	Potable	Regulatory	Gladstone WTP
Total sample value ($m)	97.952				

a In response to our draft report, GAWB updated the proposed capex to $6.107 million and the capitalisation year to 2023.

b In response to our draft report, GAWB updated the proposed capex to $0.308 million and the capitalisation year to 2021.

Note: Totals may not add due to rounding.

Source: QCA RFI 39–40.

4.5.1 KPMG's key findings

We asked KPMG to conduct detailed reviews of the sample projects and found that six of the seven projects were prudent and efficient. In KPMG's view, the remaining project did not demonstrate prudency and it recommended that the proposed cost be removed from the capex forecast, with the exception of a nominal allowance to continue the planning and appraisal process.

Projects in early stages of development

KPMG noted that some of the larger projects reviewed are in early stages of development (concept or scoping phases)—only limited documentation about them is therefore available, and cost estimates are subject to broad confidence intervals. Nonetheless, KPMG found the level of supporting documentation and rigour of the cost estimates reasonable in most cases, given the stage of the projects in the capital planning process.

Deliverability

KPMG expressed concerns about the deliverability of GAWB's significant replacement program, which is 87 per cent higher in value than the 2015–20 replacement program and is concentrated in the first two years of the forecast period. KPMG considered that GAWB may face challenges in contracting sufficient labour and services from the local market and suggested a more uniform replacement profile across 2020–25.

Moreover, KPMG considered that GAWB has yet to demonstrate robust internal processes for effectively managing large-scale contracts such as the Awoonga Dam spillway upgrade.

Capex–opex trade-offs

KPMG found that GAWB considers capex–opex trade-offs within its project management framework, but KPMG could not conclude whether this was a central element of the decision-making process. KPMG suggested that GAWB could enhance its framework by including additional net present value analysis of early options to provide stronger justification of chosen options.

Systemic issues

KPMG identified a number of issues that it considered may indicate systemic limitations in GAWB's capital planning and forecasting, including:

- a lack of detail around the standard of works required for projects in the early stages of capital planning. This lack of detail could lead to a number of variations being required to the standard of works to successfully deliver the project
- a potential bias toward replacement over refurbishment/maintenance on the basis of risk, rather than asset performance and condition. KPMG recommended that GAWB undertake more condition assessments to justify replacement and actively explore non-replacement options
- the identification of customer requirements for high reliability as drivers of some investments. KPMG said there appears to be an assumption that customers are not willing to accept any risk of supply interruptions, although it is not clear that this assumption has been tested with customers.

Notwithstanding these issues, KPMG found there was no strong rationale to justify broader adjustments to the non-sampled capex program. KPMG recommended that GAWB consider its suggested improvements to bring greater rigour and transparency to the capex forecasting and governance processes. KPMG noted that GAWB is seeking independent consultant advice on elements of its asset management processes.[180]

[180] KPMG, *GAWB expenditure review 2020*, final report, May 2020, pp. xv–xvi.

We considered KPMG's advice in forming our view on the prudency and efficiency of GAWB's forecast capex for the 2020–25 period. We discuss our findings on the project that was not found to be prudent or efficient, and other issues that we identified, in the sections below.

4.5.2 Awoonga Dam spillway upgrade—Stage 2 and 3

GAWB's largest single capital project for 2020–25 is the proposed upgrade of the Awoonga Dam spillway and slabs to meet impending dam safety requirements regarding Queensland's acceptable flood capacity guidelines.[181] These safety requirements set standards for the ability of a dam to safely discharge floodwater. GAWB expects to spend $61 million in 2024–25 to complete these works.

The proposed project consists of work required to satisfy two acceptable flood capacity requirements, one of which must be met by 2025 (65% acceptable flood capacity) and a second which must be met by 2035 (100% acceptable flood capacity). GAWB's proposed project would fulfil compliance with both requirements by 2025 and would require:

- anchoring and concrete lining of the lower spillway to meet the 65 per cent level (required by 2025)— Stage 2
- repairing of flood damage to the lower spillway apron and the installation of an aerator slab and anchoring to prevent future damage and meet the 65 per cent level (required by 2025)— Stage 2
- anchoring the concrete spillway crest to improve stability to meet the 100 per cent level (required by 2035)— Stage 3.

Some stakeholders questioned GAWB's proposal to accelerate its dam safety expenditures to comply with obligations well in advance of the regulatory obligation taking effect. Specifically, they queried the need to undertake both stages of work simultaneously to be completed by 2025, because the work required to comply with the 2035 requirements could be deferred. This ensures existing customers are not subsidising future customers.[182]

Based on our review of the relevant supporting information, we understand it is unlikely that there is any scope for GAWB to defer Stage 2 of the works, while remaining compliant with its dam safety obligations. That work is required to meet the 65 per cent acceptable flood capacity by 2025.

We understand the spillway crest currently complies with the 65 per cent acceptable flood capacity standard, but not the 100 per cent standard. The anchoring work on the spillway crest required to meet 100 per cent acceptable flood capacity (Stage 3) could theoretically be deferred beyond 2025, but must be completed by no later than 2035. However, we consider there is a reasonable case for the spillway crest works not to be deferred.

Firstly, the Queensland Government states that these timeframes are maximum timeframes for upgrades, and dam owners are encouraged to perform required upgrades sooner if possible.[183] Information provided by GAWB indicated that the dam was assessed to be in the extreme hazard category, and stated that potential adverse impacts of a dam failure would be felt not only in Gladstone, but across Queensland, due to the economic importance of the region. It also noted

[181] GAWB, sub. 1, pp. 105–106.
[182] ConocoPhillips, sub. 16, p. 2; CPM, sub. 11, p. 3, sub. 31, p. 1; CS Energy, sub. 14, p. 2.
[183] Queensland Government, Acceptable flood capacity of referable dams, 2018, viewed 5 February 2020, https://www.business.qld.gov.au/industries/mining-energy-water/water/industry-infrastructure/dams/safety-guidelines-requirements/acceptable-flood-capacity

that a minimum level of freeboard is required to undertake the works, and the ability to achieve this minimum level of freeboard is a significant restriction, as the level is not a frequent occurrence.[184]

Secondly, designing and completing the required upgrades as a single project it is likely to be efficient. Based on information from GAWB, we understand the anchoring of the lower spillway and spillway crest will require a significant amount of concrete drilling. This is specialised work and would be undertaken by the same specialist contractor.[185] The costs of preparing the site and mobilising specialist equipment, and the costs of the project overheads are likely to be significant. These costs would be unnecessarily duplicated if the spillway crest works were deferred.

GAWB engaged SMEC to provide further advice on the dam upgrade. SMEC recommended that Stages 2 and 3 be designed at the same time so that they 'fit' together. Not doing so could cause additional tension within the dam structure, thereby increasing the operating and corporate risks around operation of the dam. SMEC also advised that if the two stages were to be undertaken separately, a design consultant would need to be involved in the supervision and quality assurance during each stage. However, if a new consultant needed to be engaged, it is highly likely they would require new designs to be prepared. SMEC estimated the additional costs associated with this would be approximately $0.96 million.[186] We sighted the SMEC report to confirm this advice.

Finally, due to GAWB's regional location, it may be difficult to secure suitably qualified contractors to complete the works. Packaging the works could be a strategy for creating an appropriate level of competitive tension at tender, to ensure the works are completed for an efficient price.[187]

In its assessment, KPMG considered much of GAWB's reasoning appeared to be plausible. KPMG believed that GAWB provided sufficient substance to deem the project prudent and, given the current position of the project in the early concept stage, the proposed allowance is considered efficient.[188]

Based on GAWB's preliminary estimates, completing the works separately would cost an additional $1.2 million (in 2018 dollars). We calculated the present values of completing both works together in 2024–25 and of completing the works separately.[189] Our analysis shows that the present value of completing the works together is $1.9 million (in 2021 dollars) higher than completing them separately.

Based on KPMG's technical advice and our own review of the supporting documentation, we consider the proposed expenditure to be prudent. We are satisfied that the standard, scope and cost of works are efficient, considering the early stage in the capital planning process. We consider that there are sufficient benefits to customers to justify completing the two stages of works together. However, we acknowledge that the project scope, standard and cost still require further development.

At this stage, we consider it appropriate to include GAWB's proposed cost of $60.7 million in the capital forecast. However, given the magnitude of the project cost, we expect GAWB's actual expenditure will be subject to an ex post assessment at the next investigation to verify efficiency.

[184] GAWB, QCA RFI 125, Awoonga Dam Spillway Upgrade, pp. 2–3.
[185] GAWB, *Response to KPMG working draft*, January 2020.
[186] GAWB, QCA RFI 125, Awoonga Dam Spillway Upgrade, pp. 3–4.
[187] GAWB, QCA RFI 125, Awoonga Dam Spillway Upgrade, p. 5.
[188] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. 81.
[189] Assuming an asset life of 131 years, CPI of 2.5%, and a WACC of 4.72%.

We consider that this is a reasonable approach, which provides certainty to GAWB to undertake the required work while appropriately sharing risk between GAWB and its customers.

Finding A4.17—Awoonga Dam spillway upgrade

The QCA finds GAWB's proposed expenditure of $60.7 million for the Awoonga Dam spillway upgrade to be prudent and efficient. Given the magnitude of project costs, the QCA expects to conduct an ex post review of this expenditure in 2025.

4.5.3 Expansion of the Boat Creek pump station

The Boat Creek raw water reservoir and pump station provides a second water supply to the northern precinct, as a backup to the Mt Miller pipeline from Awoonga Dam. GAWB proposed to increase supply redundancy to the northern precinct, including the Yarwun Water Treatment Plant, by increasing storage at Boat Creek to supply 24 hours of demand.[190] This would allow for maintenance to be carried out on the Mt Miller pipeline, and would provide continued supply in the event of upstream failures. GAWB's proposal involves commissioning new pumps and a storage lagoon at an estimated cost of $6.63 million to be completed in 2024–25.

KPMG found the project was efficient in standard, scope and cost. It also found that the driver for the project had been demonstrated, along with a robust assessment of options, which justifies the project and the proposed approach. However, KPMG considered that the business case did not justify delivery of this project during the 2020–25 period.[191]

In response to our draft report, GAWB did not agree that the project is not prudent. It considered the project to be prudent, as it is one of three material projects included in the capital forecast that are necessary to achieve GAWB's network design standard of 24 hours available risk storage. In addition, recent condition reports for the Mt Miller raw water pipeline supported the need for the project to be completed by 2023. This is to allow scheduled works on the Mt Miller raw water pipeline to be undertaken within the recommended timeframes. GAWB submitted a revised capital cost of $6.11 million and a new completion date of 2022–23.[192]

KPMG reviewed the additional information provided by GAWB and updated its assessment. KPMG found that GAWB has committed to 24-hour storage but has not been able to deliver at that rate. Completion of the project would allow GAWB to do so. KPMG considered 24-hour reserve storage could be reasonable in GAWB's case and is not an unusual design requirement amongst other bulk water suppliers. Considering this standard has been in place since 2013, KPMG concluded that GAWB's customers have accepted that this approach to supply interruption and risk management is reasonable for price setting purposes.

KPMG found that GAWB's rationale for undertaking these works within the current regulatory period is primarily based on the scheduled maintenance works on the Mt Miller pipeline, which require taking the pipeline offline for approximately 48 hours. Nonetheless, KPMG noted if the Mt Miller pipeline is taken offline for the proposed works, GAWB may still not be able to supply the contracted demand. This is because the proposed expansion would provide only 24 hours of offline supply.

[190] GAWB, QCA RFI 44, Project justification and plan, p. 3.
[191] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, pp. 96–97.
[192] GAWB, sub. 33, p. 48.

Based on new information provided by GAWB, KPMG updated its findings and found the project prudent and efficient. However, based on the information sighted to date, KPMG believes GAWB needs to liaise with its customers to:

- ensure customers understand what GAWB will and will not be able to deliver in the event of failure of the Mt Miller pipeline
- propose maintenance schedules for the Mt Miller pipeline including awareness of time frames required, so that customers may plan for this contingency in the future.[193]

Based on KPMG's technical advice, we consider that GAWB has provided sufficient justification to support the delivery of the project in the 2020–25 period. We understand the project would enable GAWB to provide 24-hour supply to customers in the event of upstream failures as the asset ages, and during the proposed maintenance on the Mt Miller pipeline. Therefore, we find the project to be prudent and efficient.

However, we consider that GAWB should consult with its customers on reliability of supply, to establish their willingness to pay for future projects of this nature (discussed in Chapter 11). So far, we have not been provided with evidence linking GAWB's network design standard to customer consultation. We expect consultation on customer ability or willingness to manage supply risk should be integral to GAWB's future capital planning processes.

Finding A4.18—Expansion of the Boat Creek pump station

The QCA finds GAWB's revised capex of $6.11 million for the expansion of the Boat Creek pump station to be prudent and efficient.

4.5.4 Calliope River Bridge pipeline replacement

The project involves the proposed replacement of an asbestos cement pipeline that crosses the Calliope River to supply the northern industrial areas of Gladstone. The pipeline is nearly 40 years old and GAWB has expressed concerns regarding the remaining design life of the existing pipe, degradation due to environmental factors, release of asbestos fibres, and safety during maintenance.[194] GAWB undertook an options analysis to assess the viability of extending the life of the pipeline as an alternative to replacement. GAWB's preferred solution is to install a replacement pipeline under the riverbed using directional drilling methods, at an estimated capital cost of $4.31 million in 2021–22.

KPMG did not consider the project prudent or efficient. It found that:

- there is no evidence of a detailed condition assessment to support the need for replacement
- options were not compared on a like-for-like basis.[195]

In response to our draft report, GAWB submitted it had continued investigations to identify the most prudent and efficient solution. Based on advice from Asbestos Surveys Central Queensland, GAWB determined that a full pipeline replacement was no longer the preferred approach. GAWB proposed a smaller scope of works, which seek to maintain the continued structural integrity of the pipeline.

[193] KPMG, *GAWB expenditure review 2020*, final report, May 2020, pp. 97–100.
[194] GAWB, QCA RFI 45, GHD report, p. 3.
[195] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, pp. 100–101.

The new project scope has an estimated capital cost of $308,000. The project is to be completed in 2020–21.[196]

KPMG updated its assessment to incorporate the new project scope proposed by GAWB. KPMG considered the new project scope prudent, as it will ensure continued use of the pipeline during the 2020–25 period. Since the revised works have been restricted to necessary repairs based on actual observation, KPMG considered the scope of works were efficient. KPMG noted the preliminary nature of the new works but found the estimated standard and cost were reasonable.[197]

We have considered KPMG's updated advice and find the new project scope is a prudent and efficient solution for the 2020–25 period. We welcome GAWB continuing to refine its capex program in light of new information, to ensure the most efficient solution is achieved.

Finding A4.19—Calliope River Bridge pipeline replacement

The QCA finds GAWB's revised capex of $308,000 for the Calliope River Bridge pipeline replacement to be prudent and efficient.

4.5.5 UV disinfection

GAWB operates the Gladstone water treatment plant and the Yarwun water treatment plant. These facilities treat raw water from Awoonga Dam using typical treatment processes, including filtering and chlorination, to supply potable water. GAWB identified that additional disinfection may be needed to reduce the risk of pathogens that cannot be removed through chlorination. GAWB proposed to invest in an ultraviolet (UV) disinfection system, at an estimated capital cost of $3.70 million in 2023–24.

KPMG considered that it had not been demonstrated that the project is prudent or efficient—GAWB had not demonstrated the need for the project or a regulatory driver, sufficient documentation of risk assessment nor a full options analysis.[198]

We have considered KPMG's findings and have not included this project in the forecast capex allowance at this stage. We have not included any nominal allowance to progress the project through the next stages of the capital planning process. We consider there is sufficient flexibility within GAWB's overall capital and operating cost allowances to accommodate the cost of these activities, should GAWB decide to proceed with the project.

Finding A4.20—UV disinfection

The QCA finds GAWB's proposed capex of $3.70 million for UV disinfection not prudent or efficient.

[196] GAWB, sub. 33, p. 49.
[197] KPMG, *GAWB expenditure review 2020*, final report, May 2020, pp. 104–107.
[198] KPMG, *GAWB expenditure review 2020,* final report, May 2020, p. 114.

4.5.6 Other capex projects

KPMG's review focused on the prudency and efficiency of GAWB's core business activities of storing, treating and delivering bulk water. However, GAWB has proposed capex to deliver two projects that are not considered core business activities, specifically:

- upgrading of recreational facilities at Awoonga Dam (recreational strategy)
- the fish hatchery relocation.

We conducted a desktop review of these projects to form a view on their reasonableness. The Directions require us to consider prices that provide GAWB with sufficient revenue to recover prudent and efficient costs incurred from providing bulk water supply services, including catchment management and recreation facilities.[199]

4.5.7 Recreational strategy

GAWB proposed a program of works to upgrade its recreational facilities around Lake Awoonga, including upgrading walking tracks, boat ramps, swimming pontoons, camping facilities, playground facilities and ablution blocks. GAWB proposed to spend $7.2 million during the 2020–25 pricing period to deliver these projects. The strategy represents a significant investment in aggregate, and GAWB presented it as one of the centrepieces of its 2020–25 capital program.

GAWB said that its recreational strategy is the result of feedback from community engagement initiatives, including GAWB's Community Consultative Forum (CCF).[200]

We received submissions from a number of community organisations supporting the proposed recreational strategy investment.[201] Gladstone Engineering Alliance (GEA) noted improving recreational services and facilities offered by GAWB indirectly supports the retention of young professionals, businesspeople and families who move to the region for employment opportunities.[202] In contrast, WICET noted that contributions to improving community facilities are important, but that industrial customers, including WICET, already make substantive community contributions in their own capacity.[203] Conoco Phillips supported elements of GAWB's recreational strategy that represent prudent environmental practices or are necessary for compliance. It did not consider it appropriate for customers to pay for discretionary projects or community initiatives.[204]

In response to our draft report, GAWB submitted that it ensured all parties had been informed and provided an opportunity to directly influence the scope of the recreational strategy.[205]

Prudency

We reviewed a range of supporting information for this initiative, including internal GAWB documents and evidence of GAWB's community and customer consultation. In contrast to other projects reviewed, GAWB's proposed recreational strategy constitutes a suite of related but

[199] Referral and direction notice, section B(1.1)(a).
[200] GAWB, sub. 1, p. 38.
[201] O. Nevin, sub. 10, p. 1; Boyne Tannum Hookup Association, sub. 23, p. 1; Boyne Burnett Inland Rail Trail Inc, sub. 24, p. 1; Benaraby Progress Association, sub. 25, p. 1; Ubobo Progress Association; sub. 26, p. 1; The Community Shed Boyne Valley, sub. 27, p.1; Gladstone Area Promotion and Development Ltd, sub. 29, p. 1; Gladstone Chamber of Commerce and Industry Inc, sub. 30, p. 1.
[202] Gladstone Engineering Alliance, sub. 28, p. 1.
[203] WICET, sub. 13, p. 2.
[204] ConocoPhillips, sub 38, p. 2.
[205] GAWB, sub. 33, pp. 50–51.

discrete investments. Based on our analysis, over two-thirds of these individual projects are valued at less than $200,000 and about 40 per cent are valued at less than $100,000. The smallest project is estimated at $40,000 and the largest at $940,000.

Some elements of the recreational strategy represent prudent environmental management practices (e.g. waste management in recreational areas, fire pits and erosion management works). These activities appear prudent for GAWB as the owner of the land on which the facilities coexist with the water catchment and storage. We understand some elements of the recreational strategy will support compliance with GAWB's Catchment Management Policy and Drinking Water Management Plan.[206]

However, some investments appear incremental to the existing recreational facilities. In these cases, absent an external obligation, prudency should be demonstrated by endorsement from a broad and representative cross-section of GAWB's customers. GAWB submitted that the proposed initiatives were presented to both CFF and Customer Representative Panel (CRP) members, which provided an opportunity for members to directly influence the scope of the recreational strategy. GAWB said that the community and customers are supportive of these initiatives.[207] We understand that GAWB has consulted on both the scope and cost of the proposed program of works.

A number of community organisations expressed support for GAWB's proposed recreational strategy.[208] We note that WICET and Conoco Phillips accepted the basis for the recreational strategy, and for expenditure that represents prudent environmental practices or are necessary for compliance, but questioned how those costs should be recovered. While it may be appropriate for beneficiaries to meet the cost of recreational services—where practical and cost-effective—we consider this a matter for GAWB to consider, in consultation with its customers. We also note that there are potential indirect benefits of the recreational strategy, such as the retention of professionals in the Gladstone area—as highlighted by GEA. As the scope and costs of the proposed program of works were presented to and accepted by customers and the community during GAWB's engagement activities, we consider prudency has been reasonably demonstrated.

Efficiency

We reviewed GAWB's cost estimates for each component of the proposed recreational program, along with supporting documentation. We identified a contingency allowance in GAWB's modelling of $944,000 in 2020–25 for 'potential further upgrades to ablutions and to progress new ideas identified in further community consultation'.[209]

GAWB stated the contingency allowance should not be excluded from the forecast capital allowance, as the funds were for identified additional activities or opportunities. The project budget, the contingency allowance and the purpose of these additional funds were explicitly discussed with CCF and CRP members when the strategy was accepted and finalised. [210]

[206] GAWB, QCA RFI 79, 2020 Price Review Customer Update–Round 2.
[207] GAWB, sub. 1, p. 41.
[208] O. Nevin, sub. 10, p. 1; Boyne Tannum Hookup Association, sub. 23, p. 1; Boyne Burnett Inland Rail Trail Inc, sub. 24, p. 1; Benaraby Progress Association, sub. 25, p. 1; Ubobo Progress Association; sub. 26, p. 1; The Community Shed Boyne Valley, sub. 27, p.1; Gladstone Area Promotion and Development Ltd, sub. 29, p. 1; Gladstone Chamber of Commerce and Industry Inc, sub. 30, p. 1; Gladstone Engineering Alliance, sub. 28, p. 1.
[209] GAWB, QCA RFI 39–40, Spreadsheet: Proposed capex 2020–25.
[210] GAWB, sub. 33, p. 50–51

ConocoPhillips did not consider it appropriate for customers to pay for discretionary projects[211], and documentation received from GAWB has shown that some members of the community have previously expressed concerns over the contingency allowance.[212]

We consider this amount should be excluded from the forecast, as GAWB has not identified what additional activities this expenditure will be needed for at this stage. However, we note that if the contingency allowance is required within the forecast period, we will assess the expenditure ex post at the time of the next price review. If we find the expenditure to be prudent and efficient, it will be accepted into GAWB's RAB.

We found that some individual components of the proposed work program appear to have characteristics of operating costs, rather than capital costs. We have not made any adjustments for these costs or sought to reconcile GAWB's treatment of these costs with its capitalisation policy. Our review found no further indications that the proposed costs are inefficient or materially overstated. We expect GAWB will apply its standard procurement processes and capital planning frameworks to these initiatives to support prudent and efficient outcomes.

QCA findings

As the scope and costs of the proposed program of works were presented to and accepted by customers and the community during GAWB's engagement activities, we consider prudency has been reasonably demonstrated. There is also evidence of GAWB's commitment to the program.

We have included all of GAWB's proposed recreational projects in the forecast capex allowance 2020–25, excluding an amount of $944,000 for contingent projects, which we consider is not justified at this stage.

> **Finding A4.21—Recreational strategy**
>
> The QCA finds the proposed contingency allowance of $944,000 for the recreational strategy should be excluded from GAWB's forecast capex allowance for 2020–25.

4.5.8 Hatchery relocation

GAWB operates a fish hatchery for barramundi, mangrove jack, sea mullet and other species, which are restocked into Awoonga Dam. Environmental conditions require GAWB to restock these fish to mitigate the impact of Awoonga Dam on migratory fish species in the Boyne River.

Until recently, GAWB has maintained a hatchery facility on land owned by the Gladstone Ports Corporation. In 2016, the Gladstone Ports Corporation advised GAWB it would be required to vacate the land and remove the hatchery infrastructure by April 2018 to make way for development at the East Shores precinct. GAWB proposed to relocate the hatchery to an alternative site and build a new facility with additional capabilities including:

- research and training facilities for primary, secondary and tertiary students, including laboratory facilities
- tourism and community education facilities

[211] ConocoPhillips, sub 38, p. 2.
[212] GAWB, QCA RFI 116, Response to GAWB Draft Recreation Strategy.

- more efficient and modern technology and improved biosecurity controls, enabling year-round production cycles.[213]

GAWB submitted that its proposed new hatchery would allow it to satisfy its environmental obligations, support the aquaculture industry in Gladstone and contribute to the local community. GAWB proposed a total of $7.12 million in capex to deliver this project in 2020–21.

We received one submission from an individual who supported the proposed hatchery investment as positive for the region.[214] WICET noted the relocation is driven by the East Shores development, and questioned why the cost was not borne by Gladstone Ports Corporation, rather than being funded by GAWB customers. WICET also said it previously provided significant funding of its own toward the development of the East Shores Maritime Precinct.[215]

In response to our draft report, GAWB submitted that it had commenced the open tendering process for the new facility. Based on an assessment of the relevant markets and current market conditions, GAWB decided to modify its procurement strategy by decoupling the design and construction components of the project. However, GAWB still estimated the project to be delivered for $7.12 million and completed by 2020–21.[216]

Prudency

GAWB is required to restock fish at Lake Awoonga as a condition of its environmental impact statement (EIS) for the raising of Awoonga Dam in 2001. We acknowledge there is an established regulatory driver for this expenditure. GAWB had to relocate the existing facility due to development activities in the East Shores precinct. We understand GAWB negotiated to extend its lease and was required to vacate by 30 June 2019 (rather than the original date of April 2018).

Based on our review of supporting information, GAWB made reasonable efforts to avoid relocating the facility. We have also seen evidence that GAWB took steps to negotiate access to alternative locations on surrounding Gladstone Ports Corporation land, which were not successful. We are therefore satisfied that the relocation of the hatchery is required and is prudent.

Efficiency

Historically, the QCA considered that owning and operating a hatchery is a reasonable response to addressing the environmental externalities of GAWB's storage activities. As such, we previously found it reasonable that GAWB's hatchery assets be included in its RAB.[217] We maintain this view and consider the recovery of these costs through customer prices is appropriate, provided the service provision is not excessive.[218]

The proposed new hatchery would offer amenities that are incremental to those needed to meet GAWB's environmental obligations. These include community, education and research facilities. Based on our review of GAWB's costings, these amenities are unlikely to be material contributors to the overall capital cost of the project. It is also our expectation that GAWB will recognise any offsetting revenues from providing these services when setting customer prices.

[213] GAWB, sub. 1, p. 108.
[214] O. Nevin, sub. 10, p. 1.
[215] WICET, sub. 13, p. 2.
[216] GAWB, sub. 33, p. 51.
[217] QCA, *Gladstone Area Water Board: Investigation of pricing practices*, final report, March 2005, pp. 97–98.
[218] QCA, *Statement of regulatory pricing principles for the water sector*, December 2000, p. 41.

The level of documentation supporting this project is comprehensive and appears to demonstrate robust application of GAWB's project management framework and procurement processes. GAWB undertook an options analysis, which included various relocation sites, and the option of sourcing fish stocks commercially rather than maintaining its own hatchery.

GAWB's cost estimates have been prepared to a very high level of detail, which supports the likely efficiency of the estimates. We note that GAWB commenced the tendering process for the facility, and made the decision to decouple the design and construction components. We have seen sufficient evidence to support this decision and consider this approach to be appropriate.[219] It is our expectation that a prudent business would refine its procurement process in response to market conditions and new information in order for the most efficient outcome to be achieved. We note that even with the revised procurement strategy, GAWB still estimated the project to be delivered for $7.12 million and completed by 2020–21.

We acknowledge WICET's concerns about customer funding of the relocation project. However, there is no clear case that Gladstone Ports Corporation should be liable for the costs of relocating the hatchery. We would expect that under the terms of GAWB's expired lease arrangement with Gladstone Ports Corporation, the landowner would have rights to require GAWB to vacate the land with reasonable notice and make good the site at its own cost.

QCA findings

Based on our review, we are reasonably satisfied that the proposed expenditure is prudent and efficient.

> **Finding A4.22—Hatchery relocation**
>
> The QCA finds that GAWB's proposed $7.12 million expenditure for the hatchery relocation is prudent and efficient.

4.5.9 Cost escalation

GAWB proposed to apply a nominal cost escalation factor of 2.82 per cent to its forecast capex. This was based on advice and forecasts from Deloitte Access Economics (DAE). GAWB's proposed escalator is a composite, weighted escalation factor derived by escalating labour cost components by the Queensland wage price index (WPI) forecast (weighted at 70%), and capital costs by the consumer price index (CPI) (weighted at 30%).

The Gladstone Regional Council considered the cost escalation factors appear excessive, given the current economic environment, implied inflation and the economic outlook.[220] KPMG also considered the proposed capex escalation rate may be overstated. For these reasons, KPMG recommended that the CPI be used to escalate capex values. KPMG also recommended updated escalation values in 2018–19 to reflect the actual, rather than forecast, CPI inflation.[221]

In response to our draft report, GAWB submitted that it did not accept using only CPI to escalate capex values, as this would not account for the large labour component of capital expenditure. It considered DAE's approach to be appropriate.[222]

[219] GAWB, Response to QCA draft report, File Note: Hatchery Update.
[220] GRC, sub. 15, p. 3.
[221] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 108–109.
[222] GAWB, sub. 33, p. 52.

In its final report, KPMG considered it reasonable to reflect a portion of labour costs in the capex escalator, but with KPMG's updated CPI and WPI forecasts.[223]

We reviewed KPMG's analysis and consider there is reasonable justification to include a labour component in the capex escalator. This recognises the large labour component required to deliver GAWB's capital program. We adopted DAE's proposed weightings of 70 per cent WPI and 30 per cent CPI.

However, consistent with our findings on opex escalators (Chapter 3), we consider it appropriate to apply our measures of forecast WPI and CPI.

Finding A4.23—Cost escalation

The QCA finds the appropriate cost escalation factor to be applied to GAWB's capex allowance for 2020–25 is the composite of the QCA's measure of forecast WPI (weighted at 70%) and the QCA's measure of forecast CPI (weighted at 30%).

4.5.10 Interest during construction

Consistent with previous reviews, GAWB included an amount for interest during construction (IDC) on capital projects of greater than $1 million. This allowance provides recognition of the opportunity cost of committing funds to projects that are yet to be commissioned.

GAWB's proposed method calculates IDC based on the average monthly capital spend for each project from commencement through to commissioning and applies its proposed weighted average cost of capital (WACC) as the discount rate. This approach, while simple, does not accurately reflect the timing of actual spend on any given project. A more accurate method would calculate the IDC for each year of capital spend, based on the time between the actual spend and the commissioning date of the project.

Nonetheless, the impact of applying a more accurate method is not material in this instance. Therefore, we consider that GAWB's proposed method of calculating and applying IDC is reasonable for the 2020–25 price path period.

However, we have updated the time-varying parameters in GAWB's proposed WACC for the purposes of this final report (Chapter 6) and have adopted our alternative WACC for the IDC calculation. We understand that GAWB will further update the WACC for its chosen averaging period prior to setting prices for 2020–25.

Finding A4.24—Interest during construction

The QCA finds GAWB's proposed interest during construction methodology is appropriate for the 2020–25 price path period. We encourage GAWB to consider revising its IDC methodology to more accurately reflect the timing of capital spend for individual projects with a span of more than a year between commencement and commissioning.

4.5.11 QCA findings

Based on our review of GAWB's supporting documentation and KPMG's advice, we consider GAWB's capex for the 2020–25 pricing period is largely prudent and efficient.

[223] KPMG, *GAWB expenditure review 2020*, final report, May 2020, p. 37.

We note KPMG's concerns regarding deliverability of GAWB's significant replacement program. However, we consider GAWB is best placed to define its capital program and manage its delivery. It is our expectation that a prudent business would continually refine its capital program during the regulatory period and reallocate resources within its budget in response to new information and changing priorities. We note that GAWB is seeking independent consultant advice on elements of its asset management processes.

Nevertheless, we consider GAWB should more transparently document divergences in expenditures from forecast, including identifying drivers of those changes through internal ex post project reviews. Overspending is a key concern that GAWB's customers have raised, and we encourage GAWB to ensure its actual expenditure is explained clearly to customers.

We consider that GAWB should consult with its customers on reliability of supply, to establish their willingness to pay for future capital projects. We expect consultation on customer ability or willingness to manage supply risk should be integral to GAWB's future capital planning processes.

We do not consider there is evidence of systemic failures in GAWB's capital governance frameworks that would indicate biased forecasting or consistent overstatement of costs. Therefore, we have not made any systemic adjustments to GAWB's capex for the 2020–25 period.

Table 20 and Figure 10 set out our findings on GAWB's estimated prudent and efficient capex during the 2020–25 pricing period. Our forecast capex allowance is $168.5 million (6 per cent) lower than GAWB's proposal.

Table 20 QCA findings—GAWB's forecast capex for 2020–25

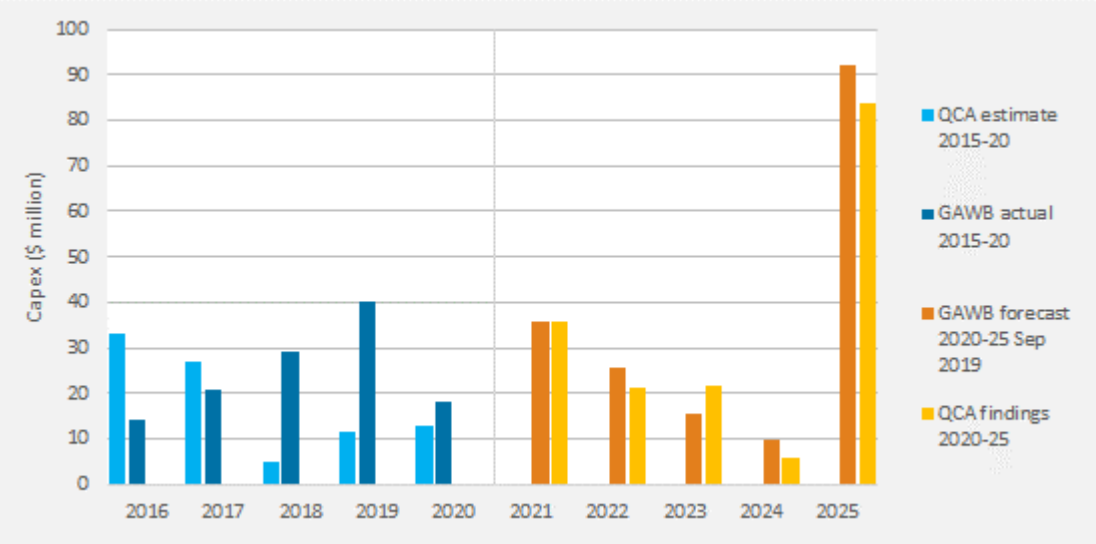
	2020–21	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***Total***
GAWB's capex proposal ($m)—September 2019	35.64	25.78	15.62	9.73	91.97	**178.75**
GAWB's capex proposal ($m)—March 2020 [a]	35.91	21.41	21.66	6.00	84.66	**169.63**
QCA findings ($m) [b]	35.89	21.36	21.61	5.98	83.64	**168.47**

a In response to our draft report, GAWB updated the proposed capex for the expansion of the Boat Creek pump station to $6.107 million and the capitalisation year to 2023. We found the project and revised timing to be prudent and efficient. GAWB also updated the proposed capex for the Calliope River Bridge pipeline replacement to $0.308 million and the capitalisation year to 2021. We found the revised scope and timing of this project to be prudent and efficient. In addition, GAWB accepted our findings that the UV disinfection project was not prudent or efficient and removed it from their forecast.

b Our values include an adjustment for the recreational strategy contingency allowance, an updated capex escalator, and updated IDC.

Note: Totals may not add due to rounding. Source: QCA analysis; QCA RFI 119–123, GAWB, Building Block Model, submission, September 2019; GAWB, Building Block Model, submission, March 2020.

Figure 10 GAWB's capex in 2015–20 and 2020–25—QCA estimate/findings and GAWB actual/forecast



Source: QCA analysis; QCA RFI 33–34, 39–40; GAWB, Building Block Model, submission, September 2019; GAWB, Roll Forward Model, submission, September 2019.

Finding A4.25—Capex 2020–25

The QCA considers that a forecast capex of $168.5 million represents a reasonable estimate of prudent and efficient capex for GAWB during the 2020–25 pricing period.

We consider GAWB should more transparently document divergences in expenditures from forecast, including identifying drivers of those changes through internal ex post project reviews. Overspending is a key concern that GAWB's customers have raised, and we encourage GAWB to ensure its actual expenditure is explained clearly to customers.

5 REGULATED ASSET BASE

GAWB's regulated asset base (RAB) is the accumulated value of its investments in its network. It includes assets of various useful lives; most depreciate in value, although a small number (such as easements and land) do not.[224] The Directions require that we roll forward GAWB's RAB for the 2020–25 review using our previously recommended methodology.[225]

The QCA's key findings on GAWB's proposed RAB are:

- The closing RAB for GAWB as at 30 June 2025 is calculated to be $725 million[226], which is lower than GAWB's proposed closing RAB of $732 million.
- The primary driver for the lower closing RAB is lower forecast capital expenditure (capex) (Table 21).

Table 21 Overview of GAWB's RAB

	GAWB's proposal	*QCA calculation*	*Difference*
Opening RAB—1 July 2020 ($m)	**567**	566	(1)
plus capex	177	167	(10)
less disposals	–	–	–
plus inflation	73	76	4
less depreciation	(85)	(85)	(0)
Closing RAB—30 June 2025 ($m)	**732**	725	(7)

Note: Excludes Curtis Island pricing zone. Numbers may not add up due to rounding.
Sources: GAWB, Building Block Model, submission, September 2019; QCA calculations.

5.1 RAB roll-forward

The RAB fluctuates according to the level of capex, inflation and depreciation, and the regulated entity's disposals. Consistent with previous GAWB investigations, the method used to roll forward the RAB incorporates:

- establishing the opening value of the RAB at the beginning of the regulatory period
- adding efficient capex incurred
- indexing for inflation in asset values
- removing redundant assets and assets sold (disposals)
- depreciating the assets, using estimated asset lives.

[224] AER, *Why do we index the regulatory asset base?*, fact sheet, p. 1, viewed 21 January 2020, https://www.aer.gov.au/system/files/Fact%20sheet%20-%20Indexation%20of%20the%20regulatory%20asset%20base.pdf.
[225] Referral and direction notice, section B(1.1)(c).
[226] Excludes Curtis Island pricing zone.

5.2 Opening value of the RAB at 1 July 2015

GAWB updated the QCA-approved RAB of $479.58 million as at 1 July 2015, which had been rolled forward in accordance with our previously recommended methodology, with the actual consumer price index (CPI), capex, depreciation and disposals values. Table 22 shows GAWB's adjustments to arrive at an updated RAB of $470.61 million as at 1 July 2015.

Table 22 GAWB's updated opening RAB at 1 July 2015

Opening RAB—1 July 2015 (QCA) ($m)	**479.58**
less forecast CPI replaced with actual CPI	(4.71)
less forecast capex replaced with actual capex	(3.60)
less forecast disposals replaced with actual disposals	(0.19)
less depreciation reflecting above adjustments	(0.47)
Opening RAB—1 July 2015 (GAWB) ($m)	**470.61**

Note: Excludes Curtis Island pricing zone.
Source: GAWB, Roll Forward Model, submission, September 2019.

Finding A5.26—Updated opening RAB at 1 July 2015

The QCA finds GAWB's updated RAB of $470.61 million as at 1 July 2015 appropriate.

5.3 RAB roll-forward to 30 June 2020

GAWB rolled the opening balance of the RAB as at 1 July 2015 ($470.61 million) forward to 30 June 2020, forecasting a closing balance of $567.05 million (Table 23). The proposed closing balance constitutes the opening RAB for the 2020–25 regulatory period, starting on 1 July 2020.

We rolled the opening balance of the RAB as at 1 July 2015 ($470.61 million) forward to 30 June 2020 using updated inflation figures for 2019–20, resulting in a forecast closing balance of $566.28 million.[227]

Table 23 GAWB's proposed RAB roll-forward to 30 June 2020

	GAWB's proposal	*QCA calculation*	*Difference*
Opening RAB—1 July 2015 (GAWB) ($m)	**470.61**	**470.61**	**–**
plus capex	117.57	117.57	–
less disposals	(2.39)	(2.39)	–
plus inflation	44.71	43.82	(0.89)
less depreciation	(63.45)	(63.33)	0.12
Forecast closing RAB—30 June 2020 (GAWB) ($m)	**567.05**	**566.28**	**(0.77)**

Note: Excludes Curtis Island pricing zone.
Source: GAWB, Roll Forward Model, submission, September 2019.

[227] The difference between GAWB's proposed forecast closing balance and our forecast closing balance is due to replacing GAWB's forecast 2019–20 inflation figure with the actual 2019–20 inflation figure we calculated.

Finding A5.27—Opening RAB at 1 July 2020

The QCA finds that an updated forecast RAB of $566.28 million as at 30 June 2020 is appropriate, rather than GAWB's proposed RAB of $567.05 million.

5.4 RAB roll-forward to 30 June 2025

Using the required method, GAWB submitted a proposed RAB roll-forward, which would see its RAB increase from its proposed $567 million as at 1 July 2020 to $732 million[228] as at 30 June 2025. GAWB's roll-forward is based on its proposed capex, inflation and depreciation during 2020–25 (Table 24).

Table 24 GAWB's proposed RAB for 2020–25

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Opening RAB—1 July 2020 ($m)	**567**	**600**	**623**	**635**	**643**
plus capex	35	26	15	10	92
less disposals	–	–	–	–	–
plus inflation	13	14	14	15	16
less depreciation	(16)	(17)	(17)	(17)	(18)
Closing RAB—30 June 2025 ($m)	**600**	**623**	**635**	**643**	**732**

Note: Excludes Curtis Island pricing zone. Numbers may not add up due to rounding.
Source: GAWB, Roll Forward Model, submission, September 2019.

We reviewed GAWB's RAB roll-forward proposal and made some adjustments to reduce capex (Table 25), based on our assessment of prudency and efficiency and our position on cost escalation in Chapter 4.

Table 25 The QCA's estimated RAB for 2020–25

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Opening RAB—1 July 2020 ($m)	**566**	**600**	**620**	**639**	**643**
plus capex	35	21	21	6	84
less disposals	–	–	–	–	–
plus inflation	14	15	15	16	17
less depreciation	(16)	(17)	(17)	(17)	(18)
Closing RAB—30 June 2025 ($m)	**600**	**620**	**639**	**643**	**725**

Note: Excludes Curtis Island pricing zone. Numbers may not add up due to rounding.
Source: QCA calculations.

[228] Excludes Curtis Island pricing zone.

The closing RAB we calculated is lower than GAWB's proposed closing RAB (Table 26), primarily due to lower forecast capex.[229]

Table 26 GAWB's RAB for 2020–25: GAWB's proposal vs the QCA's calculations

	GAWB's proposal	*QCA calculation*	*Difference*
Opening RAB—1 July 2020 ($m)	**567**	**566**	**(1)**
plus capex	177	167	(10)
less disposals	–	–	–
plus inflation	73	76	4
less depreciation	(85)	(85)	(0)
Closing RAB—30 June 2025 ($m)	**732**	**725**	**(7)**

Note: Excludes Curtis Island pricing zone. Numbers may not add up due to rounding.
Sources: GAWB, Roll Forward Model, submission, September 2019; QCA calculations.

Finding A5.28—Forecast RAB at 30 June 2025

The QCA finds that a forecast RAB of $725 million as at 30 June 2025 is appropriate, rather than GAWB's forecast RAB of $732 million.

[229] See the discussion of capex at Chapter 4.

6 RATE OF RETURN

The rate of return on assets is the return on investment that GAWB can earn. It is used as an input to calculate GAWB's prices.

In its proposal, GAWB calculated a rate of return of 4.57 per cent using a weighted average cost of capital (WACC) based on a 20-day averaging period ending 30 August 2019.

For this final report, we have calculated a bottom-up value of 4.72 per cent, based on an updated 20-day averaging period ending 31 March 2020. Our top-down analysis indicates that 4.72 per cent is an appropriate WACC for this more recent averaging period. The WACC parameters are set out below (Table 27). We note GAWB's proposed values cannot be directly compared to our final values due to the different averaging periods.

Table 27 WACC overview

Parameter	*GAWB-applied values, 2015–20*	*GAWB proposal, 2020–25*	*QCA final values, 2020–25*
20-day averaging period (end date)	30 June 2015	30 August 2019	31 March 2020
Risk-free rate (%)	2.33	0.94	0.90
Capital structure (% debt)	50	50	50
Market risk premium (%)	6.5	7.0	7.0
Asset beta	0.40	0.45	0.45
Equity beta	0.64	0.73	0.73
Cost of equity (%)	6.52	6.04	6.00
Credit rating	BBB	BBB	BBB
Debt risk premium (%)	2.48	2.05	2.44
Debt issuing costs (%)	0.108	0.108	0.108
Gamma	0.47	0.484	0.484
Cost of debt (%)	5.02	3.10	3.44
Bottom-up, nominal post-tax WACC (%)	5.77	4.57	4.72
Applied WACC (%)	5.77	4.57	4.72

Note: Some values in the table are rounded for presentation purposes; however, our final WACC value was calculated using unrounded input values.

Sources: GAWB, sub. 1, pp. 31–32, 122; GAWB, sub. 33, pp. 53–54; QCA calculations.

6.1 Context and approach

The WACC is the rate of return on investment that is most commonly used in regulatory practice in Australia. The WACC is the weighted average of the cost of equity and cost of debt, with the respective weights representing the shares of equity and debt in the firm. It is used as an input in the building block methodology to calculate GAWB's allowable revenue and derive its prices.

The price monitoring framework allows GAWB to set its WACC, and therefore we do not prescribe the WACC. However, s. 26(1)(e) of the QCA Act requires us to have regard to an appropriate rate of return on assets. The Directions (in section (B)(1.1)(b)) also require us to consider an appropriate WACC for GAWB.

To calculate an appropriate WACC for GAWB for the 2020–25 price monitoring period, we undertook a bottom-up assessment of individual WACC parameters and assessed whether these resulted in an overall WACC that is appropriate. We applied a post-tax nominal WACC (Officer WACC3), consistent with our past practice.

In forming our views, we had regard to GAWB's proposal, including the report from its consultant, Synergies Economic Consulting (Synergies), and considered stakeholders' submissions. We also sought advice from Cambridge Economic Policy Associates (CEPA) to help inform our analysis of the asset beta, debt risk premium, capital structure and credit rating.

6.2 Analysis of WACC parameters

We identified one parameter where GAWB's proposed methodology may not be appropriate—that is, the market risk premium. However, given the change in market circumstances associated with the March averaging period applied for this final report, we calculated the same value as GAWB for the market risk premium. The market risk premium, along with the other WACC parameters, is discussed below.

6.2.1 Beta

The equity beta measures the movement of the equity return of a business with the market return. It captures both the underlying systematic risk of the entity (relative to the risk of the market) and the risk of debt funding to equity holders. The asset beta (or unlevered equity beta) is the beta of a firm with no debt, and it measures the underlying systematic risk of the entity.

GAWB proposed an asset beta of 0.45, with a corresponding equity beta of 0.73.[230] This asset beta is higher than the 0.40 asset beta applied in the 2015–20 regulatory period. GAWB said that it has a greater level of systematic risk than conventional water utilities, due to its higher concentration of industrial customers, which GAWB considered are more sensitive to domestic economic conditions than residential customers.[231] Synergies said it addressed GAWB's predominantly industrial customer base by including mining and industrial services companies in its comparator sample (in addition to water utilities).[232]

In assessing whether GAWB's proposed asset beta estimate is appropriate, we considered GAWB's exposure to risk. In doing so, we had regard to characteristics that are expected to affect its systematic risk and examined the underlying economic fundamentals to identify an appropriate set of comparators.

Our analysis indicates that water utilities are comparable firms, as they have systematic risk that is broadly similar to that of GAWB, at this time. Accordingly, they serve as the primary reference point for our beta estimation process. We consider GAWB's proposed values of 0.45 for the asset beta and 0.73 for the equity beta are appropriate. The empirical estimates obtained from our

[230] The equity beta is based on a capital structure of 50 per cent debt and equity and the Conine formula to re-lever asset betas into equity betas.
[231] GAWB, sub. 1, pp. 115–16.
[232] GAWB, sub. 5, p. 29.

sample of water utilities suggest an asset beta of 0.45 is commensurate with GAWB's exposure to systematic risk.

Approach to estimating beta

Asset betas cannot be observed directly. However, equity betas can be estimated using market data on the returns to shareholders of listed firms and the returns on a proxy for the market portfolio, such as a stock market index. Where market returns are unavailable—such as for Australian water utilities—a sample of equity betas of entities with a similar systematic risk profile can provide an appropriate estimate. The set of comparable firms can be identified by qualitatively assessing the systematic risk of the regulated entity—this exercise is often referred to as first principles analysis.[233]

After estimating the equity betas of the comparators, the effects of both actual tax and gearing are removed from these estimates to find the underlying asset betas. The asset betas can then be re-levered, using benchmark tax and gearing assumptions, to determine an appropriate equity beta for the regulated entity.[234]

First principles analysis of GAWB's risk and resulting comparators

Synergies undertook a first principles analysis of GAWB's systematic risk on behalf of GAWB.[235] Synergies said it identified risk factors that suggest GAWB's systematic risk and beta should be higher than that of a conventional water utility, such as Seqwater (a QCA-regulated water utility).[236] Synergies said that GAWB's primarily industrial customer base differentiates it from metropolitan water networks (such as Seqwater), whose more diversified customer base is dominated by residential demand, which is less sensitive to domestic economic activity.[237] In contrast, it said GAWB's highly concentrated industrial customer base is sensitive to commodity market conditions.[238]

GAWB said that while it has some certainty over volumes for the term of the regulatory period, it has less certainty beyond this horizon—due to customers adjusting their reservations[239], and due to the risk of withdrawal or closure of a major customer, which can have a material impact given its concentrated customer base.[240]

Synergies estimated a value for GAWB's asset beta having regard to both water utilities and mining services and industrial services companies. It said that '[g]iven that GAWB's largest customers are involved in activities linked to the mining and resources processing sectors, we have investigated beta estimates for relevant companies that operate in the mining or industrial services sector'.[241]

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[233] CEPA referred to this as a relative risk assessment (CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 14).
[234] Several gearing models are available to de-lever and re-lever the beta estimates, such as the Conine formula. The Conine formula requires an estimate of the debt beta, which reflects the non-diversifiable, or systematic, risk of a firm's debt. Further information on this formula is found at QCA, *Dalrymple Bay Coal Terminal Draft Access Undertaking*, draft decision, October 2004, pp. 247–49.
[235] GAWB, sub. 5, pp. 26–38.
[236] GAWB, sub. 5, pp. 37–38.
[237] GAWB, sub. 5, pp. 32, 35–36.
[238] GAWB, sub. 5, p. 37.
[239] GAWB, sub. 5, p. 30.
[240] GAWB, sub. 1, pp. 115–16.
[241] GAWB, sub. 5, p. 26.

CEPA analysed GAWB's risk and determined that GAWB is exposed to similar systematic risk as the water utilities in the comparator set.[242] Based on this advice (which considered a number of factors that affect GAWB's exposure to risk[243]), we consider that GAWB is likely to be exposed to a broadly similar level of risk as typical water utilities.

As such, our analysis focuses on two key demand-related characteristics that distinguish GAWB from typical water utilities and on how they affect GAWB's exposure to risk. Many water utilities have large customer bases, and a greater proportion of residential customers (than commercial/industrial customers).[244] In contrast, GAWB has a small customer base, and a greater proportion of its revenue comes from its industrial customers (than from residential customers). Under GAWB's 2020–25 pricing proposal, GAWB would recover 67 per cent of its revenue from industrial customers.[245] A large proportion of GAWB's revenue from industrial customers is accounted for by a small number of customers.

Type of customers

Demand for water from GAWB's industrial customers depends on demand for those customers' products. Given this, CEPA assessed the demand risk GAWB is exposed to from its industrial customers. CEPA did not find evidence that volumes from these customers have shown a clear correlation with movements in the Australian market.[246] While such evidence suggests systematic demand risk is relatively low, to the extent it exists for GAWB, this effect would increase GAWB's risk, all else equal. Regardless of how much GAWB's greater reliance on industrial customers exposes it to greater demand risk (relative to typical water utilities), several factors reduce GAWB's exposure to this risk.

GAWB has substantial market power, being the sole supplier of bulk water in the Gladstone region. Water is an essential input for production for most of GAWB's industrial customers[247], and it is an essential good for residents. Many of the industrial customers have sunk investments in the Gladstone region, so they would face significant costs if they moved their business elsewhere.

WICET said that as 'GAWB is the only supplier able to provide the bulk quantities of water required by WICET, WICET does not currently see that it has any alternative other than to continue with the contract with GAWB'.[248] Further, WICET said it had a 20-year contract with GAWB with a substantial termination fee, and it assumed that other customers had similar provisions.[249]

GAWB is regulated under a revenue cap with a 10 per cent deadband. This hybrid revenue cap allows GAWB to recover the prudent and efficient costs of providing water, with the 10 per cent deadband ensuring GAWB receives at least 90 per cent of its proposed revenue over the 2020–

[242] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 23.
[243] Factors considered included the nature of GAWB's regulation, and its customers, demand risk, market power, duration of contracts, pricing structure, growth opportunities and operating leverage.
[244] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 16.
[245] QCA calculations.
[246] CEPA considered the Australian alumina and aluminium industries (as customers from these industries account for a large proportion of GAWB's revenue) and found that volumes from these industries have not shown a clear correlation with the market (including through the global financial crisis). It also found that alumina volumes have not shown a clear correlation with alumina prices. It said Synergies had not provided evidence of volatility in volumes from electricity generators (other industrial customers of GAWB), nor had it provided evidence of such volatility being due to systematic reasons. See CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 16–19.
[247] GAWB, sub. 1, p. 25.
[248] WICET, sub. 9, p. 1.
[249] WICET, sub. 13, p. 2.

25 regulatory period.[250] Furthermore, GAWB's pricing structure largely protects it from fluctuations in volume over the period.[251] GAWB proposed to recover the majority (around 95 per cent) of its revenue during 2020–25 from fixed charges, based on contracted volumes.

Even if GAWB's customers adjust their reservations beyond 2020–25[252], GAWB will be able to recover its revenue (up to a point) if it continues to be regulated under a hybrid revenue cap. Demand is used as an allocator to spread GAWB's costs among its customers, and as such, changes in customer allocations result in changes to prices charged to customers. The risk of downward adjustments to reservations is explored further below.

Number of customers

GAWB has a relatively limited number of customers (comprising the council and a small number of industrial customers), who together account for a large proportion of its revenue. Consequently, GAWB is exposed to a significant revenue impact if one of its major industrial customers exits the market (or substantially reduces its water reservation).

In such an event, GAWB would attempt to recover its losses from that customer in the first instance. GAWB seeks to sign its customers to long-term contracts (although short-term contracts are offered, at a premium). The contracts have a number of mechanisms (such as early termination payments, customer water reservation reduction payments and security payments) through which GAWB would seek to mitigate any losses arising from termination/reduction during the regulatory period.[253,254]

Beyond the regulatory period, and in the absence of replacement demand, GAWB would seek to recover its costs from its remaining customers. This may be possible, given GAWB is regulated under a hybrid revenue cap. That is, a decrease in demand, and therefore revenue, from one customer may lead to an increase in prices for remaining customers—which is feasible up to a point (theoretically, the monopoly price).

To the extent that GAWB bears any residual counterparty risk, this risk differs somewhat from the risk typical water utilities face. Many water utilities tend to have larger and more diverse customer bases (including residential customers)—meaning they can more easily stabilise revenue by spreading price increases over a far larger number of customers.

Appropriate comparators

While GAWB may bear some residual (long-term) demand risk, we nevertheless consider GAWB is likely to be exposed to a broadly similar level of risk overall as typical water utilities, and therefore water utilities provide an appropriate comparator group for estimating GAWB's beta.

We do not consider mining services and industrial services companies are an appropriate comparator group to GAWB, as they are likely to exhibit a different risk profile. CEPA did not find evidence suggesting GAWB's customer mix would lead to an increase in systematic risk.[255] Regardless of the extent to which these customers expose GAWB to greater risk, a number of

[250] If GAWB's actual revenue varies more than 10 per cent from the revenue cap within the period, it will recoup or refund the shortfall or excess (compared with the 10 per cent threshold) through an adjustment at the start of the next regulatory period. Chapter 7 provides information on the form of regulation.
[251] Chapter 9 contains more information on the tariffs.
[252] GAWB, sub. 5, p. 30.
[253] However, in the event of a customer default, the customer might not be able to meet its financial obligations arising from termination.
[254] WICET said that if it terminates the contract prior to its expiration, it would be required to pay a substantial early termination payment (WICET, sub. 9, p. 1).
[255] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 23.

GAWB's features and some mechanisms that are available to it—but are unlikely to apply to the industrial companies—reduce its risk. These include GAWB's degree of market power and its commercial and regulatory arrangements (e.g. its hybrid revenue cap and pricing structure). In contrast, Synergies' inclusion of the industrial and mining services companies in the comparator set assumes that the systematic demand risk of these companies is passed through to GAWB on a one-to-one basis. For the above reasons, we do not consider this assumption is supported.

Resulting beta estimates

Synergies selected a comparator group of 15 firms, consisting of 11 water utilities and four mining and industrial services companies. Synergies said it formed a range for GAWB's asset beta of between 0.45 (based on a sample of water utilities only) and 0.55 (based on the water utilities sample augmented with four mining and industrial services companies). Synergies applied an asset beta of 0.45.[256]

CEPA selected a comparator group of 18 water utilities for GAWB. CEPA estimated weekly and four-weekly betas over two five-year periods (2009–14 and 2014–19), for both the entire sample and a subsample of companies in developed countries only.[257] Relevant estimates of the asset beta (based on the mean) from the various samples ranged from 0.40 to 0.48.[258] CEPA said that 0.40 to 0.43 may be an appropriate range for GAWB's asset beta—relying primarily on the weekly results over the most recent five-year period (2014–19) to form this range.[259] CEPA noted that the top end of its proposed range was only slightly below GAWB's proposal of 0.45.[260]

Table 28 Estimates of a five-year asset beta

		Weekly data for 5 years to 30 Aug 2019	***Four-weekly data for 5 years to 30 Aug 2019***	***Weekly data for 5 years to 30 Aug 2014***	***Four-weekly data for 5 years to 30 Aug 2014***
Mean	entire sample	0.43	0.38	0.47	0.47
	developed country subsample	0.40	0.31	0.48	0.47
Median	entire sample	0.43	0.40	0.48	0.45
	developed country subsample	0.40	0.31	0.49	0.45

Source: CEPA 2019.

[256] GAWB, sub. 5, pp. 29–30, 38.

[257] The sample included 18 firms—13 from developed countries and five from advanced emerging countries (using the FTSE Russell classification system). The developed country subsample comprised the 13 firms from developed countries. CEPA said both developed and advanced emerging countries are likely to have sufficiently deep and liquid equity markets which are more comparable to Australia, and used results from both samples to form its proposed range of values for GAWB's asset beta (CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 23–28).

[258] In reporting this range, CEPA excluded the four-weekly results for the most recent five-year period given the four weekly estimates produced some outlier results (CEPA, *Advice on GAWB's WACC 2020–25,* December 2019, p. 26).

[259] CEPA said the beta estimates from the most recent five years provided the most recent evidence, and placed more emphasis on weekly estimates, given the outlier results from the four weekly estimates (CEPA, *Advice on GAWB's WACC 2020–2025,* December 2019, p. 28).

[260] CEPA, *Advice on GAWB's WACC 2020–2025,* December 2019, p. 28.

We had regard to the 10-year asset beta data, consistent with the approach applied in our decisions on Queensland Rail's 2020 DAU and Aurizon Network's 2017 DAU.[261] We consider a 10-year estimation period may contribute to greater stability of estimates, owing to an increased number of observations and smaller standard errors. The 10-year data produced slightly higher estimates, with the mean for the samples ranging from 0.40 to 0.45. Taking an average of the weekly and four-weekly mean estimates resulted in a value of 0.45 for the entire sample, and 0.43 for the developed country subsample.

Table 29 Estimates of a 10-year asset beta

		Weekly data for 10 years to 30 Aug 2019	***Four-weekly data for 10 years to 30 Aug 2019***
Mean	entire sample	0.45	0.44
	developed country subsample	0.45	0.40
Median	entire sample	0.47	0.40
	developed country subsample	0.46	0.38

Source: CEPA 2019.

Given our analysis of GAWB's risk, and the estimates produced by the 10-year data, we consider that GAWB's proposed value of 0.45 is appropriate.

In this instance, the increase in the beta relative to the estimate applied in the 2015–20 GAWB review reflects increases to both the sample size and sample period used in the estimation process.

Using the Conine formula and applying values of 50 per cent for gearing and 0.12 for the debt beta[262], we have calculated an equity beta of 0.73. We consider this estimate is appropriate in the context of other regulatory decisions for water utilities—the equity beta lies within a range of recent regulatory estimates of the equity beta.

[261] In our decision on Queensland Rail's DAU, we took an average of weekly and monthly 10-year asset beta data—see QCA, *Queensland Rail 2020 Draft Access Undertaking,* decision, February 2020, p. 35. In relation to Aurizon Network, see Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 80.

[262] We consider GAWB's proposed value of 0.12 for the debt beta is appropriate. We have applied this value in our recent reports (e.g. in QCA, *Rural irrigation price review 2020–24 Part A: Overview*, final report, January 2020, p. 93 and QCA, *Queensland Rail 2020 Draft Access Undertaking*, decision, February 2020, p. 38).

Table 30 Recent regulatory decisions for water utilities

Regulator	*Entity*	*Year*	*Equity beta*	*Gearing*	*Asset beta*
ESCOSA	SA Water	2016	0.70	60%	0.38
ERA	Water Corporation, Aqwest and Busselton Water	2016	0.70	55%	0.41
IPART	Various	2018	0.70	60%	0.38
OTTER	TasWater	2018	0.65	60%	0.35
ICRC	Icon Water	2018	0.70	60%	0.38
QCA	Seqwater	2018	0.77	60%	0.41
QCA	Sunwater and Seqwater (irrigation)—final decision	2020	0.755	60%	0.40

Notes: CEPA calculated the asset betas using the equity betas obtained from other regulators' decisions and the QCA's preferred approach to de-levering and re-levering. As such, it said that the asset betas it calculated may not be comparable to the asset betas provided by the other regulators. However, we consider these values may provide a rough guide for comparison purposes.

Source: CEPA, Advice on GAWB's WACC 2020–2025, December 2019.

We note that the value for GAWB's asset beta is higher than the values applied to Seqwater for the 2018–21 period and to Sunwater and Seqwater for the 2020–24 irrigation pricing investigation.[263] However, these entities have higher equity betas than GAWB (Table 30) because they have higher gearing levels. If gearing increases, financial risk to equity holders increases, so the cost of equity increases, all else equal.

Finding A6.29—Beta

The QCA finds GAWB's proposed values of 0.45 for the asset beta and 0.73 for the equity beta are appropriate.

6.2.2 Market risk premium

The market risk premium is the additional return an investor requires, to be compensated for the risk of investing in a market portfolio of risky assets relative to purchasing a risk-free asset.

GAWB proposed a market risk premium of 7.0 per cent. This is higher than the 6.5 per cent estimate it applied in 2015–20. GAWB said it proposed this market risk premium, as the QCA's current range of approaches and weightings resulted in a conservative estimate of the market risk premium (i.e. 6.5%), especially given:

- the decrease in the risk-free rate
- the relatively low weight assigned to the Wright MRP
- the QCA's Cornell DGM estimate is well below DGM estimates generated by other Australian regulators.[264]

[263] The 2012 irrigation review indicated that rural irrigation businesses may have lower systematic risk profiles than water businesses that supply mostly industrial customers such as GAWB. However, a limited sample prevented us from reaffirming this finding in our final report on rural irrigation prices for 2020–24. See QCA, *Rural irrigation price review 2020–24, Part A: Overview,* final report, January 2020, p. 93.

[264] GAWB, sub. 1, p. 114.

To address these matters when calculating a weighted average of estimates from five methodologies (listed below), GAWB increased the weight applied to the Wright estimate and decreased the weight applied to the dividend growth model estimate (both relative to the weight applied in our draft decision on Queensland Rail's 2020 draft access undertaking (DAU)).

The council considered that a market risk premium of no greater than 6.5 per cent should apply to ensure consistency in treatment with the market risk premiums adopted in other jurisdictions for water supply.[265]

In our draft report we considered a market risk premium of 6.5 per cent was appropriate, rather than GAWB's proposed value of 7.0 per cent.

In its submission on our draft report, GAWB maintained its view that 'an MRP estimate that is based on a lower weighting of the Cornell DGM and a higher weighting of the Wright MRP compared to the QCA's approach is appropriate'[266]—for the weighted average calculation, which is one of three metrics we calculate to inform our judgment of an appropriate value for the market risk premium. However, GAWB did not provide new evidence to support this position.

In this final report, we consider GAWB's proposed value for the market risk premium of 7.0 per cent is appropriate. The increase from the 6.5 per cent in our draft report is due to updating the estimates for the March averaging period, rather than to any change in methodology since our draft report. In particular, there was a significant increase in market volatility in March (likely due to the coronavirus pandemic), which contributed to a material increase in the value calculated using the dividend growth model.

Low interest rates

An overall theme of Synergies' report was ensuring that companies are provided with an adequate return on equity in the current environment of low interest rates. Synergies said that a bottom-up compilation of WACC parameters is not enough in isolation from the wider consideration of an overall return on equity outcome capable of incentivising investment. It said when return on equity parameters, such as the risk-free rate, depart significantly from their long-term averages, it is imperative that this is at least partially accommodated in the total market return. Synergies said some experts consider it may be inappropriate to combine a long-term estimate of the market risk premium with a short-term average of the risk-free rate (and instead they apply an adjusted risk-free rate).[267]

Synergies also said a market risk premium of 7.0 per cent (or higher) remains appropriate even when using a 10-year risk-free rate, given that the 10-year risk-free rate has fallen substantially in recent times.[268] It said this with the knowledge that we previously applied a 7.0 per cent market risk premium with a four-year risk-free rate in our decision on Aurizon Network's 2017 DAU. The equivalent market risk premium using a 10-year risk-free rate as at January 2019 was 6.5 per cent (applied in our draft decision on Queensland Rail's 2020 DAU).

We consider the proposed estimation methodologies seek to account for low interest rates.[269] Three of the five estimation methodologies rely primarily on current interest rates (as opposed

[265] GRC, sub. 15, p. 4.
[266] GAWB, sub. 33, p. 53.
[267] GAWB, sub. 5, p. 20.
[268] GAWB, sub. 5, pp. 15–16.
[269] On Synergies' point about experts adjusting the risk-free rate, we note valuers adjust risk-free rates and total returns for a range of reasons—which are not necessarily consistent with the regulatory exercise. For example,

to historical rates) to determine the market risk premium. As such, they provide an indication of where the market risk premium might lie in current conditions.

We also consider it is important to assess the overall return on equity, rather than individual parameters in isolation. For this reason, in considering an appropriate WACC for GAWB, we combined a detailed bottom-up assessment of individual parameters with a top-down check of the overall WACC against the WACC values of relevant comparators (section 6.3). By ensuring the overall WACC is appropriate, we are implicitly also ensuring the cost of equity is appropriate.

Estimation methodologies

Methods for estimating the market risk premium can be classified into historical methods (such as the Ibbotson and Siegel methods), forward-looking methods (such as dividend growth models and surveys) or hybrid methods (such as the Wright method) that contain both historical and forward-looking inputs. Finding an appropriate estimate of the market risk premium requires judgement, as the market risk premium is not observable and there is no single estimation technique that can produce a 'correct' estimate. Therefore, it is useful to look at estimates from a number of valid methodologies.

Synergies used the Ibbotson, Siegel and Wright methods, a dividend growth model and surveys to estimate the market risk premium. We focus below on the two methods that we consider were used with weights that were not appropriate (for calculating a weighted average): the Wright method and the dividend growth model.[270]

Wright method

The Wright method assumes that the risk-free rate and market risk premium are perfectly negatively correlated—resulting in a constant return on equity. In other words, when the observable risk-free rate decreases (increases), the unobservable market risk premium increases (decreases) by an offsetting amount.

Synergies proposed increasing the weight applied to the Wright method on the basis that the overall market risk premium estimate would be responsive to changes in the risk-free rate.[271] Synergies presented material that it said supported the notion that the cost of equity is stable over time (even as government bond yields have declined).[272]

We consider that the stability of the return on equity over time is plausible, but that this issue is ultimately an empirical question. Further, while the commentary that Synergies provided supports a relatively stable cost of equity, we consider this information to be but one input in forming a view on the market risk premium.

Empirical analysis over several sample periods to 2019 supports our previous conclusion that there tends to be relatively more stability in the market risk premium than in the return on equity

valuers of long-lived projects adjust the 10-year risk-free rate (in the discount rate) upward to account for project cash flows received many years into the future.

[270] Synergies also said the current weightings on the Ibbotson and Siegel market risk premium estimates are not appropriate (GAWB, sub. 5, p. 18). However, given GAWB did not propose to change the weights applied to these methods, we have not discussed Synergies' arguments.

[271] GAWB, sub. 5, p. 25.

[272] Synergies presented material from the RBA (2015), which said that the earnings yield on listed companies and required returns on capital expenditure for many Australian firms are fairly stable, and do not move much with the return on safe assets or interest rates. It also presented a quote from KPMG (2018), which said that market evidence indicates that bond yields and the market risk premium are strongly inversely correlated. See GAWB, sub. 5, pp. 19–23.

over time.[273] Such evidence suggests a decrease in bond yields may not equate to a one-for-one increase in the market risk premium.

We acknowledge that this area is difficult and complex (as the market risk premium is unobservable), and that empirical analysis is not determinative, given the statistical limitations.[274] Consistent with this view, we previously raised the original weight placed on this method for our final decision on the Aurizon Network 2017 DAU.[275] At this time, however, we do not consider there is convincing evidence to justify a further increase in the weight placed on the Wright method; accordingly, our treatment of this method remains appropriate.

Cornell dividend growth model

In the dividend growth model, the market return is the rate of return that reconciles the current value of the market portfolio with the present value of the expected future stream of dividends.[276]

Synergies proposed decreasing the weight applied to the dividend growth model estimate. Synergies said that the QCA's most recent dividend growth model estimate is an outlier compared to recent dividend growth model estimates of various other regulators.[277] It said the difference may relate to adjustments that the QCA makes to long-run growth assumptions.[278,279] It said reducing the weight on this method 'ameliorates any issues arising from the assumptions or adjustments underpinning the QCA's application of the model'.[280]

We do not consider it appropriate to change our treatment of the dividend growth model at this time. While Synergies presented estimates from several regulators, it is not possible to be definitive about the reasons for the difference without knowing all the inputs and methodological features of the models—only some of this information is public.[281]

In response to Synergies' specific concern with our long-run growth rate assumption, we acknowledge that this assumption reduces the market risk premium estimate, all else equal. However, we consider that this assumption is well justified and remains appropriate.[282] We note that Synergies did not suggest an alternative that it considers superior.

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[273] We updated the analysis performed in our Market Parameters decision on the relative stability of the market risk premium and real return on equity for Australia. For details of the original analysis, see QCA, *Cost of capital: market parameters*, final decision, August 2014, pp. 85–88.

[274] We concluded that a limitation of the earlier analysis was that it did not test the statistical significance of the difference between the variances of the market risk premium and the real return on equity time series—because there were too few independent observations (QCA, *Aurizon Network's 2017 DAU*, final decision, Appendix F, December 2018, pp. 67–69).

[275] In doing so, we considered the evidence supported a lower weight on the Wright method than on the Ibbotson method—consistent with our analysis suggesting greater stability in the market risk premium than the real return on equity over time. We consider this relativity remains appropriate (QCA, *Aurizon Network's 2017 DAU*, final decision, Appendix F, December 2018, pp. 45, 69).

[276] The key features of our Cornell-type dividend growth model are described in QCA, *Cost of capital: market parameters*, final decision, August 2014, pp. 67–73.

[277] GAWB, sub. 5, p. 23.

[278] GAWB, sub. 5, p. 24.

[279] It appears the adjustment Synergies referred to is the deduction applied to the real gross domestic product growth rate used in the model.

[280] GAWB, sub. 5, p. 25.

[281] In addition, only the estimates from IPART can be directly compared to our (January 2019) estimate, as they were estimated at the same point in time. Dividend growth model estimates are based on several time-varying inputs, which are sensitive to current market conditions.

[282] The relevant growth rate of dividends is a long-term rate that applies to the (aggregate) earnings of all shares in currently existing and future companies. Therefore, the long-run growth rate of earnings of existing shares must be

Estimates

In its proposal, GAWB calculated a weighted and simple average of the estimation methods and said that these calculations point to a market risk premium value of 7.0 per cent—when using the QCA's standard approach of rounding to the nearest half per cent.[283,284] In its submission on our draft report, GAWB said its adjustments resulted in a weighted mean market risk premium of 7.11 per cent (as at 28 February 2020).[285,286]

In considering an appropriate value for the market risk premium, we had regard to the same five estimation methodologies as GAWB, and to three measures: a weighted average, simple average and the median. For the weighted average, we consider the weights applied for our decision on Queensland Rail's 2020 DAU remain appropriate.[287] These weights are consistent with our assessment of the relative strengths and weaknesses of the methods and are statistically defensible.[288]

For this final report, we updated the estimates for each of the different approaches, using data up to the 20-day period ending 31 March 2020 (the risk-free rate and cost of debt averaging period) (Table 31).

Table 31 Market risk premium estimation methods

Method	*Market risk premium estimate (as at 31 March 2020)*
Ibbotson	6.2%
Siegel	5.6%
Surveys and independent expert reports	6.5%
Cornell dividend growth model	9.1%
Wright	10.4%

Note: The Wright estimate is based on an updated (8 May 2020) forecast of inflation, consistent with the remainder of this final report.

Source: QCA calculations.

The estimates of the market risk premium range from 5.6 per cent to 10.4 per cent. The median market risk premium estimate is 6.5 per cent, a simple average of the five estimates is 7.6 per cent, and a weighted average is 7.5 per cent. We used these metrics to inform our judgment of an appropriate value for the market risk premium, and consider 7.0 per cent is an appropriate value for this final report.[289] While 7.0 per cent represents an increase from 6.5 per cent in our

less than the long-run growth rate in GDP to accommodate new share issues and the formation of new companies over time. A deduction from the growth rate of GDP accounts for this.

[283] However, for the simple average, we have calculated a lower value than Synergies.

[284] For the weighted average calculation, Synergies applied the following set of weights: Ibbotson (25%), Cornell dividend growth model (15%), Siegel (15%), Wright (25%) and surveys (20%) (GAWB, sub. 5, p. 25).

[285] However, it is not clear how GAWB calculated this value.

[286] GAWB, sub. 33, p. 53.

[287] The weights are Ibbotson (25%), Cornell dividend growth model (25%), Siegel (15%), Wright (15%) and surveys (20%) (QCA, *Queensland Rail 2020 Draft Access Undertaking*, decision, February 2020, p. 46).

[288] This set of weights places relatively more emphasis on the two methods that are entirely independent of each other (the Ibbotson and dividend growth model methods). Doing so maximises the use of the information available (and reduces the mean square error of the estimate).

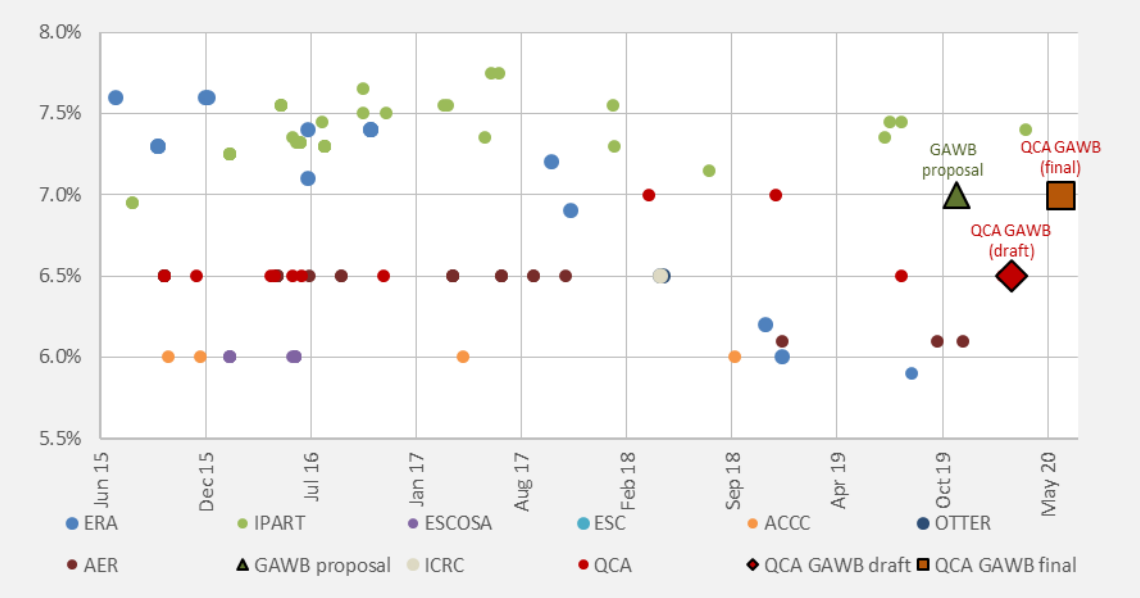
[289] This is consistent with our standard approach of rounding the market risk premium to the nearest half per cent.

draft report, we consider 7.0 per cent recognises the change in market conditions since the draft report.[290]

Recent regulatory decisions

We consider a value of 7.0 per cent for the market risk premium is appropriate in view of the range of values adopted by other Australian regulators. Recent decisions by Australian regulators have provided values for the market risk premium ranging from 5.9 per cent to 7.8 per cent.

Figure 11 Market risk premium estimates from other Australian regulators



Note: For the IPART values, we have taken the average of the historical and current market risk premium midpoint estimates.

Source: Various regulatory decisions; QCA calculations.

Finding A6.30— Market risk premium

The QCA finds GAWB's proposed value of 7.0 per cent for the market risk premium is appropriate.

6.2.3 Risk-free rate

The risk-free rate is the rate of return on an asset with zero default risk, which compensates the investor for the time value of money. The risk-free rate is a component of both the cost of equity and the cost of debt.

GAWB calculated a risk-free rate of 0.94 per cent, using (interpolated) nominal yields on 10-year Commonwealth Government bonds, averaged over the placeholder 20-business day period ending 30 August 2019. It nominated a 20-day averaging period starting 4 May 2020 to calculate the risk-free rate for its final 2020–25 prices.[291] We consider GAWB has applied an appropriate method to calculate the risk-free rate.

[290] In particular, the dividend growth model recognises the change in current market conditions.
[291] GAWB, sub. 33, p. 54.

Term to maturity

In regulation, the risk-free rate is typically estimated using long-term bond yields (such as those based on 10-year terms) or using bonds with terms that match the length of the regulatory period.

GAWB applied a 10-year term. This differs from the term applied by GAWB in previous reviews—which matched the term of the regulatory period (five years). We see merit in using a 10-year bond term to estimate the risk-free rate.[292] A 10-year bond term better reflects the expectations of investors than a shorter bond term, given the long-term nature of infrastructure asset investment. A 10-year term is also adopted by other Australian regulators including the AER, the ACCC, IPART, ERA, ESCOSA and the ESC.

Averaging period

The daily risk-free rate is usually averaged over a specifically nominated period, often 20 to 40 business days, to manage the risk of one-off shocks. It is standard practice for regulated entities to nominate the dates for an averaging period in advance of it occurring, to eliminate the potential for 'cherry-picking' of a period.

For calculating its final prices for 2020–25, GAWB said it intended to commence the averaging period on 4 May 2020 (corresponding to the 20-day period ending 31 May 2020).[293] For this final report, we used the 20-day period ending 31 March 2020.[294] We could not use the same period as GAWB because our final report is due to the Minister before completion of GAWB's nominated May averaging period.[295]

Finding A6.31—Risk-free rate

The QCA finds GAWB's proposed approach to calculating the risk-free rate is appropriate.

The QCA has calculated a value of 0.90 per cent for the risk-free rate for the 20-day averaging period ending 31 March 2020.

For its final 2020–25 prices, GAWB nominated a 20-day averaging period starting 4 May 2020. Therefore, the risk-free rate GAWB applies to its final prices may differ to the risk-free rate calculated in this final report.

6.2.4 Capital structure

A firm's capital structure refers to the relative proportions of debt and equity that together finance the firm's activities.[296] Gearing refers to the proportion of debt in the total market value of its assets (debt and equity). A firm's risk profile, the gearing level of comparator firms and regulatory precedent can help inform an appropriate gearing level for a regulated firm.

GAWB proposed a 50 per cent gearing level, consistent with the level applied in previous reviews.

[292] We recently applied a 10-year bond term for Queensland Rail (QCA, *Queensland Rail 2020 Draft Access Undertaking,* decision, February 2020, p. 42).
[293] GAWB, sub. 33, p. 54.
[294] GAWB indicated it may adopt a different averaging period length to minimise the extent to which the risk-free rate estimate is influenced by temporary perturbations in the market (GAWB, sub. 1, p. 113).
[295] Our final report is due on 29 May 2020.
[296] A firm's capital funds a range of business activities, including operations, maintenance, capacity expansion and working capital.

The council said that a 50 per cent level of gearing (rather than the 60 per cent level of gearing applied to Seqwater) would result in a higher cost to the council than would otherwise apply.[297] It said that gearing should be increased to 60 per cent in order for its community to be treated equitably.[298]

We consider GAWB's proposed gearing level of 50 per cent is appropriate. We considered advice from CEPA, stakeholder submissions, GAWB's business risk, regulatory precedent and the gearing levels of comparator firms in our analysis.

We have not found evidence suggesting there has been a material change in GAWB's total risk profile since the previous pricing review, when a 50 per cent gearing level was applied.

A 50 per cent gearing level lies between two relevant reference points:

- It is below the 60 per cent gearing level set by regulators for most other water utilities in Australia. We consider this relativity remains appropriate at this time. GAWB may be less able than typical water utilities to support debt, due primarily to its dependence on a relatively small number of large industrial customers.[299] This risk characteristic differs from typical water utilities that tend to have larger customer bases comprising small residential customers.
- It is above the actual gearing of comparable listed water utilities.[300] The average actual gearing of these firms was 34 per cent for the period 2014–19, and 40 per cent for 2009–14. However, we do not consider these values warrant a decrease in GAWB's gearing ratio at this time. Despite their broadly similar business models and operations, there are differences between the comparator firms and GAWB.[301]

We acknowledge the council's statement that GAWB's gearing should be increased to 60 per cent. However, we do not set regulated WACC values to equalise prices across the state—there are other policy mechanisms for that purpose. Rather, we set WACC parameters, including capital structure, based on the risk of the business. In the present case, we do not consider a change in GAWB's level of gearing is appropriate, given our conclusion that it may face slightly greater risk than typical water utilities. Further, we note that even if such a change led to a price reduction[302], it is not clear that this would be passed through to the council's retail customers.

[297] Given the concentrated nature of GAWB's customer base and associated demand risk (see GRC, sub. 15, p. 4).
[298] GRC, sub. 15, p. 4.
[299] We similarly concluded in previous decisions that GAWB could support a lower level of gearing than other Australian regulated water businesses because it has a different risk profile. See QCA, *Gladstone Area Water Board: Investigation of pricing practices,* final report*,* March 2005, pp. 126–27 and QCA, *Gladstone Area Water Board: Investigation of pricing practices,* final report*,* June 2010, p. 125.
[300] We considered the actual gearing of the water utility comparator firms used for our beta analysis, given these firms are likely to have broadly comparable earnings volatility to GAWB. These firms have similar business models (they are water utilities), and are subject to forms of regulation or contractual arrangements that protect them from revenue fluctuations in a way that is broadly comparable with GAWB's regulatory framework (CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 9, 15).
[301] For example, the comparator water utilities are subject to a variety of regulatory frameworks, some of which suggest the capacity to support less debt (CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 29–31).
[302] Increasing GAWB's gearing may not necessarily decrease its WACC. It may in fact increase GAWB's WACC, given that increasing the proportion of debt funding in a firm can increase risk to equity holders. The precise effect on the overall WACC from changing the level of gearing depends on the interaction between various parameters in the WACC equation.

Finding A6.32—Capital structure

The QCA finds GAWB's proposed 50 per cent gearing rate is appropriate.

6.2.5 Credit rating

A credit rating is an assessment of the creditworthiness of a borrower. A higher credit rating indicates a borrower is less likely to default. A credit rating for a regulated firm can be determined by assessing the firm's business and financial risk profiles, considering an appropriate capital structure.

GAWB proposed a BBB credit rating, consistent with the rating applied in previous reviews.

We consider GAWB's proposed credit rating is appropriate.

We have not found reasons to depart from the BBB credit rating applied in previous reviews, given we do not consider that GAWB's financial circumstances have materially changed.

We consider a BBB rating is appropriate, looking at the credit rating of comparator firms. Regulatory reviews for most other Australian regulated water businesses applied a BBB credit rating.[303] While the credit rating of the listed overseas comparator firms varied from BB– to A+, there were four companies in the BBB band.[304]

We tested whether GAWB is likely to remain financeable over the 2020–25 regulatory period, given a BBB credit rating and our 2020–25 regulatory cash flows.[305] We calculated two key credit metrics, FFO over debt and interest cover.[306] The calculated ratios indicate that the regulatory cash flows may support a BBB credit rating.[307]

Finding A6.33—Credit rating

The QCA finds GAWB's proposed BBB credit rating is appropriate.

6.2.6 Debt risk premium

The debt risk premium is the amount above the risk-free rate a business has to pay to acquire debt funding from financial markets and is related to, among other factors, a firm's credit rating. The debt risk premium increases with the riskiness of the business and varies over time with market circumstances.

GAWB applied a debt risk premium of 2.158 per cent, comprising a raw debt risk premium of 2.05 per cent and debt-raising costs of 0.108 per cent. This was calculated over the placeholder 20-day averaging period in August 2019. For the reasons provided in this section, we find GAWB's approach to calculating the debt risk premium is appropriate.

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[303] QCA, *Rural irrigation price review 2020–24, Part A: Overview,* final report, January 2020, p. 94.
[304] CEPA, *Advice on GAWB's WACC 2020–2025,* December 2019, p. 29.
[305] The cash flows are based on our pricing-related findings in this report, including the gearing and BBB credit rating assumptions, and our findings on capital and operating expenditure.
[306] The funds from operations (FFO) to net debt ratio measures a business's ability to generate cash flows to service and repay debt. It is calculated as FFO / total borrowings. The interest cover ratio measures a business's ability to service its debt burden using its cash flows. It is calculated as (FFO + interest paid) / interest paid.
[307] We compared these metrics to the values applied in our previous review (see Incenta, *WACC parameters for GAWB price monitoring investigation 2015–20,* May 2015, pp. 23–24).

Debt management strategy

Before estimating a regulatory cost of debt allowance, it is first necessary to choose a benchmark debt management strategy as the basis for this estimation process. In Australia, regulators typically apply either an on-the-day[308] or trailing average[309] debt management strategy for this purpose.

GAWB applied a benchmark debt management strategy based on an on-the-day approach. While GAWB saw merit in a trailing average approach, it indicated this approach requires annual updates—which would cause annual variations in the WACC and therefore in customer prices. Under GAWB's current pricing framework, it sets prices at the start of the five-year period and only increases them for inflation each year. GAWB said 'yearly changes in the WACC could potentially introduce an additional layer of uncertainty for customers as a "true up" would need to occur at the start of each regulatory period'.[310] GAWB said that, in light of this possibility, it would continue to apply an on-the-day debt management strategy for the 2020–25 period.

We consider an on-the-day debt management strategy is a suitable approach for GAWB at this time. This is the same approach GAWB has applied previously. While we also see merit in the trailing average approach, we understand that GAWB is seeking to limit pricing adjustments to customers.

Term of debt risk premium

GAWB applied a 10-year term to maturity for BBB rated corporate bonds to calculate a 10-year debt risk premium.

We consider this term is appropriate. Calculating a 10-year debt risk premium is consistent with the efficient debt financing practices of regulated infrastructure firms with long-lived assets. Issuing debt for longer terms, such as 10 years, can help manage refinancing risk. A 10-year term is also consistent with the term of the proposed risk-free rate.

Corporate bond data source and methodology

For an on-the-day debt management strategy, there are several data sources and methods available for estimating the debt risk premium.

GAWB calculated the debt risk premium using Reserve Bank of Australia (RBA) and Bloomberg data. It averaged corporate bond yields from the two sources over a 20-day period in August 2019 to arrive at its debt risk premium estimate.

We consider this approach is appropriate. The use of third-party data is common across the Australian regulatory landscape. We applied the same approach in our recent decision on Queensland Rail's 2020 draft access undertaking.[311] We do not consider either the RBA or

[308] The on-the-day approach involves setting the regulatory cost of debt over a relatively short period immediately preceding the start of a regulatory period. The rationale for this approach is that the allowed cost of debt at the beginning of a regulatory period should reflect prevailing market conditions and therefore known information at the time. The market rate provides the best estimate of the rate of return on debt that lenders require at the time.

[309] The trailing average approach estimates the regulatory cost of debt as an average of the total cost of debt over an historical period (i.e. the most recent 10 years) with annual updates of that average. This approach may provide a better 'match' between the regulatory cost of debt and the firm's cost of debt by better replicating the actual practice of many regulated firms in issuing long-term debt and staggering their debt to manage refinancing risk.

[310] GAWB, sub. 1, p. 118.

[311] QCA, *Queensland Rail 2020 Draft Access Undertaking*, decision, February 2020, p. 43. In our draft decision we found the differences between the third-party approach and our previously applied econometric approach (used in the 2015–20 GAWB review, among others) were not biased in any particular direction (QCA, *Queensland Rail 2020 Draft Access Undertaking,* draft decision, April 2019, pp. 34–35). We consider this finding remains relevant.

Bloomberg is superior for the purpose of calculating the debt risk premium. We therefore consider it is appropriate to take an average of the values from both sources.

We obtained the following debt risk premium values[312] for the averaging period ending 31 March 2020:

- 2.67 per cent, using the RBA BBB-rated series, extrapolated to an effective 10-year term[313]
- 2.20 per cent, using the Bloomberg BVAL 10-year BBB series.

We apply the average of 2.44 per cent as the debt risk premium value for this final report. This value is higher than GAWB's proposed value, due to our use of a later (March) averaging period, which was likely affected by the coronavirus pandemic.

Debt-raising costs

In addition to the raw debt risk premium, we typically provide firms with an allowance for the transaction costs associated with raising debt. GAWB included a debt-raising cost allowance of 0.108 per cent. We consider this allowance is appropriate. It is consistent with the allowance we applied in recent decisions for other regulated entities.[314]

Finding A6.34—Debt risk premium

The QCA finds GAWB's proposed approach to calculating the debt risk premium is appropriate.

The QCA has calculated a value of 2.548 per cent for the debt risk premium comprising a raw debt risk premium of 2.44 per cent and debt-raising cost allowance of 0.108 per cent, for the 20-day period ending 31 March 2020.

For its final 2020–25 prices, GAWB nominated using a 20-day averaging period starting 4 May 2020. Therefore, the debt risk premium GAWB applies to its final prices may differ to the debt risk premium calculated in this final report.

6.2.7 Gamma

The Australian tax system allows companies to provide their shareholders with credits (called dividend imputation credits) to reflect company taxes paid on profits that are distributed as dividends. Shareholders then use these dividend imputation credits to reduce their own tax liabilities. Therefore, imputation credits effectively reduce a company's cost of capital—because it reduces the cost to shareholders of investing in a company.

The value of dividend imputation credits is captured by a parameter known as 'gamma', which is the product of:

- the distribution rate—the ratio of distributed imputation credits to company tax paid, and
- the utilisation rate—the value-weighted average over the utilisation rates of imputation credits of all investors in the market.

[312] Provided by our consultant, CEPA (CEPA, *Advice on an appropriate debt risk premium for GAWB's 2020-2025 pricing period: May 2020 update,* May 2020, p. 3).
[313] We applied the approach specified in the AER rate of return instrument (AER, *Rate of return instrument*, December 2018).
[314] See QCA, *Rural irrigation price review 2020–24 Part A: Overview*, final report, January 2020, p. 95; QCA, *Queensland Rail 2020 Draft Access Undertaking*, decision, February 2020, p. 45; QCA, *Aurizon Network's 2017 DAU*, final decision, Appendix F, December 2018, p. 139.

There are a number of ways in which the distribution rate and utilisation rate can be calculated.

GAWB proposed to apply a value of 0.484 for gamma. This value was calculated using a distribution rate of 0.88, based on the average distribution rate of the top 20 companies on the ASX by market capitalisation, and a utilisation rate of 0.55, based primarily on the equity ownership of Australian listed companies.[315]

GAWB raised some concerns with the ways these rates were calculated[316]—however, it did not propose to depart from QCA precedent at this time. It said it will continue to monitor developments in the approaches to valuing imputation credits and re-evaluate its position at future reviews accordingly.[317]

We consider GAWB's proposal to apply a value of 0.484 for gamma (based on a distribution rate of 0.88 and a utilisation rate of 0.55) is appropriate. We also considered this value was appropriate in our Aurizon Network UT5 final decision, where we set out our rationale[318], and we subsequently applied it in our decision on Queensland Rail's 2020 DAU and report on rural irrigation prices for 2020–24.

Although GAWB expressed concerns about the methodology, it proposed to adopt a value we consider appropriate at this time. Therefore, we have not addressed GAWB's concerns in this report.

Finding A6.35—Gamma

The QCA finds GAWB's proposed value of 0.484 for gamma is appropriate.

6.3 Top-down analysis and overall WACC

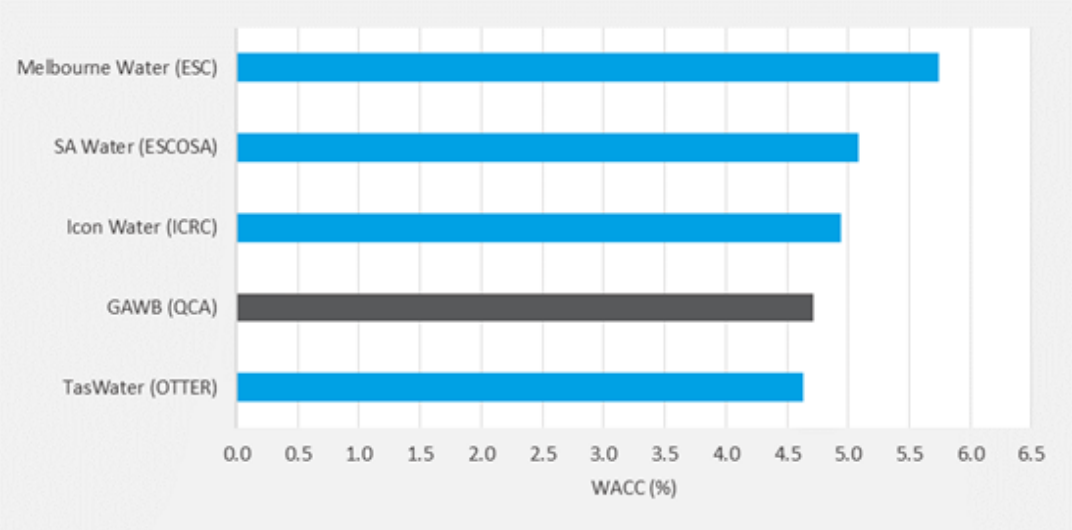
While a bottom-up assessment of individual WACC parameters provides a framework for estimating a rate of return for GAWB, we also consider whether the overall WACC is appropriate.

Given a number of the parameters involve subjective assessment and the estimation methods are subject to statistical uncertainty, we undertake a top-down analysis to provide a 'sense-check' of our bottom-up estimate. In doing so, we consider the WACC values set by other Australian regulators for similar regulated firms, and other relevant information. Ultimately, determining an appropriate WACC requires the exercise of judgement within the context of the assessment.

We consider the WACC values of other Australian regulated water utilities are relevant reference points for GAWB. We normalised the WACC values of a sample of these firms in order to compare the WACC values at the same point in time, as at 31 March 2020.[319] The normalisation involves applying other regulators' WACC methodologies to a common averaging period.

[315] GAWB, sub. 1, pp. 120–21.
[316] GAWB raised concerns about the methodology used to calculate the distribution rate, and the integrity of the data underpinning the equity ownership approach as well as the weight placed on that approach (GAWB, sub. 1, pp. 120–21 and sub. 5, pp. 45–48).
[317] GAWB, sub. 1, p. 120.
[318] QCA, *Aurizon Network's 2017 draft access undertaking*, final decision, Appendix F, December 2018, pp. 171–87.
[319] The normalisation process controls for differences in regulatory WACC values that arise due to time-varying changes in certain parameters—primarily the risk-free rate and cost of debt.

Figure 12 WACC values for other Australian water utilities, normalised to 31 March 2020



Source: Various regulatory decisions[320]; QCA calculations.

We advise care when the figures are examined[321], as there are differences between the firms in the sample.[322] However, we consider these figures provide a reasonable guide for comparison.

For the first year of the regulatory period, GAWB's proposed WACC is towards the lower end of the comparator water entities' WACC values (Figure 12). The primary reason for the lower WACC is GAWB's materially lower cost of debt as at the averaging period (31 March 2020). This difference arises because GAWB uses an on-the-day cost of debt while most of the other water entities use a trailing average cost of debt.[323] The latter approach incorporates historical costs of debt that are relatively higher than the current cost of debt.

For the remaining years of the regulatory period, some of the other firms' trailing average costs of debt are annually updated and the WACC values recalculated.[324,325] As a result, if current debt market conditions continue for the next several years, the WACC values of these firms would decline over the regulatory period towards the (lower) GAWB WACC.[326]

Given that the primary reason the bottom-up WACC for GAWB is towards the low end of the other regulatory WACC values (in the first year) is because GAWB uses a different approach to

[320] ESC, *Melbourne Water's 2021 water price review*, guidance paper, November 2019; ESCOSA, *SA Water Regulatory Determination 2020*, draft determination: statement of reasons, March 2020; ICRC, *Regulated water and sewerage services prices 2018–23*, final report, May 2018; OTTER, *2018 water and sewerage price determination investigation*, final report, May 2018.

[321] We made some assumptions in attempting to replicate the other regulators' methodologies.

[322] Furthermore, the WACC is only one way to compensate for the risks faced by an entity. The operations and full range of regulatory features relevant to each entity should be considered when comparing the WACC values.

[323] The cost of debt applied for OTTER is a hybrid between a trailing average and an on-the-day approach.

[324] Typically, the cost of debt estimated using a trailing average approach is an average of the cost of debt values for the previous 10 years. Each year, a new cost of debt value is incorporated into the calculation, and the oldest value is removed. This differs from the on-the-day approach, which uses a constant cost of debt for the regulatory period.

[325] However, OTTER determines its cost of debt (using historical and current data) at the start of the regulatory period and does not update it within the regulatory period (OTTER, *2018 Water and Sewerage Price Determination Investigation*, final report, May 2018, pp. 165–66).

[326] Compared to the current cost of debt value, the values in the early 2010s were high. So long as the values for the cost of debt over the regulatory period are below the values they are replacing, the trailing average costs of debt, and therefore the WACC values, will fall each year.

estimating the cost of debt, the bottom-up WACC appears to be reasonable. Therefore, we consider that 4.72 per cent is an appropriate WACC value for GAWB at this time.

The updated bottom-up WACC of 4.72 per cent (March 2020 averaging period), sits above GAWB's original proposal of 4.57 per cent (August 2019 averaging period). The values differ because of the different averaging periods—the March debt risk premium (2.44%) is higher by about 38 basis points, but is slightly offset by the risk-free rate (0.90%), which is lower by four basis points. All other values are the same.[327] We note that GAWB intends to update its estimate for the 20-day averaging period starting 4 May 2020.

Finding A6.36—Overall WACC

The QCA finds that 4.72 per cent is an appropriate WACC for GAWB for the 2020–25 period, based on the 20-day averaging period ending 31 March 2020.

For its final 2020–25 prices, GAWB nominated using a 20-day averaging period starting 4 May 2020. Therefore, the overall WACC GAWB applies to its final prices may differ to the WACC calculated in this final report.

[327] However, while we calculate a value of 7.0 per cent for the market risk premium, we do not support the method GAWB used to calculate this value.

7 RISK MANAGEMENT

GAWB faces risks from fluctuations in demand that may affect its revenues or strand its assets, and from adverse events that may change its costs. Its challenges as a bulk water supplier in the Gladstone area include high fixed costs and a concentrated customer base. GAWB has proposed risk management measures for the 2020–25 regulatory period that include applying a revenue cap, adding review triggers and requiring customers to fund single-user assets.

We find that:

- GAWB's proposal to continue the hybrid revenue cap form of regulation with a 10 per cent deadband on the revenue cap is appropriate (section 7.1)
- some, but not all, of the proposed revenue review triggers for unexpected circumstances are appropriate—specifically,
  - adjustments to demand should not trigger a review (7.2.1)
  - force majeure and drought response measures can be added as review triggers (7.2.2)
  - the trigger materiality threshold should not be reduced—rather, it is appropriate for the threshold to remain at 15 per cent of the smoothed annual revenue requirement (7.2.4).
- it is appropriate that GAWB's capital contributions framework should provide for new customers to own dedicated connecting assets, subject to negotiation (7.3).
- GAWB's contracts should not indicate the QCA can have a role in resolving pricing disputes (7.4).
- GAWB should publish its standard water supply contract (7.5).

7.1 Form of regulation

Risk can be managed, from a regulatory standpoint, by allocating risk to customers or to the regulated entity, in this case GAWB. The mechanism that controls this depends on the regulated entity's particular circumstances and the level of risk it bears through its operational structure and policies. In general, we consider that risk should be allocated to the party that is best placed to manage it.

Under our regulatory approach, we either implement a price cap or a revenue cap—or a blend of the two. A key difference between the two methods lies in who bears volume risk—the supplier in the case of a price cap; customers in the case of a revenue cap.

One blended form of regulation is a revenue cap with a deadband, also known as a hybrid revenue cap. Delivery charges above or below the deadband range are returned to or recouped from customers through price changes in the subsequent regulatory period. This mechanism seeks to keep GAWB's revenue from customers within a range that supports its financial viability whilst providing greater incentives to generate efficiencies than is the case with a revenue cap.

7.1.1 Previous investigations

For the first three regulatory periods (from 2001–02 to 2014–15), a price cap form of regulation applied to GAWB, and we undertook pricing practices investigations (as opposed to price monitoring). While a price cap was in place, prices were fixed, which meant any variations in demand translated to variations in revenue.

GAWB has applied a hybrid revenue cap form of regulation during the current regulatory period (2015–20). It implemented a 10 per cent deadband on all regulated activities (including delivery and all other charges) for 2015–20.[328]

7.1.2 Form of regulation for 2020–25

GAWB proposed to continue a 10 per cent deadband on the annual revenue requirement for all regulated activities (including delivery and all other charges) for the 2020–25 regulatory period.[329] Despite this, GAWB argued against a 10 per cent deadband.

GAWB said our 2015 report on the hybrid revenue cap was counter-intuitive. GAWB claimed the hybrid revenue cap and the notion of stronger incentives to secure additional sales volumes[330] were flawed, because:

- GAWB has a small customer base and is unable to control the entry or exit of a new customer
- investment in the Gladstone region is determined by international and domestic factors outside of GAWB's control
- increased consumption would result in more frequent drought restrictions
- GAWB has no legal obligation to connect additional customers.[331]

We acknowledge GAWB has very little influence over the entry and exit of customers, as both domestic and international factors affect demand, and the costs imposed by GAWB are a small proportion of customers' production costs. Exogenous domestic factors include environmental considerations, and changes in technologies.

GAWB was also concerned about the possibility of increased water usage increasing the risk of drought restrictions. We do not consider this risk to be of material concern, due to the nature of GAWB's customers, which operate under contractual obligations to buy pre-specified quantities of water. Although customers may exceed the amount they have committed to purchase to meet industrial process needs, significant increases in water usage are not financially desirable for customers. Costs therefore act as a deterrent to large deviations from the contracted purchase amount of water.

Continuing the 10 per cent deadband on all regulated activities is in the best interest of GAWB's customers, as it reduces the chance of price shocks between regulatory periods. We note neither delivery charges nor other charges breached even a 5 per cent deadband during the 2015–20 regulatory period. Maximum daily quantity (MDQ) pricing, a system in which customers pay based on their contracted maximum daily consumption, was implemented for the 2015–20 regulatory period and assisted in decreasing revenue volatility.

[328] GAWB initially proposed a deadband range of 5 per cent on the revenue cap for 2015–20, which would have applied to all regulated activities. We put forward an alternative proposal, with a 5 per cent deadband on delivery charges and 10 per cent on all other regulated activities. The 5 per cent deadband was suggested as a transitional mechanism for introducing the new pricing system.
[329] GAWB, sub. 1, p. 51.
[330] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, pp. 55–57.
[331] GAWB, sub. 1, pp. 48–50.

This hybrid revenue cap form of regulation is in line with IPART and the Essential Services Commission's (ESC) approaches for hybrid revenue caps, in which the use of a deadband is also allowed.[332,333] The council also supported GAWB's current form of regulation.[334]

We find GAWB's proposal is appropriate, with the principal objective being to minimise price shocks on customers, rather than to explicitly incentivise GAWB to secure additional sales volumes.

Over-run charges and surcharges

GAWB said in response to our draft report that revenue received from over-run charges or short-duration surcharges should be excluded from the revenue cap adjustment at the end of the regulatory period, as it was already required to rebate those charges in the subsequent regulatory period.[335] It said this over-run rebate should be dealt with through a separate process, as a revenue cap adjustment was only made where the deadband was exceeded.[336]

We acknowledge that including the over-runs and short duration surcharges in the deadband calculation would result in double-counting, and have updated our finding from the draft report, to remove the reference to including over-run charges in the revenue that will be taken into account should the deadband be applied.

Finding A7.37—Form of regulation

For the 2020–25 pricing period, the QCA finds it appropriate to apply a revenue cap with a 10 per cent deadband form of regulation, which:

- covers all revenue, including storage, administration, delivery and contract length premium revenue
- fixes prices (apart from CPI increases) for the term of the regulatory period
- carries forward annual revenue variances in excess of 10 per cent of total revenue to the next regulatory period (indexed at the WACC).

7.2 Review triggers

GAWB's regulatory framework includes a review trigger to adjust the smoothed annual revenue requirement to recover costs that are unexpected and not provided for in capital or operating expenditure forecasts.[337] This mechanism is distinct from GAWB's revenue cap deadband, which is activated when actual revenue from regulated activities differs substantially from forecast revenue.

GAWB said it will act reasonably in determining the relevant costs incurred due to a trigger event and determining the price adjustments needed to recover these costs. In the event of a review

[332] ESC, *Water pricing framework and approach: Implementing PREMO from 2018*, October 2016, pp. 32–33.
[333] IPART, *Review of prices for Sydney Water Corporation*, final report, June 2016, p. 152.
[334] GRC, sub. 15, p. 4.
[335] An over-run charge is levied when a customer exceeds its contracted annual volume (see section 9.5), while a short duration charge, or contract length premium, provides an incentive for customers to commit to longer-term contracts (see section 9.6).
[336] GAWB, sub. 33, pp. 55–56.
[337] GAWB, sub. 1, p. 142.

being triggered, it will submit the method for calculating these costs to us for review in the subsequent price investigation.[338]

GAWB said its current framework allows for review triggers where unexpected costs may be recovered through a mid-regulatory period adjustment to prices.[339] GAWB proposed three events that would trigger a review in the 2020–25 regulatory period:

- adjustments to demand (section 7.2.1)
- force majeure (section 7.2.2)
- drought response measures (section 7.2.3).

Force majeure and drought response measures are proposed additions to the criteria for a review trigger, with GAWB stating adjustments to demand should remain as a trigger event. GAWB also proposed to decrease the materiality threshold for review triggers from 15 to 10 per cent of the smoothed annual revenue requirement (section 7.2.4).

7.2.1 Adjustments to demand

GAWB's pricing regime has included demand-based review triggers since GAWB became subject to regulation.[340] However, it appears both GAWB and the QCA overlooked review triggers during the 2015 price review, in which the form of regulation changed from a price cap to a hybrid revenue cap. Having given the issue closer consideration, we no longer consider a demand-based review trigger to be appropriate, given demand risks are already addressed through GAWB's form of regulation.

The current form of regulation addresses variations in revenues due to demand, whereas review triggers address variations in costs due to unforeseen external events. GAWB is regulated under a hybrid revenue cap, which shifts most of its demand risk to customers. As such, GAWB is already covered for demand risk greater than 10 per cent of its required revenue. Moreover, it is unlikely that GAWB's revenue would vary more than the 10 per cent deadband, given it recovers most of its costs through fixed charges. As GAWB's review trigger for demand has the same effect as its revenue cap, we consider a review trigger for demand is unnecessary.

ConocoPhillips said adjustments to demand should not be an eligible review trigger, given that customers already bear most of this risk.[341]

GAWB cited the examples of Seqwater and Icon Water to support including additional triggers for review events. However, these companies do not include review triggers for demand—instead, both address demand risk in the form of regulation through a revenue cap with a deadband.[342,343,344]

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[338] GAWB, sub. 1, p. 144. This is in order to determine whether GAWB's costs incurred in reaction to a trigger event were prudent and efficient and to advise on GAWB's cost recovery.
[339] GAWB, sub. 1, p. 142.
[340] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, September 2002, p. 118.
[341] ConocoPhillips, sub. 38, p. 2.
[342] As we do not have an ongoing role in deterministic price setting for Seqwater, there is no formal price control mechanism. However, Seqwater can be seen to be under a 'de facto' revenue cap, as we typically apply an 'overs and unders' adjustment at the end of each regulatory period to account for differences between forecast and actual demand.
[343] QCA, *SEQ Bulk Water Price Path 2015–18*, final report, March 2015, pp. 94–95.
[344] ICRC, *Regulated water and sewerage services prices 2018–23*, final report, May 2018, p. 22.

GAWB said in response to our draft report that the demand trigger was not the same as a revenue cap, and that both mechanisms should apply. It said one such trigger would be a new customer that brought a material increase in demand. It would be in the interests of customers for this to trigger a review, as it was likely to result in lower water prices in the applicable pricing zones.[345]

We maintain our view that a revenue cap with a 10 per cent deadband will work as designed, by protecting GAWB from significant departures from the demand forecasts used to assess its prices, without creating an unnecessary burden of frequent adjustments.

Any single new customer big enough to cause a 10 per cent (or 15 per cent) revenue increase would likely take some time to come onstream, and its impact could be addressed at the next regulatory reset. At the same time, GAWB is protected from the effects of a sudden exit of a customer that accounts for 10 per cent or more of its revenues by contractual mechanisms that include early termination fees. GAWB will also enjoy further protections from its new policy of requiring customers to own single-user connection infrastructure (see section 7.3). It is therefore unnecessary to have an extra review process to address the effects of a 10 or 15 per cent deviation between GAWB's forecast and actual demand, particularly given such a change would also trigger a revenue cap adjustment.

We said in our draft report that GAWB should provide a clear outline of how the annual revenue requirement and prices would be adjusted to address a trigger event. This would clarify the purpose of having two mechanisms (a demand-based review trigger as well as a hybrid revenue cap with a deadband). It would also provide transparency to customers and offer structured protocols if such an event was to occur.

GAWB explained that if there was a review event for demand or force majeure, it would develop an internal case for a review trigger, consider the timing of the event and the terms of the Directions, and consult with customers, before deciding how to proceed. It would consider clarifying this in the next updates of the pricing principles that it negotiated with its customers.[346]

We find GAWB's explanation unsatisfactory. Its guidance amounts to saying it will decide what to do if something happens. What we were seeking was the indication of intent that GAWB has said it won't provide until after the event. While the exact approach will understandably be driven by the circumstances, it would be helpful to customers if GAWB was more transparent. This might include an explanation of how its approach to an annual revenue variation of more than 10 per cent would differ from what is already included in the revenue cap mechanism.

Finding A7.38—Adjustments to demand

The QCA finds that including adjustments to demand as an eligible review event is not appropriate.

7.2.2 Force majeure

We acknowledge the uncertainty and potential adverse impacts of unexpected natural disasters and similar events. In previous regulatory reviews, we considered it reasonable that force

[345] GAWB, sub. 33, pp. 56–57.
[346] GAWB, sub. 33, p. 58.

majeure events trigger a review of revenues and prices in some circumstances, in line with other QCA regulatory decisions and reports.[347,348]

GAWB considered that the following events may constitute force majeure events:

- flood, earthquake, cyclone, tornado, storm, lightning or other damage caused by the elements
- a failure of electricity supply to the dam or water delivery system
- fire, including fires that may require an increase in the quantity and flow rate of water to be supplied by GAWB to any other customer of GAWB
- insurrection, riot, war, revolution, acts of terrorism and civil commotion.[349]

This list of events that constitute a force majeure event is largely consistent with our views on a reasonable set of force majeure provisions. It is also consistent with the view of the Wiggins Island Coal Export Terminal (WICET), which stated that its contract provides GAWB with a broad entitlement to adjust the amounts paid by WICET, to recover from a force majeure event.[350]

Finding A7.39—Force majeure

The QCA finds that adding force majeure to review triggers is appropriate.

7.2.3 Drought response measures

GAWB stated in its 2015 proposal that when supply restrictions are triggered (e.g. by a drought), GAWB may adjust charges to recover efficient costs.[351] However, the fixed portion of GAWB's revenue comprises approximately 95 per cent of total revenue. These charges do not change despite a supply restriction. That being said, we acknowledge efficient costs may need to be recouped by GAWB in the event of a drought as outlined in the Water Act.[352] Therefore, while increasing prices in times of supply restrictions may not be supported by customers or the community, we consider it reasonable that drought response be identified as a review event and be dealt with in conjunction with GAWB's drought management plan, which sets out the required actions. It is also broadly consistent with WICET's view that GAWB can adjust the amounts paid by WICET in time of water restrictions.[353]

Finding A7.40—Drought response measures

The QCA finds that adding drought response measures to review triggers is appropriate.

[347] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, p. 81.
[348] Aurizon Network, *2017 Access Undertaking (UT5)*, December 2019, p. 441.
[349] GAWB, sub. 1, p. 143.
[350] WICET, sub. 9, p. 2.
[351] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 83.
[352] Section 25O(2)(b) of the Water Act.
[353] WICET, sub. 9, p.2.

7.2.4 Materiality threshold

GAWB proposed the materiality threshold for review triggers be decreased from 15 per cent to 10 per cent of the smoothed annual revenue requirement for the 2020–25 pricing period. GAWB said the current threshold is higher than those of four other regulated companies:

- Icon Water
- Seqwater
- Aurizon Network
- Queensland Rail.

Thresholds of comparable regulated entities

We do not consider Aurizon Network and Queensland Rail to be relevant comparators, as these are fundamentally different businesses, which do not operate as water utilities. Moreover, Aurizon Network and Queensland Rail both operate under different pricing structures, compared to GAWB. For example, Aurizon Network is subject to a pure revenue cap and Queensland Rail is subject to a price cap for the West Moreton reference tariff. However, we acknowledge Icon Water and Seqwater may be suitable comparators, as both companies:

- operate as water utilities
- have review periods similar to GAWB (three to five years)[354]
- implement hybrid revenue caps similar to GAWB.[355]

GAWB said its proposed materiality threshold is $6 million[356], while the current materiality threshold would be $10 million[357], based on its proposed smoothed annual revenue requirement for the 2020–25 period. The proposed threshold is smaller than Icon Water's threshold of $10 million.

While the materiality threshold for Seqwater is not specified, Seqwater undertakes a more qualitative analysis to determine the full effect of a trigger event. If Seqwater can demonstrate that it is not at fault for an emergency event that causes a change in revenue, it may be eligible for a price review within the regulatory period.[358]

By comparison, Melbourne Water may apply to the ESC to determine whether an unforeseen event warrants the adjustment of scheduled prices instead of implementing a numerical materiality threshold.[359]

WICET stated that GAWB was broadly entitled to adjust the amounts paid by WICET 'if there is, or is reasonably expected to be, a sustained variation in aggregate annual revenues derived from the supply of water by GAWB of at least 15%'.[360] A threshold that is lower than 15 per cent might not be enforceable under WICET's contract.

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[354] The length of the review periods is an important consideration. Aurizon is subject to a revenue adjustment on a yearly basis, thereby eliminating any over-/under-recoveries of revenue. Queensland Rail is subject to a price cap and does not have revenue adjustments, yet undergoes reviews when variations in demand are of significance.
[355] For example, ICRC, *Regulated water and sewerage services prices 2018–23*, final report, May 2018, p. 11.
[356] GAWB, sub. 1, p. 144. This is calculated as 10 per cent of GAWB's smoothed annual revenue requirement for the 2020–25 pricing period.
[357] Based on the current 15 per cent materiality threshold (GAWB, sub. 1, p. 144).
[358] QCA, *SEQ Bulk Water Price Path 2015–18*, final report, March 2015, p. 92.
[359] ESC, *Metropolitan Melbourne Water Price Review 2016–21: Melbourne Water Determination*, June 2017, p. 11.
[360] WICET, sub. 9, p. 2.

Risk allocation precedent

We are of the view that, in line with past regulatory decisions, a risk should be borne by the party best suited to manage it.[361,362] We consider that GAWB is best suited to manage drought and force majeure trigger events.

GAWB's policies such as the Water Supply Plan (WSP) and the Contingent Supply Strategy (CSS) were created to address drought and supply risk. GAWB is continuing to work on new supply sources with other water utility companies, in line with the CSS, for secondary supply channels in the event of a drought.[363,364] Furthermore, in times of distress, if GAWB incurs losses or damage because of actions taken under Part 1 of the Water Act (water supply emergencies), GAWB may apply for compensation under s. 25R of the Water Act.

In the case of force majeure, GAWB stated it 'maintains an extensive insurance portfolio as a mechanism of risk management'.[365] We understand this insurance portfolio partly covers loss or damage to Awoonga Dam and other assets, as well as other typical business risks. Although the exact terms are confidential, we understand GAWB's insurance terms will be somewhat similar to those of other regulated water entities. For example, Sydney Desalination Plant is broadly covered for business interruptions from force majeure events.[366]

Due to GAWB's protocols and provisions in place, we find GAWB is well placed to manage the risk of events that would trigger a review. GAWB has not sufficiently justified why it should bear less risk at this time. However, because force majeure events can result in vastly differing monetary and economic effects on each party (depending on the event), it is difficult to quantify an equitable threshold that considers the impacts of an unspecified event on each stakeholder.

Practicality of the materiality threshold

We introduced the 15 per cent threshold in the 2002–05 review partly to avoid triggering multiple mid-period reviews, given GAWB's volatile demand at the time under a price cap. We acknowledge GAWB's demand—and subsequently, revenues—are now relatively stable under a hybrid revenue cap. However, when considering the difference between a 10 per cent and 15 per cent shock on aggregate revenue, the magnitude of the materiality threshold is relatively insignificant.

For example, when considering GAWB's smoothed annual revenue requirement for the 2020–25 pricing period[367], the difference between a 10 per cent and 15 per cent threshold is $3 million.[368] Our view is that most trigger events will either fall short of both thresholds, or breach them, due to the relatively low difference between the two.

GAWB said numerical materiality thresholds were more transparent than qualitative processes, and were easily reflected in its contractual arrangements, including the pricing principles.[369]

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[361] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, June 2010, pp. 11, 13, 15, 65.
[362] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, March 2005, pp. 20–22.
[363] GAWB, *2019 Annual Report*, December 2019, pp. 18–19.
[364] GAWB, sub. 1, p. 17.
[365] GAWB, *2019 Annual Report*, December 2019, p. 43.
[366] IPART, *Sydney Desalination Plant Review of prices from 1 July 2017 to 30 June 2022*, final report, June 2017, p. 35.
[367] Based on section 16.2.3 of GAWB's submission (GAWB, sub. 1, p. 144), we infer a proposed smoothed annual revenue requirement of around $60 million.
[368] Based on the inferred revenue requirement, a 10 per cent threshold is equivalent to $6 million and a 15 per cent threshold is equivalent to $9 million.
[369] GAWB, sub. 33, p. 59.

We consider that GAWB's justification is insufficient, and that it is unnecessary to alter the current 15 per cent threshold. However, our preferred approach would be for GAWB to eliminate a numerical threshold and instead propose a qualitative assessment process in the case of a trigger event, involving specific steps and criteria to deal with the trigger event in an efficient manner. Should these criteria be satisfied, we find GAWB should be eligible for a mid-period review.

Finding A7.41—Materiality threshold

The QCA finds GAWB's proposal of reducing the materiality threshold from 15 to 10 per cent is not appropriate.

7.3 New connections and capital contributions

GAWB said it has tended to own dedicated customer connections, which are defined under GAWB's capital contributions framework as:

> [a]n asset that is installed for the sole use of the connecting customer and is expected to remain for the sole use of that customer at all times over the life of the asset.[370]

GAWB was concerned that when the ownership of the asset remained with GAWB, it was responsible for the administration, maintenance and other costs associated with the asset. GAWB said it could incur significant costs from investigating and accommodating new customer connections, which might not be recoverable if the investment did not proceed. GAWB also considered it bears significant stranding risk as a result of its concentrated industrial customer base.[371]

To address these concerns, GAWB proposed that new customers should be responsible for developing, funding, owning, operating and maintaining dedicated connection assets that are necessary to connect them to GAWB's network, unless otherwise required by and/or agreed with GAWB.[372] GAWB acknowledged possible exceptions to this amendment—the asset may be owned by GAWB when:

- the nature and/or location of the asset means that it is more likely that it could be used by other customers to access GAWB's network in the future. This includes 'strategic' infrastructure that GAWB considers could enable future growth and economic development in the region
- the cost of the infrastructure is very small
- the connection enables delivery of water to the Gladstone Regional Council (as this presents a different risk profile to GAWB's industrial customer base).[373]

GAWB said these changes would apply only to new connection enquiries and investments from 1 July 2020 onwards—arrangements for existing customers would not change.[374] It said including or excluding dedicated connection assets in the RAB would be a commercial matter to be resolved between the customer and GAWB.

[370] GAWB, sub. 6, p. 4.
[371] GAWB, sub. 1, p. 137.
[372] GAWB, sub. 1, pp. 139–40.
[373] GAWB, sub. 1, p. 140.
[374] GAWB, sub. 1, p. 140.

ConocoPhillips also said the treatment of dedicated connection assets is a commercial matter to be negotiated between GAWB and new connecting customers. However, it said GAWB has a history of cost overruns should it undertake the construction.[375]

Comparison to other entities

GAWB gave the examples of Aurizon Network and Energex as regulated utility companies that provide services via infrastructure owned by customers. GAWB said these examples provided a precedent for its proposed amendment.[376] In the case of Aurizon Network, private infrastructure owners are required to own their private section of the rail, with Aurizon Network owning any connecting infrastructure to the network.[377] Energex customers, however, have the option of owning their connection assets.[378]

We find that although some electricity network companies in Australia require customers to own, operate and maintain infrastructure, as pointed out by GAWB, others do not. In the cases of Western Power and PowerWater, customers are required to transfer ownership of the asset to the network provider[379,380] whereas Ergon Energy, like Energex, provides various options to the prospective customer, ranging from customer ownership of the dedicated connection asset to Ergon building, maintaining and owning the asset.[381]

GAWB's proposed capital contributions framework includes an option for GAWB to operate and maintain the dedicated connection asset on behalf of the customer (while ownership is with the customer). However, GAWB would have no contractual obligation to do so according to the proposed amendment, as the choice appears to lie with GAWB.[382]

GAWB stated the proposed amendment is outside the scope of our price monitoring investigation, but it chose to present its proposed changes in the interests of full disclosure and transparency for all stakeholders.[383] We note s. 26(3) of the QCA Act does not limit the matters to which we may have regard when conducting a price monitoring investigation.

While GAWB's proposal departs from the current approach, we consider the treatment of dedicated connection assets is typically a commercial matter to be negotiated between GAWB and new connecting customers.

Finding A7.42—New connections and capital contributions

The QCA finds it appropriate for GAWB's capital contributions framework to provide for new customers to own dedicated connecting assets, subject to negotiation between GAWB and the customers.

[375] ConocoPhillips, sub. 38, p. 2.
[376] GAWB, sub. 1, p. 139.
[377] Aurizon Network, *2017 Access Undertaking (UT5)*, July 2019, Part 9.1(c).
[378] Energex, *Large Customer Connection Manual*, April 2017, p. 9.
[379] PowerWater, *Power networks capital contributions policy*, July 2014, p. 6.
[380] Western Power, *Contributions policy*, Appendix C.1, February 2019, p. 16.
[381] Ergon Energy, *Connection Policy*, July 2015, p. 27.
[382] GAWB, sub. 6, pp. 8–9.
[383] GAWB, sub. 1, pp. 138–39.

7.4 Resolving pricing disputes

GAWB's water supply contracts with its customers include provisions for resolving pricing disputes, which we understand are part of GAWB's standard terms and conditions. In the event of a pricing dispute, the relevant provisions envisage that parties may request that we intervene to resolve the pricing dispute. This is a further matter that we have had regard to pursuant to s. 26(3) of the QCA Act.

However, it is our view that we would likely have to decline any request to intervene in a pricing dispute on the part of GAWB and/or a customer. This is because we do not have the requisite statutory power to intervene in pricing disputes of this type.[384] Our mediation and arbitration powers (under Parts 6A and 7 of the QCA Act) are primarily limited to disputes arising in relation to access and access agreements under Part 5 of the QCA Act[385], and do not extend to monopoly business activities declared under Part 3 of the QCA Act, such as GAWB.

Our view is that this may leave customers facing greater risk than they perhaps envisaged when entering into contracts with GAWB, if customers were expecting that pricing disputes could be resolved by an independent regulator. In the case of the council, where consumers might ultimately be affected if bulk water charges are passed through, this increased risk would be inconsistent with s. 26(1)(c) of the QCA Act (protecting consumers from abuses of monopoly power).

ConocoPhillips said it had expected the QCA could resolve disputes. It would support amending the QCA Act, but in the absence of that, it would seek to renegotiate its contract with GAWB to include enforceable provisions.[386]

GAWB said its standard terms and conditions included a four-stage process for pricing disputes. If the first stage, executive negotiation, failed to resolve the dispute, the parties will request the QCA to intervene. The next stages are mediation and arbitration. There was no option for QCA intervention in non-pricing disputes. It said it was appropriate to include a step where the QCA could elect to intervene in pricing disputes:

> [There] is a significant likelihood that the dispute will relate to matters on which the QCA has expressed a finding or recommendation. For example, the dispute may relate to the proper interpretation of one of the QCA's findings as part of a price monitoring investigation. The QCA is not obliged to intervene in such a dispute, but GAWB considers it prudent that its contractual arrangements contemplate that … the dispute could be referred to the QCA for consideration.[387]

We maintain our view that the following options need to be considered to address our inability to intervene in a GAWB pricing dispute:

- GAWB might review the pricing dispute provisions in the standard terms and conditions it offers its customers to remove QCA dispute resolution and instead provide effective pricing dispute provisions that balance the interests of customers with GAWB's interests.
- Affected customers might want to renegotiate their water supply contracts with GAWB to amend the pricing dispute provisions (as referred to above).

[384] Unless the QCA Act Minister were to direct the QCA to conduct a specific pricing investigation for that particular customer, under s. 23 of the QCA Act, as a means to resolve the pricing dispute, which is not envisaged in GAWB's standard terms and conditions.
[385] Refer to the QCA's functions under ss. 10(fa)–(gb) of the QCA Act.
[386] ConocoPhillips, sub. 38, p. 2.
[387] GAWB, sub. 33, p. 60.

- The Queensland Government might see fit to amend the QCA Act to extend the QCA's mediation and arbitration powers to monopoly business activities declared under Part 3, such as GAWB.[388]

It is not appropriate for the current situation to persist, with contracts suggesting that a pricing dispute might be referred to us.

Finding A7.43— Pricing disputes

The QCA finds it is not appropriate for GAWB's standard water supply terms and conditions to include provisions for the QCA to resolve pricing disputes. GAWB should amend its standard water supply terms and conditions to remove QCA resolution and instead provide effective pricing dispute provisions that balance the interests of customers with GAWB's interests.

7.5 Publishing the standard water supply contract

GAWB does not publish its standard water supply terms and conditions on its website, unlike a number of other water supply entities.[389]

Publishing terms and conditions would have the following benefits:

- giving customers confidence that they are treated equitably and are offered similar terms and conditions as other GAWB customers who may be competing in the same markets
- enabling customers to compare their contracts to the standard terms and negotiate individual terms by reducing information asymmetry
- enabling the QCA to publicly analyse the standard water supply terms and conditions during pricing reviews, including comparing GAWB's proposed arrangements to its standard terms and conditions
- providing GAWB with an incentive to offer a balanced standard water supply contract to avoid reputational risk, given the public scrutiny of the standard terms and conditions.

GAWB said it determined whether the standard terms and conditions were appropriate, when negotiating with its customers. This enabled it to make prudent risk-based decisions. It said it might need the consent of its customers to publish standard terms and conditions, given that some of them were subject to those provisions.[390]

We find GAWB's arguments unconvincing. There is no aspect of publishing standard terms and conditions that prevents GAWB from negotiating different terms with its customers. But transparent standard agreements will help potential customers prepare their business cases for investments that might increase demand for GAWB's services and help absorb its unused capacity. As for confidentiality concerns about existing customers, presumably GAWB would not be disclosing whether they had agreed to the standard terms in any case. Our view that GAWB should follow standard regulatory practice remains unchanged.

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[388] We recommended this amendment in our investigation on GAWB's pricing practices in 2005 (see QCA, *GAWB: Investigation of Pricing Practices*, final report, March 2005, pp. 159–61).

[389] Examples include Sunwater (Bulk Water Supply Contract), Seqwater (Standard Supply Contract), Melbourne Water (Bulk Water Agreement), Water NSW (Raw Water Supply Agreement), Water Corporation, Western Australia (Standard terms and conditions).

[390] GAWB, sub. 33, pp. 60–61.

Finding A7.44—Publishing the standard water supply terms and conditions

The QCA finds that GAWB should publish its standard water supply terms and conditions on its website.

8 DEMAND FORECASTS

Demand forecasts are used to derive prices. GAWB compiled individual customer demand forecasts for 2020–25. Its total demand forecast for raw and treated water in that period reflects a slight reduction from current levels.

We reviewed GAWB's proposed demand forecasts and found them reasonable for the purposes of setting prices for the 2020–25 period. We formed this view as GAWB's demand forecasts are based on the best information available, having regard to historical outcomes, actual contracted volumes, and expectations of future demand, as advised by its customers.

GAWB intends to continue engaging with customers to determine future demand requirements and will use information from this process to set final prices for 2020–25.

8.1 Water demand forecasts for Gladstone

Water demand forecasts are important to our price monitoring exercise. Demand forecasts are relevant when we determine the prudent and efficient level of capital and operating costs, and when we translate those costs to prices. Demand can be a key driver of infrastructure investment expenditure, particularly augmentation and expansion expenditure. It also has a direct impact on some variable operating expenditures—for example, the quantity of water treatment chemicals required and electricity consumed to pump water. Demand forecasts are also necessary to allocate GAWB's costs between customers in the price-setting process.

GAWB is somewhat unusual among bulk water supply businesses, in that its customer base is primarily composed of a relatively small number of large industrial customers, including refineries and processing plants, power generators and aluminium smelters. These customers account for around 80 per cent of the water supplied by GAWB. The remaining 20 per cent of demand is attributed to residential and smaller commercial customers, who are mostly supplied through the Gladstone Regional Council (the council) delivery network.

Because of the composition and concentration of GAWB's customer base, significant changes in water demand will most likely be driven either by the entry and exit of industrial customers, or by significant changes in their production. We acknowledge that GAWB has very little influence over the entry and exit of customers. Residential and other commercial demand tends to be less 'lumpy' and is typically driven by population growth, climatic conditions, water conservation and efficiency policies, as well as changes in consumer behaviour over time.

In assessing GAWB's proposed demand forecasts, we considered the methods and assumptions GAWB adopted and whether they are likely to produce reasonable demand estimates for the 2020–25 period. In our view, reasonable estimates of GAWB's demand for 2020–25 should be derived having regard to existing contract volumes and anticipated contract volumes—informed by customers' expectations of demand. It may also be relevant to consider:

- step changes in demand that are known with reasonable certainty (due to the entry or exit of significant customers)
- consistency with economic and demographic trends, known efforts by businesses and households to improve water use efficiency, and policy measures that influence water usage.

8.2 Demand parameters

To develop its proposed prices, GAWB prepared forecasts for the following measures of demand:

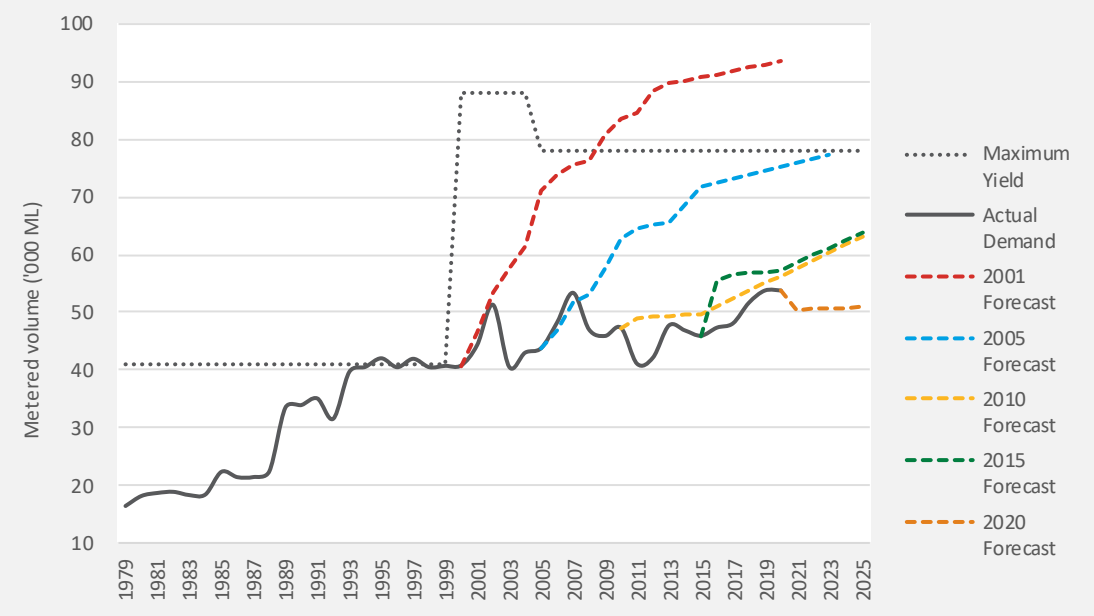
- reservation volumes—the total volume of water that GAWB agrees to supply to a customer during each year
- metered volumes—the actual volumes delivered
- reserved maximum daily quantity (MDQ)[391]—the maximum daily quantity of water that GAWB agrees to supply to a customer during any day
- metered MDQ—the maximum amount of water used by a customer during a day.

The application of these forecasts in determining GAWB's various tariff components is discussed in Chapter 9 (pricing practices).

8.3 Historical demand

Historically, GAWB's demand projections have tended to be optimistic, but substantial anticipated industrial demand growth has not occurred (Figure 13). A number of previously anticipated new customers either have not materialised (such as the Astral Calcining plant) or have taken less water than expected. This highlights the uncertainty that comes with forecasting demand for a concentrated, largely industrial, customer base.

Figure 13 Metered volumes—historical forecasts and actuals



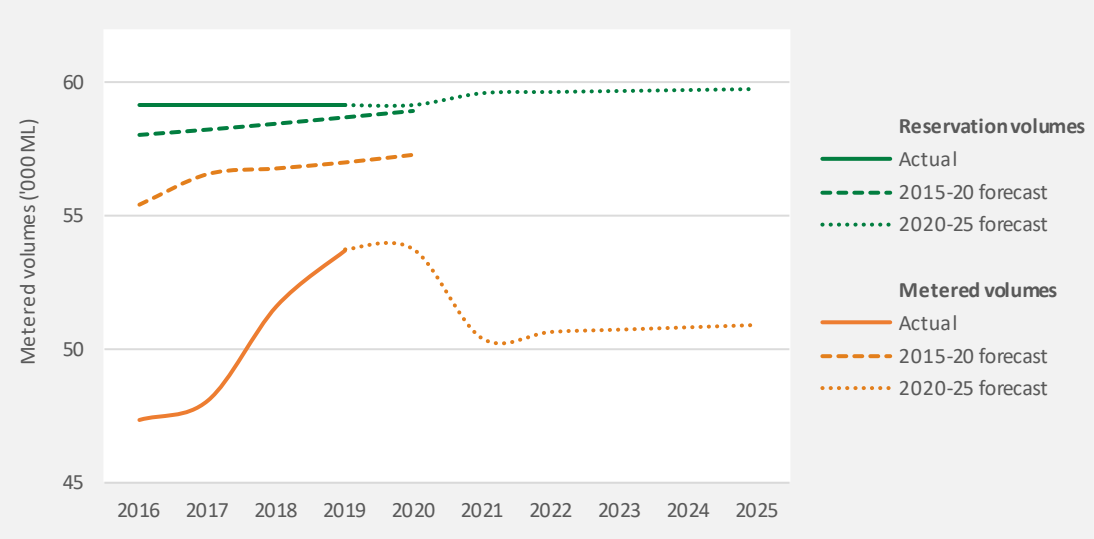
Note: The estimated volumes in 2019–20 are assumed to be consistent with the actual levels reported in 2018–19. The maximum yield indicates dam capacity (i.e. GAWB's maximum supply).

Source: QCA analysis.

Figure 14 illustrates the 2015–20 demand outcomes and compares them with GAWB's proposed forecasts for 2020–25. During the 2015–20 period, demand (metered volumes) was below forecast, while reservation (contracted) volumes were largely consistent with forecasts, albeit slightly higher.

[391] MDQ is explained in Chapter 9.

Figure 14 Total volumes—historical and forecasts



Notes: 2019–20 estimated volumes are assumed consistent with 2018–19 reported actual levels. Forecasts are based on data derived from GAWB's 2020–25 pricing model, which differs from the data illustrated in GAWB's published proposal. Actual total reservation volume for the 2015–20 period is assumed constant at current levels (as reported in GAWB's response to RFI 19). GAWB refined its demand forecasts after the QCA released its final report for the 2015–20 period to reflect the latest information on actual contracted reservations for the period (GAWB, sub. 1, p. 32). However, the variations presented in the figure reflect the difference between actual reported demand and GAWB's original forecasts (as accepted by the QCA for the purposes of its 2015 final report).

Source: GAWB responses to RFI 19 and RFI 90; QCA analysis.

Metered MDQs declined by 10 per cent overall during the 2015–20 period and fell short of the forecast by up to 16 per cent. Similarly, actual reserved MDQs during the same period were around 6 per cent lower than forecast.[392] GAWB attributed these outcomes, in part, to customer responsiveness to the pricing signals presented by MDQ pricing, including the 'ratcheting' mechanism.[393] GAWB noted customers had implemented new operational processes or manual procedures to reduce their peak daily capacity requirements, including onsite water storage.[394]

8.4 Forecast demand for 2020–25

GAWB's total demand forecast (raw and treated) for the 2020–25 period reflects a slight reduction from current levels, decreasing from 53,709 ML actual metered volume in 2018–19 to 50,360 ML expected in 2020–21. Demand for the remainder of the period is forecast to then be relatively constant, with overall metered volumes increasing slightly from 50,360 ML in 2020–21 to 50,860 ML by 2024–25.

GAWB allows customers to revise their contracted reservation by up to 10 per cent before each QCA pricing review. GAWB's demand forecasts include the assumption—based on previous experience—that some customers will exercise this option.[395] Overall, reservation volumes are forecast to increase slightly from the current period.

The primary contributor to this modest overall increase in reservation volumes during the 2020–25 period is assumed growth in demand for treated water supplied to the council, whereas

[392] Variances based on total current reserved MDQ as reported by GAWB in response to RFI19.
[393] GAWB, sub. 1, p. 44.
[394] GAWB, sub. 1, p. 129.
[395] GAWB, QCA RFI 89, pp. 8–9.

forecast metered demand for most industrial customers is expected to remain stable. GAWB's forecasts do not assume the entry or exit of significant industrial customers during 2020–25.

8.4.1 Forecast horizon

GAWB prepared a 5-year demand forecast, consistent with its interpretation of the Directions and its proposal to implement a five-year price smoothing period. In previous reviews, GAWB also developed long-term demand forecasts to support price smoothing over the 20-year planning horizon. The reasons for adopting a 5-year period are explained in Part B of this report. We have not attempted to forecast demand beyond the 2020–25 period.

8.4.2 Methodology

GAWB engaged Wedgewood White Ltd to assist in developing its demand forecasts. Wedgewood White adopted a probabilistic approach to forecast aggregate demand. This method had regard to current contract and metered demand levels, customers' own demand forecasts and GAWB's assessment of the probability of material changes in demand.[396]

Wedgewood White estimated probability distributions for each customer connection point, which were sampled in a Monte Carlo analysis to produce the aggregate demand forecasts. Wedgewood White noted that its forecasts are informed by demand projections that customers provided in late 2018 and early 2019. In most cases, where a customer provided a demand forecast, this was adopted as the median of the customer's demand probability distribution.

The median aggregate forecast value (50% probability of exceedance) in each year was adopted as the revenue forecast. Wedgewood White also developed a 10 per cent probability of exceedance forecast as a high case and a 90 per cent probability of exceedance forecast as the low case, which were used for planning and sensitivity analysis.[397] The forecasts assume normal hydrological conditions and do not attempt to model the possibility of drought-induced supply restrictions during the 2020–25 period.[398]

GAWB noted that the forecasts take into account connection enquiries from potential customers that would require supply in the next five years.[399] However, these potential sources of new demand have either been excluded from the forecasts or been assigned conservative weightings in the modelling, and they feature only in the 'high' demand scenario.[400] As GAWB has adopted the 'median' demand scenario, which reflects customer-reported demand forecasts, these potential new demand sources are not reflected in the forecasts used. We consider this appropriate, given the uncertainty regarding if, and when, these new customers will materialise and the associated demand increments.[401] We consider adopting the median scenario is reasonable, as it reflects the most recent information and expectations of demand reported directly by GAWB's customers.

GAWB noted that since it submitted its regulatory proposal it has continued to work with its customers to determine their demand requirements for the 2020–25 period.[402] GAWB did not identify any adjustments to its submitted demand forecast in response to our draft report;

[396] GAWB, QCA RFI 89, p. 2.
[397] GAWB, QCA RFI 89, p. 7.
[398] GAWB, QCA RFI 89, p. 7.
[399] GAWB, sub. 1, p. 44.
[400] GAWB, QCA RFI 89, pp. 28–29.
[401] Revenue cap adjustments may be available to GAWB, should a material increment in demand eventuate during the pricing period (Chapters 7 and 10).
[402] GAWB, sub. 33, p. 62.

however, it said the demand information provided through ongoing customer consultation will be used to determine bulk water prices for the 2020–25 regulatory period.[403]

8.4.3 Reservation volumes

In most cases, GAWB's 2020–25 reservation volume forecasts are based on each customer's current contracted reservations. Reservation volumes are typically fixed in contracts for each financial year. However, we understand customers may be able to reduce their contracted reservation volumes in two ways:

- GAWB's standard water supply agreements allow customers to reduce their reservation by 10 per cent before each price review.
- Contract provisions allow customers to reduce reservations by any amount, at any time, by paying an additional fee.[404]

We understand reservation reductions may, in certain circumstances, also be imposed by GAWB, as set out in customers' contracts.

GAWB's forecasts assume that two of its customers will seek 10 per cent reservation reductions at the start of the 2020–25 period for some connections, based on information from those customers or their prior history of doing so.[405] In some cases, customers have forecast increased reservation volumes, which are also reflected in GAWB's forecasts. Overall, total reservation volumes are forecast to be slightly higher than current levels.

We consider GAWB's forecast contract volumes are reasonable, as they are based on the latest available information and advice from customers. We note there has been some public commentary surrounding the anticipated decommissioning of the Callide B coal-fired power station in the Gladstone region.[406] However, this closure is assumed to occur after 2025 and has therefore not affected GAWB's demand forecasts.[407]

8.4.4 Metered volumes

Metered volumes are subject to greater variability than reserved volumes and cannot be forecast with the same certainty. GAWB has forecast total metered volumes in the 2020–25 period to be largely stable and consistent with current period volumes, albeit increasing slightly over the period. This is the net result of a modest decrease in total raw water volumes and an increase in treated water compared with the 2015–20 period.[408] GAWB's metered volume forecasts are primarily based on projections that customers provided, or otherwise assume demand will continue at current levels for the 2020–25 period.

The historical relationship between reservation and metered volumes of GAWB's customers shows a general tendency for customers to over-contract (compared with actual demand), but the extent of this is not consistent across GAWB's customers. Some customers consume water at levels closer to reservation volumes (and sometimes exceed them), while other customers appear to maintain a wider margin.

[403] GAWB, sub. 33, p. 62.
[404] GAWB, QCA RFI 89, p. 8.
[405] GAWB, QCA RFI 89, pp. 8–9.
[406] CS Energy, Statement on the future of Callide B power station, 27 October 2019, viewed 6 January 2020, https://www.csenergy.com.au/news/statement-on-the-future-of-callide-b-power-station.
[407] GAWB, QCA RFI 89, pp. 9–10.
[408] For the purposes of this analysis, actual volumes for 2019–20 are assumed to remain at 2018–19 levels.

We consider the variance between forecast reservation and forecast metered volumes for each customer is a reasonable reflection of historical outcomes. In our view, GAWB's forecast metered volumes are reasonable, as they are based on the latest available information, historical outcomes and advice from customers.

Reserved MDQ

GAWB's reserved MDQ forecasts are primarily based on customer estimates, or otherwise reflect current MDQ reservations. The forecasts assume a fixed MDQ reservation across the 2020–25 period for most customers. The forecast for the council reflects its anticipated increases and decreases in some connection point MDQs during the 2020–25 period.

In aggregate, reserved MDQs are projected to remain relatively stable, at a level consistent with the current MDQ reservation. We consider GAWB's reserved MDQ forecasts are reasonable, as they are based on the latest available information, historical trends and advice from customers.

Metered MDQ

GAWB noted the introduction of MDQ pricing increased awareness of peak daily volumes and customers had begun introducing permanent water-saving measures and operational processes to minimise the frequency of exceeding MDQ allocations and over-run charges.[409] In aggregate, GAWB has forecast total metered MDQs for the 2020–25 period to be 16 per cent lower than in the 2015–20 period. This reflects a total reduction in MDQs for raw water of 14 per cent and a total reduction in MDQs for potable water of 21 per cent.[410] GAWB assumed metered MDQ demand will be fairly constant across the 2020–25 period in aggregate.

We considered the historical relationship between contracted and metered volumes of GAWB's customers to assess the MDQ forecasts. At the customer level, GAWB's metered MDQ forecasts appear to assume that the current ratio of metered MDQ to reserved MDQ will remain the same for the 2020–25 period. That is, where a customer has forecast a change in reserved MDQ, the metered MDQ will change by a similar proportion and maintain the recently observed ratio between the two measures. We consider this a reasonable assumption. In our view, GAWB's metered MDQ forecasts are reasonable, as they are based on the latest available information, historical trends and advice from customers.

Finding A8.45—Forecast demand

The QCA finds GAWB's proposed demand forecasts for the 2020–25 period are reasonable, as they are based on the latest available information, historical outcomes or trends and advice from customers.

The QCA acknowledges that GAWB will continue to consult with customers to determine future demand requirements and will use information from this process to set final prices for the 2020–25 period.

[409] GAWB, sub. 1, pp. 9–10, 44.
[410] For the purposes of this analysis, actual total MDQs for 2019–20 are assumed to remain at 2018–19 levels.

9 PRICING PRACTICES

Pricing practices provide the framework that enables GAWB to recover its annual revenue requirement. GAWB has proposed pricing practices for the 2020–25 regulatory period that include a zonal pricing structure, over-run charges, and premiums based on contract length.

The QCA considers:

- GAWB's proposed pricing practices for 2020–25 are appropriate, as they are consistent with the QCA's pricing principles[411]
- there may be benefits in GAWB simplifying its pricing practices in future reviews, after appropriate consultation with its customers. In particular, greater simplicity would increase transparency.

9.1 Pricing practices 2020–25

GAWB's proposed price structure comprises three distinct components—related to storage, delivery and administration. Prices are further differentiated by customer according to the customer's use of specific parts (zones) of GAWB's infrastructure network, the quality of water provided (treated or raw), quantities reserved and the length of GAWB's contract with the customer.[412]

Whilst we find GAWB's pricing practices to be economically sound, they are also quite granular and complex. Our concern is whether customers can understand how both their and GAWB's actions affect the prices they pay. For example, CS Energy and Callide Power Management (CPM) sought clarity in relation to GAWB's proposed pricing practices.

CS Energy commented on the difficulty of assessing the pricing structure:

> CS Energy notes the indicated 6% reduction in pricing however cannot quantify the key changes in GAWB's operations. A lack of clarity does not allow for reasonable assessment of the pricing structure. This includes the methodology for attribution to costs associated with the water reservation and volumetric charge.[413]

Callide Power Management (CPM) emphasised the importance of revealing to users the impact movements in pricing parameters would have on them:

> CPM wishes to impress upon the QCA the need to ensure that it fully understands—and makes transparent to users—the underlying impact of the movements in each pricing parameter/assumption.[414]

Simpler pricing practices would aid transparency and comprehension for customers. However, we acknowledge that GAWB's business is unique in terms of its predominantly industrial customer base. Also, GAWB's pricing practices have undergone continual change since the QCA's initial pricing practices review in 2002, and as such it may be beneficial to keep the pricing structure unchanged for the 2020–25 period. For future pricing reviews, we suggest that GAWB

[411] QCA, *Statement of Water Pricing Principles*, December 2000; QCA, *Statement of Regulatory Pricing Principles*, August 2013; QCA, *SEQ Retail Water Long-Term Regulatory Framework—Pricing Principles—Part C*, final report, September 2014.
[412] GAWB, sub. 1, pp. 126–35.
[413] CS Energy, sub. 14, pp. 1–2.
[414] CPM, sub. 11, p. 2.

should try to find an optimal compromise so that its pricing practices balance simplicity and cost reflectivity. Simpler prices may also improve customers' understanding of the price impacts of:

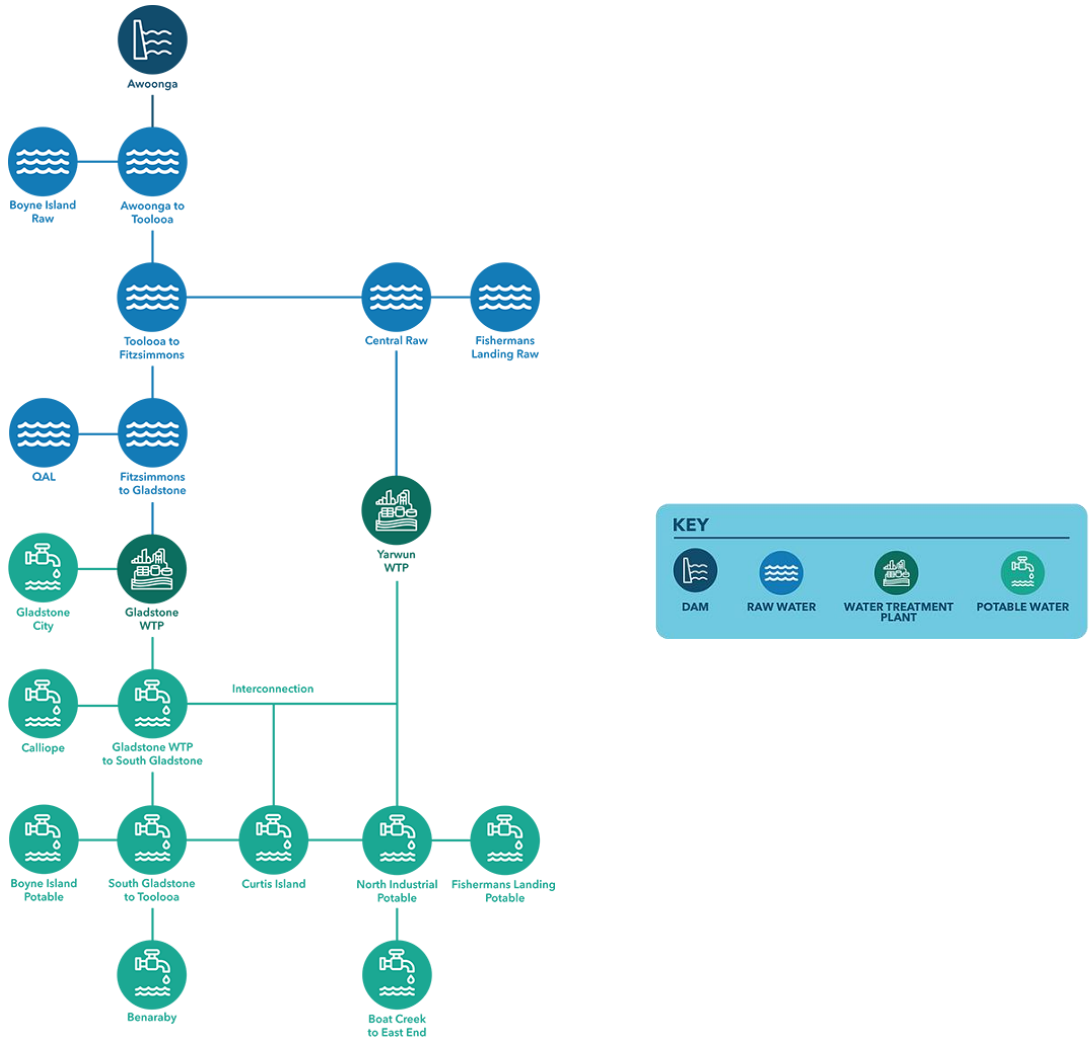
- their bulk water demands
- their service requirements (such as reliability)
- GAWB's actions.

Simpler pricing practices, in effect, may improve customer engagement.

9.2 Zonal pricing

As recommended in our 2010 review, GAWB proposed differentiated prices for all customers, according to customers' use of specific components of GAWB's infrastructure network.[415] This is achieved by zonal pricing. GAWB's proposed pricing zones for the 1 July 2020 to 30 June 2025 period are consistent with those used for the 2015 price review (see Figure 15).

Figure 15 GAWB's proposed pricing zones for 2020–25



Note: The Mt Miller and Hanson Road Pipeline pricing zones were combined in 2016–20 to provide an average zonal price. This approach has been continued in 2020–25. The zone is presented as the Central Raw pricing zone.

Source: GAWB, sub. 1, p. 127.

[415] GAWB, sub. 1, p. 127.

Stakeholders did not comment on zonal pricing.

Finding A9.46—Zonal pricing

The QCA finds GAWB's pricing zones are appropriate, as they reflect the operational and physical structure of GAWB's delivery network. Zonal prices are also more cost-reflective than average-cost pricing and therefore should promote more efficient consumption decisions by GAWB customers.

9.3 Pricing structure

GAWB's proposed pricing structure has three components: storage, delivery and administration.

9.3.1 Storage charges

GAWB proposed a two-part tariff structure for its storage charges:

- a storage volumetric charge, based on the long-run marginal cost (LRMC)[416] for volumes sourced at Awoonga Dam, which is calculated using forecast annual volumes (in megalitres)
- a storage access charge to cover the remaining annual revenue requirement associated with storage, which is not recovered by the storage volumetric charge; it is based on reserved annual volumes (in megalitres).[417]

We consider GAWB's proposed pricing methodology for storage is appropriate, as it is consistent with the QCA's pricing principles[418] and previous regulatory decisions.[419] Stakeholders did not comment on storage charges.

9.3.2 Delivery charges

GAWB proposed a three-part tariff structure for its delivery charges:

- a delivery volumetric charge to reflect the variable operating costs, based on forecast annual volumes (in megalitres)
- a delivery metered maximum daily quantity (MDQ) volumetric charge, based on the LRMC of delivery capacity and on forecast aggregate MDQ
- a delivery access charge, which covers the part of the delivery network annual revenue requirement that is not recovered via the volumetric delivery charges; it is based on reserved MDQ.[420]

We consider that GAWB's proposed pricing methodology for its delivery charges is appropriate, as it is consistent with the QCA's pricing principles[421] and previous regulatory decisions.[422] Stakeholders did not comment on GAWB's proposed delivery volumetric and delivery metered

[416] In 2010, the pricing methodology was adjusted to reflect the LRMC of service provision. GAWB estimated the LRMC using the average incremental cost (AIC) method.
[417] GAWB, sub. 1, p. 126.
[418] QCA, *Statement of Regulatory Pricing Principles for the Water Sector*, December 2000, p. 67.
[419] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, pp. 64–65.
[420] GAWB, sub. 1, p. 126.
[421] QCA, *Statement of Regulatory Pricing Principles for the Water Sector*, December 2000, p. 67.
[422] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 65.

MDQ volumetric charges. Their comments on the proposed delivery access charge are addressed below.

Delivery access charge and MDQ pricing

GAWB implemented MDQ pricing for its delivery access charge in the 2015–20 regulatory period to more accurately reflect the network capacity required to deliver a customer's demand.[423] We considered then that MDQ pricing was an appropriate means to recover fixed delivery costs and supported its introduction.[424]

For 2020–25, GAWB proposed to continue basing its delivery access charge on reserved MDQ, with MDQ charges based on a customer's reserved MDQ as at 1 July 2020. GAWB said this recognises the benefits customers have had over the five-year transitional period from 2015–20 in regulating their peak daily flow rates and determining the right size of their reserved MDQ.[425]

The Gladstone Regional Council (the council) queried whether the MDQ approach is relevant for an urban supply environment, where the majority of the infrastructure used is customer-specific. The council argued customer demand is reasonably certain and primarily fluctuates due to weather. Therefore:

> any spike in MDQ is likely to be temporary due to an event such as a mains leak and not representative of a shift in peak usage patterns that may need to be subject to a punitive charging structure.[426]

The council proposed a different approach:

> that a Mean Day Maximum Month (MDMM), which is the highest 30-day moving average daily water demand during a year, is more appropriate than MDQ, particularly given council reservoirs act as both emergency storage and a peak demand buffer.[427]

The capacity that is required for any customer depends on its peak demand. A 30-day average may not reflect the peak usage of an industrial customer whose daily usage varies more than that of the council. Given that industrial users account for roughly 80 per cent of GAWB's water usage, we consider that the delivery access charge should reflect their peak demand. In the absence of an automatic ratcheting up system (as implemented by GAWB during 2015–20), the benefit to the council of being charged a MDMM instead of MDQ pricing would be limited, assuming the council's demand is less peaky than that of industrial customers.

Consistent with our 2015–20 review[428], we consider it appropriate for fixed delivery costs to be recovered via MDQ pricing, which:

- is a cost-reflective and equitable means of allocating the fixed cost of the delivery network
- signals delivery capacity expansion costs to existing and future customers and may defer the need for future expansion
- provides incentives for customers to actively reduce their impost on the delivery system.

[423] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 65.
[424] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 67.
[425] GAWB, sub. 1, p. 130.
[426] GRC, sub. 15, p. 5.
[427] GRC, sub. 15, p. 5.
[428] QCA, *Gladstone Area Water Board Price Monitoring 2015–20,* final report, May 2015, p. 67.

9.3.3 Administration charge

Those costs of GAWB that cannot be allocated to a particular pricing zone are allocated to corporate overheads, in accordance with the method established in the initial pricing practices investigation in 2002.[429] Such costs are charged directly to customers on the basis of the relative administrative effort required to provide storage, raw water and treated water services (Table 32).

Table 32 GAWB's proposed administration charges

Charge	*Effort/volume ratio*	Administration charge for 2020–21 ($/ML)
Storage	1:1	32.40
Raw	3:1	97.20
Treated	7:1	226.81

Note: Effort/volume ratios are allocated according to administrative effort in each segment (storage, raw water and treated water). This relative administrative effort is approximated by the relative operating and maintenance costs per megalitre.

Source: GAWB, sub. 1, p. 134.

The council raised the matter of the difference in risk for industrial customers compared to the council, and the price implications:

> At many points within its submission, GAWB explicitly states that its operations and cost base are different from urban water suppliers in that industrial customers account for the majority of its demands and have greater demands and risks associated with their water supply. These comments imply that Council is being disadvantaged through the application of a higher WACC and higher operating and capital costs (e. g. "our cost" base differs from urban water service providers", page 88) than would otherwise exist if Council was serviced through an urban bulk water supplier. It is questioned whether costs are being appropriately allocated to industrial customers vs Council – including common costs via the 'effort' ratios – given these assertions.[430]

We consider that the effort ratios GAWB proposed (Table 32)—which assign progressively higher administration costs to storage activities, raw water delivery activities and treated water delivery activities—broadly reflect operating cost differentials.

While an activity analysis of general administration functions would be ideal to better identify the cost drivers, the cost of undertaking such analysis is not justified—given that total administration costs are less than 10 per cent of the total annual revenue requirement, and any resulting change would not have a material impact on overall prices. We therefore accept GAWB's proposed allocation of administrative costs. It is reasonable to recover corporate costs via an administration charge based on annual contracted volumes, as administration charges do not vary with metered water use or peak demand.

[429] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 68.
[430] GRC, sub. 15, p. 5.

Finding A9.47—Tariff structure

The QCA finds GAWB's proposed pricing structures for storage, delivery and administration charges appropriate.

9.4 Smooth prices

Consistent with previous price reviews, GAWB proposed to apply smooth prices—that is, all GAWB's prices are adjusted for CPI for the purpose of annual price adjustments within the price period.

GAWB determined smooth prices by solving for prices in the first year of the price period (2020–21), as all prices increase by forecast CPI for the remainder of the period. Prices are solved so that the present values of expected revenue from prices and of GAWB's revenue requirement over the pricing period are equal.

The council suggested an alternative price path, due to the impact of the coronavirus disease (covid-19) outbreak on the Gladstone community:

> The impact of CovID19 on the Gladstone Community, in particular the business and commercial sector to date has been significant and the full impacts of this unfolding pandemic are unquantifiable at this stage. It is acknowledged that the price reset is required by legislation but in the best interest of the Gladstone Region, the adoption of any price reset that puts upward costs onto the community should be deferred for at least 12 months, and be effective from 1 July 2021 at the earliest.[431]

We share the view of the Productivity Commission, whose inquiry into Australia's urban water sector found that broad-based issues of equity and affordability are better addressed by governments through the tax and transfer payments system rather than through price adjustments.

For example the Productivity Commission said:

> For low-income households, the affordability of water and wastewater services and other essential goods and services is most efficiently achieved through non-concession elements of Australia's tax and transfer payments system.[432]

and

> Efficiency gains can be made by replacing or amending water and wastewater concessions with direct payments to targeted households or rebates on the fixed component of water and wastewater service bills.[433]

We note the Queensland Government has announced rebates of $200 per household as part of its $4 billion covid-19 support package.[434] That is meant to be $100 for water and $100 for electricity. However, due to the varied way water bills are charged across Queensland, the full rebate will appear on electricity bills. Small businesses will get $500 off their power bills.

[431] GRC, sub. 32, p. 1.
[432] Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, 2011, p. 222.
[433] Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, 2011, p. 221.
[434] Palaszczuk, A, Trad, J, Miles, S & Fentiman, S, *Palaszczuk government unveils $4 billion package to support health, jobs, households and Queensland businesses*, joint media statement, Queensland Government, 24 March 2020.

Finding A9.48—Smooth prices

The QCA finds GAWB's proposed smooth prices appropriate.

9.5 Over-run charges

Consistent with past QCA recommendations, GAWB levies over-run charges where customers exceed their contracted annual volume. These charges provide an incentive for customers to accurately specify their required capacity and allow for the recovery of costs associated with over-runs.

GAWB proposed to return to customers any additional revenue received from levying over-run charges over a regulatory period, net of any (efficient) increase in costs that is caused by the additional demand. We understand GAWB would return additional revenue from over-run charges to all customers by reducing its revenue requirement in the price component affected (i.e. storage, delivery or administration). GAWB proposed that additional revenue should also be excluded from the revenue cap adjustment.[435]

There are two types of over-run charges—storage and administration charges and delivery charges.

9.5.1 Storage and administration over-run charges

For industrial customers, GAWB proposed a surcharge of:

- 25 per cent, which will apply to the total charge for incremental volumes—where actual consumption is between 110 per cent and 125 per cent of the reserved amount
- 50 per cent, which will apply to the total charge for incremental volumes—where actual consumption is higher than 125 per cent of the reserved amount.[436]

We consider the proposed methodology for industrial customers is appropriate and consistent with the methodology that we previously recommended.[437]

For the council, GAWB proposed that a surcharge of 25 per cent should apply to the total charge for incremental volumes where actual consumption is higher than 125 per cent of the reserved amount (unless otherwise negotiated with GAWB).[438]

When we received GAWB's proposal, we considered that the lower charges and higher exceedance percentage proposed for council relative to industrial customers were appropriate, given the council's limited ability to control consumption. However, we noted GAWB only proposed a surcharge of 10 per cent in its 2015 submission.[439] We therefore sought stakeholder feedback on GAWB's proposal for 2020–25 on storage and administration over-run charges for the council.

[435] GAWB, sub. 1, p. 78.
[436] GAWB, sub. 1, p. 128.
[437] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices,* final report, June 2010, p. 36.
[438] GAWB, sub. 1, p. 128.
[439] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 67.

GAWB subsequently explained that the 25 per cent premium will not apply to the council:

> The reference to a 25 per cent premium for council is a typographical error. This will be corrected when the Pricing Principles are updated following the current price review. These over-run charges have not been levied to date, so there has been no adverse impact associated with this typographical oversight.[440]

Finding A9.49—Storage and administration over-run charges

The QCA finds GAWB's proposed approach for storage and administration over-run charges appropriate, on the condition that GAWB applies a surcharge of 10 per cent for Gladstone Regional Council.

9.5.2 Delivery over-run charges

Automatic ratcheting up during 2015–20

To assist with the transition to MDQ-based charging, GAWB waived all delivery over-run charges for the 2015–20 regulatory period. In the event a customer exceeded its reserved MDQ in one month, GAWB used the actual MDQ recorded during the month to calculate water charges. GAWB then used the actual MDQ for that month as the reserved MDQ for the remainder of the regulatory period. If a customer exceeded the increased reserved MDQ in a subsequent month, GAWB would increase the reserved MDQ again to align with the actual MDQ recorded during the month. GAWB introduced this 'automatic ratcheting up' mechanism to assist customers in identifying the maximum daily capacity they required and to recover the incremental costs associated with an over-run.[441]

GAWB indicated that customers could apply to GAWB, over the course of the 2015–20 regulatory period, to modify their reserved MDQs, without penalty. That is, they could apply to:

- increase the reserved MDQ—if they determined they required higher peak day flows (and GAWB determined there was sufficient capacity in its delivery system to accommodate the request), or
- decrease the reserved MDQ—if they over-specified it or made changes to their consumption profile that resulted in lower peak day flows.[442]

GAWB reviewed customer applications in terms of a longitudinal analysis of MDQ consumption and information provided by the customer on the changes it had made to its consumption profile (i.e. operational changes).[443]

Over-run charge proposal for 2020–25

Two customers raised concerns with the ratcheting up mechanism implemented by GAWB over the 2015–20 regulatory period. In particular, they were concerned with the resetting of the reserved MDQ over the remainder of the regulatory period, as the reset could result from a one-off incident.[444] In response, GAWB noted that its 2020–25 submission does not include a

[440] GAWB, sub. 33, p. 16.
[441] GAWB, sub. 1, p. 129.
[442] GAWB, sub. 1, p. 130.
[443] GAWB, sub. 1, p. 130.
[444] GRC, sub. 15, p. 5; WICET, sub. 9, p. 2. WICET also said a high MDQ without reset would mean it had no incentive to reduce its water usage (sub. 9, p. 3).

ratcheting up mechanism, but instead is based on the higher of reserved and actual MDQ usage for each month, without a reset of MDQ reservation.[445]

GAWB's proposed approach for 2020–25 is to levy delivery over-run charges on a monthly basis, based on the highest exceedance above the reserved MDQ. Monthly delivery charges will be levied as:

- delivery access charges, based on the higher of reserved and actual MDQ
- delivery metered MDQ volumetric charges, based on actual MDQ
- MDQ delivery over-run charges, based on the MDQ exceedance.[446] The MDQ exceedance is determined as the difference between the monthly charge amounts that result from the total MDQ charge[447] applied to reserved MDQ and the total MDQ charge applied to actual MDQ. The over-run charge is then determined by multiplying the MDQ exceedance by two.[448]

GAWB's proposed calculation of the MDQ delivery over-run charge can be expressed in the following formulae:

$$MDQcharges^{actual} = \left(Delivery\ access\ charge^{\$/MDQ} + Delivery\ metered\ volumetric\ charge^{\$/MDQ}\right) \times MDQ^{actual}$$

$$MDQ\ charges^{reserved} = \left(Delivery\ access\ charge^{\$/MDQ} + Delivery\ metered\ volumetric\ charge^{\$/MDQ}\right) \times MDQ^{reserved}$$

$$Delivery\ over\ run\ charges = (MDQ\ charges^{actual} - MDQ\ charges^{reserved}) \times 2$$

GAWB proposed to base MDQ charges on a customer's reserved MDQ as at 1 July 2020. It said this recognises the benefits customers have had over the five-year transitional period in regulating their peak daily flow rates and determining the right size of their reserved MDQ.[449]

GAWB said its proposed methodology for delivery (MDQ) over-runs takes into account the QCA feedback from its 2015 review. At the time, we noted that Ergon adopted an approach whereby if a customer exceeded its contracted peak demand in any one month, the actual peak demand is substituted for contracted peak demand in the calculation of the capacity charge for that month. We considered this method may better reflect network costs incurred by suppliers.[450]

GAWB reiterated that the main rationale for introducing over-run charges was to incentivise accurate reservations. GAWB contended that over-run charges need to be sufficiently material to influence a customer's behaviour. GAWB also noted 'additional revenue recovered from over-run

[445] GAWB, sub. 12, p. 2.
[446] Delivery over-run charges are not levied on the delivery volumetric charge, as this charge relates to variable operating expenditure. Therefore, in the event of demand exceedance, GAWB would recover additional costs through this charge.
[447] The total MDQ charge comprises the delivery access charge and delivery metered MDQ volumetric charge.
[448] GAWB, sub. 1, pp. 132–33.
[449] GAWB, sub. 1, p. 130.
[450] QCA, *Gladstone Area Water Board Price Monitoring 2015–20,* final report, May 2015, p. 68.

charges (net of additional costs incurred; this includes any tax payable associated with the additional revenue) is rebated to customers'.[451]

We consider that GAWB's proposed approach provides a good compromise from GAWB's original proposal from the 2015 review and our previous position (i.e. the approach used by Ergon). This approach balances the interests of both customers and GAWB:

- Customers will not have their MDQ reset for the remainder of the regulatory period for one-off spikes in MDQ.
- GAWB will provide a sufficiently strong signal to customers to reserve accurately.
- The additional revenue recovered from over-run charges[452] is rebated to customers.

Finding A9.50—Delivery over-run charges

The QCA finds GAWB's proposed approach for levying delivery over-run charges on a monthly basis appropriate under the specified terms.

9.6 Contract length premium

GAWB proposed to maintain the arrangement of applying a surcharge to contracts with a term of less than 20 years. GAWB did not propose to change the arrangement or premiums applied for the 1 July 2015 to 30 June 2020 regulatory period (Table 33).

Table 33 Premiums by contract length

Contract length	*Premium (%)*
2 years or less	25
2 to 5 years	20
5 to 10 years	10
10 to 15 years	5
15 to 20 years	3

Source: GAWB, sub. 1, pp. 78–79.

GAWB proposed to return revenue received from this surcharge to customers through the administration charge. Therefore, this revenue should not be included in the revenue cap.

Finding A9.51—Contract length premium

The QCA finds the contract length premiums proposed by GAWB appropriate, as they allow GAWB to more effectively manage its network and the take-up of spare capacity over the long term, by incentivising customers to sign up for long-term contracts.

[451] GAWB, sub. 1, p. 131.
[452] Net of additional costs incurred, such as any tax payable associated with the additional revenue.

10 REVENUE REQUIREMENTS AND INDICATIVE PRICES

GAWB's revenue requirement is the amount GAWB needs to cover the costs of serving its customers, while providing an appropriate return to its shareholders.[453] The indicative prices, that are expected to enable GAWB to recover this revenue requirement from customers, are derived by applying forecast demand.

After reviewing GAWB's proposed revenue requirement and prices, the QCA calculated:

- an indicative revenue requirement of $303 million for the 2020–25 pricing period[454], whereas GAWB proposed a revenue requirement of $319 million
- an indicative price for the Awoonga pricing zone for 2020–21 that is 3.5 per cent lower than the price proposed by GAWB.
- indicative prices for all the other pricing zones (except Boat Creek to East End) for 2020–21 that are 4.5 to 6.8 per cent lower than the prices proposed by GAWB.[455]
- an indicative price for the Boat Creek to East End pricing zone for 2020–21 that is 8.8 per cent higher than the price proposed by GAWB.

10.1 Interpretation of indicative prices

As this investigation is a price monitoring review, we have calculated a revenue requirement and associated prices for GAWB that are indicative only. We do not set or recommend prices for GAWB to charge to its customers. The indicative prices are provided for information purposes only and are intended to help GAWB's customers understand the impact our proposed changes to pricing inputs—as outlined in this final report—would have on prices. Actual prices for individual customers are set by GAWB, subject to contractual arrangements.

The Gladstone Regional Council (the council) is responsible for setting the water prices for ratepayers in the Gladstone region. The bulk water price paid by the council is one component of that price; other components include the cost of investing in, operating and maintaining the council's own delivery infrastructure. The council has a long-standing policy of setting a uniform water tariff, effectively averaging the geographically varying cost of bulk water across all ratepayers. It is therefore not possible to draw conclusions from these indicative bulk water prices on the changes to ratepayers' water bills.

[453] In the case of a statutory authority like GAWB, the shareholder is the government. In this situation, the costs of debt and equity capital are benchmarked with reference to commercial markets consistent with competitive neutrality requirements.

[454] Excluding the Curtis Island pricing zone.

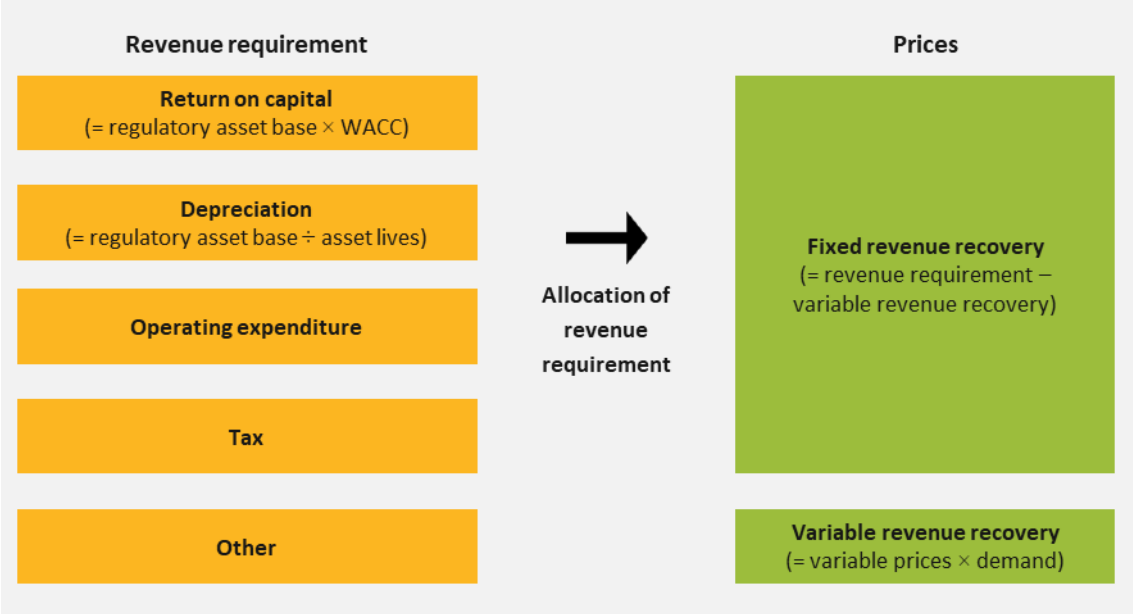
[455] GAWB's proposed prices and our indicative prices remain constant in real terms for the length of the regulatory period.

10.2 Revenue requirement

We used a building block approach to calculate GAWB's total revenue requirement for the 2020–25 pricing period (Figure 16). The calculation of the revenue requirement includes the following components:

- operating expenditure (opex)—which represents our assessment of GAWB's prudent and efficient operating, maintenance and corporate costs
- return of capital or regulatory depreciation—this allowance recognises that capital infrastructure will degrade through the provision of services and that GAWB needs to recoup its prudent and efficient capital cost over the useful life of the infrastructure
- return on capital—an allowance for a return on assets used for providing the regulated service, which represents the opportunity cost of capital provided by debt and equity investors
- tax—which represents GAWB's tax-equivalent expenses
- other—including prior period adjustments[456], rebates and unregulated revenues.

Figure 16 Building block approach



Source: QCA representation.

[456] GAWB's prior period adjustments include over-run charges, short-term contract length premiums, revenue cap adjustments, asset disposals and accelerated depreciation.

Figure 17 shows both GAWB's proposed and our indicative revenue requirement over the 2020–25 regulatory period, including the building block components.

Figure 17 Revenue requirement for 2020–25—GAWB's proposal and QCA estimate

*Notes: * The Curtis Island pricing zone is not included.*

The 'Other' category includes various adjustments such as rebates and unregulated revenues. Inflation is added to the regulated asset base to maintain its nominal value, and is then subtracted from the revenue requirement to avoid double counting.

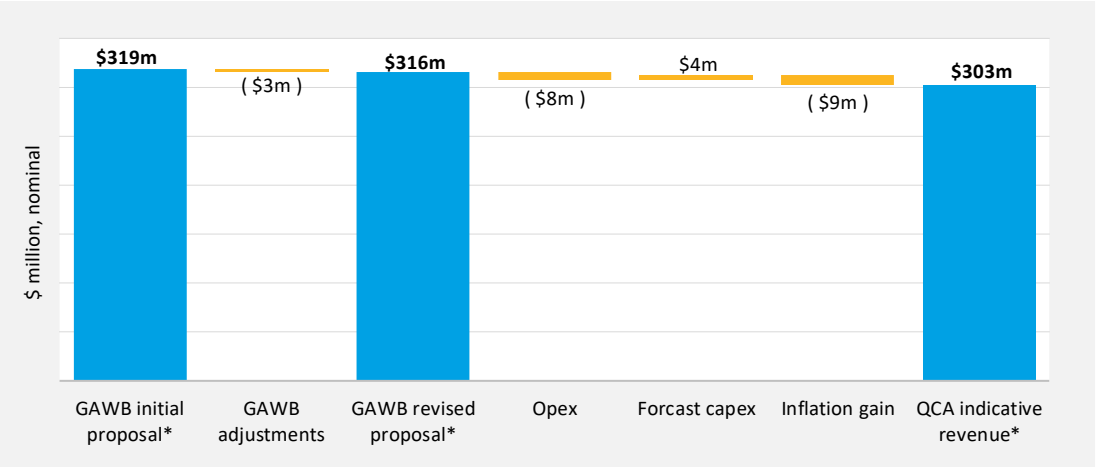
Sources: GAWB, Building Block Model, submission, September 2019; QCA calculations.

The main drivers of the difference between our indicative revenue requirement and GAWB's proposal for the 2020–25 regulatory period are:

- reduced operating expenditure due to adjustments to individual operating expenditure cost categories, cost escalation factors and efficiency targets (Chapter 3)
- an increase in return on capital due to a higher weighted average cost of capital (WACC) (Chapter 6)
- an increase in inflation gain (which is netted off the revenue requirement) due to a higher forecast of inflation (Chapter 3).

Figure 18 illustrates the differences between GAWB's and our indicative revenue requirement.

Figure 18 Revenue requirement 2020–25—GAWB's proposal and QCA estimate



*Notes: * The Curtis Island pricing zone is not included.*
Sources: GAWB, Building Block Model, submission, September 2019 and March 2020; QCA calculations.

Based on our assessment of the costs that GAWB submitted, our estimate of GAWB's revenue requirement is $289 million for the 2020–25 regulatory period (real 2020–21 dollars)[457]. This is $14.9 million (4.9%) lower than the amount submitted by GAWB, and $86.2 million (23.0%) lower than the estimate we derived for the 2015–20 regulatory period (Table 34).

Table 34 GAWB's revenue requirement

Component	*QCA estimate 2015–20*	*GAWB's proposal 2020–25*	*QCA estimate 2020–25*	*QCA estimate 2020–25 vs QCA estimate 2015–20*	*QCA estimate 2020–25 vs GAWB's proposal 2020–25*
	$ million, 2020–21 real dollars				
Revenue carryover	104	–	–	(100%)	–
Operating expenditure	117	162	147	26%	(9%)
Return of capital	67	81	81	20%	(0%)
Return on capital	153	137	142	(7%)	3%
Inflation gain	(70)	(69)	(73)	4%	5%
Tax	6	7	6	3%	(11%)
Other	(2)	(14)	(14)	608%	0%
Total revenue requirement	**375**	**304**	**289**	(23%)	(5%)

Note: Excludes Curtis Island pricing zone.
Source: GAWB, Building Block Model, submission, September 2019; QCA calculations.

[457] Note revenue requirements calculated in Table 34 are less than those reported in Figure 18 and Figure 19. This is because these numbers were converted from nominal dollars to real 2020–21 dollars to enable comparison of revenues over different regulatory periods.

Table 35 shows the indicative individual annual revenue requirements we calculated for the storage and administration charges, and delivery charges by zone.

Table 35 QCA indicative annual revenue requirement by charge type and zone

Charge ($m)	*Pricing zone/category*	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Storage	Awoonga	18.4	20.1	20.1	20.8	22.5
Delivery	Awoonga to Toolooa	12.3	11.5	11.8	12.1	12.4
	Toolooa to Fitzsimmons	2.8	2.6	2.7	2.8	3.0
	Boyne Raw	0.2	0.2	0.2	0.2	0.2
	Central Raw	1.3	1.3	1.3	1.3	1.3
	Fitzsimmons to Gladstone	0.5	0.5	0.5	0.5	0.5
	QAL	0.6	0.7	0.8	0.8	0.8
	Fishermans Landing Raw	0.2	0.1	0.1	0.1	0.1
	Gladstone WTP	8.9	8.7	8.9	9.2	9.6
	Gladstone City	0.2	0.1	0.1	0.1	0.1
	Gladstone WTP to South Gladstone	1.9	1.8	1.8	1.8	2.1
	Calliope	0.6	0.8	0.8	0.8	0.8
	South Gladstone to Toolooa	0.7	0.7	0.7	0.8	0.8
	Boyne Potable	0.4	0.5	0.5	0.5	0.5
	Benaraby	0.5	0.4	0.4	0.4	0.4
	Yarwun WTP	1.7	1.7	1.7	1.7	1.7
	North Industrial Potable	0.8	0.8	0.8	0.8	0.8
	Fishermans Landing Potable	0.0	(0.0)	(0.0)	(0.0)	(0.0)
	Boat Creek to East End	0.5	0.6	0.9	1.1	1.1
Administration	Corporate	5.9	5.7	5.8	5.6	6.0
Total revenue requirement ($m)		**58.4**	**58.6**	**59.9**	**61.5**	**64.8**

Note: The individual revenue requirements do not always add up to the total in the table due to rounding. The Curtis Island pricing zone has been excluded.
Source: QCA calculations.

Finding A10.52—Revenue requirement

The QCA calculation of GAWB's indicative revenue requirement is $303 million (nominal dollars, excluding the Curtis Island pricing zone) for the 2020–25 regulatory period.

10.3 Indicative prices

As part of this price monitoring review, we have calculated indicative prices for the 2020–25 regulatory period based on our calculations of required revenue and estimations of forecast demand (Table 36). In determining our indicative prices, we have sought to reflect efficient

outcomes and provide GAWB with the revenues necessary to promote sustainable investment and take account of public interest matters.

Table 36 QCA indicative prices, 2020–21

Pricing zone	*Reservation and storage*		*Delivery*		*Admin*	*Indicative average price*
	Storage access ($/reserved ML)	*Storage volumetric* ($/metered ML)	*Delivery access* ($/reserved MDQ)	*Delivery volumetric* ($/metered ML	($/res. ML)	($/res. ML)
Awoonga	351.60	1.71	—	—	30.86	383.90
Awoonga to Toolooa	351.60	1.71	6,046.48	32.93	92.58	736.88
Toolooa to Fitzsimmons	351.60	1.71	7,645.91	32.93	92.58	805.83
Boyne Raw	351.60	1.71	10,330.18	32.93	92.58	963.09
Central Raw	351.60	1.71	9,467.34	32.94	92.58	887.52
Fitzsimmons to Gladstone	351.60	1.71	8,154.89	32.93	92.58	827.19
QAL	351.60	1.71	9,840.13	32.93	92.58	904.78
Fishermans Landing Raw	351.60	1.71	13,274.38	33.52	92.58	1,317.66
Gladstone WTP	351.60	1.71	23,548.62	111.83	216.02	1,611.02
Gladstone City	351.60	1.71	26,745.24	111.83	216.02	1,741.09
Gladstone WTP to South Gladstone	351.60	1.71	28,169.00	111.87	216.02	1,789.02
Calliope	351.60	1.71	40,531.29	127.08	216.02	2,308.51
South Gladstone to Toolooa	351.60	1.71	36,446.41	114.90	216.02	2,139.54
Boyne Potable	351.60	1.71	43,968.85	115.19	216.02	2,458.21
Benaraby	351.60	1.71	66,615.50	138.01	216.02	3,384.51
Yarwun WTP	351.60	1.71	32,399.83	107.98	216.02	2,542.22
North Industrial Potable	351.60	1.71	38,793.46	109.27	216.02	3,144.09
Fishermans Landing Potable	351.60	1.71	55,926.59	109.27	216.02	5,811.30
Boat Creek to East End	351.60	1.71	91,009.93	292.33	216.02	11,232.58

Notes: These prices do not include the prices applicable to the Curtis Island Pricing Zone and are indicative of the price a customer will pay for water taken off in the relevant pricing zone. Delivery access charges are shown as monthly amounts ($/MDQ). The annual $/MDQ price is 12 times this monthly amount.
Source: QCA calculations.

The 2020–21 indicative price:

- for the Awoonga pricing zone is 3.5 per cent lower than that proposed by GAWB, primarily because the reduction in forecast operating expenditure of $3.4 million and increase in inflation gain $2.2 million (deducted from revenue requirement) are greater than the increase in return on assets $2.7 million driven by an increase in WACC.
- for all the delivery pricing zones (except Boat Creek to East End) is between 4.5 and 6.8 per cent lower than those proposed by GAWB, primarily because the reduction in forecast operating expenditure of $15.7 million and increase in inflation gain $3.8 million (deducted

from revenue requirement) are greater than the increase in return on assets $4.4 million driven by an increase in WACC.

- for the Boat Creek to East End pricing zone is 8.8 per cent higher than that proposed by GAWB, primarily because of an increase in return on assets ($0.6 million) and depreciation ($0.5 million) driven by an increase in the WACC, and the new completion date for the expansion of the Boat Creek pump station ($6.1 million, in 2023 rather than the original completion date of 2025).[458]

Table 37 Summary of 2020–21 indicative price movements

Price zone	*GAWB 2015–16 price escalated to 2020–21* *($/ML)*	*GAWB proposed price 2020–21* *($/ML)*	*QCA indicative price 2020–21* *($/ML)*	*QCA 2020–21 vs GAWB escalated 2020–21*	*QCA 2020–21 vs GAWB 2020–21*
Awoonga	422.76	397.91	383.90	(9.2%)	(3.5%)
Awoonga to Toolooa	740.78	774.91	736.88	(0.5%)	(4.9%)
Toolooa to Fitzsimmons	795.14	847.10	805.83	1.3%	(4.9%)
Boyne Raw	1,279.52	1,008.77	963.09	(24.7%)	(4.5%)
Central Raw	914.51	929.57	887.52	(3.0%)	(4.5%)
Fitzsimmons to Gladstone	808.22	869.48	827.19	2.3%	(4.9%)
QAL	868.86	949.28	904.78	4.1%	(4.7%)
Fishermans Landing Raw	1,411.10	1,384.85	1,317.66	(6.6%)	(4.9%)
Gladstone WTP	1,513.91	1,713.57	1,611.02	6.4%	(6.0%)
Gladstone City	1,638.83	1,846.97	1,741.09	6.2%	(5.7%)
Gladstone WTP to South Gladstone	1,667.84	1,896.91	1,789.02	7.3%	(5.7%)
Calliope	2,179.84	2,477.38	2,308.51	5.9%	(6.8%)
South Gladstone to Toolooa	1,905.56	2,269.98	2,139.54	12.3%	(5.7%)
Boyne Potable	2,224.80	2,599.99	2,458.21	10.5%	(5.5%)
Benaraby	3,155.66	3,597.11	3,384.51	7.3%	(5.9%)
Yarwun WTP	2,230.18	2,716.05	2,542.22	14.0%	(6.4%)
North Industrial Potable	2,645.47	3,318.84	3,144.09	18.8%	(5.3%)

[458] See the discussion of the expansion of the Boat Creek pump station in section 4.5.3.

Price zone	*GAWB 2015–16 price escalated to 2020–21* *($/ML)*	*GAWB proposed price 2020–21* *($/ML)*	*QCA indicative price 2020–21* *($/ML)*	*QCA 2020–21 vs GAWB escalated 2020–21*	*QCA 2020–21 vs GAWB 2020–21*
Fishermans Landing Potable	8,426.24	6,194.25	5,811.30	(31.0%)	(6.2%)
Boat Creek to East End	8,809.82	10,323.50	11,232.58	27.5%	8.8%

Sources: GAWB, Building Block Model, submission, September 2019; QCA calculations.

Finding A10.53—Indicative prices

The QCA has calculated indicative prices for GAWB, which are shown in Table 36 in this chapter.

Annual indexation of prices

In the 2015 review, we recommended that a CPI inflation measure based on the Australian Bureau of Statistics 'All Groups, Brisbane' classification[459] should be used for annual price adjustments within the price period. We support the continued use of the same CPI inflation measure for annual indexation of prices for the 2020–25 regulatory period.

Finding A10.54—Annual indexation of prices

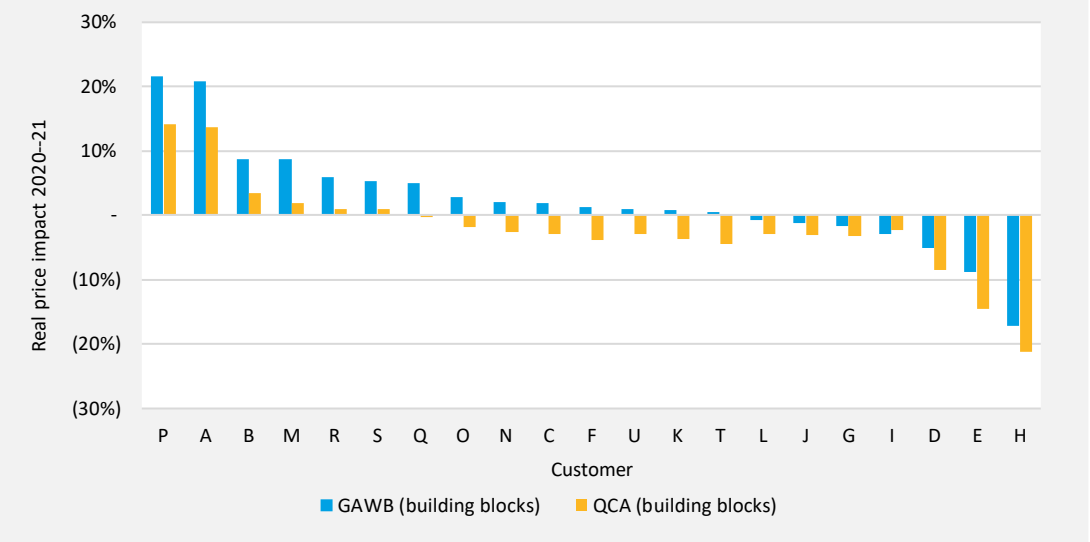
The QCA recommends that GAWB's prices from 2020–25 be indexed annually using the 'All Groups Brisbane' measure of CPI inflation.

10.4 Impact on customers

The indicative revenue requirement that we calculated is $16 million less than GAWB's over the 2020–25 regulatory period, or $2.94 million less for 2020–21. That indicative revenue requirement predominantly results in reductions to customers' price impacts (Figure 19). The variation in impacts across customers is driven by the effect on each pricing zone of our identified changes to forecast inflation, operating and capital expenditure. An individual customer's overall price impact is the product of the zones of the GAWB infrastructure network that are used to deliver water to that customer (Chapter 9), and the prices for each zone.

[459] See, Australian Bureau of Statistics, *Consumer Price Index, Australia*, Tables 1 and 2 CPI: All Groups, Index Numbers and Percentage Changes, cat no. 6401.0.

Figure 19 Customer price impact—QCA indicative prices relative to GAWB's proposal, 2020–21



Note: The impact of capitalising the under-recovery associated with raising Awoonga Dam (see Part B of this report) is not included in this figure.
Source: GAWB, Building Block Model, submission, September 2019; QCA calculations.

Price changes in each of GAWB's pricing zones are driven by the following factors in 2020–25 (see Table 38), relative to 2015–20:

- capital and operating expenditure for each zone
- the WACC applied to GAWB's regulated asset base
- pricing zone demands
- change in price smoothing methodology (i.e. 5 years instead of 20 years).

As we were not provided with a model for this period that is equivalent to the model for the previous period, we are unable to determine the impact of the change in price smoothing methodology.

However, despite the absence of equivalent models, we have endeavoured to identify drivers of price changes where possible, given the information available. This results in some pricing zones having a greater level of detail than others (see Table 38).

Table 38 Drivers of price changes for each of GAWB's pricing zones

Price zone	*Price impact (%) QCA 2020–21 vs GAWB 2019–20*	*Drivers of price change*
Awoonga	**–8**	The main driver is a substantial drop in return on assets ($9.4 million) in this pricing period relative to the last. This is caused by a 105 basis-point reduction to WACC. The Awoonga pricing zone is particularly sensitive to WACC movements due to the size of its RAB (currently $320 million), which makes up a sizeable portion of GAWB's overall RAB ($567 million[a]).
Awoonga to Toolooa	**1**	Not applicable.
Toolooa to Fitzsimmons	**3**	The main driver is a substantial increase in opex ($5.2 million) in this pricing period relative to the last. The price increase is partially offset by a reduction in return on assets ($1.6 million) caused by a 105 basis-point reduction to WACC and an increase in contracted MDQ and ML demands in this pricing period relative to the last.
Boyne Raw	**–23**	Drivers include a decrease in return on assets ($0.2 million) caused by a 105 basis-point reduction to WACC and increases in contracted MDQ demand (98 per cent) and contracted ML demand (42 per cent) in this pricing period relative to the last.
Central Raw	**–1**	The price increase caused by reductions in all demands in this pricing period relative to last, including contracted MDQ (6 per cent), contracted ML (10 per cent) and metered ML (12 per cent), is offset by a decrease in return on assets ($2.8 million) caused by a 105 basis-point reduction to WACC in this pricing period relative to the last.
Fitzsimmons to Gladstone	**4**	The main driver is a substantial increase in opex ($1.2 million) in this pricing period relative to the last. The price increase is partially offset by an increase in contracted ML demand (8 per cent) in this pricing period relative to the last.
QAL	**6**	Drivers include increases in opex ($0.6 million), depreciation ($0.8 million) and return on assets ($0.5 million) in this pricing period relative to the last. The increase in depreciation and return on assets are caused by capital projects worth $2.3 million and $3.1 million being commissioned in 2018 and 2022 respectively. Major projects include the pipeline under Aurizon's network ($1.9 million, in 2018) and a raw water pipeline ($3.1 million, in 2022).
Fishermans Landing Raw	**–5**	We do not have all the required information to fully explain with confidence the drivers of this price change.
Gladstone WTP	**8**	The main driver is a substantial increase in opex ($10.5 million) in this pricing period relative to the last.
Gladstone City	**8**	The main driver is a 6 per cent decrease in contracted MDQ demand in this pricing period relative to the last.

Price zone	*Price impact (%) QCA 2020–21 vs GAWB 2019–20*	*Drivers of price change*
Gladstone WTP to South Gladstone	**9**	Drivers include increases in opex ($1.2 million), depreciation ($1.0 million) and return on assets ($1.1 million) in this pricing period relative to the last. Increases in depreciation and return on assets are caused by capital projects worth $7.2 million being commissioned in 2018. Major projects include work on the high lift pump stations and main switchboard at the Gladstone water treatment plant ($0.8 million and $3.7 million[b] respectively) and the construction of a pipeline over a rail line from Glenlyon road to South Gladstone reservoir ($2.5 million).
Calliope	**8**	Drivers include increases in opex ($0.5 million), depreciation ($1.1 million) and return on assets ($1.4 million) in this pricing period relative to the last. Increase in depreciation and return on assets are caused by capital projects worth $7.8 million being commissioned in 2021. Business process improvements accounts for $7.0 million. The price increase is partially offset by significant increases in demand, including contracted ML (105 per cent), contracted MDQ (54 per cent) and metered ML (105 per cent).
South Gladstone to Toolooa	**14**	Drivers include increases in opex ($0.6 million), depreciation ($0.5 million) and return on assets ($0.3 million), in this pricing period relative to the last. The increase in depreciation and return on assets are caused by capital projects worth $4.2 million being commissioned between 2020 and 2023. Major projects include a condition assessment of South Trees pipeline ($0.5 million, in 2020), a switchboard replacement at Glen Eden ($0.6 million, in 2021) and a pipeline from South Gladstone reservoir to Benaraby booster ($2.6 million, in 2023).
Boyne Potable	**12**	The main driver is decreases in contracted ML demand (6 per cent), contracted MDQ demand (2 per cent) and metered ML demand (9 per cent) in this regulatory period relative to the last.
Benaraby	**9**	We do not have all the required information to fully explain with confidence the drivers of this price change.
Yarwun WTP	**16**	The main driver is an increase in depreciation ($0.6 million) in this pricing period relative to the last. The increase in depreciation is caused by capital projects worth $1.3 million and $1.6 million being commissioned in 2018 and 2020 respectively. Major projects include a main switchboard ($1.1 million, in 2018) and various capital works at the treatment plant in 2020. Note most of these capital projects tend to have shorter asset lives, which also increases depreciation. Decreases in all Yarwun water treatment plant demands in this pricing period relative to the last also added upward pressure on prices.
North Industrial Potable	**21**	The main driver is a substantial increase in depreciation ($1.0 million) in this pricing period relative to the last. The increase in depreciation was caused by capital projects worth $6.3 million being commissioned in 2018. Major projects include a pipeline from the Curtis Island booster pump station to the Yarwun water treatment plant ($3.3 million) and a pipeline from Mt Miller to the Gladstone Ports Corporation ($2.1 million).
Fishermans Landing Potable	**–30**	The main driver is a substantial decrease in opex ($137,322) in this pricing period relative to the last. A significant increase in contracted MDQ demand (63 per cent) in this pricing period relative to the last has also added downward pressure to the price.

Price zone	*Price impact (%) QCA 2020–21 vs GAWB 2019–20*	*Drivers of price change*
Boat Creek to East End	**30**	The main driver is a substantial increase in return on assets and depreciation ($2.6 million) in this pricing period relative to the last. This increase is caused by capital projects worth $12.2 million being commissioned between 2020 and 2023. Major projects include work at East End reservoir ($2.3 million, in 2020), a pipeline replacement at East End ($3.4 million, in 2022) and expansion of the Boat Creek pump station to increase the resilience of the northern sector ($6.1 million, in 2023).

a *Excludes Curtis Island price zone.*

b *Includes $800,000 of interest during construction.*

11 FUTURE REVIEWS

Our subsequent report on the monitoring of GAWB's pricing practices (the mid-term price monitoring review) will be provided in 2023, under the direction notice for this review. We may also be directed to review GAWB's pricing practices in a future period (e.g. 2025–30).

In the course of the current review, we made several key observations that relate to, or may inform, the process of future reviews. While the approach in subsequent reviews will be guided by any government direction at that time, we have suggested some ways to promote transparency and accountability in future investigation of prices.

Our observations on future reviews represent our perspective at this point in time, and do not impact outcomes of the current review. Equally, the observations should not be regarded as a pre-determination of any issues relating to future reviews.

Our observations relating to future reviews of GAWB's pricing are that:

- Our subsequent report for this investigation in 2023 will compare the findings in this final report to the actual prices charged by GAWB over the 2020–23 period. This affords customers transparency and promotes accountability for GAWB.
- If GAWB is subject to regulation for the period 2025–30, our investigation would be aided by GAWB providing more timely and comprehensive information.
- GAWB could seek to be more proactive in its customer engagement prior to a 2025–30 review, particularly on:
  - capital and operating expenditure
  - incentive mechanisms
  - pricing structure reform.

We also raise some water pricing considerations, such as demand management, that are outside the scope of our investigation, but which may influence overall public policy outcomes.

By setting out these observations, we seek to build on the common understanding among all parties of the economic benefits of prices that recover GAWB's efficient costs, but do not include monopoly rents.

11.1 2023 price monitoring review

11.1.1 Directions

As part of the price monitoring investigation for the 2020–25 regulatory period, the Treasurer directed that we provide a subsequent report (by 31 October 2023) that compares the annual prices GAWB charged between 1 July 2020 and 30 June 2023 with the findings in this final report.[460,461] The Directions provide that we may accept a submission from GAWB with prices charged over the period 1 July 2020 to 30 June 2023, 'justifying any deviations' between the prices GAWB charged to its customers and our indicative prices in this final report.

[460] Referral and direction notice, sections D(1.2)(c).
[461] We will charge GAWB the QCA fee for this review, in accordance with the QCA fee framework.

11.1.2 Proposed approach

The QCA has experience in monitoring prices in other sectors. Price monitoring is often part of broader activities to monitor a specific market or entity. In considering how to most effectively monitor the prices GAWB will charge from 2020–21 to 2022–23, we looked at how we have monitored prices in the past—that is, SEQ retail water prices and SEQ retail electricity prices.

Box 1 SEQ retail water price monitoring

We previously monitored water prices in south east Queensland (SEQ), to assess whether households and businesses were paying a price that was comparable to the costs of providing the relevant services.[462] In our price monitoring reviews of distribution and retail water and sewerage activities in SEQ, we investigated prices, costs and revenues.

Retail water prices typically include various price components, including sewerage access charges, water access charges, bulk water prices and retail-distribution water prices. It is difficult to compare the overall price effect—both across providers and over time—when individual price components change. In our price monitoring reviews, we therefore focused on bills (including water and wastewater, and the bulk water component) that we estimated based on a set usage of water per year, and a sewerage bill for a detached residence in each council area.

We note that average water consumption varies from entity to entity, between customer groups and from year to year. The changes in customers' bills therefore depend on their individual usage. However, we consider that our price monitoring framework based on bills provided a straightforward approach to compare and monitor prices prevailing in different years.

Box 2 SEQ retail electricity market monitoring

We have monitored the SEQ retail electricity market since the Queensland Government deregulated retail electricity prices in SEQ in July 2016. We monitor prices based on electricity offers.[463] Electricity offers include various price components—fixed supply charges, variable usage charges, discounts (off the total bill or off usage or supply charges) and one-off incentives and benefits. It is therefore difficult to directly compare offers between retailers and over time.

To provide a meaningful comparison of retailers' offers, we present prices as a bill for a 'typical SEQ customer' with a median consumption, which incorporates all the price components. As these bills are based on the prices in retailers' offers, the bills do not reflect the actual bills or prices SEQ customers paid, but what customers with a median consumption level would have paid if they had taken up the offers that were available and met the conditions of the offers.

We consider that this approach provides a straightforward, transparent methodology to monitor the current prices in the electricity market. As the output is a dollar value (a customer's bill), various offers with different fixed and variable price elements can be readily compared.

The indicative prices in Table 36 (Chapter 10 of Part A)[464] include various fixed and variable components (charges) for each pricing zone, similar to retail electricity and retail water prices. We therefore expect that, subject to comments from GAWB and its stakeholders in the run-up to the mid-term review, we will monitor and compare GAWB's actual charges for each pricing zone

[462] We currently have no active role in regulating or monitoring retail water prices.
[463] Electricity offers that are available on the Energy Made Easy website, a price comparator developed by the Australian Energy Regulator (AER), during a quarter or during the year.
[464] Or Table 3 of Part B, should GAWB implement our advice on the under-recovery.

to our indicative charges.[465,466] We observe that zonal prices could be a straightforward and transparent measure to monitor and compare GAWB's prices over time.

As with our existing price monitoring approaches, we could use prices for each zone, rather than the actual bills each of GAWB's customers received based on their contractual arrangements. Firstly, these bills depend on customers' individual consumption levels and may vary during the year. Different customers' bills would therefore not be directly comparable to each other, or to the findings in our final report. More importantly, confidentiality issues would limit our ability to use and publish individual customers' bill information in a price monitoring review.

11.1.3 Information required from GAWB for the mid-term review

In order to conduct a mid-term price monitoring review in the manner proposed above, we will rely on relevant information from GAWB. Below is an indicative summary of information we might expect GAWB to submit by **31 July 2023.** It is a guide only and is not exhaustive or determinative. We expect the final scope of information requirements would be settled closer to the time of the review, having regard to consultation with GAWB, its customers and the government.

We anticipate we would need:

- annual price information for all pricing zones for 2020–21, 2021–22 and 2022–23 that is comparable to the prices we presented in Table 36.[467] Ideally, GAWB would submit one table for each year with the actual prices (price components) charged in that year[468]
- the updated building blocks model used to calculate the price information (prices and price components) for each year, including the data used for the indexation of prices
- a public submission that compares the prices charged to customers and those included in the findings in this final report. GAWB's submission should cover the period 1 July 2020 to 30 June 2023 and explain the differences from the indicative prices, including in individual price components and pricing inputs, such as volume forecasts and WACC
- GAWB's submission should also itemise any costs associated with the accumulated under-recovery of revenue.

Further information from GAWB that might promote transparency and accountability in any investigation of prices for the 2025–30 period is discussed in section 11.2.2 and Appendix D.

11.1.4 Our 2023 price monitoring report

In our mid-term monitoring report in 2023, we may include the relevant information and tables from GAWB's submission. We may also include Table 36 with the prices we calculated for 2020–21 and indicative prices and individual price components for 2021–22 and 2022–23, indexed for

[465] The mid-term price monitoring should take into account the variations in circumstances across GAWB's network. For example, it might be efficient for GAWB to alter certain charges away from the indicative prices in response to changing demand forecasts.

[466] To make the comparison relevant for 2021–22 and 2022–23, our indicative prices will need to be adjusted for actual rather than forecast inflation. However, given both our indicative prices and GAWB's actual prices will be escalated by actual CPI for the comparison, our expectation is that any differences between our prices and GAWB's in those two years will be the same (for the same reasons) as in 2020–21.

[467] GAWB should also provide this information for Curtis Island (confidentiality of this information may be claimed if required).

[468] We note that GAWB already submitted a similar table for this investigation with estimated indicative prices based on its pricing framework (GAWB, sub. 1, pp. 133–35).

CPI using the 'Brisbane All Groups' classification. Based on this information, we would compare and analyse the prices and price components for each year and pricing zone.

We may also comment on the differences, if any, between the prices that GAWB charged and the prices we calculated for each of the three years, having regard to the matters listed in s. 26 of the QCA Act. This commentary may address both differences from the indicative prices and in individual price components. GAWB's submission explaining the differences would inform our assessment of the differences we identify.

11.1.5 Stakeholder input

We encourage stakeholders' views on our 2023 price monitoring review.[469] Stakeholders can provide submissions by **31 May 2023,** which we will consider in the preparation of our price monitoring report.

11.2 2025 pricing review

We may be directed to investigate GAWB's pricing practices for the 2025–30 period.[470] Since GAWB was declared as a monopoly business activity in 2000, GAWB has been subject to an investigation concerning its pricing practices under Part 3 of the QCA Act every five years.

11.2.1 Regulation and types of investigations

The purpose of the economic regulation of natural monopolies such as GAWB is to protect the longer-term interests of consumers. Without regulation, firms may exercise market power in a number of ways: by charging excessive prices, reducing service quality or undertaking inefficient production of the goods and services in question. Regulation promotes the ongoing provision of the service, by allowing the regulated firm to charge prices that recover its efficient costs including an appropriate risk-adjusted return of and on investment.

The QCA Act provides for investigation and monitoring of pricing practices of declared monopoly business activities, which may include declared water entities. It sets out factors we must consider in an investigation. We also consider our pricing principles, which include that prices should be cost reflective and forward looking, promote revenue adequacy and take into account matters relevant to the public interest.[471]

[469] Among other issues, we will seek to hear from customers about their negotiations with GAWB (e.g. regarding the under-recovery).
[470] If so, we would charge GAWB the QCA fee for this review in accordance with the QCA fee framework. GAWB submitted the QCA fee for the current (2020–25) review as a component of its operating expenditure.
[471] QCA, *Statement of regulatory pricing principles for the water sector*, December 2000, p. 3.

If GAWB continues to be declared pursuant to Part 3 of the QCA Act and the Treasurer directs us to investigate GAWB's prices for 2025–30 (or some other period), such an investigation may be either:

- a pricing practices investigation[472] (as it was for each five-year period to 2015), or
- a price monitoring investigation[473] (as for the 2015–20 and 2020–25 periods).

We note GAWB's concern that our approach to the 2020–25 investigation was more heavy-handed than what it considered is required for a price monitoring investigation—including in terms of the level of information required and the scope of pricing practices that we investigate.[474] That said, it was not ideal that we needed to issue the number of information requests to GAWB that we did in order to allow us to complete the investigation. We consider that all aspects of our investigation pertained to monitoring GAWB's pricing practices and were within the scope of the investigation. We would welcome working with GAWB and its customers before future reviews, so they can establish common expectations and we can better clarify the process and the information needed from GAWB.

11.2.2 Information required from GAWB for the next period

In order to promote transparency and accountability in the investigation, we would require certain information from GAWB in any 2025–30 pricing proposal (see Appendix D for an indicative list). Our aim is to avoid the resource-intensive process that had to be followed in this review to secure detailed information, particularly about GAWB's proposed operating and capital expenditures.[475] We would prefer GAWB's approach to the previous review (for 2015–20), when it provided more detailed, relevant information from the start, in its pricing proposal.

One method that could assist with the timely provision of information is the use of information templates, which KPMG suggested GAWB could use.[476] Operating and capital expenditure templates would provide guidance to GAWB on the information it should collect and submit to us for the review. This would enable a less burdensome process once GAWB submits its pricing proposal—as we would be less likely to issue as many subsequent requests for information. Information templates are commonly used by other regulators, including the Essential Services Commission (ESC), the Australian Competition and Consumer Commission (ACCC), the Australian Energy Regulator (AER) and the Independent Pricing and Regulatory Tribunal (IPART). We could work with GAWB to develop such templates in time for a 2025 review.

Overall, timely and comprehensive information would help foster a more productive regulatory relationship and a more light-handed regulatory approach.

11.3 Matters to consider before a 2025 review

11.3.1 Stakeholder engagement

We consider GAWB could benefit from building on the customer engagement it is pursuing. While GAWB said it engaged with its customers[477], several customers' submissions highlighted a lack of

[472] Under s. 23 of the QCA Act.
[473] Under s. 23A of the QCA Act.
[474] GAWB, sub. 33, pp. 18–22.
[475] For example, it took several rounds of requests for information to receive the required level of detail regarding GAWB's operating costs and the underlying modelling.
[476] KPMG, *GAWB expenditure review 2020*, final report, April 2020, p. 187.
[477] GAWB, sub. 1, pp. 37–42.

understanding of reasons for price movements and other key issues, such as the cause and treatment of GAWB's under-recovered revenue balance.[478]

The ESC sets out expectations regarding customer consultation by a water business in developing its price submission[479], which we consider are relevant for GAWB.[480] It sets out key principles to guide customer engagement, which include:

- having ongoing engagement that starts early
- providing all customers with a reasonable and fair opportunity to participate
- prioritising matters that have a significant influence on the services provided and prices charged by water businesses.[481]

It also published a guide that encouraged firms to engage about a broad range of matters and to actively discuss matters with customers, rather than inform them of outcomes.[482]

Likewise, IPART sets out guidance on the level of customer engagement a water agency should conduct.[483] It said a key aim of regulation was to ensure that prices reflect customer preferences and willingness to pay. Therefore, a water agency's submission should reflect a strong understanding of what its customers want.[484] A water agency is responsible for understanding its customers' views, priorities and needs, which should inform its decision-making. This includes customers' views in relation to discretionary expenditure, price structures and service standards.[485]

Should GAWB be subject to investigation in a future review, we consider it would be beneficial for GAWB to work with its customers to develop its pricing submission. We would expect to see evidence of such customer support in its submission.

Observation A11.55

The QCA considers that demonstrated customer understanding of and engagement in GAWB's pricing submissions would lead to improved outcomes of any future review.

11.3.2 Capital and operating expenditure

We consider that both GAWB and its customers could benefit from corresponding more with each other (and possibly reaching agreement) on GAWB's capital and operating expenditure plans. CS Energy, for example, said it would welcome more transparency and regular updates on GAWB's capex program, during 2020–25 to anticipate potential accumulated over- or under-recovery.[486] It is clear that GAWB has made some steps to implement such consultation for the 2020–25

[478] For example, Callide Power Management, sub. 11, p. 2, sub. 17, p. 6; WICET, sub. 13, p. 1; CS Energy, sub. 14, pp. 1–2; GRC, sub. 15, p. 1; ConocoPhillips, sub. 16, p. 2.
[479] The ESC set these expectations part of a new approach, placing greater emphasis on the role of customer engagement to influence price submissions of water businesses. It included an incentive mechanism called PREMO (Essential Services Commission, *2018 Water price review—guidance paper*, November 2016, pp. 3–4).
[480] Essential Services Commission, *2018 Water price review—guidance paper*, November 2016, pp. 23–25.
[481] Essential Services Commission, *2018 Water price review—guidance paper*, November 2016, p. 23.
[482] Essential Services Commission, *2018 Water price review—guidance paper*, November 2016, pp. 24–25.
[483] IPART set out five principles that customer engagement should be consistent with (IPART, *Guidelines for water agency pricing submissions,* April 2018, p. 21).
[484] IPART, *Guidelines for water agency pricing submissions*, April 2018, p. 1.
[485] IPART, *Guidelines for water agency pricing submissions*, April 2018, p. 21.
[486] CS Energy, sub. 22, p. 1.

pricing process. Nonetheless, we consider this consultation could be extended and should play a greater role in the development of GAWB's expenditure proposals in future. Such consultation could take a variety of forms, such as face-to-face meetings, videoconferencing, workshops, surveys and email communication.

Communicating with customers

Firstly, GAWB could ask its customers about their operating preferences and requirements, and their preferred standard, and present to customers the resulting cost of expenditure options, including non-capital solutions. Doing so can inform GAWB's expenditure priorities and may lead to increased customer satisfaction. In addition, strong evidence of customer support for GAWB's capital and operating expenditure plans and pricing (e.g. results of willingness to pay studies) would likely carry significant weight in the assessment of prudency and efficiency of cost forecasts. A greater emphasis on customer involvement in expenditure planning is consistent with recent regulatory practice. As an example, IPART has made a draft decision to allow Sydney Water to recover from customers the costs of discretionary expenditure (expenditure that exceeds mandated standards)[487]—considering, among other factors, whether the utility's customers had the capacity and willingness to pay for the expenditure.[488]

Secondly, GAWB could inform its customers of expenditure it is required to undertake—for example, expenditure required to meet regulatory obligations. This would help customers understand the need for that expenditure, and the resulting price impacts. By communicating to its customers early the necessity of such expenditure, GAWB may face fewer questions later.

Reliability

We consider the level of reliability of GAWB's service is a key indicator of quality, on which GAWB could conduct greater consultation. We are required to consider the standard of services, including quality and reliability, as part of our investigation.[489] Reliability of a system is typically considered to be its probability of successful operation.[490] An example measure of reliability for a water utility is the frequency and duration of unplanned outages. The required level of reliability for a service may be reflected in a firm's mix of capital and operating expenditure.[491]

Our consultant KPMG said GAWB commonly identified that a driver for investment was to maintain high reliability standards, driven by customer needs, however GAWB did not provide evidence of this customer consultation.[492] KPMG also said that 'as GAWB only has a small number of large customers, it has a greater ability to directly engage with these customers on the level of service they require, and their willingness to pay given the potential trade-offs between price, the quality and reliability of service'.[493]

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[487] Discretionary expenditure included expenditure that is not required to deliver the monopoly service, expenditure to provide services or achieve outcomes that are not mandatory, and to provide a level of service that goes beyond mandated service standards (IPART, *Review of prices for Sydney water from 1 July 2020*, draft report, Appendix P—Discretionary expenditure framework, March 2020, p. 94).

[488] IPART, *Review of prices for Sydney water from 1 July 2020*, draft report, Appendix P—Discretionary expenditure framework, March 2020, p. 94.

[489] QCA Act, s. 26(1)(d)(iii).

[490] Butler et al., *Reliable, resilient and sustainable water management: the Safe & SuRe approach*, research article, June 2016, Wiley Online Library.

[491] For example, if a high level of reliability is not required, a firm may undertake more operating expenditure, to fix existing assets on failure, in place of capital expenditure, such as replacing ageing assets with new, more reliable infrastructure.

[492] KPMG, *GAWB expenditure review 2020*, final report, April 2020, pp. 119–20.

[493] KPMG, *GAWB expenditure review 2020*, final report, April 2020, p. 120.

Stakeholder submissions also highlighted GAWB's need to consult on the level of reliability:

- Regarding the offline storage project, the council said that its own infrastructure provides up to four days of storage capacity to meet its demand. It noted GAWB's overspend on the project and submitted that residents should only pay a share of the costs required to deliver storage that is incremental to the council's existing storage capacity. The council requested that GAWB consider a pricing discount in recognition of the council's ability to meet demand using its own storage for up to four days.[494]
- CPM said that 'security and reliability of supply should be appropriately balanced with the level of required capital expenditure and the customer's ability and desire to separately manage these risks'.[495]

GAWB could benefit from finding out the level of reliability its customers want and building and maintaining its network to that level. For the current review, we were not provided with such evidence of customer support for reliability standards for expenditure. Rather, GAWB stated it has an internal 'network design standard of 24-hour available risk storage'.[496] GAWB could find out if a customer would prefer to pay more for a better quality service or pay less for a lower quality service. For example, customers may be willing to accept longer periods of shutdowns or reduced flow, for a lower cost.

Consulting with customers on service levels is consistent with recent regulatory practice. For example, IPART said that water agencies should link forecast service standards to the customer consultation the agencies have completed.[497] ESCOSA sets its performance targets for SA Water to achieve increases in service levels only where SA Water has demonstrated customer support and willingness to pay for particular improvements.[498]

While reliability requirements are assessed at a customer level, GAWB would need to consider the reliability requirements of a pricing zone, given GAWB sets prices for each zone and charges each customer according to its relative share of demand within these zones. Where customers in a pricing zone agree about the level of service, GAWB can meet that level.[499] Where customers have different requirements for the level of service, GAWB and customers can work together to meet each requirement, to the extent it is feasible and practical to do so.[500] We would be willing to discuss such options with GAWB prior to a future review.

GAWB said that customers have 'implemented new operational processes or manual procedures to reduce their peak daily capacity requirements (including infrastructure to capture and store water onsite)'[501] in response to the introduction of MDQ pricing in 2015. With these new measures in place, it would be timely for GAWB to assess the level of reliability its customers require. Such evidence could be elicited from a survey about customers' on-site infrastructure,

[494] GRC, sub. 15, p. 3.
[495] CPM, sub. 11, p. 4.
[496] GAWB, sub. 33, p. 48.
[497] This included improving service levels beyond what is required by regulation, if feedback from customers indicated a capacity and willingness to pay for the additional level of service. IPART also indicated it would consider customers' willingness to accept lower standards (IPART, *Guidelines for water agency pricing submissions*, April 2018, pp. 8, 21).
[498] ESCOSA, *SA Water Regulatory Determination 2020*, draft determination: statement of reasons, March 2020, p. 66.
[499] For example, if all customers in a zone have their own on-site storage, GAWB may not need to provide a high level of reliability for that zone, as those customers have their own storage in the case of an outage.
[500] Options to meet different needs include through GAWB's cost allocation approach or through customer-funded assets.
[501] GAWB, sub. 1, pp. 129–30.

capture and storage, and/or a willingness to pay study. Given GAWB's small customer base, we consider increased consultation would be achievable and effective.

> **Observation A11.56**
>
> The QCA considers that GAWB could engage more with its customers about its capital and operating expenditure, particularly regarding the level of reliability of its services. GAWB could provide evidence of customer support for its expenditure programs.

11.3.3 Incentive mechanisms

We encourage GAWB, in collaboration with customers, to consider implementing incentive mechanisms for it to control its costs and share efficiency gains with its customers. Incentive mechanisms can enhance economic efficiency, where the benefits outweigh the costs, taking into account relevant risks.

The lack of strong, ongoing incentives for GAWB to control its costs was a shared concern among stakeholders. The council raised concerns with GAWB's overspends during 2015–20 and questioned the appropriateness of the additional expenditure. The council said there should be an ex post assessment of historical projections where expenditure is consistently underestimated, and variations from the QCA's forecasts should be questioned.[502] Other stakeholders also expressed concerns that GAWB faces no incentives to remain within forecast allowances or to further control and optimise its costs.[503] ConocoPhillips suggested that the pricing structure should be revised to include incentives for GAWB to optimise and control its costs.[504]

Under the current framework, GAWB retains any savings, should its actual costs be less than forecast. Therefore, GAWB has an incentive to reduce costs, but also to overstate regulatory forecast costs (in particular, where actual operating expenditure base-year costs are used in forecasting). Historically, GAWB has been subject to ex post assessments of capital expenditure (i.e. assessing expenditure in the previous regulatory period), which determined whether its spending was prudent and efficient. Under other regulatory frameworks, like GAWB's, only actual capital costs that are found to be prudent and efficient are rolled into the RAB, providing an incentive to spend only when it is prudent and efficient to do so. Another approach, which is contained in the National Electricity Rules administered by the AER, is to allow the regulator the discretion to undertake an ex post review in the event that the total capital allowance has been exceeded during the relevant period.

GAWB has not historically been subject to ex post adjustments for operating expenditure, which would have made it more accountable for actual overspends—currently, GAWB bears operating cost risk during the regulatory period, but not between periods, as the allowance for operating costs in the following regulatory period is typically based on actual operating costs for the current period that are not reviewed fully for efficiency. GAWB also does not face any form of efficiency carryover mechanism that could present continuous incentives to realise efficiencies and promote sharing of those efficiencies with its customers.

[502] GRC, sub. 15, pp. 2–3.
[503] WICET, sub. 9, p. 1; ConocoPhillips, sub. 16, p. 1.
[504] ConocoPhillips, sub. 16, p. 2.

We encourage GAWB, in consultation with its customers, to consider implementing incentive mechanisms to control its costs, particularly its operating expenditure.[505] In response to our draft report, GAWB said it would implement one such mechanism—a compounding efficiency factor during the 2020–25 period[506]—which may provide further incentives for GAWB to control expenditure and reveal efficient costs.[507] There are other mechanisms available that GAWB could pursue. For example, the AER introduced an efficiency benefit-sharing scheme that provides for a sharing between regulated entities and users of efficiency gains and efficiency losses.[508] IPART applies an efficiency carryover mechanism to water businesses in New South Wales, which aims to remove the incentive for businesses to delay implementing efficiencies.[509]

There are potential benefits to GAWB from implementing stronger incentives to control costs. If GAWB faces appropriate incentives to operate prudently and efficiently, then we (and customers) could have more confidence in its forecast costs. This would support a more light-handed regulatory framework (as there would be less need for in-depth scrutiny) and reduce regulatory burden.

We also consider that the onus is on GAWB to clearly explain to its customers any material divergences between forecast and actual costs incurred. The justification provided in GAWB's pricing proposal for divergences from the 2015–20 period was limited.[510] In future reviews, GAWB would benefit from providing more robust explanations for departures from forecasts, including drivers for differences and evidence of options that were considered to avoid the increased expenditure—as, in doing so, GAWB may instil greater customer and regulator confidence in its spending.

If GAWB is unable to adequately justify overspends to its customers, it is appropriate for us to review the actual operating expenditure incurred by GAWB. Such a review would provide transparency to customers over the reasonableness of GAWB's deviations from forecast costs and hold GAWB accountable for overspends. The government could therefore consider including an express direction to carry out the assessment as a requirement in the direction notice for any future review. An ex post operating cost review would introduce additional regulatory burden and therefore it is not our preferred solution. This level of scrutiny will not be necessary if GAWB adequately justifies any overspending to customers in the first instance.

[505] We do not consider it is our role as part of the current price monitoring investigation to propose or impose on GAWB such mechanisms.
[506] GAWB, sub. 33, pp. 37–38.
[507] Further detail is provided in the operating expenditure chapter (Chapter 3).
[508] Australian Energy Regulator, *Better regulation—Efficiency Benefit Sharing Scheme for Electricity Network Service Providers*, November 2013, p. 4.
[509] IPART, *Review of prices for Sydney water from 1 July 2020*, draft report, March 2020, pp. 117–18.
[510] GAWB justified its departures from the QCA final report for 2015–20 in its proposal for this review (see GAWB, sub. 1, pp. 31–32).

Observation A11.57

The QCA considers that GAWB could benefit from working with its customers to implement incentive mechanisms to control its costs, particularly its operating expenditure. GAWB should also provide more detailed explanations where its actual costs differ from its forecast costs.

11.3.4 Pricing structure

We consider GAWB and its customers could benefit from a pricing structure that is simpler and easier to understand. GAWB has a complex pricing structure, which customers said limited their ability to understand the drivers of price changes (increases or decreases)[511], and which has limited our ability to explain those drivers in this report. Final customer prices are derived using a combination of GAWB's 20 pricing zones, six charges (adopting various pricing approaches) and four demand measures.[512]

Our pricing principles can provide guidance on appropriate prices.[513] One of the principles is cost reflectivity—that is, prices should derive sufficient revenue to recover the efficient costs of providing the service. Where costs of supply differ between customers, it is desirable to have prices that reflect these cost differentials, to promote the efficient allocation and use of resources. However, potential disadvantages of more cost-reflective prices are increased complexity and reduced clarity.[514] Another pricing principle is that pricing structures should be simple and easy to understand.[515] Simpler prices can help customers make decisions based on a better understanding of the pricing impacts. They also promote accountability for the regulated entity, by making the pricing impacts of its decisions more transparent. A disadvantage of simpler prices can be the loss of some cost reflectivity.

GAWB's current pricing structure is cost-reflective (as it is based on 20 pricing zones across its network and six charges); however, it is difficult to understand and therefore not transparent. We consider GAWB and its customers could benefit from GAWB moving to a simpler pricing structure. The benefits of increased transparency and comprehension are likely to outweigh the disadvantage of slightly less cost reflectivity.

As an example of a simpler pricing structure, GAWB could reduce the number of charges from the six it currently has. Based on our final report, only 4 per cent of revenue is recovered from the combination of three volumetric charges (one storage and two delivery); and 9 per cent of revenue is recovered from the administration charge.[516] Therefore, eliminating these charges would not have a large distributional impact on GAWB's customers (this is especially the case for the three volumetric charges).

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[511] For example, CS Energy, sub. 14, pp. 1–2 and CPM, sub. 11, p. 2.

[512] Chapter 9 provides more details of GAWB's pricing structure.

[513] We use our water pricing principles to help assess the appropriateness of GAWB's prices. These principles are set up to achieve the objectives of monopoly price regulation. See QCA, *Statement of regulatory pricing principles for the water sector*, December 2000.

[514] QCA, *Statement of regulatory pricing principles for the water sector*, December 2000, p. 63.

[515] QCA, *Statement of regulatory pricing principles for the water sector*, December 2000, pp. 3, 58.

[516] Rolling the costs currently recovered by the administration charge into either a storage or delivery charge means they would be allocated based on the relative demand that underpins these charges, which could be a reasonable allocation. Chapter 9 provides more details of the administration charge.

Instead, GAWB could have two charges:

- a fixed storage charge based on contracted volumes
- a fixed delivery charge based on reserved maximum daily quantity (MDQ).

This approach could make GAWB's prices much simpler and easier to understand, and would still be relatively cost-reflective, given the cost reflectivity provided by having 20 pricing zones is retained (the reduction in the number of charges would only slightly reduce cost reflectivity).

GAWB could consult with its customers to learn about their preferred pricing structure. Subject to successful consultation, GAWB could implement a new pricing structure before a future pricing review.

> **Observation A11.58**
>
> The QCA considers that GAWB should seek to understand its customers' preferences in relation to its pricing structure and consider implementing a simpler pricing structure prior to a future review.

11.4 Water pricing policy considerations

We have reviewed GAWB's prices to determine whether they recover its efficient costs, giving it enough revenue to keep operating and investing, without extracting monopoly rents. In general, we have concentrated on the cost- and efficiency-related matters specified in the Treasurer's Directions. We observe that economic regulators are not best placed to determine or weigh public policy objectives[517], but that cost-reflective pricing can have an effect on delivery of the government's policy goals.

11.4.1 The limits of cost-reflective pricing

In competitive markets, prices tend toward the marginal cost of supplying the good or service. Regulators seek to mimic this in the prices charged by monopoly businesses; however, the high level of fixed costs that characterise most monopoly services means the marginal cost price generally does not recover the cost of providing the service. This means the revenue from a 'competitive' marginal cost price would not be enough to keep the regulated monopoly in business.

The solution in many cases, including GAWB's, is some form of average price. This achieves desirable outcomes, including promoting productive efficiency, and financial viability. We have focused on determining prices that allow GAWB to recover its efficient costs. That reflects our approach to this investigation, which has given priority to economic efficiency considerations over non-economic factors.[518] We have assumed that social and other non-economic objectives are best addressed by other government policies.

The revenue cap with a deadband creates some incentives for GAWB to find ways to reduce its costs, while protecting it from unanticipated demand changes; however, it is not designed to achieve a variety of other desirable outcomes.

[517] See, for example, Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, final report, August 2011, p. 268.
[518] The factors we have had regard to in this investigation are explained in Chapter 2.

11.4.2 Demand management

For customers (and to an extent for GAWB) the cost-reflective average price sends a signal that is the opposite of the appropriate economic signals about capacity. When utilisation is low, and there is spare capacity, the average price will be high. Conversely, when demand is close to capacity, average prices will be low, encouraging extra use.

The pricing structure compounds the incentives caused by average-cost prices. Almost the whole price is fixed, reflecting GAWB's costs, which are 96 per cent fixed. The use of storage and delivery access charges reinforces this effect, as customers will pay for their full nominated amount of supply, regardless of whether they conserve more water than anticipated. Since customers' bills hardly vary with usage, they have almost no incentive to conserve water once they have contracted for a particular volume (although they have some incentive not to consume above that contracted amount).

Pricing that provides incentives to conserve water is not a significant concern when Awoonga Dam has ample supply, but becomes increasingly relevant in the context of GAWB's contingent supply strategy. GAWB is contemplating building the 115 kilometre Gladstone to Fitzroy pipeline if a drought reduces water levels in Awoonga Dam below a critical level.[519] In this context, it would make sense if demand was managed to delay or avoid the substantial expenditure required by a trigger of the contingent supply strategy.

Prices that reflect GAWB's efficient average costs provide a useful signal to customers about the cost of creating the capacity to deliver water, but not a signal about the value or scarcity of the water itself. This is not a problem when water is plentiful but can promote inefficient water use when water becomes scarce.

Other jurisdictions have sought to address similar incentive issues by restructuring the service charge to make a greater proportion variable. For example, IPART has approved, or is considering, drought management measures applying to both bulk supplier Water NSW and retailer Sydney Water. Water NSW is insulated from some of the financial effects of a drought, because its prices will be adjusted to protect most of its revenue if Sydney Water switches to an alternative supply from the Sydney Desalination Plant to conserve stored water.[520] Sydney Water has proposed a demand management regime that raises prices if dam levels fall below a threshold, and leaves those higher prices in place until dam levels recover.[521] While the circumstances and corporate structure in Sydney are different in some respects from those in Gladstone, there are enough common factors for similar measures to be applied.

While many demand management measures have been applied to domestic customers, industrial water users can also play a part in reducing water use. Indeed, GAWB said customers had already responded to its MDQ pricing by implementing new processes and procedures to reduce their peak daily capacity requirements.[522]

Neither GAWB nor the council has proposed additional demand management measures, and we have not made any findings regarding demand management and its pricing implications. Demand management could be considered as part of future reviews. This could include addressing the contradictory goals of implementing pricing approaches that give customers incentives to

[519] For an explanation of GAWB's planning for future water needs, see GAWB, sub. 1, pp. 15–17.
[520] IPART, *Review of Prices for WaterNSW*, final report, June 2016, p. 52.
[521] The proposal is for Sydney Water's variable charge to be higher when dam levels fall below 60 per cent. The price would remain raised until dam levels exceeded 70 per cent. See IPART, *Sydney Water*, overview, March 2020, p. 2.
[522] GAWB, sub. 1, pp. 9–10, 129–30.

conserve water, while still covering GAWB's costs—and at the same time making the tariff structure simpler. A review might also consider whether it would be efficient for GAWB to reduce some of its costs because customers reduced their demand or implemented water conservation measures on-site.

11.4.3 Future reviews

A number of reviews of relevant water policies are planned during the five years before the next expected GAWB regulatory period starting in 2025. These are expected to include further work by the Productivity Commission, as well as an update of the National Water Initiative framework agreed in 2004 by the Council of Australian Governments (COAG). We are also reviewing the water pricing principles we published in 2000.

In addition to demand management, there are other areas where water policy is evolving, ranging from promoting environmental outcomes to encouraging industrial development, and addressing broader concerns about equity and social welfare. These matters of government policy have been outside the scope of this report.

We encourage stakeholders with an interest in these policies to contribute to the various planned reviews.

GLOSSARY

ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
AIC	average incremental cost
ARR	annual revenue requirement
BVAL	Bloomberg's Evaluated Pricing service
Capex	capital expenditure
CAGR	compound annual growth rate
CCF	Community Consultative Forum
CEPA	Cambridge Economic Policy Associates
CIP	Curtis Island Pipeline
Council	Gladstone Regional Council
CPI	consumer price index
CPM	Callide Power Management
CRP	Customer Representative Panel
CSS	contingent supply strategy
DAE	Deloitte Access Economics
DAU	draft access undertaking
Directions	referral and direction notice dated 28 June 2019
DGM	dividend growth model
DRP	debt risk premium
EIS	environmental impact statement
ERA	Economic Regulation Authority Western Australia
ESC	Essential Services Commission Victoria
ESCOSA	Essential Services Commission of South Australia
FFO	funds from operations
GAWB	Gladstone Area Water Board
GDP	gross domestic product
GEA	Gladstone Engineering Alliance
GRC	Gladstone Regional Council
ICRC	Independent Competition and Regulatory Commission
ICT	information and communications technology
IDC	interest during construction
IPART	Independent Pricing and Regulatory Tribunal

LCMP	Life Cycle Management Plan
LNG	liquefied natural gas
LRMC	long-run marginal cost
MAR	maximum allowable revenue
MDMM	mean day maximum month
MDQ	maximum daily quantity
ML	megalitre
MRP	market risk premium
MYFER	Mid-year Fiscal and Economic Review
NERA	National Economic Research Associates
NPV	net present value
Opex	operating expenditure
OTTER	Office of the Tasmanian Economic Regulator
PDR	proportion of discretionary revenue
PoE	probability of exceedance
PREMO	Performance, Risk, Engagement, Management, Outcomes
QAL	Queensland Alumina Limited
QCA	Queensland Competition Authority
QCA Act	*Queensland Competition Authority Act 1997*
QR	Queensland Rail
QTC	Queensland Treasury Corporation
RAB	regulated asset base
RAV	regulatory asset value
RBA	Reserve Bank of Australia
RFI	request for information
Synergies	Synergies Economic Consulting
SMP	Statement on Monetary Policy
SRMC	short-run marginal cost
UV	ultraviolet
VFD	variable frequency drive
WACC	weighted average cost of capital—also known as the rate of return
WICET	Wiggins Island Coal Export Terminal
WPI	wage price index
WSA	water supply agreement
WSP	water supply plan
WTP	water treatment plant
Wedgewood White	Wedgewood White Limited

APPENDIX A: REFERRAL AND DIRECTION NOTICE

QUEENSLAND COMPETITION AUTHORITY ACT 1997
SECTIONS 23A and 24

REFERRAL AND DIRECTION NOTICE

A Section 23A – Referral

(1.1) As the Treasurer of Queensland, pursuant to section 23A of the *Queensland Competition Authority Act 1997* (the Act), I refer the monopoly business activities of the Gladstone Area Water Board (GAWB) described in paragraph A(1.2) to the Queensland Competition Authority (the Authority) for a price monitoring investigation for the period 1 July 2020 to 30 June 2025.

(1.2) The monopoly business activities are:

- bulk water storage, including water storage for another person;
- bulk water delivery services;
- bulk water treatment services;
- supplying bulk water to another person, other than supplying bottled or containerised water.

B Section 24 - Directions

(1.1) Pursuant to section 24 of the Act, I direct the Authority to consider the following matters for the period 1 July 2020 to 30 June 2025 when conducting the investigation:

(a) prices which provide GAWB sufficient revenue to recover prudent and efficient costs incurred from providing bulk water supply services including catchment management and recreation facilities;
(b) an appropriate Weighted Average Cost of Capital (WACC);
(c) the Regulated Asset Base (RAB) roll-forward calculation (in accordance with the Authority's previously recommended methodology);
(d) the revenue carryover calculation (in accordance with the Authority's previously recommended methodology);
(e) for capital expenditure to be included in the RAB, form a view on prudency and efficiency of capital expenditure using an appropriate sample size and focusing on areas which would give rise to material price changes rather than matters which are likely to have a minor or inconsequential impact; and
(f) for operating expenditure to be included in the forecast revenue, form a view on prudency and efficiency in any function by using an appropriate sample size and focusing on areas which would give rise to material price changes rather than matters which are likely to have a minor or inconsequential impact.

(1.2) For the avoidance of doubt, the Authority may consider a matter not indicated in section B(1.1) if it is likely to have a material impact on the price to a customer.

(1.3) The Authority is to provide advice on measures which:

(a) prevent the further accumulation of under-recovered revenue;
(b) reduce the existing balance of accumulated revenue under-recoveries; and
(c) manage the impact on customers of any proposed measures developed under sections B(1.3)(a) and B(1.3)(b).

C Consultation

(1.1) The Authority must undertake an open consultation process with all relevant parties, as required by section 25 of the Act, and consider submissions within the timetable for the delivery of the Final Report to the Treasurer detailed in section D.

(1.2) Consistent with sections 24(1)(a) and 34 of the Act, all reports and submissions should be made publicly available, including on the Authority's website.

D Timing

(1.1) The notice given and published by the Authority under section 25 of the Act on receipt of this Referral and Direction Notice, should require submissions on pricing practices for the period 1 July 2020 to 30 June 2025 to be made to the Authority by GAWB by no later than 30 September 2019.

(1.2) The Authority must report the results of the investigation to the Treasurer in accordance with the following timetable:

(a) Draft Report with respect to the investigation under sections B(1.1) – B(1.3) for the 1 July 2020 to 30 June 2025 price monitoring period by no later than 28 February 2020;

(b) Final Report with respect to the investigation under sections B(1.1) – B(1.3) for the 1 July 2020 to 30 June 2025 price monitoring period by no later than 29 May 2020; and

(c) Subsequent Report in the form of a comparison of:

i. annual prices charged by GAWB over the period 1 July 2020 to 30 June 2023; and

ii. the Authority's findings with regard to prices in the Final Report in section D(1.2)(b), by no later than 31 October 2023. The Authority may accept a submission from GAWB with prices charged over the period 1 July 2020 to 30 June 2023, justifying any deviations between prices charged to customers and the Authority's findings from the Final Report in D(1.2)(b) no later than 31 July 2023.

HON. JACKIE TRAD MP
DEPUTY PREMIER
Treasurer
Minister for Aboriginal and Torres Strait Islander Partnerships

APPENDIX B: GAWB DECLARATION

QUEENSLAND COMPETITION AUTHORITY ACT 1997
SECTIONS 19, 23 and 24
MINISTERS' DECLARATION AND REFERRAL NOTICE

As the Premier and the Treasurer of Queensland, we hereby declare under Section 19 of the *Queensland Competition Authority Act 1997* that the following government business activities undertaken by the Gladstone Area Water Board be declared to be government monopoly business activities:

(i) bulk water storage, including water storage for another person;
(ii) bulk water delivery services;
(iii) bulk water treatment services;
(iv) supplying bulk water to another person, other than supplying bottled or containerised water.

As the Premier and the Treasurer of Queensland, we hereby refer under section 23 of the *Queensland Competition Authority Act 1997* the declared government monopoly business activities to the Queensland Competition Authority for the following investigations:

(a) an initial investigation about the pricing practices relating to the declared activities; and
(b) investigations for monitoring the pricing practices relating to the declared activities.

Under Section 24 of the *Queensland Competition Authority Act 1997* we direct the QCA in relation to this referral to:

(a) report the results of the initial investigation to Ministers within three months of this notice; and
(b) monitor prices included in contractual arrangements entered into during, and after, the period of the QCA initial investigation.

Peter Beattie
Premier

Date Signed: 13.9.00

David Hamill
Treasurer

Date Signed: 27/8/00

APPENDIX C: LIST OF SUBMISSIONS

The submissions that we received during our review of GAWB's pricing proposal (1 July 2020 to 30 June 2025) are listed below. The submissions are numbered for reference purposes only—the numbers are used in the footnotes in the report. The submissions are available on our website.

Table 39 Submissions

Stakeholder	*Sub. no.*	*Type of submission*	*Date*
Benaraby Progress Association	25	Submission on the QCA draft report	26 March 2020
Boyne Burnett Inland Rail Trail Inc.	24	Submission on the QCA draft report	25 March 2020
Boyne Tannum Hookup Association	23	Submission on the QCA draft report	24 March 2020
Callide Power Management	11	Submission on GAWB's proposal	28 October 2019
	17	Submission in response to under-recovery	29 November 2019
	31	Submission on the QCA draft report	27 March 2020
The Community Shed Boyne Valley	27	Submission on the QCA draft report	26 March 2020
ConocoPhillips (APLNG)	16	Submission in response to under-recovery	29 November 2019
	38	Submission on the QCA draft report	27 March 2020
CS Energy	14	Submission on GAWB's proposal	25 October 2019
	18	Submission in response to under-recovery	29 November 2019
	22	Submission on the QCA draft report	23 March 2020
Gladstone Area Water Board	1	GAWB's proposal, Part A	30 September 2019
	2	GAWB's proposal, Part A—confidential version	30 September 2019
	3	Attachment 1—Referral and direction notice	30 September 2019
	4	Attachment 2—Cost escalation factors (2020–21 to 2024–25), prepared for GAWB by Deloitte Access Economics, August 2019	30 September 2019
	5	Attachment 3—Review of the WACC for Gladstone Area Water Board, prepared for GAWB by Synergies, September 2019	30 September 2019
	6	Attachment 4—Capital contributions framework	30 September 2019
	7	GAWB's proposal, Part B	30 September 2019

Stakeholder	*Sub. no.*	*Type of submission*	*Date*
	8	GAWB's proposal, Part B—confidential version	30 September 2019
	12	Submission in response to WICET's initial submission	28 October 2019
	33	Response (Part A) to the QCA draft report Part A	27 March 2020
	34	Response (Part B) to the QCA draft report Part B	27 March 2020
	35	Attachment A to response part A—Response to KPMG report: Draft Report – GAWB expenditure review 2020, prepared for GAWB by Deloitte Access Economics, 25 March 2020	27 March 2020
	36	Attachment A to response part B—A retrospective analysis of water security benefits from the raising of Awoonga Dam, prepared for GAWB by Synergies Economic Consulting, March 2020	27 March 2020
	37	Covering letter	27 March 2020
Gladstone Area Promotion and Development Ltd	29	Submission on the QCA draft report	27 March 2020
Gladstone Chamber of Commerce and Industry Inc.	30	Submission on the QCA draft report	27 March 2020
Gladstone Engineering Alliance	28	Submission on the QCA draft report	27 March 2020
Gladstone Regional Council	15	Submission on GAWB's proposal	8 November 2019
	32	Submission on the QCA draft report	27 March 2020
Nevin, O	10	Submission on GAWB's proposal	21 October 2019
Rio Tinto	19	Submission on GAWB's proposal and under-recovery	29 November 2019
Ubobo Progress Association	26	Submission on the QCA draft report	26 March 2020
Wiggins Island Coal Export Terminal (WICET)	9	Initial submission	30 September 2019
	13	Submission on GAWB's proposal	28 October 2019

APPENDIX D: INDICATIVE LIST OF INFORMATION TO INCLUDE IN A FUTURE 2025–30 REVIEW

Chapter 11 (Future reviews) sets out our suggestions for promoting transparency and accountability in future reviews of GAWB. Below is an indicative list of information we would expect GAWB to include in its proposal for the 2025–30 regulatory review. This list is intended to guide GAWB and is not exhaustive. We expect the final scope of information requirements would be settled closer to the time of the review—and would depend on the scope of the QCA's review as directed by the Treasurer.

- policies, plans and procedures, for example for procurement, risk management, project planning and management, asset management, capital investment and governance frameworks
- details of actual capital and operating expenditure for the previous period, including justifications for divergences from values in the QCA report for that period
- details of proposed capital expenditure, including business cases or supporting documentation identifying drivers, scope of work, options analysis, assumptions and project timing including stage of gateway process
- details of proposed operating expenditure, including identifying costs by major category and by pricing zone, controllable and non-controllable expenditure, identifying any step changes and justifications for changes from historical levels of expenditure, forecasting methods and assumptions, and governance arrangements
- a complete set of robust models that transparently detail all relevant assumptions and inputs used to derive forecast revenues and prices—this should include all relevant input models, including, but not limited to, capital and operating expenditure, cost escalators, cost allocation methods and demand forecasts
- estimated price impacts of overall proposal by customer and details of how those impacts were calculated.

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