Queensland Competition Authority

Draft report

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

February 2020

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We wish to acknowledge the contribution of the following staff to this report:

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SUBMISSIONS

Closing date for submissions: 27 March 2020

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning its assessment of the Gladstone Area Water Board pricing proposal for 2020–25. The QCA will take account of all submissions received within the stated timeframes.

Submissions, comments or inquiries regarding this paper should be directed to:

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GPO Box 2257
Brisbane Q 4001

Tel (07) 3222 0587
Fax (07) 3222 0599
www.qca.org.au/submissions

Confidentiality

In the interests of transparency and to promote informed discussion and consultation, the QCA intends to make all submissions publicly available. However, if a person making a submission believes that information in the submission is confidential, that person should claim confidentiality in respect of the document (or the relevant part of the document) at the time the submission is given to the QCA and state the basis for the confidentiality claim.

The assessment of confidentiality claims will be made by the QCA in accordance with the *Queensland Competition Authority Act 1997*, including an assessment of whether disclosure of the information would damage the person's commercial activities and considerations of the public interest.

Claims for confidentiality should be clearly noted on the front page of the submission. The relevant sections of the submission should also be marked as confidential, so that the remainder of the document can be made publicly available. It would also be appreciated if two versions of the submission (i.e. a complete version and another excising confidential information) could be provided.

A confidentiality claim template is available on request. We encourage stakeholders to use this template when making confidentiality claims. The confidentiality claim template provides guidance on the type of information that would assist our assessment of claims for confidentiality.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at our Brisbane office, or on our website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact us on (07) 3222 0555.

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EXECUTIVE SUMMARY

We are undertaking 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 are also investigating 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 draft report sets out our draft 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 and to mitigate their impact on customers.

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 to ensure customers have access to bulk water at prices that reflect prudent and efficient costs.

On 28 June 2019, the Deputy Premier, Treasurer and Minister for Aboriginal and Torres Strait Islander Partnerships 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 believed would address its revenue under-recovery.

Price monitoring 2020–25

We use a building block approach to calculate GAWB's estimated efficient costs of supplying bulk water and 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 is also lower than what GAWB proposed ($309 million rather than $319 million proposed), resulting in a decrease in indicative prices in 2020–21 for most pricing zones (–1% to –6%), and an increase for the Awoonga pricing zone (+1%).

We find GAWB's proposed five-year price smoothing approach appropriate, as it aligns the price smoothing and the regulatory periods and prevents a further accumulation of under-recovered revenue.

We also examine GAWB's total demand forecast for raw and treated water in the 2020–25 period, which reflects a slight decline from current levels. GAWB will update this forecast before our final report.

Under-recovery of revenue

GAWB's accumulated revenue under-recovery balance has grown rapidly over time. At $125 million (in 2020), it is over double our estimated 2019–20 revenue requirement for GAWB of $56 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 accumulated revenue under-recovery by:
  - capitalising the under-recovery balance associated with the Awoonga Dam augmentation (estimated at $23.5 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 $101.2 million or 81% of the total under-recovery balance).
- manage the impact on customers through the negotiated repayment arrangements between GAWB and its customers (for example, 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 appropriate cost of debt as the interest rate.

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

Way forward

Public involvement is a key part of the QCA's investigatory process. We invite customers and other stakeholders to make written submissions on our draft report by 27 March 2020. In particular, we seek stakeholders' views on the topics highlighted in section 1.2.3. The views and issues raised by stakeholders will inform our final report, which is due by 29 May 2020.

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 ensure that monopoly businesses operating in Queensland, particularly in the provision of key infrastructure, do not abuse their market power through unfair pricing or restrictive access arrangements.

Task, timing and contacts

We are investigating the prices that Gladstone Area Water Board (GAWB) is planning to charge for the period 2020–25, under direction from the Queensland Government. 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:

- 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

Indicative date	***Action***	***Status***
1 July 2019	The QCA published a notice of investigation	☑
30 September 2019	Initial submissions and GAWB's proposal due	☑
28 October 2019	Stakeholder submissions on GAWB's proposal due	☑
4 November 2019	The QCA released confidential information	☑
28 February 2020	The QCA draft report published	☑
27 March 2020	Submissions on the draft report due	☐
By 29 May 2020	Final report provided to the government	☐

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:

ATTN: Ms Clotilde Bélanger, Project Manager
Tel (07) 3222 0587
www.qca.org.au/Contact-us

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, which relate to bulk water services, are storage, delivery and treatment, 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.[1]

1.1.2 Statutory obligations

GAWB is a category 1 water authority[2], subject to commercialisation[3]. GAWB has a statutory obligation for its objectives to adhere to the Water Act 2000.[4] Accordingly, GAWB should aim to provide goods and services in an efficient and effective manner, while taking into consideration community service. The Water Act 2000 gives GAWB the power to levy charges on its customers

[1] GAWB, sub. 1, p. 25.
[2] Section 548 of the *Water Act 2000* (Qld), s. 31 of the Water Regulation 2002 (repealed) and s. 93 of the Water Regulation 2006. A category 1 water authority operates on a much larger scale than a category 2 water authority.
[3] Section 639 of the Water Act 2000.
[4] Section 640 of the Water Act 2000.

to carry out its business functions.[5] GAWB seeks to implement these objectives through its strategic water plan[6] 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 per annum. GAWB owns and manages Awoonga Dam along with over 200 kilometres of bulk water pipelines and related infrastructure in the Gladstone region. Its delivery network includes delivery pipelines, water treatment plants, water 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 as an independent supply of water that can supply GAWB's customers for up to 14 days and reduce supply risk to customers. 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)[7] and undertaken one price monitoring investigation (for the 2015–20 regulatory period)[8], as GAWB has reset its prices every five years. This is our second price monitoring investigation.

[5] Section 572(1) of the Water Act 2000.
[6] GAWB, *Strategic Water Plan*, 2013.
[7] Pursuant to s. 23 of the QCA Act.
[8] Pursuant to s. 23A of the QCA Act.

Following the 2015 price monitoring investigation, GAWB introduced a revenue cap with a 10 per cent deadband[9]—in contrast to the price cap form of regulation that applied in previous pricing 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 investigation, we are monitoring GAWB's pricing practices, which extends to the examination of GAWB's proposed prices for the next five-year regulatory period (2020–2025). Key aspects of this investigation are our:

- calculation of adequate revenue requirements for the 2020–2025 regulatory period
- assessment of the prices proposed by GAWB to ensure that costs are prudent and efficient
- advice on the treatment of under-recovered revenue from past regulatory periods.

1.2.2 Directions

On 28 June 2019, we received a ministerial direction 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 Draft 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 had been taken up, which resulted in the 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 (see Part B of this Draft Report).

1.2.3 Regulatory process

We received GAWB's proposal and initial stakeholder submissions on 30 September 2019.

We invited submissions on both 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 have considered GAWB's proposal and the views and submissions of all stakeholders provided. All submissions and reports are published on our website. Stakeholders are invited to provide submissions on this draft report by 27 March 2020. We consider that additional information from GAWB's customers and stakeholders would be beneficial to our investigation. We particularly seek stakeholder views on the following points:

- under-recovery of revenues (i.e. the proposed structure for pricing and recovering revenues)
- five-year price smoothing

[9] This hybrid revenue cap form of regulation is explained in Chapter 7 (in Part A) of this draft report.

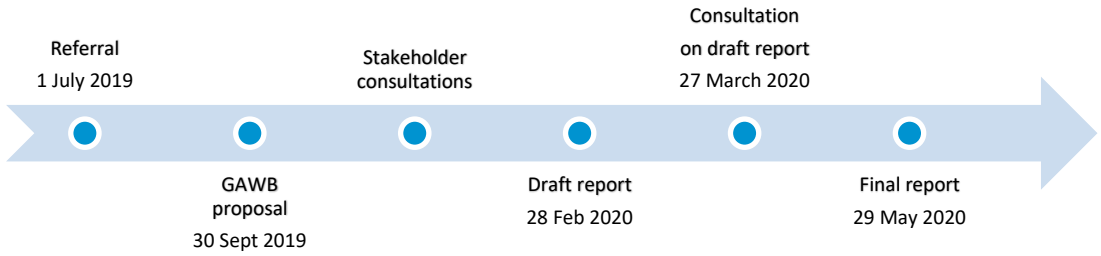
- review triggers
- new connections and capital contributions framework
- pricing disputes
- storage and administration over-run charges for the Gladstone Regional Council
- recreational strategy
- revised demand forecasts (any revised forecasts must be submitted by 27 March 2020).

We will provide our final report by 29 May 2020. The final report will discuss in further depth our expectations of:

- our 2023 price monitoring report (Part D, cl. 1.2 (c) of the Directions), and
- the 2025–30 price review.

We also intend to raise several points that we expect to consider in future reviews.

Figure 2 Investigation timeline



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[10]—Appendix A) and the QCA Act.

Under the QCA Act, a price monitoring investigation is an ongoing investigation in relation to a monopoly business activity, in which the QCA monitors pricing practices[11] relating to the activity, and reports periodically to the Minister about the results of the investigation.[12] The general objective of price monitoring is to present incentives that constrain a monopoly activity from exercising its market power.[13] In our price monitoring, we investigate prices to provide information to the Minister and stakeholders about the costs of supply, and assess revenues against estimated prudent and efficient costs.

Within our periodical reporting on a price monitoring investigation, we will typically report on the findings of our investigation only, unless we have been directed by the Minister to make recommendations.[14] These findings have an informative rather than deterministic purpose and do not directly bind the Minister or the monopoly business.

The Minister 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 draft report.

2.2 The Minister's Directions

The Minister's Directions under section 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

[10] As context requires, we use 'Directions' to refer to both the referral and direction notice.
[11] 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.
[12] Section 22 of the QCA Act.
[13] Explanatory notes to the *Queensland Competition Authority Amendment Bill 2008*, p. 3.
[14] The effect and consequences of report recommendations are set out within section 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 Minister 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 section 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[15]
- 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.[16]

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.[17]

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

[15] Sections 26(1)(a), (c) , (d) of the QCA Act.
[16] Sections 26(1)(g), (i), (m) of the QCA Act.
[17] 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 also 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 section 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 ensuring community members can 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 agree with the findings 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. (finding 8.4)[18]

and

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

> 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. (finding 8.3)[19]

Economic and regional development

The Gladstone region is home to a range of significant industries, including liquefied natural gas (LNG) plants, alumina processing, chemical manufacturing and power generation. Queensland's largest multi-commodity port by volume is also located there.[20] These industries make a significant contribution to the Queensland economy. In 2018, the gross regional product for the Gladstone region was estimated at $4.77 billion, which represents 1.5 per cent of the state's gross state product.[21]

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 of 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 flow requirements.[22]

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 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 infrastructure augmentation. GAWB's cost base comprises around 95 per cent fixed costs. This is relevant when considering how the costs of storage and delivery augmentation 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 weigh these

[19] Productivity Commission, *Australia's Urban Water Sector*, inquiry report no. 55, 2011, p. 221.
[20] Gladstone Regional Council, *2018/19 Annual Report*, p. 5.
[21] .id Consulting, *Gladstone Regional Council: economic profile*, viewed 26 November 2019, https://economy.id.com.au/gladstone.
[22] Queensland Government, *Water Plan (Boyne River Basin) 2013*, 6 December 2016.

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.[23]

As such, in carrying out this investigation, we have had regard to all the matters set out in section 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 weighed 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.[24] 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 to that adopted 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 a 20-year smoothing period that had been used in the past.[25]

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 considered the use of a 20-year smoothing period as required by the Directions, and have formed the view that this approach is no longer appropriate. Our consideration of this issue is detailed in Chapter 11.

We have formed preliminary 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 preliminary 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, or expressed views, on expenditures that are not material contributors to GAWB's prices. A key output from this process is our schedule of indicative prices (Chapter 10). These act as non-

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

binding 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).

The QCA's draft findings on indicative prices for GAWB are provided in Chapter 10.

Unless otherwise stated, all costs and prices presented in this report are in nominal terms and figures are reported as mid-year values.

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:

- cessation of the 20-year price smoothing period in favour of a 5-year period
- removal of under-recoveries from smoothed prices
- recouping under-recovered revenues from customers through annuities.[26]

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 section 26 of the QCA Act. The application of these assessment criteria is discussed further in Chapter 11.

2.5 The QCA's investigation process

On 1 July 2019, pursuant to section 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 submissions received, including GAWB's regulatory proposal, were published on the QCA's website on 1 October 2019.

[26] 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.[27]

We have considered the submissions and views of all parties in preparing this draft report, as set out within Appendix C. All public submissions and reports are published on our website.

[27] Various Members and staff of the QCA participated in these visits.

3 OPERATING EXPENDITURE

In this chapter, we provide our view on whether GAWB's operating expenditure (opex)—including costs associated with catchment management and recreation management—is prudent and efficient.[28]

3.1 Key points

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 $158.5 million, compared with GAWB's proposal of $173.2 million.[29]
- Our estimated prudent and efficient opex forecast is around $14.8 million lower than GAWB's forecast, due to the application of:
  - revised cost escalators
  - adjustments for some changes in expenditures that we felt are not sufficiently justified
  - a more challenging efficiency target.

3.2 GAWB's operating expenditure proposal

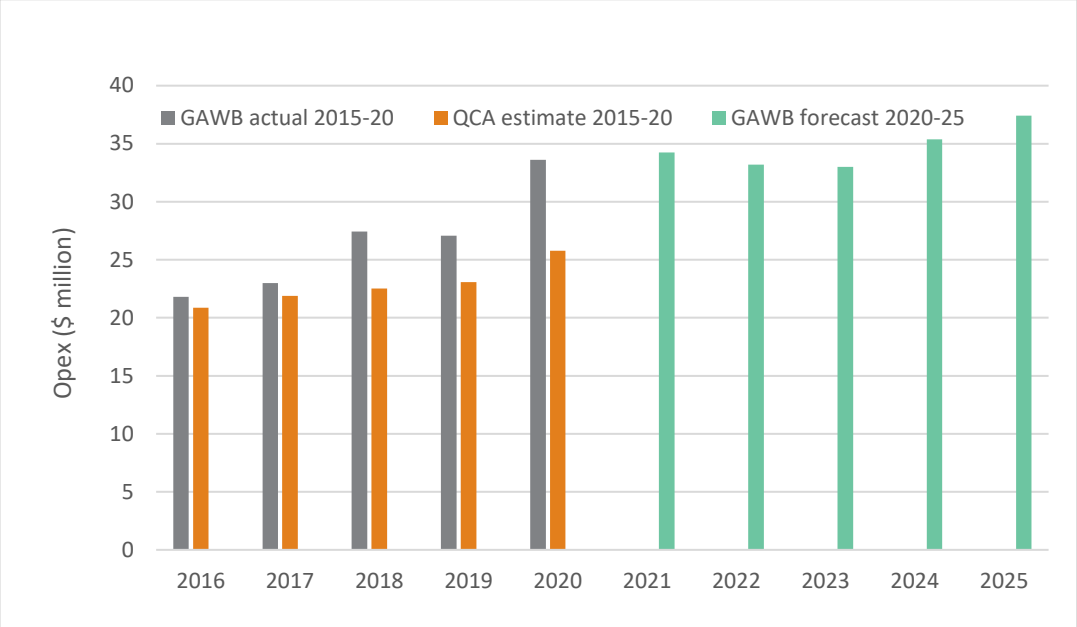
GAWB expects to spend $133 million in opex during 2015–20, which is around 17 per cent higher than our estimate of prudent and efficient opex determined at the time of our 2015 investigation. GAWB attributed the expected overspends during 2015–20 to higher than anticipated costs associated with professional services, information systems, and staffing.[30] 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).

[28] Opex refers to 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 significant 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.

[29] 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).

[30] GAWB, sub. 1, pp. 92–95.

Figure 3 GAWB's opex for 2015–20 and forecast opex for 2020–25 ($ million)



Note: 2020 values represent GAWB projections.

Source: GAWB, QCA RFIs 85–86 and RFIs 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 GAWB's proposed increases in expenditure for 2020–25, despite modest demand projections.[31]

Other stakeholders also expressed concerns that GAWB faces no incentives to remain within forecast allowances or to further control and optimise its costs.[32] ConocoPhillips suggested that the pricing structure should be revised to include incentives for GAWB to optimise and control its costs.[33]

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.

3.3 GAWB's 2020–25 forecast operating expenditure

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.

GAWB's total opex forecast includes proposed annual efficiency savings of 1 per cent per year, which apply to costs that GAWB considers controllable (section 3.10). Table 1 sets out GAWB's forecasts by activity.

[31] GRC, sub. 15, pp. 2–3.
[32] WICET, sub. 9, p. 1; ConocoPhillips, sub. 16, p. 1.
[33] ConocoPhillips, sub. 16, p. 2.

Table 1 GAWB's proposed opex for 2020–25 ($ million)

Category	*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	**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 (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 RFIs 95–114; KPMG analysis.

3.4 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.[34]

3.4.1 Prudency and efficiency

We consider opex is prudent if it can be justified by reference to an identified need or cost driver (e.g. 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).

We consider opex is efficient if it minimises GAWB's long-term costs of providing water supply services.

3.4.2 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,

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

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

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 the:
  - review of historical expenditure trends and performance against forecasts
  - review of GAWB' 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 are reflective of good industry practice and provide robust justifications for the proposed expenditure.[35]

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.[36]

3.4.3 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. 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.

In a number of instances, KPMG did not have information that was sufficiently detailed, or in the right form, to undertake its analysis. Consequently, we requested significant additional information from GAWB, and 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 do not consider that materiality of any specific cost needs to be strictly defined. In this instance, we consider 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, they can be significant when considered in aggregate.

[35] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 33–34.
[36] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 120.

3.5 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.

In the late stages of developing our draft findings, GAWB provided additional information that may provide further justification for some of its proposed opex. Due to the stage that this information was provided, KPMG was unable to fully consider this information in its draft report for us. We intend to seek further advice from KPMG that takes into account all available information. We will consider KPMG's advice in our final report.

3.6 Policies, procedures and frameworks

KPMG reviewed GAWB's supporting policies and procedures, detailing its overarching governance, procurement, capital planning and asset management frameworks. KPMG then sought to test the application of GAWB's frameworks in the development of expenditure proposals.

KPMG found that GAWB maintains a robust and detailed procurement plan, to satisfy its obligations under the Queensland Government's procurement policy.[37] 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.[38]

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.[39] KPMG was not able to fully verify the links between maintenance cost forecasts and the LCMP maintenance schedules (discussed in section 3.9.2). Nonetheless, KPMG observed that GAWB demonstrates a commitment to continuous improvement of its asset management systems with leading practice frameworks.[40]

KPMG made additional findings on GAWB's governance and capital planning frameworks, which are noted in Chapter 4.

[37] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 43–46.
[38] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 9.
[39] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 41.
[40] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 36.

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, 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.

3.7 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.[41] 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 systems as key changes affecting future costs.[42]

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

- activities identified in its Life Cycle Management Plans (section 3.6.)
- historical costs
- strategic objectives, board decisions and corporate commitments
- compliance obligations
- demand forecasts.[43]

GAWB also applied efficiency savings of 1 per cent per year to its controllable opex forecasts (section 3.10).

KPMG noted that while GAWB provided an overview of its forecasting approach, it did not provide details on the actual forecasting methods adopted. KPMG said GAWB's approach appeared 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
- applying nominal cost escalators to convert the forecasts from real 2018–19 dollar terms to nominal values.

We note that 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

[41] GAWB, QCA RFI 57, Opex forecasting methodology, p. 1.
[42] GAWB, QCA RFI 57, Opex forecasting methodology, p. 1.
[43] GAWB, QCA RFI 57, Opex forecasting methodology, p. 3.

extrapolating costs from a reasonable base year with the use of appropriate escalators. KPMG also determined an alternative efficiency factor, which it considered an important element of its recommended alternative forecasts.

3.8 Cost escalation

3.8.1 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 2).

GAWB's proposed escalators are 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.[44]

Table 2 GAWB's proposed nominal cost escalators

Escalator	*Annual change (%)*
Consumer price index (CPI)	2.30
Wage price index (WPI)	3.04
Insurance	5.70
Chemicals	3.03
Council charges (rates)	2.82
Employee costs (wages)	3.22
Professional services (engineering)	3.04
Contract labour costs	3.04
Contractors (service delivery)	3.04
Other materials and services	2.85
Electricity	2.06

Source: GAWB, sub. 4, p. 8; GAWB, QCA RFI 121.

3.8.2 KPMG review and recommended escalators

KPMG reviewed GAWB's proposed escalators and recommended a number of revisions (Table 3). KPMG also identified errors in the application of the escalators to 2018–19 costs and corrected these errors in its recommended adjustments.

Table 3 KPMG's assessment of GAWB's cost escalator method and assumptions

Escalator	*GAWB's proposal*	*KPMG's recommendation*
CPI	DAE forecast: 2.3% (Brisbane CPI)	Updated DAE 'Business Outlook' forecast of Queensland CPI until 2023–24, then

[44] GRC, sub. 15, p. 3.

Escalator	*GAWB's proposal*	*KPMG's recommendation*
		extrapolated 2023–24 value to 2024–25
WPI	DAE forecast: 3.04% (Qld WPI)	Updated DAE 'Business Outlook' forecast of Queensland WPI until 2023–24, then extrapolated 2023–24 value to 2024-25
Insurance	5.7% based on DAE's 'Brisbane CPI' plus a premium of 3.4%, reflecting the observed difference between general CPI and insurance	Updated DAE 'Queensland CPI' forecast plus historical insurance cost growth premium of 3.4% per year
Chemicals	DAE crude oil price forecast of 3.03%	As per updated 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 (updated CPI) • 3% for finance costs (updated CPI)
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 the latest DAE WPI forecast
Professional services (engineering)	DAE forecast: 3.04% (WPI)	As per updated WPI
Contract labour costs	DAE forecast: 3.04% (WPI)	As per updated WPI
Contractors (service delivery)	DAE forecast: 3.04% (WPI)	As per updated WPI
Other material and services	DAE forecast: 2.85%. Weighted average of Qld WPI (75%) and Brisbane CPI (25%)	Updated DAE WPI (75%) and CPI (25%) forecasts
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 3.9.3)
Operations	DAE CPI for all items, except 'trade waste charges', which attracts the council charges escalator	As per GAWB proposal, with updated DAE CPI
Information systems and administration	DAE forecast: 2.3%	As per updated annual CPI

3.8.3 QCA conclusions

We reviewed GAWB's proposed escalators and agree with most of KPMG's recommendations regarding the composition of the escalators and their application to forecast costs. Our findings on specific escalators are discussed further in the assessments of individual opex functions, where relevant (section 3.9).

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.

In recent regulatory decisions, we have applied CPI inflation forecasts based on short-term RBA (Reserve Bank of Australia) forecasts and the midpoint of the RBA's target inflation band. Likewise, we previously adopted forecasts of WPI inflation based on Queensland Government budget forecasts, and long-term historical averages.[45] We have tended to use this approach as it is reasonably transparent, uses publicly available data and can be replicated by stakeholders.

We have a number of concerns regarding the transparency of the underlying DAE forecasts for CPI and WPI. We note that the DAE forecasts are derived using a proprietary macroeconomic model, and its assumptions are not easily understood or verifiable by stakeholders. We also note that DAE's forecasts tend to be licenced, subscription-based products. This means they are not freely available in the public domain and their broader public use is subject to limitations.

We are minded to prefer CPI and WPI forecasts that are more transparent and widely available. However, for the purposes of this draft report, we have provisionally adopted KPMG's recommended CPI and WPI inflation forecasts, which are based on updated DAE forecasts.

Given our concerns, we intend to further consider the appropriateness of using these forecasts, and will review our position for the final report. At this stage, we have also provisionally applied KPMG's recommended CPI inflation forecast to escalate our estimated forecast capital expenditure allowance (Chapter 4), and to forecast inflationary gain on the regulated asset base (RAB) (Chapter 5).

We note that GAWB's insurance cost escalation rate was estimated prior to the impacts on Australian insurance markets of recent fire and storm events on the east coast of Australia becoming apparent. We are open to considering revised, documented, insurance cost estimates if GAWB feels that is appropriate.

Our draft positions on GAWB's opex escalation rates are set out in Table 4. We may revise these values, including the underlying data sources, for our final report, based on further considerations and more recent data.

Table 4 Cost escalators—QCA draft findings

Escalator	*Average annual change (%)*
CPI	2.0
Chemicals	2.0
WPI	2.9
Professional services (engineering)	2.9
Contract labour costs	2.9
Contractors (service delivery)	2.9

[45] For example, QCA, *Rural irrigation price review 2020–24*, final report, January 2020, Part B: Sunwater, pp. 48–49.

Escalator	*Average annual change (%)*
Employee costs (wages)	2.9
Council charges	2.6
Insurance	5.4
Other materials and services	2.6
Information systems and administration	2.0
Maintenance	2.6
Electricity	Not applicable; nominal forecast applied (section 3.9.3)
Operations	CPI for all items, except 'trade waste charges', which attracts the council charges escalator.

Source: KPMG, GAWB expenditure review 2020, draft report, February 2020, pp. 126–27; KPMG modelling.

Finding A3.2—Cost escalation

The QCA considers GAWB's proposed cost escalators are reasonable to adopt for the purposes of this draft report, after making our adjustments to weightings and updates for more recent information. The QCA's draft findings on cost escalators for opex reflect these adjustments and updates.

The QCA intends to further review the appropriateness of these escalators, including the underlying data sources, for its final report.

3.9 Forecast operating expenditure by function

3.9.1 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 3.10). KPMG recommended an adjustment to water quality costs to reflect its recommendation on forecast chemical costs (section 3.9.9) on the basis that changes in these two cost categories should align.[46]

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 and council rate escalators be applied.[47] We consider GAWB's forecast operations expenditure is prudent and likely reasonably efficient. Based on our own review, we

[46] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 133.
[47] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 132.

agree with KPMG's advice and have adopted its recommended operations cost forecast (Table 5).

Table 5 Operations costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	2.14	2.23	2.29	2.38	2.43	**11.47**
QCA draft findings	2.11	2.17	2.23	2.29	2.34	**11.14**

Note: All values are before the application of efficiency adjustments.

Finding A3.3—Operations costs

The QCA finds an appropriate total forecast for GAWB's operations costs during 2020–25 is $11.14 million.

3.9.2 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.[48] GAWB said that while these assessments occur periodically, there are 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.[49]

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
- 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).[50]

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. [51]

[48] GAWB, sub. 1, p. 95.
[49] GAWB, sub. 1, p. 95.
[50] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 135–36.

KPMG was also unable to test the alignment between the LCMP funding models and the maintenance cost forecasts, due to information being provided at a late stage in its review.

Because of these concerns and challenges, KPMG 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 ensure the 10 per cent margin is not eroded.[52] We consider this a reasonable approach.

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.[53]

GAWB provided additional information that it said demonstrates the link between LCMPs and its forecasts. However, due to the stage at which this information arrived, KPMG was not able to take it into account. We intend to seek further advice and will consider this new information in our final report.

Based on the available information, we consider GAWB's forecast maintenance costs are prudent, but have not been demonstrated to be efficient. On balance, we consider that KPMG's recommended maintenance cost forecast, including escalation, is reasonable and we have adopted it for the purposes of this draft report (Table 6).

Our draft estimate of prudent and efficient maintenance costs is around 17 per cent lower than GAWB's proposed forecast. 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 6 Maintenance costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	4.01	4.31	3.79	4.20	4.13	**20.45**
QCA draft findings	3.15	3.27	3.37	3.54	3.55	**16.88**

Note: The QCA has not applied its efficiency factor to maintenance costs.

Finding A3.4—Maintenance costs

The QCA finds an appropriate total forecast for GAWB's maintenance costs during 2020–25 is $16.88 million.

[51] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 136.
[52] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 136.
[53] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 136.

3.9.3 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.[54] 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.

GAWB attributed the increase in 2023–24 to the anticipated commissioning for 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).

KPMG found there was limited information on the drivers for GAWB's forecast electricity costs or 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).[55]

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.[56] 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.[57] 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 Residential Electricity Price Trends report[58] and the AER's draft determination on Ergon and Energy's network tariffs over the 2020–25 period.[59] While noting that residential price trends are not a perfect indicator of GAWB's electricity costs given its characteristics,[60] KPMG

[54] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 138.
[55] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 139–41.
[56] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 138.
[57] GAWB, sub. 4, p. 8.
[58] AEMC, *Residential Electricity Price Trends 2019*, final report, December 2019.
[59] AER, *Ergon Energy Distribution Determination 2020 to 2025: Overview*, draft decision, October 2019.
[60] For example, GAWB's wholesale energy contracting strategy and specific network tariffs are not reflective of residential electricity supply arrangements.

considered the AEMC estimates were nonetheless reflective of cost trends in the Queensland energy sector more generally.[61]

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 projected a reduction in environmental costs[62] of around 33 per cent.[63] 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.[64]

Network charges and wholesale energy costs represent the majority of GAWB's total electricity costs associated with its main connection sites.[65] As such, we consider that expected movements in these two components provide a reasonable indication of likely changes in GAWB's electricity prices.

Based on expected decreases in network and wholesale costs indicated in the AEMC's report and the AER's draft decision, KPMG 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.[66]
- 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.[67]

We consider GAWB's forecast electricity costs are prudent, but have not been demonstrated to be efficient, as there are indications of more significant decreases in electricity prices over coming years than GAWB's forecasts suggest. On balance, we consider KPMG's alternative forecast is reasonable, as it is based on the most recent information and expectations. We have adopted KPMG's forecast for the purposes of this draft report (Table 7).

We note that new information relevant to GAWB's electricity prices may become available in the near future, including the AER's final determination on Ergon Energy's network costs for 2020–25. Where possible, we will consider updating our forecasts to include the most recent available data before our final report.

Table 7 Electricity costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*

[61] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 138.
[62] Environmental costs include costs of the large-scale renewable energy target and small-scale renewable energy scheme.
[63] AEMC, *Residential Electricity Price Trends 2019*, final report, December 2019, p. 6.
[64] AER, *Ergon Energy Distribution Determination 2020 to 2025*, draft decision, Attachment 1 Annual revenue requirement, October 2019, pp. 13–14.
[65] Based on QCA review of GAWB electricity invoices.
[66] Based on 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.
[67] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 141.

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	3.04	3.10	3.16	3.32	3.38	**16.00**
QCA draft findings	2.47	2.40	2.40	2.40	2.40	**12.08**

Note: The values are before the application of efficiency adjustments.

Finding A3.5—Electricity costs

The QCA finds an appropriate total forecast for GAWB's electricity costs during 2020–25 is $12.08 million.

3.9.4 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.

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.[68]

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.[69]

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 3.8). 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

[68] GRC, sub. 15, p. 2.
[69] GAWB, sub. 1, p. 93.

expected efficiencies from business improvement initiatives have not yet been realised.[70] 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.[71]

We find GAWB's forecast employment costs are prudent, and mostly efficient. We have adopted GAWB's forecast with updated cost escalators from DAE as discussed in section 3.8 (Table 8). 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.

Table 8 Employment costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	13.04	13.42	13.89	14.21	14.74	**69.29**
QCA draft findings	12.94	13.32	13.82	14.14	14.68	**68.90**

Note: The values are before application of efficiency adjustments.

Finding A3.6—Employment costs

The QCA finds an appropriate total forecast for GAWB's employment costs during 2020–25 is $68.9 million.

3.9.5 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.[72] 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.[73]

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

[70] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 147.
[71] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 147.
[72] 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.
[73] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 158–60.

in 2019–20. This represents an average annual spend of $2.5 million per year compared with GAWB's average proposed spend of $2.8 million per year, in 2018–19 dollar terms.

KPMG's recommended forecast allows for annual average costs that are higher than both the original forecast for 2015–20 and actual spend in most years of the 2015–20 period.[74] KPMG recommended that its efficiency factor be applied to professional services costs in recognition of proposed initiatives that are expected to deliver efficiencies.

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. We consider these to be reasonable estimates. We may revise these forecasts for more recent information before our final report.

On balance, we consider GAWB has not demonstrated that its professional services expenditure is prudent or efficient. We consider KPMG's forecast is a reasonable estimate that will provide a sufficient overall budget for GAWB, within which it can reallocate resources during the 2020–25 period according to its priorities in any given year (Table 9).[75]

We note GAWB's proposed professional services costs include amounts attributable to its Lake Awoonga recreational strategy. We find the capex associated with this program is mostly prudent and efficient (Chapter 4) and consider that our alternative professional services forecast is sufficient for GAWB to fund the services required.

Table 9 Professional services costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	4.50	2.55	2.42	3.33	4.79	**17.59**
QCA draft findings	3.09	2.61	2.68	3.07	4.49	**15.93**

Note: The values are before the application of efficiency adjustments.

Finding A3.7—Professional services costs

The QCA finds an appropriate total forecast for GAWB's professional services costs during 2020–25 is $15.93 million.

3.9.6 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.[76]

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

[74] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 161.
[75] KPMG adopted GAWB's forecast for QCA fees and related expenditure, adjusted for its recommended update to the CPI only.
[76] GAWB, sub. 1, p. 94.

framework, KPMG said it 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.[77]

KPMG said that, while there is a sense that oversight and governance of GAWB's IT 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 IT expenditure throughout the regulatory period.[78]

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.[79]

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.[80]

On balance, we accept that an increase in costs for 2020–25 is likely required and consistent with industry trends. We also note this 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 for the purposes of our draft report, subject to updating the CPI cost escalator (

We are seeking further information from GAWB to justify its forecast information systems expenditure program and will consider this in our final report.

Table 10). 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.

We are seeking further information from GAWB to justify its forecast information systems expenditure program and will consider this in our final report.

Table 10 Information systems costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	3.29	2.86	3.00	3.18	3.09	**15.42**
QCA draft findings	3.24	2.81	2.95	3.12	3.03	**15.16**

Note: The values are before application of efficiency adjustments.

[77] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 156.
[78] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 156.
[79] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 156.
[80] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 156.

Finding A3.8—Information systems costs

The QCA finds an appropriate total forecast for GAWB's information systems costs during 2020–25 is $15.16 million.

We are seeking further information from GAWB to justify its forecast information systems expenditure program and will consider this in our final report.

3.9.7 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 a step 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.[81]

KPMG agreed that current risks, particularly climate-based risks, are likely to see insurance costs grow at a faster rate than CPI.[82] 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.[83]

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.

We find that GAWB's insurance costs are prudent but have not been demonstrated to be efficient. For the purposes of this draft report, we have adopted KPMG's recommended updated insurance cost forecast based on an escalation of 2019–20 budgeted insurance costs (Table 11).

GAWB provided additional information relating to the proposed step change in costs between 2019–20 and 2020–21. GAWB also provided correspondence from its insurance broker detailing its expectations of future premium increases. However, this information was provided at a late

[81] GAWB, sub. 1, p. 98.
[82] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 152.
[83] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 152.

stage in the review process and KPMG was not able to take it into account. We are seeking further advice and will consider this new information to inform our final report.

We note that GAWB's insurance costs estimates, and KPMG's review of them, occurred prior to the impacts on Australian insurance markets of recent fire and storm events on the east coast of Australia becoming apparent. We are open to receiving revised, documented, estimates if GAWB feels that is appropriate.

Table 11 Insurance costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	1.55	1.52	1.61	1.80	1.80	**8.26**
QCA draft findings	1.44	1.40	1.48	1.65	1.65	**7.63**

Note: The values are before the application of efficiency adjustments.

Finding A3.9—Insurance costs

The QCA finds an appropriate total forecast for GAWB's insurance costs during 2020–25 is $7.63 million.

3.9.8 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 3.8). 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.[84] KPMG's recommended adjustments were made with reference to historical expenditure and other information provided by GAWB.

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.[85]

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.

[84] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 162–65.
[85] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 164.

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.[86]

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 that its forecast administration costs are prudent or efficient overall. We consider that KPMG's recommended forecast, including escalation, is reasonable, and we have adopted it for the purposes of this draft report (Table 12).

Table 12 Administration costs—QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	1.73	2.19	1.78	1.88	1.92	**9.50**
QCA draft findings	1.58	1.56	1.60	1.67	1.67	**8.08**

Note: The values are before application of efficiency adjustments.

Finding A3.10—Administration costs

The QCA finds an appropriate total forecast for GAWB's administration costs during 2020–25 is $8.08 million.

3.9.9 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.[87]

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.[88] 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.

[86] GRC, sub. 15, p. 3.
[87] GAWB, QCA RFI 101–103.
[88] GAWB, QCA RFI 101–103.

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.[89]

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 a reasonable base cost for developing an alternative forecast.

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.

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 KPMG's forecast is a reasonable alternative and have adopted it for this draft report (Table 13).

Table 13 Chemicals costs—QCA draft findings ($ million)

	2020–21	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***Total***
GAWB's proposal	0.72	0.74	0.78	0.81	0.83	**3.87**
QCA draft findings	0.70	0.71	0.73	0.74	0.76	**3.63**

Note: The values are before the application of efficiency adjustments.

Finding A3.11—Chemicals costs

The QCA finds an appropriate total forecast for GAWB's chemical costs during 2020–25 is $3.63 million.

3.9.10 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.[90]

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

[89] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 145.
[90] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 149.

that the individual component weightings be updated with more recent data reported by the council (section 3.8).

We consider GAWB's rates cost forecasts are prudent and efficient; however, we have applied KPMG's recommended escalators based on updated weightings. 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.

Table 14 Council charges expenditure: QCA draft findings ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB's proposal	0.51	0.53	0.54	0.56	0.57	**2.71**
QCA draft findings	0.51	0.52	0.53	0.55	0.56	**2.67**

Note: Council charges are considered non-controllable costs and do not attract an efficiency adjustment.

Finding A3.12—Council charges

The QCA finds an appropriate total forecast for GAWB's council charges (rates) during 2020–25 is $2.67 million.

3.10 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.

3.10.1 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 a 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.[91]

3.10.2 Application of efficiency factor

GAWB considers the following costs to be uncontrollable and has not applied its efficiency factor to these costs:

- environmental compliance costs, handling of trade waste, water testing quality and management and land lease payments
- fixed electricity charges

[91] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 169.

- chemicals
- employment costs for water treatment plant operators
- council rates
- insurance costs
- external audit fees and QCA regulatory fees.

GAWB said that these costs comprise around 24 per cent of its opex forecast.[92]

KPMG recommended that we expand GAWB's definition of controllable opex to include most of these costs.[93] We agree with this approach and note it is consistent with our approach for Seqwater bulk water prices in 2018.[94] We consider that although GAWB may be a price-taker for these costs to an extent, it does retain some control over the drivers for incurring these costs.

We note that there may be a case for not imposing efficiency targets on GAWB's forecast insurance costs at this time given recent catastrophic events, which will likely affect the insurance market in the near future. Nonetheless, we have applied our efficiency factor to these costs for the purposes of this draft report as the impact is not material in this case. We will consider this matter further and present a formed view in our final report, having regard to any new supporting information that GAWB may wish to provide.

3.10.3 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
- is consistent with other regulators' practices and with what has been proposed, and achieved, by water businesses in similar circumstances to GAWB.[95]

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.[96]

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.

[92] GAWB, QCA RFI 53, File Note—Controllable vs Uncontrollable, p. 3.
[93] 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 3.9.2.
[94] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, pp. 30–31.
[95] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 172.
[96] PREMO (Performance, Risk, Engagement, Management, Outcomes) refers to the regulatory framework applying to water businesses in Victoria, established by the Essential Services Commission.

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 at this stage, and have applied GAWB's proposed efficiency target of 1 per cent, but have applied it as an annually compounded, rather than static, adjustment.

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. This approach should also present a stronger, and ongoing, incentive to GAWB to reveal prudent and efficient costs during the 2020–25 period.

Together with all other adjustments set out in this chapter, the application of this efficiency target results in an estimated total incremental reduction of $2.4 million to total forecast opex.[97]

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.[98]

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.

3.11 QCA draft findings

When considered in aggregate, and compared to actual historical costs and trends, we have not seen compelling evidence that GAWB's proposed 30 per cent increase in total opex compared to 2015–20 is prudent and efficient.

Based on our review, and considering KPMG's advice, we find that an overall opex forecast of $158.5 million is a reasonable estimate of prudent and efficient operating costs for the 2020–25 pricing period.

Our estimated opex is $14.8 million (9.3%) 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 19 per cent (12 per cent real) compared with total actual opex during 2015–20. We consider GAWB

[97] Based on a comparison with GAWB's proposed opex, including its proposed efficiency adjustment.
[98] GRC, sub. 15, p. 3.

should be able to operate within this allowance by prioritising expenditures, as required, to meet its operational requirements and the needs of its customers.

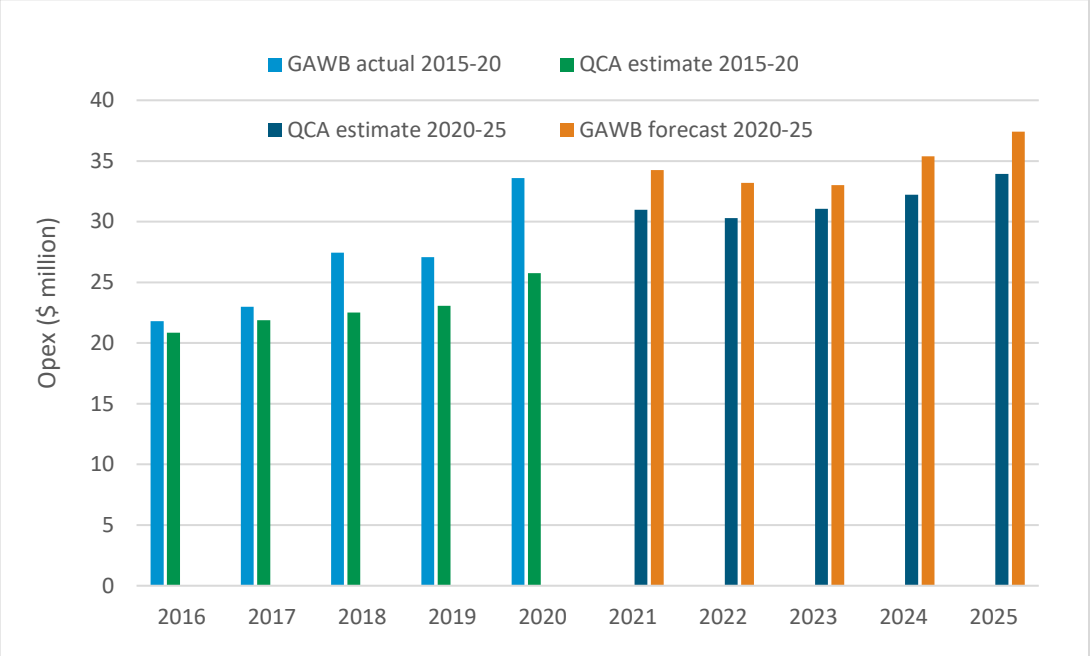
We share KPMG's view that GAWB should consider ways to more transparently document divergences from forecasts, including identifying drivers of those changes. Opex represents a significant portion of GAWB's revenues, and overspending is a key concern that GAWB's customers have raised. We encourage GAWB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

In the late stages of preparing our draft findings, GAWB provided additional information that may provide further justification for some of its proposed opex. Due to the stage that this information was provided, KPMG was unable to fully consider this information in time to finalise its report to the QCA. We intend to seek further advice from KPMG that takes into account all available information, and we will consider that in preparing our final report.

Table 15 GAWB opex for 2020–25—QCA draft findings ($ million)

Category	*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 draft findings						
Operations	2.11	2.17	2.23	2.29	2.34	**11.14**
Maintenance	3.15	3.27	3.37	3.54	3.55	**16.88**
Electricity	2.47	2.40	2.40	2.40	2.40	**12.08**
Chemicals	0.70	0.71	0.73	0.74	0.76	**3.63**
Employment costs	12.94	13.32	13.82	14.14	14.68	**68.90**
Rates	0.51	0.52	0.53	0.55	0.56	**2.67**
Insurance	1.44	1.40	1.48	1.65	1.65	**7.63**
Information systems	3.24	2.81	2.95	3.12	3.03	**15.16**
Professional services	3.09	2.61	2.68	3.07	4.49	**15.93**
Administration	1.58	1.56	1.60	1.67	1.67	**8.08**
Subtotal	**31.23**	**30.78**	**31.79**	**33.18**	**35.13**	**162.10**
Efficiency savings	(0.25)	(0.49)	(0.73)	(0.97)	(1.20)	**(3.63)**
Total (including proposed efficiency savings)	**30.98**	**30.29**	**31.06**	**32.21**	**33.93**	**158.47**

Figure 4 GAWB opex for 2025: QCA draft findings and GAWB proposal ($ million)



Note: 2020 values represent GAWB projections.

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

Finding A3.13—Opex 2020–25

The QCA finds a prudent and efficient opex forecast for GAWB for the 2020–25 period is $158.5 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.

GAWB provided some additional information late in the review process in support of its opex forecasts, which the QCA and KPMG were not able to consider for this draft report. This information will be considered in developing the final report.

4 CAPITAL EXPENDITURE

In this chapter, we provide a view on whether GAWB's capital expenditure (capex)[99] is prudent and efficient. Capex that we assess to be prudent and efficient is included in GAWB's regulatory asset base (RAB) and GAWB earns a return on and of the RAB as part of its building block costs.

4.1 Key points

The QCA's key findings on GAWB's capex are:

- GAWB's policies, procedures, frameworks and capital governance are sound (section 4.4.4).
- GAWB's historical capex from 2015–20 appears prudent and efficient, with the exception of an overstatement of the capitalised value of its corporate premises (section 4.5.5).
- GAWB's forecast capex for 2020–25 may be overstated by around $22 million (section 0). We formed this view mostly due to:
  - insufficient evidence of prudency and/or efficiency of three capital projects ($14.6 million)
  - the inclusion of a contingency allowance for recreational strategy investment, which is not justified ($0.9 million)
  - a revised cost escalation ($6.5 million) .

Adjusting for these findings, we estimate a prudent and efficient capex allowance for the 2020–25 period of $156.7 million, compared to GAWB's proposal of $178.7 million.

4.2 GAWB's capital expenditure proposal

GAWB expects to incur capex during the 2015–20 period that is around 36 per cent higher than the QCA's estimate of prudent and efficient capex in its 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 general concerns with the prudency and efficiency of GAWB's capex, including concerns with its expenditure exceeding its allowances in the 2015–20 period, and proposed increases in capex for the 2020–25 period.[100] Stakeholders also expressed concerns that GAWB has no incentives to remain within forecast allowances or to further control and optimise its costs.[101] ConocoPhillips suggested that the pricing structure should be revised to include incentives for GAWB to optimise and control its costs.[102]

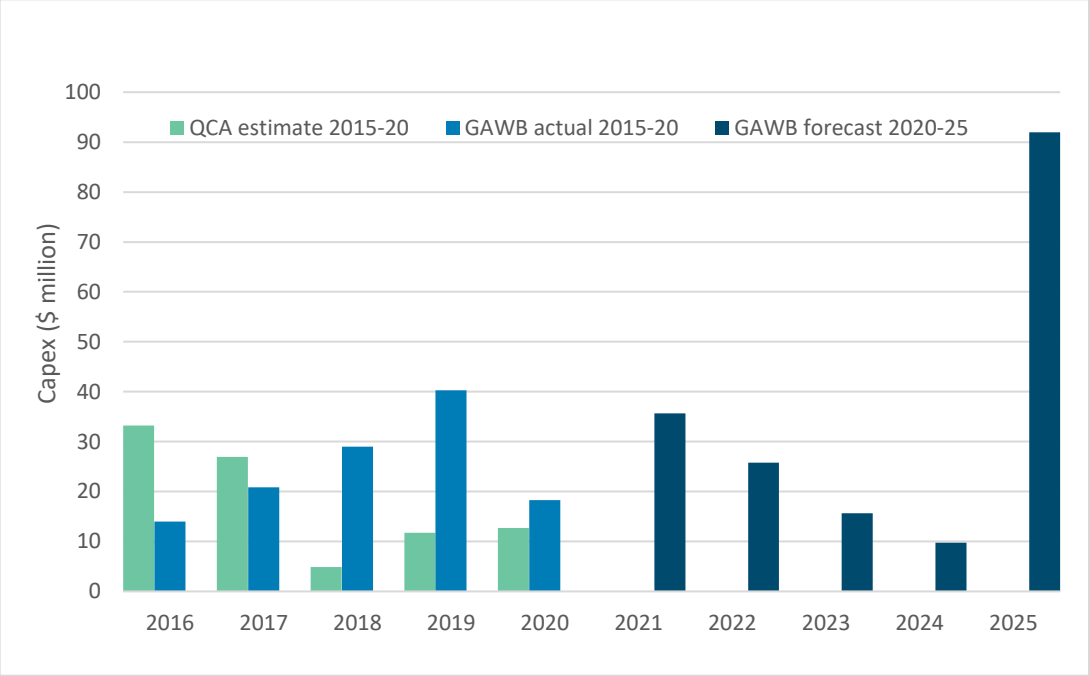
[99] Capex is expenditure to upgrade or replace an existing asset or build a new asset. Capex may relate to a diverse program of capital works on a single asset (e.g. a water treatment plant upgrade or a dam safety upgrade) or a program of capitalised works on a series of assets.

[100] 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.

[101] WICET, sub. 13, p. 1; ConocoPhillips, sub. 16, p. 2.

[102] ConocoPhillips, sub. 16, p. 2.

Figure 5 GAWB's 2015–20 capex and forecast 2020–25 capex ($ million)



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.

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.[103]

4.3 Assessment approach

The Directions ask us to form a view on prudent and efficient capex (including costs associated with catchment management and recreation facilities).[104] In accordance with the Directions, our investigation focused on a sample of capital expenditures that are material to prices. We reviewed GAWB's capital planning frameworks and governance procedures, and selected a sample of historical and forecast projects for detailed review to test prudency and efficiency, and to assess the application of frameworks and governance processes in practice.

4.3.1 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).

The QCA considers capex is efficient if:

[103] Callide Power Management, sub. 11, pp. 3–4.
[104] Referral and direction notice, sections B(1.1)(a) and (e).

- 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.

4.3.2 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.

4.3.3 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.

4.4 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 in the development of its capex (and opex) proposals.

4.4.1 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.

4.4.2 Asset management frameworks

KPMG found that GAWB demonstrates a commitment to continuous improvement of its asset management systems with leading practice frameworks, which is evidenced by GAWB's implementation of asset management improvement initiatives, and certification against the international 'ISO 550001' asset management standards.[105]

4.4.3 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 (i.e. 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.[106]

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.[107] 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.

[105] This standard is an international asset management standard that specifies requirements for asset-intensive organisations to implement better asset management practices.
[106] GAWB, sub. 1, pp. 101–102.
[107] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 41.

4.4.4 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.[108]

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.[109]

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 as to 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 A4.14—Policies, procedures and frameworks

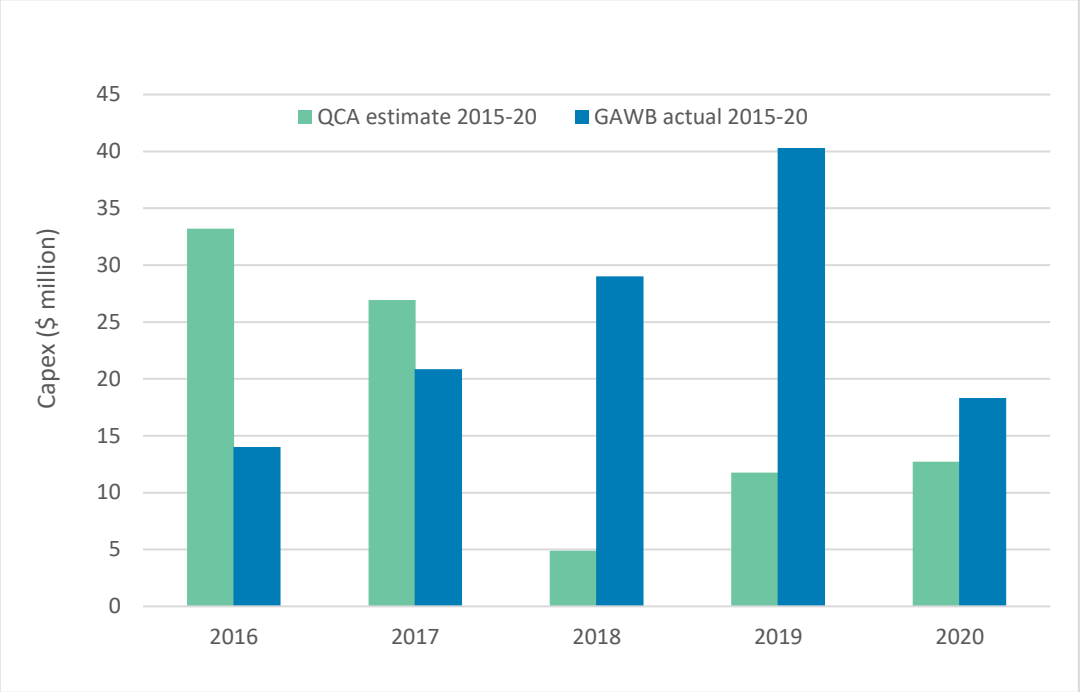
The QCA finds GAWB's capital planning and governance frameworks are robust. The QCA has not seen evidence to suggest systemic flaws or significant deficiencies that would introduce bias to GAWB's forecasting. The QCA encourages GAWB to consider the potential areas for improvement that KPMG identified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

4.5 GAWB's 2015–20 capex

GAWB expects to incur $122 million in capex during the 2015–16 to 2019–20 pricing period.[110] This is $33 million (36%) 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.

[108] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 11–12.
[109] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 12.
[110] Including estimated capex for 2019–20.

Figure 6 GAWB's 2015–20 capex—forecast and actual ($ million)



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

Some stakeholders raised concerns with GAWB's overspend during the 2015–20 period.[111] 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.[112]

KPMG and Arup reviewed a sample of three capital projects (Table 16) that were undertaken during the current pricing period. In aggregate, our sample represents 43 per cent of the total costs that GAWB proposed to capitalise during the 2015–20 period.

Table 16 Sampled submitted capex, 2015–20

Project	*GAWB's proposed capitalised amount ($m)*	*Driver*	*Pricing zone*
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	52.08		

Note: Capex includes interest during construction.

4.5.1 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

[111] GRC, sub. 15, pp. 2–3; ConocoPhillips, sub. 16, p. 2; WICET, sub. 13, p. 1; Callide Power Management, sub. 10, p. 3.
[112] GRC, sub. 15, p. 3.

determined in previous QCA investigations, we asked KPMG to focus its review on any variation 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 4.5.4).

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.[113] 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.[114]

4.5.2 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.[115]

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 option as appropriate. 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 agree that the project, and expenditure, is prudent and efficient.

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

[113] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 51–52.
[114] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 12.
[115] GAWB, sub. 1, pp. 103–104.

existing storage capacity.[116] 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.[117] The council raised similar concerns during the 2015 price monitoring investigation. In that context, we expressed the view that this is a matter for GAWB to address.[118] We maintain this view.

4.5.3 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 variables speeds and can improve their efficiency.

GAWB submitted that the VFDs were nearing end-of-life, and they were no longer supported with spare parts from the manufacturer.[119] 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 consequences of 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 agree that the project and additional expenditure are prudent and efficient.

4.5.4 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.[120]

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.[121] 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. However, KPMG considered that customers should not bear the cost of holding the unsold 147 Goondoon St property and recommended that the asset base be reduced by the expected minimum sale price of 147 Goondoon Street.[122]

We agree in principle with KPMG's findings. 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

[116] GRC, sub. 15, p. 3.
[117] GRC, sub. 15, p. 3.
[118] QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, final report, May 2015, p. 32.
[119] GAWB, QCA RFI 38, Business Case Awoonga Dam VSD Replacement, p. 1.
[120] GAWB, QCA RFI 37, Accommodation Strategy Business Case, December 2016, pp. 13–14.
[121] As at February 2020.
[122] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 69.

- making the adjustment would indirectly reveal GAWB's confidential information.

Nonetheless, we consider GAWB should make an appropriate adjustment either to the capitalised value of its new premises in the regulatory asset base, or a separate asset disposal, before setting final prices for 2020–25.

4.5.5 QCA draft findings

Based on KPMG's advice and our own review of GAWB's supporting documentation, we consider GAWB's capex for the 2015–20 pricing period was 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 share KPMG's view that GAWB should consider ways to more transparently document divergences from forecast, including identifying drivers of those changes. Capital and operating 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.

Finding A4.15—GAWB's 2015–20 capital expenditure

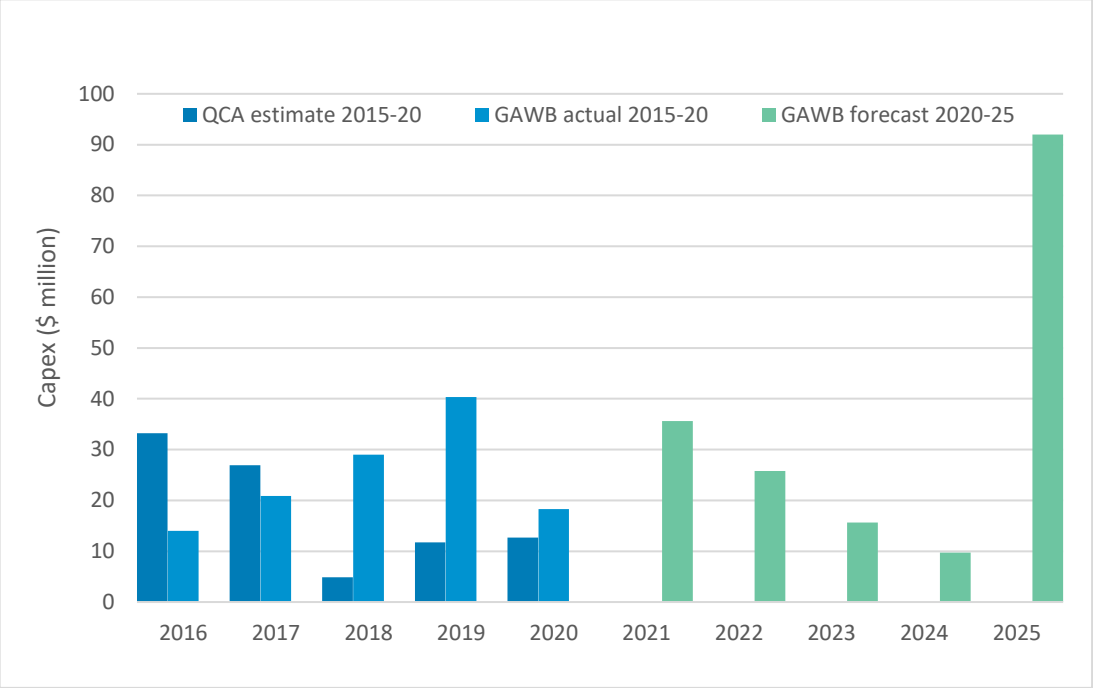
The QCA considers that an amount of $122 million of capex, expected to be incurred between 1 July 2015 and 30 June 2020, should be included in GAWB's opening RAB at 1 July 2020.

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.

4.6 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).

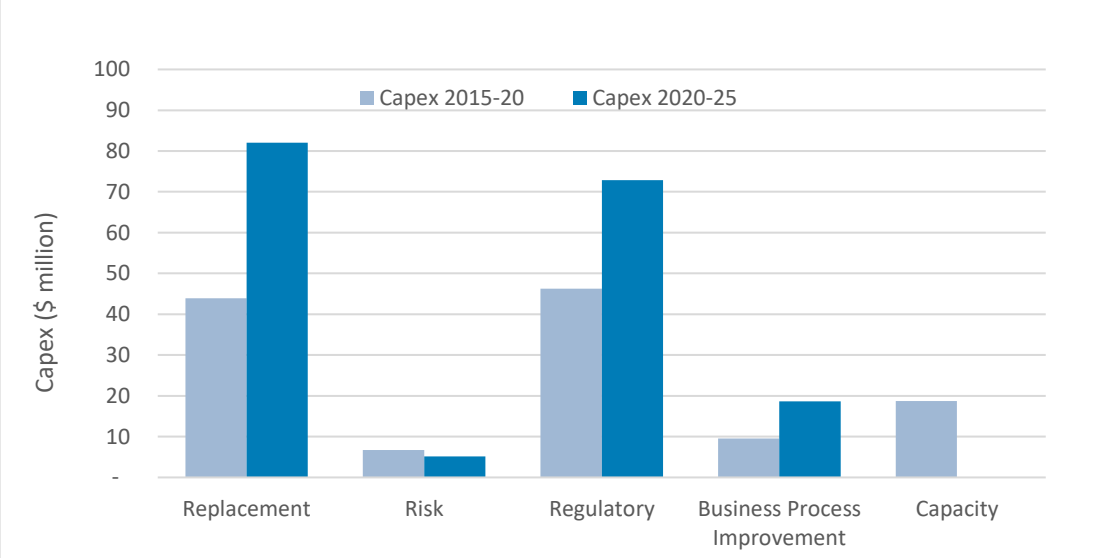
Figure 7 GAWB's 2015–20 capex and forecast 2020–25 capex ($ million)



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

By value, GAWB's forecast includes more regulatory, replacement and business process improvement capex 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. Replacement expenditure in 2015–20 was significantly less than forecast at the previous investigation.

Figure 8 GAWB's capex by drivers—current and forecast period ($ million)

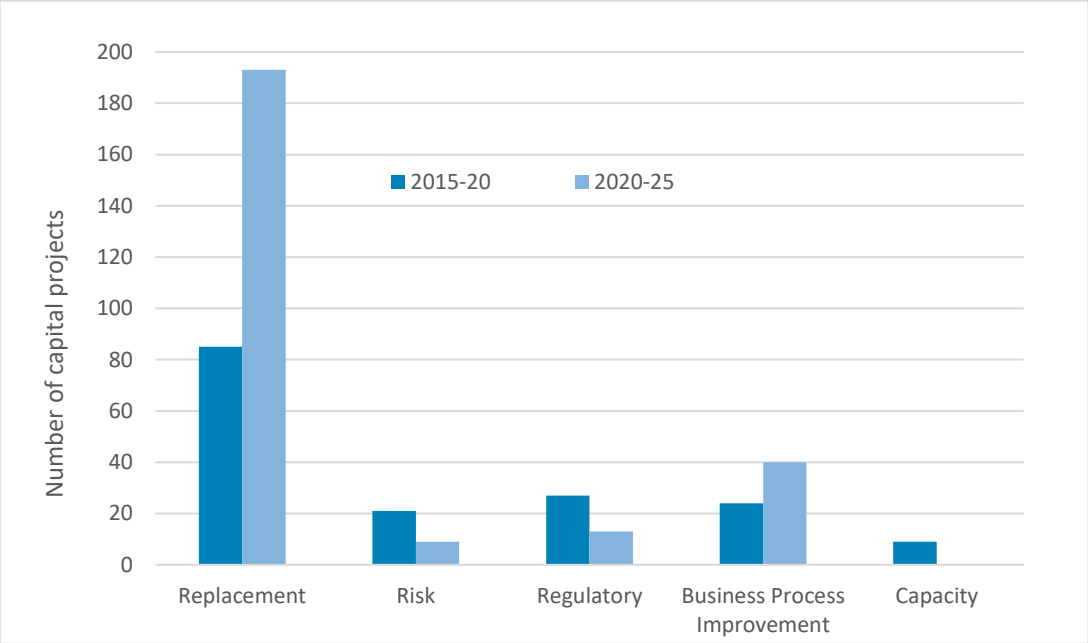


Note: Based on GAWB models provided to the QCA (QCA RFIs 33–34 & 39–40).

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 number of projects—current and forecast period



Note: Based on GAWB models provided to the QCA (QCA RFIs 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 3 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 17). 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. Over 30 per cent of the sample (by value) is attributable to the Awoonga Dam pricing zone. As this is the furthermost upstream pricing zone, all customers share the costs of capital expenditure in this zone. The Awoonga Dam spillway upgrade is the largest single capital project proposed, representing 34 per cent of GAWB's total forecast capex program by value.

Table 17 Sampled submitted capex, 2020–25

Project	*Proposed capex ($m)*	*Capitalisation year*	*Asset class*	*Driver*	*Pricing zone*
Awoonga Dam spillway capacity upgrade— Stage 2 and 3	60.693	2025	Storage	Regulatory	Awoonga
South Gladstone Reservoir replacement	11.550	2025	Potable	Replacement	Gladstone WTP to South Gladstone

Project	*Proposed capex ($m)*	*Capitalisation year*	*Asset class*	*Driver*	*Pricing zone*
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	6.627	2025	Potable	Regulatory	Boat Creek to East End
Calliope River Bridge pipeline replacement	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	97.952				

Note: Totals may not add due to rounding.

4.6.1 Key findings

KPMG conducted detailed reviews of the sample projects and found that four of the seven projects were prudent and efficient. In KPMG's view, the three remaining projects did not demonstrate prudency and it recommended that the proposed costs be removed from the capex forecast, with the exception of a nominal allowance to continue the planning and appraisal process. Projects that were found not prudent or efficient, and other issues that were identified, are discussed below.

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 projects' stage in the capital planning process.

KPMG recommended to exclude projects from the capex forecast if the expenditure was considered prudent but the projects were at an early stage in the capital planning and approvals process (gate 0 to gate 2) with a level of documentation that was insufficient to demonstrate efficiency. If KPMG found the level of documentation and available information sufficient (but could be improved upon), it recommended a revised forecast reflecting its estimate of the efficient costs of the project.

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. KPMG recommended that

GAWB provide further supporting information to demonstrate how it proposes to deliver its 2020–25 replacement program.

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. KPMG said GAWB should provide assurances that it can deliver the project successfully and on budget.

Capex–opex trade-offs

KPMG found that GAWB considers capex–opex trade-offs within its project management framework, but KPGM 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:

- lack of detail around the standard of works required for projects in the early stages of capital planning, which could require a number of variations 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 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.[123]

4.6.2 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.[124] 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)

[123] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 17.
[124] GAWB, sub. 1, pp. 105–106.

- 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)
- anchoring the concrete spillway crest to improve stability to meet the 100 per cent level (required by 2035).

KPMG assessed the proposed project and found it to be prudent and likely to be efficient, based on the available documentation. KPMG noted some uncertainty regarding the standard, scope and cost of the project, as it is currently in relatively early stages of the capital planning process. However, KPMG considered GAWB's estimates as reasonable, and potentially understated.[125]

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 by 2025, because the work required to comply with the 2035 requirements could be deferred.[126]

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

With regard to the spillway crest, we understand it currently complies with the 65 per cent acceptable flood capacity standard, but not the 100 per cent standard. This anchoring work on the spillway crest required to meet 100 per cent acceptable flood capacity 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.[127] Secondly, it is likely efficient to design and complete the required upgrades as a single project. 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.[128] The costs of preparing the site and mobilising specialist equipment, and the costs of the project overheads are likely to be significant, and would be unnecessarily duplicated if the spillway crest works were deferred. As the two work areas are located on the same site, it appears reasonable that there would be efficiencies from packaging the work as a single contract.

Based on KPMG's technical advice and our own review of the supporting documentation, we consider the proposed expenditure to be prudent, including the proposed schedule for completion. We are satisfied that the standard, scope and cost of works have been estimated to a reasonable level of accuracy, considering the early stage in the capital planning process. However, we acknowledge that the project scope, standard and cost still requires 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

[125] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, p. 84.
[126] ConocoPhillips, sub. 16, p. 2; CPM, sub. 11, p. 3; CS Energy, sub. 14, p. 2.
[127] 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
[128] GAWB, Response to KPMG working draft, January 2020.

expenditure will be subject to an ex post assessment at the next investigation to verify efficiency. 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 A4.16—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 anticipates to conduct an ex post review of this expenditure in 2025.

4.6.3 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.[129] This would allow for maintenance to be carried out on the Mt Miller pipeline, and 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.

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 options assessment that 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, because:

- GAWB has not demonstrated that the full contracted demand in the northern precinct has increased as stated, or that the full contracted demand has needed to be supplied by the Boat Creek reservoir
- GAWB has not provided reasons why the Boat Creek facility should be upgraded to satisfy the full contracted demand if it has not previously needed to meet full demand
- GAWB has not provided information on the likelihood of a failure that would require the Boat Creek facility to supply the full demand for the northern precinct for a 24-hour period.[130]

KPMG concluded that GAWB should provide better justification for the project to proceed in the 2020–25 period. We have excluded the proposed capex for the purposes of this draft report. However, we reserve our position on this expenditure, pending further review and engineering advice, and will present a formed view in our final report.

[129] GAWB, QCA RFI 44, Project justification and plan, p. 3.
[130] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 96.

Finding A4.17—Expansion of the Boat Creek pump station

The QCA finds GAWB's proposed capex of $6.63 million for the expansion of Boat Creek pump station efficient, but not prudent. The QCA will review further information and present a formed view in its final report.

4.6.4 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 concerns with maintenance.[131] 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 new 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. KPMG 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.[132]

We agree with 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. However, we welcome further supporting information from GAWB to support the investment, and may revise our position for our final report.

Finding A4.18—Calliope River bridge pipeline replacement

The QCA finds GAWB's proposed capex of $4.31 million for the Calliope River bridge pipeline replacement neither prudent nor efficient. The QCA welcomes further supporting information from GAWB.

4.6.5 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 process, 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.[133]

[131] GAWB, QCA RFI 45, GHD report, p. 3.
[132] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 101.

We agree with 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. However, we welcome further supporting information from GAWB to support the investment, and may revise our position for our final report.

Finding A4.19—UV disinfection

The QCA finds GAWB's proposed capex of $3.70 million for UV disinfection not prudent or efficient. The QCA welcomes further supporting information from GAWB on this project.

4.6.6 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.[134]

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.[135]

We received one submission from an individual supporting the proposed recreational strategy investment.[136] 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.[137]

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

[133] KPMG, *GAWB expenditure review 2020,* draft report, February 2020, p. 107.
[134] Referral and direction notice, section B(1.1)(a).
[135] GAWB, sub. 1, p. 38.
[136] O. Nevin, sub. 10.
[137] WICET, sub. 13, p. 2.

projects reviewed, GAWB's proposed recreational strategy constitutes a suite of related, but discrete, investments. Based on our analysis, over two thirds of these individual projects are of less than $200,000 in value and about 40 per cent are 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.[138]

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 its Community Consultative Forum in late 2018, and to its Customer Representative Panel in mid-2019. GAWB said that the community and customers are supportive of these initiatives.[139] We understand that GAWB has consulted on both the scope, and cost of the proposed program of works.

We note that WICET accepts the basis for the recreational strategy, but it questions 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 consider prudency is reasonably demonstrated by community and customer acceptance of the program and associated costs through GAWB's engagement activities.

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 $0.944 million in 2020–25 for 'potential further upgrades to ablutions and to progress new ideas identified in further community consultation'.[140] We consider this amount should be excluded from the forecast, as the need for the expenditure has not been established.

We found that some individual components of the proposed work program appear to have characteristics of operating, 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

We consider that prudency is reasonably demonstrated by general community (and customer) acceptance of the proposed program and associated costs through GAWB's customer engagement activities. There is also evidence of GAWB's commitment to the program. However, we encourage stakeholders to submit their views on GAWB's proposal. We are

[138] GAWB, QCA RFI 79, 2020 Price Review Customer Update–Round 2.
[139] GAWB, sub. 1, p. 41.
[140] GAWB, QCA RFI 39–40, Spreadsheet, Proposed capex 2020–25.

particularly interested in views of customers to validate GAWB's customer engagement outcomes.

For the purposes of our draft report, we have included all of GAWB's proposed recreational projects in the forecast capex allowance 2020–25, excluding an amount of $0.944 million for contingent projects, which we consider is not justified.

Finding A4.20—Recreational strategy

The QCA finds the proposed contingency allowance of $0.944 million for the recreational strategy should be excluded from GAWB's forecast capex allowance for 2020–25. The QCA seeks stakeholders' views on GAWB's proposal.

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
- more efficient and modern technology and improved biosecurity controls, enabling year-round production cycles.[141]

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.[142] 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.[143]

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 the lease expired and GAWB was required to vacate by 30 June 2019.

[141] GAWB, sub. 1, p. 108.
[142] O. Nevin, sub. 10.
[143] WICET, sub. 13, p. 2.

Based on our review of supporting information, GAWB made reasonable efforts to avoid relocating the facility. GAWB also successfully negotiated to extend its lease. 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.[144] We maintain this view and consider the recovery of these costs through customer prices is appropriate, provided the service provision is not excessive.[145]

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.

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. Nonetheless, we have not sighted documentation of the procurement process for the design and construction of the facility. We understand this process is underway and we expect GAWB will be able to provide evidence of further progress, including updated cost estimates, prior to our final report.

We note 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 likely efficient. However, we request further information from GAWB to demonstrate progress and updated cost estimates. We may update our findings for our final report.

[144] QCA, *Gladstone Area Water Board: Investigation of pricing practices*, final report, March 2005, pp. 97–98.
[145] QCA, *Statement of regulatory pricing principles for the water sector*, December 2000, p. 41.

Finding A4.21—Hatchery relocation

The QCA find's GAWB's proposed $7.12 million expenditure for the hatchery relocation is prudent and likely efficient. The QCA requests further information from GAWB to demonstrate progress and updated cost estimates.

4.6.7 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. 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.[146] KPMG also considered the proposed capex escalation rate may be overstated. It noted that the weightings applied to labour and capital are based on construction sector average proportions, and do not necessarily reflect GAWB's circumstances. KPMG also noted that during the past five years:

- construction sector wages have grown slower than the Queensland average WPI (1.83% compared with 2.13%)
- producer price indices for heavy and civil engineering construction have seen moderate growth of 1.8 per cent on average, in line with construction sector wages (1.83%)

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.[147] We reviewed KPMG's analysis and agree with its position. Based on our review, we consider there is not a strong case for capex to be escalated at a rate any higher than CPI. We also note that CPI inflation has been commonly used by businesses and regulators to escalate capex, including in the QCA's review of Seqwater's bulk water prices for 2018–21.[148]

Consistent with our findings on opex escalators (Chapter 3), we have applied KPMG's recommended updated CPI inflation forecasts, based on Deloitte Access Economics forecasts. We intend to review the CPI forecasts, including the appropriateness of the source, for our final report.

The impact of this adjustment, after applying all adjustments to individual projects, is a reduction in total capex of $6.5 million over the 2020–25 pricing period.

[146] GRC, sub. 15, p. 3.
[147] KPMG, *GAWB expenditure review 2020*, draft report, February 2020, pp. 109–10.
[148] QCA, *Seqwater Bulk Water Price Review 2018–21,* Final report, March 2018, pp. 50–51.

Finding A4.22—Cost escalation

The QCA finds the appropriate cost escalation factor to be applied to GAWB's capex allowance for 2020–25 is the updated CPI inflation forecast.

4.6.8 Interest during construction

Consistent with previous reviews, GAWB has 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 applied its proposed weighted average cost of capital (WACC) of 4.57 per cent as the IDC discount rate. We consider that GAWB's proposed method of calculating and applying IDC is reasonable. We consider GAWB's proposed WACC is reasonable (Chapter 6) and we have not made any adjustments to GAWB's proposed IDC.

We will revise our WACC estimate to reflect updated an averaging period for our final report and may revisit our positon on IDC as a result.

Finding A4.23—Interest during construction

The QCA finds GAWB's proposed interest during construction methodology is appropriate.

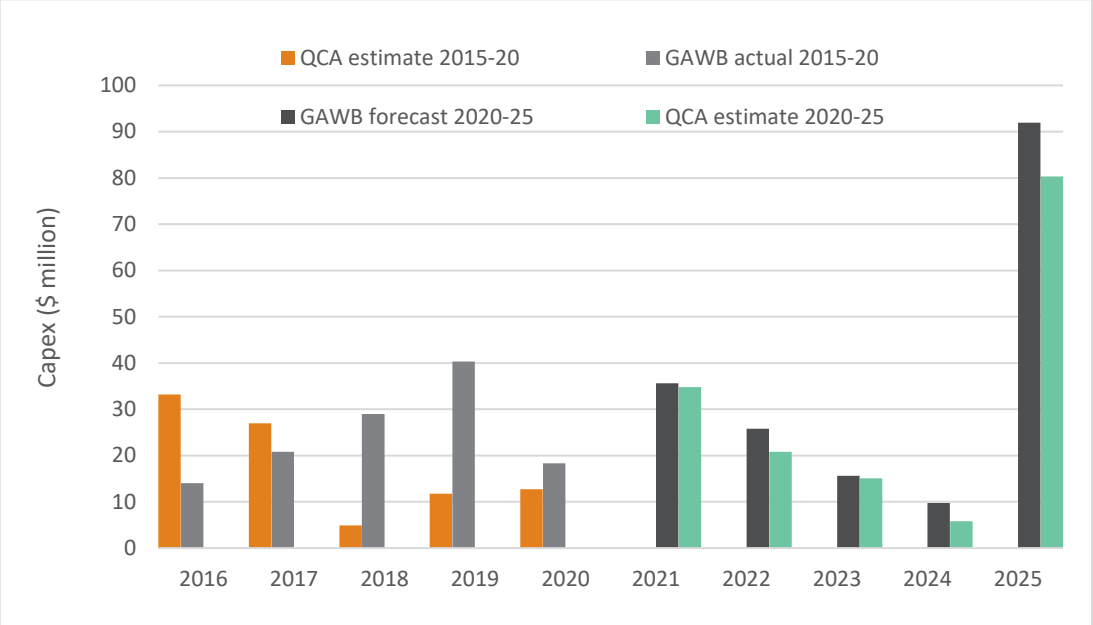
QCA draft findings

Figure 10 set out the QCA's draft findings on GAWB's estimated prudent and efficient capex during the 2020–25 pricing period. Our draft forecast capex allowance is $156.7 million (14 per cent) lower than GAWB's proposal.

Table 18 QCA draft findings—GAWB's forecast capex for 2020–25 ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*Total*
GAWB proposal	**35.64**	**25.78**	**15.62**	**9.73**	**91.97**	**178.75**
Less QCA adjustments						
Boat Creek pump expansion	–	–	–	–	(6.63)	(6.63)
Calliope River bridge pipeline replacement	–	(4.31)	–	–	–	(4.31)
UV disinfection	–	–	–	(3.70)	–	(3.70)
Recreational strategy contingency	–	–	–	–	(0.94)	(0.94)
TOTAL before escalation adjustment	**35.64**	**21.48**	**15.62**	**6.03**	**84.40**	**163.17**
Escalation adjustment (CPI)	(0.85)	(0.68)	(0.57)	(0.26)	(4.09)	(6.45)
TOTAL QCA capital allowance	**34.78**	**20.79**	**15.05**	**5.78**	**80.31**	**156.72**

Figure 10 QCA draft findings—GAWB's forecast capex for 2020–25 ($ million)



Finding A4.24—Capex 2020–25

The QCA considers that a forecast capex of $156.7 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. 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

In this chapter, we examine GAWB's regulated assed base (RAB). In particular, we assess GAWB's proposed RAB roll-forwards and arrive at a RAB forecast as at 30 June 2025.

5.1 Key points

The Directions require that we roll forward GAWB's RAB for the 2020–25 review in accordance with our previously recommended methodology.[149] Our key findings regarding GAWB's proposed RAB are:

- We calculate a closing RAB of $703 million for GAWB, which is lower than GAWB's proposed closing RAB of $732 million as at 30 June 2025.
- The primary drivers for the difference (Table 19) are:
  - lower forecast capital expenditure (capex) for 2020–25
  - lower forecast inflation for 2020–25.

Table 19 Overview of GAWB's RAB ($ million)

	GAWB's proposal	*QCA calculation*	*Difference*
Opening RAB—1 July 2020	**567**	**567**	**–**
plus Capex	177	155	(22)
less Disposals	–	–	–
plus Inflation	73	64	(9)
less Depreciation	85	83	(2)
Closing RAB—30 June 2025	**732**	**703**	**(29)**

Note: Excludes Curtis Island pricing zone. The depreciation difference is a double negative (e.g. the $2 million reduction in depreciation increases the closing RAB by $2 million, as depreciation is a deduction in the RAB roll forward).

Sources: GAWB, Building Block Model, submission, September 2019; QCA calculations.

5.2 RAB roll-forward

The RAB changes, depending on the level of capex, inflation, depreciation and the regulated entity's disposals. After all, the RAB can be defined as:

> an accumulation of the value of investments that a service provider has made in its network. It includes assets of various useful lives. Most of these assets depreciate in value, although a small number (such as easements and land) do not.[150]

Consistent with previous GAWB investigations, the method to roll forward the RAB incorporates:

- establishing the opening value of the RAB at the beginning of the regulatory period

[149] Referral and direction notice, section B(1.1)(c).

[150] AER, *Why do we index the regulatory asset base?,* fact sheet, viewed 21 January 2020, p. 1, https://www.aer.gov.au/system/files/Fact%20sheet%20-%20Indexation%20of%20the%20regulatory%20asset%20base.pdf.

- adding efficient capex incurred
- indexing for inflation in asset values
- removing redundant assets and assets sold (disposals)
- depreciating the assets, using estimated asset lives.

5.3 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 CPI (Consumer Price Index), capex, depreciation and disposals values. Table 20 shows GAWB's adjustments to arrive at an updated RAB of $470.61 million as at 1 July 2015.

Table 20 GAWB's updated opening RAB at 1 July 2015 ($ million)

	Value
Opening RAB—1 July 2015 (QCA)	**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)	**470.61**

Note: Excludes Curtis Island pricing zone.

Source: GAWB, Roll Forward Model, submission, September 2019.

Finding A5.25—Updated opening RAB at 1 July 2015

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

5.4 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 (Table 21). The proposed closing balance constitutes the opening RAB for the 2020–25 regulatory period, starting on 1 July 2020.

Table 21 GAWB's proposed RAB roll-forward to 30 June 2020 ($ million)

	Value
Opening RAB—1 July 2015 (GAWB)	**470.61**
plus Capex	117.57
less Disposals	(2.39)
plus Inflation	44.71
less Depreciation	(63.45)
Forecast closing RAB—30 June 2020 (GAWB)	**567.05**

Note: Excludes Curtis Island pricing zone.

Source: GAWB, Roll Forward Model, submission, September 2019.

Finding A5.26—Opening RAB at 1 July 2020

The QCA finds GAWB's proposed opening RAB of $567.05 million as at 1 July 2020 appropriate.

5.5 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 $567 as at 1 July 2020 to $732 million as at 30 June 2025. GAWB's roll-forward is based on its proposed capex, inflation and depreciation amounts during 2020–25 (Table 22).

Table 22 GAWB's proposed RAB for 2020–25 ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Opening RAB—1 July 2020	**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	**600**	**623**	**635**	**643**	**732**

Note: Excludes Curtis Island pricing zone.

Source: GAWB, Roll Forward Model, submission, September 2019.

We reviewed GAWB's RAB roll-forward proposal and made some adjustments to reflect a reduction in capex based on our assessment of prudency and efficiency and our position on cost escalation in Chapter 4 (Table 23).

Table 23 The QCA's estimated RAB for 2020–25 ($ million)

	2020–21	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Opening RAB—1 July 2020	**567**	**595**	**611**	**623**	**626**
plus Capex	34	21	14	6	80
less Disposals	–	–	–	–	–
plus Inflation	9	12	14	14	15
less Depreciation	(16)	(17)	(17)	(17)	(18)
Closing RAB—30 June 2025	**595**	**611**	**623**	**626**	**703**

Note: Excludes Curtis Island pricing zone.

Source: QCA calculations.

Table 24 below shows the difference between the GAWB-submitted and QCA-calculated RABs. The primary drivers impacting our closing RAB relative to GAWB's proposed closing RAB are:

- lower forecast capex over the 2020–25 regulatory period[151]
- lower forecast inflation over the 2020–25 regulatory period.[152]

[151] See Chapter 4.

Table 24 GAWB's RAB for 2020–25: GAWB's proposal compared to the QCA's calculations ($ million)

	GAWB's proposal	*QCA calculation*	*Difference*
Opening RAB—1 July 2020	**567**	**567**	**–**
plus Capex	177	155	(22)
less Disposals	–	–	–
plus Inflation	73	64	(9)
less Depreciation	(85)	(83)	(2)
Closing RAB—30 June 2025	**732**	**703**	**(29)**

Note: Excludes Curtis Island pricing zone.

Sources: GAWB, Roll Forward Model, submission, September 2019; QCA calculations.

Finding A5.27—Forecast RAB at 30 June 2025

The QCA finds that a forecast RAB of $703 million as at 30 June 2025 is appropriate, rather than GAWB's forecast RAB of $732 million.

[152] See escalation discussion at Chapter 3.

6 RATE OF RETURN

In this chapter, we assess whether GAWB has proposed an appropriate rate of return on assets for the 2020–25 period.

6.1 Key points

The QCA finds GAWB's proposed weighted average cost of capital (WACC) of 4.57 per cent to apply to prices for the 2020–25 period is appropriate. While we calculate a bottom-up value of 4.39 per cent, which is 18 basis points lower than GAWB's proposed value (primarily due to the lower market risk premium value), the top-down analysis indicates GAWB proposed an appropriate WACC.

Table 25 WACC overview

Parameter	*GAWB-applied values, 2015–20*	*GAWB proposal, 2020–25*	*QCA draft value, 2020–25*
Placeholder 20-day averaging period (end date)	n/a	30 August 2019	30 August 2019
Final 20-day averaging period (end date)	30 June 2015	Period not proposed	31 March 2020
Risk-free rate (%)	2.33	0.94	0.94
Capital structure (% debt)	50	50	50
Market risk premium (%)	6.5	7.0	6.5
Asset beta	0.40	0.45	0.45
Equity beta	0.64	0.73	0.73
Cost of equity (%)	6.52	6.04	5.68
Credit rating	BBB	BBB	BBB
Debt risk premium (%)	2.48	2.05	2.06
Debt issuing costs (%)	0.108	0.108	0.108
Gamma	0.47	0.484	0.484
Cost of debt (%)	5.02	3.10	3.11
Bottom up, nominal post-tax WACC (%)	5.77	4.57	4.39
Applied WACC (%)	**5.77**	**4.57**	**4.57**

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

Source: GAWB, sub. 1, pp. 31–32, 122; QCA calculations.

6.2 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. The WACC 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). We also considered stakeholders' submissions.

We 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.

6.3 Analysis of WACC parameters

We identified one parameter where GAWB's proposed value may not be appropriate—that is, the market risk premium. The market risk premium, along with the other WACC parameters, is discussed below.

6.3.1 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.[153] 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.[154] 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).[155]

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

[153] 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.
[154] GAWB, sub. 1, pp. 115–16.
[155] GAWB, sub. 5, p. 29.

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. In the case 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 a first principles analysis.[156]

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.[157]

First principles analysis of GAWB's risk and appropriate comparators

Synergies undertook a first principles analysis of GAWB's systematic risk on behalf of GAWB.[158] 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 (another water utility we regulate).[159] 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.[160] In contrast, it said GAWB's highly concentrated industrial customer base is sensitive to commodity market conditions.[161]

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[162], and due to the risk of withdrawal or closure of a major customer, which can have a material impact given its concentrated customer base.[163]

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'.[164]

CEPA analysed GAWB's risk and determined that GAWB is exposed to similar systematic risk as the water utilities in the comparator set.[165] Based on this advice (which considered a number of

[156] CEPA referred to this as a relative risk assessment (CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 14).
[157] A number of 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, https://www.qca.org.au/wp-content/uploads/2019/05/12204_DBCTDAU_DraftDecision_Oct04-1.pdf.
[158] GAWB, sub. 5, pp. 26–38.
[159] GAWB, sub. 5, pp. 37–38.
[160] GAWB, sub. 5, pp. 32, 35–36.
[161] GAWB, sub. 5, p. 37.
[162] GAWB, sub. 5, p. 30.
[163] GAWB, sub. 1, pp. 115–16.
[164] GAWB, sub. 5, p. 26.
[165] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 23.

factors that affect GAWB's exposure to risk[166]), 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 how these affect GAWB's exposure to risk. Many water utilities have large customer bases, and a greater proportion of residential customers (than commercial/industrial customers).[167] 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.[168] 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.[169] 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), we find there are several factors that 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[170], and it is an essential good to 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'.[171]

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 2020–25 regulatory period.[172] Furthermore, GAWB's pricing structure largely protects it from fluctuations in volume over the period.[173] Within the 2020–25 period, GAWB proposed to

[166] Including the nature of GAWB's regulation, and its customers, demand risk, market power, duration of contracts, pricing structure, growth opportunities and operating leverage.
[167] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 16.
[168] QCA calculations.
[169] 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 that there is volatility in volumes from electricity generators (other industrial customers of GAWB), nor that such volatility is due to systematic reasons. See CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 16–19.
[170] GAWB, sub. 1, p. 25.
[171] WICET, sub. 9, p. 1.
[172] If GAWB's actual revenue varies 10 per cent more than the revenue cap (either side) within the period, it is entitled to recover the revenue up to these amounts at the start of the next regulatory period. Chapter 7 provides information on the form of regulation.
[173] Chapter 9 contains more information on the tariffs.

recover the majority (around 95 per cent) of its revenue from fixed charges, based on contracted volumes.

We note Synergies' argument that GAWB's customers may adjust their reservations beyond the 2020–25 regulatory period.[174] However, if GAWB continues to be regulated under a hybrid revenue cap, it will be able to recover its revenue (up to a point). 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 up to long-term contracts (although short-term contracts are offered, at a premium). These contracts have a number of mechanisms (such as early termination/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.[175,176]

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 GAWB bears any residual counterparty risk, this risk differs somewhat from that facing typical water utilities. 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.[177] Regardless of the extent to which these customers expose GAWB to greater risk, a number of 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 (such as its hybrid revenue cap and pricing structure).

[174] GAWB, sub. 5, p. 30.
[175] However, in the event of a customer default, the customer might not be able to meet its financial obligations arising from termination.
[176] 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).
[177] CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, p. 23.

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.[178]

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.[179] Relevant estimates of the asset beta (based on the mean) from the various samples ranged from 0.40 to 0.48.[180] 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.[181] CEPA noted that the top end of its proposed range was only slightly below GAWB's proposal of 0.45.[182]

Table 26 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
Mean (developed country subsample)	0.40	0.31	0.48	0.47
Median (entire sample)	0.43	0.40	0.48	0.45
Median (developed country subsample)	0.40	0.31	0.49	0.45

Source: CEPA 2019.

We had regard to the 10-year asset beta data, consistent with the approach applied in our recent draft decision on Queensland Rail's DAU and decision on Aurizon Network's 2017

[178] GAWB, sub. 5, pp. 29–30, 38.

[179] 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).

[180] 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).

[181] 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).

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

DAU.[183] 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 27 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
Mean (developed country subsample)	0.45	0.40
Median (entire sample)	0.47	0.40
Median (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[184], we calculate 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.

Table 28 Recent regulatory decisions for water utilities

Regulator	***Company***	***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

[183] In our draft decision on Queensland Rail's DAU, we took an average of weekly and monthly 10-year asset beta data—see QCA, *Queensland Rail's 2020 Draft Access Undertaking,* draft decision, April 2019, pp. 28–29. In relation to Aurizon Network, see Incenta, *Aurizon Network's WACC for the 2017 DAU*, December 2017, p. 80.

[184] 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's 2020 Draft Access Undertaking*, draft decision, April 2019, p. 27).

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 (CEPA, Advice on GAWB's WACC 2020–2025, December 2019, p. 27).

Source: CEPA 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.[185] However, these entities have higher equity betas than GAWB (Table 28) because they have higher gearing levels. Increasing gearing increases financial risk to equity holders, so the cost of equity increases, all else equal.

Finding A6.28—Beta

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

6.3.2 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 results in a conservative estimate of the market risk premium (i.e. 6.5%), especially given the:

- decrease in the risk-free rate;
- relatively low weight assigned to the Wright MRP; and
- the QCA's Cornell DGM estimate is well below DGM estimates generated by other Australian regulators.[186]

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.[187]

We do not consider GAWB's proposed value for the market risk premium is appropriate. Instead, we consider a value of 6.5 per cent is appropriate.

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.[188] Synergies said

[185] 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.

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

[187] GRC, sub. 15, p. 4.

that a bottom-up compilation of WACC parameters is not enough in isolation of the wider consideration of an overall return on equity outcome capable of incentivising investment.[189] 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.[190] 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).[191]

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.[192] It said this with the knowledge that the QCA previously applied a 7.0 per cent market risk premium with a four-year risk-free rate in its 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.[193] Three of the five estimation methodologies rely primarily on current interest rates (as opposed 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 the 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 WACCs of relevant comparators (section 6.4). By ensuring the overall WACC is appropriate, we are implicitly also ensuring the cost of equity is appropriate.

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, which contain both historical and forward-looking inputs (such as the Wright method). 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 is capable of producing 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 key estimation methods for which we do not consider the weight proposed by GAWB (for calculating a weighted average) is appropriate: the Wright method and the dividend growth model.[194]

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[188] GAWB, sub. 5, p. 20.
[189] GAWB, sub. 5, p. 20.
[190] GAWB, sub. 5, p. 20.
[191] GAWB, sub. 5, pp. 19–21.
[192] GAWB, sub. 5, pp. 15–16.
[193] 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, 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.
[194] 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.

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.[195] 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).[196]

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 provided by Synergies 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 over time.[197] 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.[198] Consistent with this view, we previously raised the original weight placed on this method for our final decision on the Aurizon Network 2017 DAU.[199] 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.[200]

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

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

[196] 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.

[197] 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.

[198] 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. 45, 67–69).

[199] 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).

[200] 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.

compared to recent dividend growth model estimates of various other regulators.[201] It said the difference may relate to adjustments that the QCA makes to long-run growth assumptions.[202],[203] 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'.[204]

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 of the inputs and methodological features of the models—only some of this information is public.[205]

In response to Synergies' specific concern with our long-run growth rate assumption, we acknowledge that this reduces the market risk premium estimate, all else equal.[206] However, we consider that this assumption is well justified and remains appropriate.[207] We note that Synergies did not suggest an alternative that it considers superior.

Estimate

GAWB took 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-percent.[208,209]

In considering an appropriate value for the market risk premium, we had regard to the same five estimation methodologies, and had regard to three measures: a weighted average, simple average, and median. For the weighted average, we consider the weights applied for our draft decision on Queensland Rail's 2020 DAU remain appropriate.[210] These weights are consistent with our assessment of the relative strengths and weaknesses of the methods and are statistically defensible.[211]

For the purpose of this investigation, we updated the estimates for each of the different approaches, using data up to the 20-day period ending 30 August 2019 (the risk-free rate and cost of debt averaging period) (Table 29). We will update these estimates for our final report.

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[201] GAWB, sub. 5, p. 23.
[202] GAWB, sub. 5, p. 24.
[203] It appears the adjustment Synergies referred to is the deduction applied to the real gross domestic product growth rate used in the model.
[204] GAWB, sub. 5, p. 25.
[205] 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 a number of time-varying inputs, which are sensitive to current market conditions.
[206] However, there are other sources of difference. For example, some regulatory dividend growth models apply different horizons over which the growth rate in dividends converges to the long-run growth rate.
[207] 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 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.
[208] However, for the simple average we calculate a lower value than Synergies.
[209] 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).
[210] The weights are Ibbotson (25%), Cornell dividend growth model (25%), Siegel (15%), Wright (15%) and surveys (20%) (QCA, *Queensland Rail's 2020 Draft Access Undertaking*, draft decision, April 2019, p. 39).
[211] 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).

Table 29 Market risk premium estimation methods

Method	*Market risk premium estimate as at 30 August 2019*
Ibbotson	6.4%
Siegel	5.8%
Surveys and independent expert reports	6.4%
Cornell dividend growth model	5.8%
Wright	10.2%

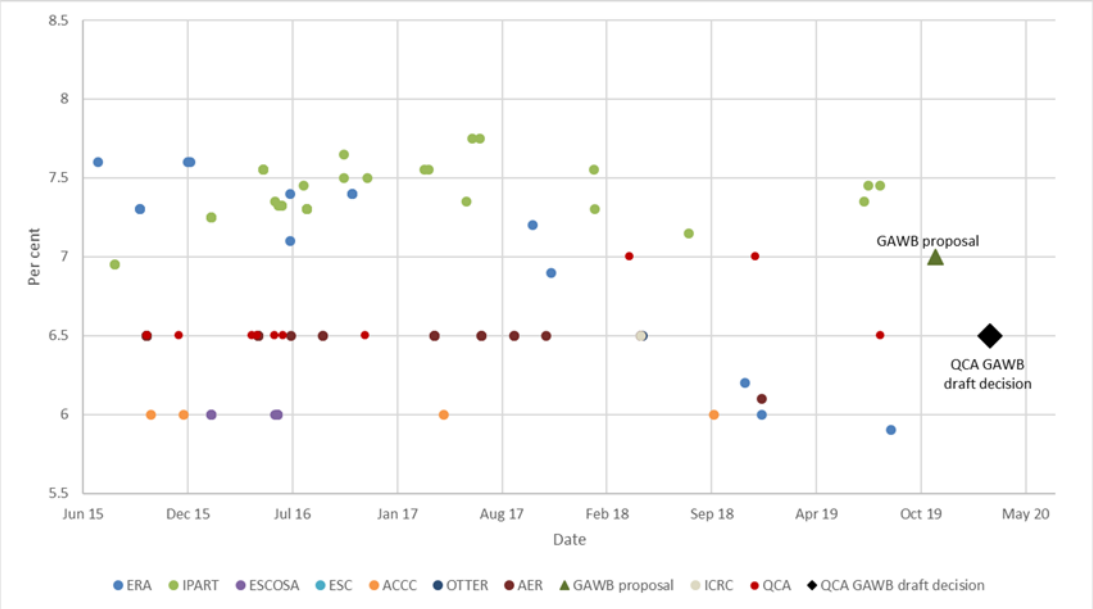
Source: QCA calculations.

The estimates of the market risk premium range from 5.8 per cent to 10.2 per cent. The median market risk premium estimate is 6.4 per cent, a simple average of the five estimates is 6.9 per cent, and a weighted average is 6.7 per cent. Consistent with our standard approach of rounding the market risk premium to the nearest half percent, we consider 6.5 per cent is an appropriate value for the market risk premium.

Recent regulatory decisions

We consider a value of 6.5 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. Of note is the AER—due to the large number of entities it regulates—which lowered its estimate to 6.1 per cent in its 2018 rate of return guidelines.[212]

Figure 11 Market risk premium estimates from other regulators' decisions, 2015–19



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

Source: QCA calculations.

[212] AER, *Rate of return instrument—Explanatory Statement*, December 2018, p. 15.

Finding A6.29— Market risk premium

The QCA finds GAWB's proposed value of 7.0 per cent for the market risk premium is not appropriate. Rather, a value of 6.5 per cent is appropriate.

6.3.3 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 20-business day period ending 30 August 2019.

We consider GAWB has applied an appropriate method to calculate the risk-free rate.

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.[213] 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.

GAWB averaged the bond yields over a 20-day period ending 30 August 2019. It did not propose a specific averaging period it intends to use for calculating its final prices for 2020–25.[214]

For this draft report, we used the same 20-business day averaging period as GAWB for ease of comparability. For our final report, we plan to use a 20-day period ending 31 March 2020—although this may change if GAWB proposes a longer period in the meantime.[215] This is sufficiently close to the commencement of the 2020–25 regulatory period to increase the likelihood that the risk-free rate reflects conditions at the beginning of the regulatory period.

We consider it would be appropriate for GAWB to nominate an averaging period by way of a submission. We consider an appropriate averaging period would be a period in the first half of 2020 (in other words, up to six months before the finalisation of GAWB's prices).

[213] We recently applied a 10-year bond term for Queensland Rail (QCA, *Queensland Rail's 2020 Draft Access Undertaking,* draft decision, April 2019, p. 32).
[214] However, GAWB said 0.94 per cent was a preliminary estimate only (GAWB, sub. 1, p. 113).
[215] 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).

Finding A6.30—Risk-free rate

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

The QCA calculates a value of 0.94 per cent for the risk-free rate over the placeholder period for this draft report. The QCA will provide an updated estimate for its final report.

It would be appropriate for GAWB to nominate an averaging period to apply to its final prices for 2020–25, through a submission.

6.3.4 Capital structure

A firm's capital structure refers to the relative proportions of debt and equity that together finance the firm's activities.[216] 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.

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.[217] It said that gearing should be increased to 60 per cent in order for its community to be treated equitably.[218]

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 level 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 level of 50 per cent gearing level lies between two relevant reference points, discussed below.

A 50 per cent gearing level 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.[219] This risk characteristic differs from typical water utilities that tend to have larger customer bases comprising small residential customers.

[216] A firm's capital funds a range of business activities, including operations, maintenance, capacity expansion and working capital.

[217] Given the concentrated nature of GAWB's customer base and associated demand risk (see GRC, sub. 15, p. 4).

[218] GRC, sub. 15, p. 4.

[219] 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. 125–27 and QCA, *Gladstone Area Water Board: Investigation of pricing practices,* final report, June 2010, p. 125.

A 50 per cent gearing level is above the actual gearing of comparable listed water utilities.[220] 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.[221]

We acknowledge the council's statement that GAWB's gearing should be increased to 60 per cent. However, we do not set regulated WACCs 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 lead to a price reduction[222], it is not clear that this would be passed through to the council's retail customers.

Finding A6.31—Capital structure

The QCA finds GAWB's proposed 50 per cent gearing rate is appropriate.

6.3.5 Credit rating

A credit rating is an assessment of the creditworthiness of a borrower. A higher credit rating means 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, taking into account 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.[223] While the credit rating of the listed overseas comparator firms varied from BB– to A+, there were four companies in the BBB band.[224]

We tested whether GAWB is likely to remain financeable over the 2020–25 regulatory period, given a BBB credit rating and our draft 2020–25 regulatory cash flows.[225] We calculated two key

[220] 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 which 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).

[221] 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).

[222] 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.

[223] QCA, *Rural irrigation price review 2020–24, Part A: Overview,* final report, January 2020, p. 94.

[224] CEPA, *Advice on GAWB's WACC 2020–2025,* December 2019, p. 29.

[225] The cash flows are based on our pricing-related recommendations in this report, including the gearing and BBB credit rating assumptions, and our recommendations on capital expenditure and operating expenditure.

credit metrics, FFO over debt and interest cover.[226] The calculated ratios indicate that the regulatory cash flows may support a BBB credit rating.[227]

> **Finding A6.32—Credit rating**
>
> The QCA finds GAWB's proposed BBB credit rating is appropriate.

6.3.6 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.

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[228] or trailing average[229] debt management strategy for this purpose.

GAWB applied a benchmark debt management strategy based on an on-the-day approach. While GAWB said it sees merit in a trailing average approach, GAWB indicated this approach requires annual updates—which would cause annual variations in the WACC and therefore 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'.[230] 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

[226] 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.

[227] 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).

[228] 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.

[229] 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.

[230] GAWB, sub. 1, p. 118.

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 a number of 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 draft decision on Queensland Rail's draft access undertaking.[231] We do not consider either data provider is superior to the other for the purposes of calculating the debt risk premium and therefore consider it is appropriate to take an average of the calculations from both sources.

We obtained the following debt risk premium calculations for the placeholder averaging period ending 30 August 2019:

- 2.24 per cent, using the RBA BBB-rated series, extrapolated to an effective 10-year term[232]
- 1.88 per cent, using the Bloomberg BVAL 10-year BBB series

The average is 2.06 per cent—which is the placeholder value we apply for our draft report.[233]

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.[234]

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[231] In our draft decision on Queensland Rail's 2020 DAU, we considered that the differences between that 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's 2020 Draft Access Undertaking,* draft decision, April 2019, pp. 34–35). We consider this finding remains relevant.

[232] We applied the approach specified in the AER rate of return instrument (AER, *Rate of return instrument*, December 2018).

[233] This is slightly different from the value calculated by Synergies (2.05 per cent). CEPA listed possible reasons for this divergence—see CEPA, *Advice on GAWB's WACC 2020–2025*, December 2019, pp. 32–33.

[234] See QCA, *Rural irrigation price review 2020–24 Part A: Overview*, final report, January 2020, p. 95; QCA, *Queensland Rail's 2020 Draft Access Undertaking*, draft decision, April 2019, p. 36 and QCA, *Aurizon Network's 2017 DAU*, final decision, Appendix F, December 2018, p. 139.

Finding A6.33—Debt risk premium

The QCA finds GAWB's proposed approach to calculating the debt risk premium is appropriate.

The QCA calculates a placeholder value of 2.169 per cent for the debt risk premium for this draft report, comprising a raw debt risk premium of 2.06 per cent and debt-raising cost allowance of 0.108 per cent.

The QCA will provide an updated estimate for the final report (using the averaging period for the risk-free rate that GAWB nominates, or the 20-day period ending 31 March 2020).

6.3.7 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.

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.[235]

GAWB raised some concerns with the ways these rates were calculated[236]—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.[237]

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[238], and we subsequently applied it in our draft decision on Queensland Rail's 2020 DAU and report on rural irrigation prices for 2020–24.

While we note GAWB's concerns about the methodology and acknowledge there are alternative views and interpretations for estimating gamma and its components, GAWB proposed to adopt

[235] GAWB, sub. 1, pp. 120–22.
[236] 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, p. 121 and GAWB, sub. 5, pp. 45–48).
[237] GAWB, sub. 1, p. 120.
[238] QCA, *Aurizon Network's 2017 draft access undertaking*, final decision, Appendix F, December 2018, pp. 171–87.

a value we consider appropriate at this time. Therefore, we have not addressed GAWB's concerns in this draft report. We will consider GAWB's arguments should it propose at a later date to adopt a methodology and value different to those we find appropriate.

Finding A6.34—Gamma

The QCA finds GAWB's proposed value of 0.484 for gamma is appropriate.

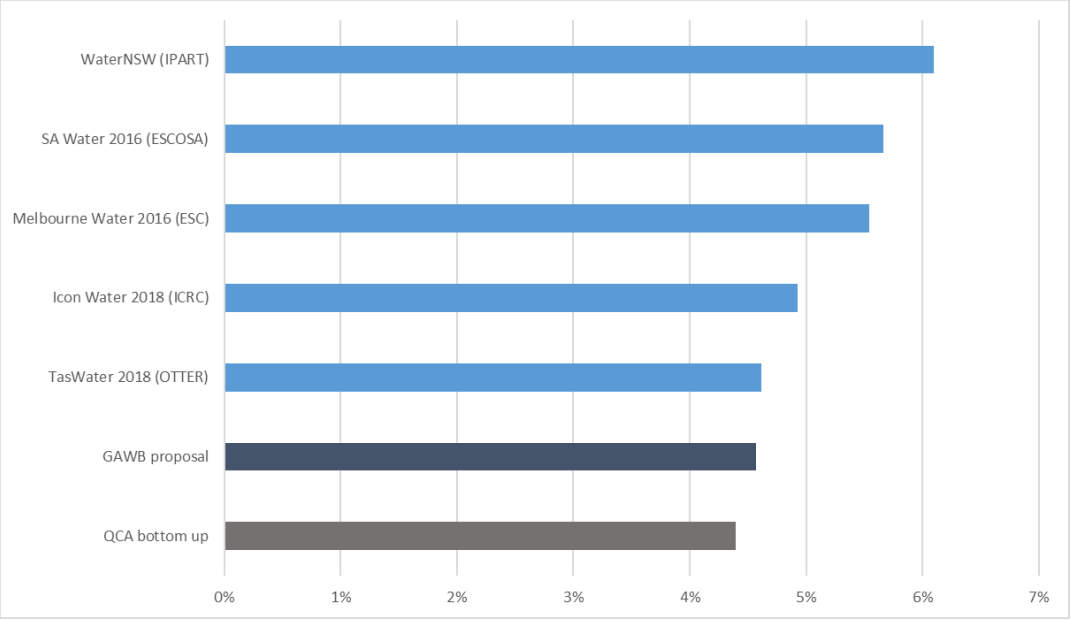
6.4 Top-down analysis

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 take into consideration the WACCs set by other Australian regulators for regulated firms with similar risk, and other relevant information. Ultimately, determining an appropriate WACC requires the exercise of judgement within the context of this assessment.

We considered the WACCs of other Australian regulated water utilities are relevant reference points for GAWB. We normalised the WACCs so they could be compared at the same point in time.[239] The normalisation involves applying other regulators' WACC methodologies, but using GAWB's averaging period (to 30 August 2019), to determine the WACC for the regulated comparator firm.

Figure 12 WACCs for water utilities, normalised to 30 August 2019



Source: Various regulatory decisions; IPART spreadsheet - WACC model (August 2019); QCA calculations.

[239] The normalisation process controls for differences in regulatory WACCs that arise due to time-varying changes in certain parameters—primarily the risk-free rate and cost of debt.

We advise care when looking at the figures presented[240], noting there are differences between the firms in the sample.[241] However, we consider these figures provide a reasonable guide for comparison.

Figure 12 shows that—for the first year of the regulatory period—GAWB's proposed WACC is lower than the comparator water entities' WACCs. The primary reason for the lower WACC is GAWB's materially lower cost of debt as at the averaging period (August 2019). This difference arises because GAWB uses an on-the-day cost of debt while the other water entities use a trailing average cost of debt. 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 WACCs recalculated.[242,243] As a result, if current debt market conditions continue for the next several years, the WACCs of these firms would decline over the regulatory period toward the (lower) GAWB WACC.[244]

Given GAWB's proposed WACC is below the WACCs of comparable water entities, and is only slightly higher than our bottom up estimate, we consider the overall WACC proposed by GAWB is reasonable.

Therefore, we consider that 4.57 per cent is an appropriate WACC value for GAWB at this time. In doing so, we note that we are not implicitly accepting GAWB's proposed values for every individual WACC parameter (in particular, its proposed value for the market risk premium).

6.5 Overall WACC

While the bottom-up value is lower than GAWB's proposed value, the top-down analysis shows that GAWB proposed an appropriate WACC.

Finding A6.35—Overall WACC

The QCA finds a 4.57 per cent WACC is appropriate for GAWB for the 2020–25 period, based on the placeholder averaging period ending 30 August 2019. This value will be updated for the final report, using an averaging period closer to the commencement of the regulatory period.

[240] We made some assumptions in attempting to replicate the other regulators' methodologies.

[241] 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 WACCs.

[242] 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 removed. This differs from the on the day approach, which uses a constant cost of debt for the regulatory period.

[243] 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). Also, while ESCOSA uses a trailing average to determine the cost of debt, it sets a predetermined price path with no annual updates (ESCOSA, *SA Water Regulatory Determination 2016*, final determination, June 2016, pp. 118–23).

[244] 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.

7 RISK MANAGEMENT

In this chapter, we assess GAWB's proposed risk management arrangements for the 2020–25 regulatory period and address some additional risk-related issues.

7.1 Key points

The QCA's key findings on GAWB's proposed risk management arrangements are:

- Form of regulation—The QCA considers that GAWB's proposal to continue the hybrid revenue cap form of regulation is appropriate. The QCA also finds the continuation of the 10 per cent deadband on the revenue cap appropriate.
- Review triggers to allow GAWB to adjust its revenue when faced with unexpected circumstances—The QCA finds some, but not all, of GAWB's proposal is appropriate, specifically:
  - adjustments to demand should not trigger a review
  - force majeure and drought response measures can be added as review triggers
  - the trigger materiality threshold should not be reduced —rather, the QCA finds it appropriate for the threshold to remain at 15 per cent of smoothed annual revenue requirement.
- New connections and capital contributions—The QCA encourages existing and potential stakeholders to present their views on GAWB's proposed amendment to its capital contributions framework.

7.2 Managing risk in supplying bulk water

Risk management, from a regulatory standpoint, can be attained by allocating risk to customers or to the regulated entity, in this case GAWB. The mechanism that controls this is dependent 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.

There are a number of risks GAWB must manage as a bulk water supplier in the Gladstone area with high fixed costs and a concentrated customer base. For GAWB, the questions of price cap versus revenue cap regulation, measures to combat adverse events, and stranding risk are concerns from a risk management standpoint.

Our investigation considered three key proposals from GAWB related to risk management, namely form of regulation (section 7.3), review triggers (section 7.4) and the capital contributions framework for new connections (section 7.5). In addition, we commented on the resolution of pricing disputes (section 7.6) and publication of standard water supply terms and conditions (section 7.7).

7.3 Form of regulation

Under our regulatory approach, we either implement a price cap or a revenue cap — or a blend of both. A key difference between the two methods is the bearer of volume risk—the supplier

bears the risk in the case of a price cap, and customers bear the risk 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. Excess delivery charges above or below the chosen deadband range are either distributed to customers or charged to customers respectively through price changes in the following regulatory period. This mechanism ensures GAWB's revenues from customers remain within a certain range designed to support its ongoing financial viability.

7.3.1 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 would be translated to variations in revenue.

GAWB applied a hybrid revenue cap form of regulation during the 2015–20 regulatory period. GAWB implemented a 10 per cent deadband on all regulated activities (including delivery and all other charges) for this period.[245]

7.3.2 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.[246] Despite this, GAWB presented arguments against a 10 per cent deadband.

GAWB asserted that 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[247] 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 an increase in the frequency of drought restrictions
- GAWB has no legal obligation to connect additional customers.[248]

We acknowledge GAWB has very little influence over the entry and exit of customers—both domestic and international factors affect demand—and the costs imposed by GAWB are a small proportion of 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. GAWB's customers operate under contractual obligations to buy pre-

[245] GAWB initially proposed a deadband range of 5 per cent on the revenue cap, which would be applied to all regulated activities. We instead put forward an alternative proposal, in which the deadband of 5 per cent would be imposed on delivery charges and a 10 per cent deadband on all other regulated activities. The 5 per cent deadband was suggested as a transitional mechanism for the introduction of the new pricing system.
[246] GAWB, sub. 1, p. 51.
[247] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 55–57.
[248] GAWB, sub. 1, pp. 48–50.

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.

The continuation of the 10 per cent deadband on all regulated activities is appropriate, as it 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. The implementation of MDQ pricing, a system in which customers pay based on their contracted maximum daily water volumes, assisted in decreasing revenue volatility during the 2015–20 regulatory period.

This form of regulation is in line with IPART and the Essential Services Commission's (ESC) approaches for hybrid revenue caps in which these regulators also allow the use of a deadband.[249,250] In its submission, the council also agreed to GAWB's current form of regulation practice.[251]

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.

Finding A7.36—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, over-run charges and contract length premium revenue
- fixes prices (with the exception of 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).

7.4 Review triggers

A review trigger is built into GAWB's regulatory framework as a mechanism to adjust the smoothed annual revenue requirement to recover costs that are unexpected and not provided for in capital or operating expenditure forecasts.[252] This mechanism is distinct from GAWB's revenue cap deadband, which is activated when actual revenue from regulated activities differs substantially from forecasted revenue.

GAWB said it will act reasonably in determining the relevant costs incurred due to a trigger event and determining the resultant price adjustments needed to recover these costs. In the event of a review being triggered, it will submit the method for calculating these costs to us for review in the following price investigation.[253]

[249] ESC, *Water pricing framework and approach: Implementing PREMO from 2018*, October 2016, pp. 32–33.
[250] IPART, *Review of prices for Sydney Water Corporation*, final report, June 2016, p. 152.
[251] GRC, sub. 15, p. 4.
[252] GAWB, sub. 1, p. 142.
[253] 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.

GAWB said its current framework allows for review triggers where unexpected costs may be recovered through a mid-regulatory period adjustment to prices.[254]

GAWB proposed three events which would trigger a review in the 2020–25 regulatory period:

- adjustments to demand
- force majeure
- drought response measures.

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.

7.4.1 Adjustments to demand

Demand-based review triggers have been in place since GAWB became subject to regulation.[255] 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 variation would exceed the 10 per cent deadband, given it recovers most 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.

In its submission, GAWB cited the examples of Seqwater and Icon Water to support the inclusion of 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.[256,257,258]

Finding A7.37—Adjustments to demand

The QCA finds the inclusion of adjustments to demand as an eligible review event is not appropriate.

In the event that GAWB persists with including demand adjustments as a review trigger, we consider GAWB should clarify and make distinct the mechanisms under which its form of

[254] GAWB, sub. 1, p. 142.
[255] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, September 2002, p. 118.
[256] 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.
[257] QCA, *SEQ Bulk Water Price Path 2015–18*, final report, March 2015, pp. 94–95.
[258] ICRC, *Regulated water and sewerage services prices 2018–23*, final report, May 2018, p. 22.

regulation and review triggers function in the case of adverse events. Similarly, GAWB should specify mechanisms for events where there are advantageous changes in demand. The council expressed a similar view where it acknowledged the need for GAWB to recover efficient costs but considered that:

> [m]ore information is needed regarding the method for determining a trigger event, the make-up of aggregate revenue and the timeframes around which the trigger event can be identified and adjustments to pricing made.[259]

GAWB should provide a clear outline of how adjustments to the annual revenue requirement and prices would be made in the event of 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.

Finding A7.38—Clarification of trigger events and deadband response

The QCA considers that GAWB should clarify procedures regarding a review trigger and make public specific actions that it will take in response to a trigger event, specifically the:

- methodology to determine a demand trigger event
- effect of the event on its annual revenue requirement and aggregate revenue
- interaction with the form of regulation
- timing of these actions.

7.4.2 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 majeure events trigger a review of revenues and prices in some circumstances, in line with other QCA regulatory decisions and reports.[260,261]

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.[262]

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

[259] GRC, sub. 15, p. 7.
[260] QCA, *Seqwater Bulk Water Price Review 2018–21*, final report, March 2018, p. 81.
[261] Aurizon Network, *2017 Access Undertaking (UT5)*, December 2019, p. 441.
[262] GAWB, sub. 1, p. 143.

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.[263]

Finding A7.39—Force majeure

The QCA finds that the addition of force majeure to review triggers is appropriate.

7.4.3 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.[264] 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. However, we acknowledge efficient costs may need to be recouped by GAWB in the event of a drought as outlined in the Water Act.[265] Therefore, whilst we note 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 submission stating GAWB can adjust the amounts paid by WICET in time of water restrictions.[266]

Finding A7.40—Drought response measures

The QCA finds that the addition of drought response measures to review triggers is appropriate.

7.4.4 Materiality threshold

GAWB proposed the materiality threshold for review triggers should 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 reason for this change is because the current threshold is higher than four other regulated companies' thresholds:

- 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:

[263] WICET, sub. 9, p. 2.
[264] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 83.
[265] Section 25O(2)(b) of the Water Act.
[266] WICET, sub. 9, p.2.

- operate as water utilities
- have review periods similar to GAWB (three to five years)[267]
- implement hybrid revenue caps similar to GAWB.[268]

GAWB said its proposed materiality threshold is $6 million[269], while the current materiality threshold would be $10 million[270], 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.[271]

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.[272]

WICET also 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%'.[273] A threshold that is lower than 15 per cent might not be enforceable under WICET's contract.

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.[274,275] 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.[276,277] Furthermore, in times of distress, if GAWB incurs losses or damages because of actions taken under Part 1 of the Water Act (water supply emergencies), GAWB may apply for compensation under section 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'.[278] We understand this insurance portfolio partly covers loss or damage to Awoonga Dam and other assets, as well as a coverage for other typical business

[267] 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.
[268] For example, ICRC, *Regulated water and sewerage services prices 2018–23*, final report, May 2018, p. 11.
[269] 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.
[270] Based on the current 15 per cent materiality threshold (GAWB, sub. 1, p. 144).
[271] QCA, *SEQ Bulk Water Price Path 2015–18*, final report, March 2015, p. 92.
[272] ESC, *Metropolitan Melbourne Water Price Review 2016–21: Melbourne Water Determination*, June 2017, p. 11.
[273] WICET, sub. 9, p. 2.
[274] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, June 2010, pp. 11, 13, 15, 65.
[275] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices*, final report, March 2005, pp. 20–22.
[276] GAWB, *2019 Annual Report*, December 2019, pp. 18–19.
[277] GAWB, sub. 1, p. 17.
[278] GAWB, *2019 Annual Report*, December 2019, p. 43.

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.[279]

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 provided sufficient justification as to 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[280], the difference between a 10 per cent and 15 per cent threshold is $3 million.[281] Our view is that most trigger events will either not breach either threshold, or breach both, due to the relatively low difference in monetary value between the thresholds.

We consider that GAWB's justification is insufficient, and that it is unnecessary to alter the current threshold, unless GAWB presents further justification. 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, with specific steps and criteria involved 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.
- The QCA's preferred option for the materiality threshold is for GAWB to eliminate the numerical threshold and instead implement a qualitative process to determine if sufficiently material impacts on GAWB's operations have occurred, and GAWB to be eligible for a mid-period review.

7.5 New connections and capital contributions

GAWB noted it has tended to own dedicated customer connections, which are defined under GAWB's capital contributions framework as:

[279] IPART, *Sydney Desalination Plant Review of prices from 1 July 2017 to 30 June 2022*, final report, June 2017, p. 35.
[280] 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.
[281] 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.

> [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.[282]

GAWB's point of contention was the ownership of the asset remaining with GAWB subsequently, making GAWB responsible for the administration, maintenance and other costs associated with the asset. GAWB stated it can incur significant costs from investigating and accommodating new customer connections, which may not be recoverable if the investment does not proceed. GAWB also considered it bears significant stranding risk as a result of its concentrated industrial customer base.[283]

To address these concerns, GAWB proposed that new customers should be responsible for the development, funding, ownership, operation and maintenance of dedicated connection assets that are necessary to connect them to GAWB's network, unless otherwise required by and/or agreed with GAWB.[284] 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).[285]

GAWB noted these changes would apply only to new connection enquiries and investments from 1 July 2020 onwards; it will not change the arrangements applying to current customers.[286] GAWB highlighted that the inclusion or exclusion of dedicated connection assets in the RAB would be a commercial matter to be resolved between the customer and GAWB.

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.[287] 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.[288] Energex customers, however, have the option of owning their connection assets.[289]

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[290,291] whereas Ergon Energy, like Energex, provides various options to

[282] GAWB, sub. 6, p. 4.
[283] GAWB, sub. 1, p. 137.
[284] GAWB, sub. 1, pp. 139–40.
[285] GAWB, sub. 1, p. 140.
[286] GAWB, sub. 1, p. 140.
[287] GAWB, sub. 1, p. 139.
[288] Aurizon Network, *2017 Access Undertaking (UT5)*, July 2019, Part 9.1(c).
[289] Energex, *Large Customer Connection Manual*, April 2017, p. 9.
[290] PowerWater, *Power networks capital contributions policy*, July 2014, p. 6.
[291] Western Power, *Contributions policy*, Appendix C.1, February 2019, p. 16.

the prospective customer, ranging from customer ownership of the dedicated connection asset to Ergon building, maintaining and owning the asset.[292]

Stakeholder views invited

GAWB's proposed amendment to the 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.[293]

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.[294] We note that pursuant to section 26(3) of the QCA Act, the QCA is not limited in relation to the matters to which it may have regard when conducting a price monitoring investigation.

While GAWB's proposal represents a departure from the current approach, we consider the treatment of dedicated connection assets is typically a commercial matter for negotiation between GAWB and new connecting customers. Nonetheless, we consider GAWB's proposed changes to its capital contribution policy are material and we encourage existing and potential customers to present their views on these proposed amendments.

Finding A7.42—New connections and capital contributions

The QCA encourages existing and potential stakeholders to present their views on the proposed amendments to the capital contributions framework.

7.6 Resolution of pricing disputes

GAWB's water supply contracts with its customers include provisions for the resolution of 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 the QCA intervene to resolve the pricing dispute. This is a further matter that we have had regard to pursuant to section 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 the QCA does not have the requisite statutory power to intervene in pricing disputes of this type.[295] 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[296], 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

[292] Ergon Energy, *Connection Policy*, July 2015, p. 27.
[293] GAWB, sub. 6, pp. 8–9.
[294] GAWB, sub. 1, pp. 138–39.
[295] Unless the QCA Act Minister were to direct the QCA to conduct a specific pricing investigation for that particular customer, under section 23 of the QCA Act, as a means to resolve the pricing dispute, which is not envisaged in GAWB's standard terms and conditions.
[296] Refer to the QCA's functions under ss. 10(fa)–(gb) of the QCA Act.

ultimately be affected if bulk water charges are passed through, this increased risk would be inconsistent with section 26(1)(c) of the QCA Act (protection of consumers from abuses of monopoly power).

We identified the following options to address this issue:

- 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 contract with GAWB to appropriately amend the pricing dispute provisions (as referred to above).
- 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.[297]

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.

7.7 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.[298]

Publication of 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.

[297] 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).

[298] 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).

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

In this chapter, we look at GAWB's past water demand forecasts and provide a review of its proposed demand forecasts for the 2020–25 period.

8.1 Key points

We reviewed GAWB's proposed demand forecasts and find 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's total demand forecast for raw and treated water in the 2020–25 period reflects a slight decline from current levels. However, GAWB intends to submit revised forecasts after our draft report, following further engagement with customers. We will review any revised forecasts prior to releasing our final report.

8.2 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.

8.3 Demand parameters

To develop its proposed prices, GAWB prepared forecasts for the following measures of demand:

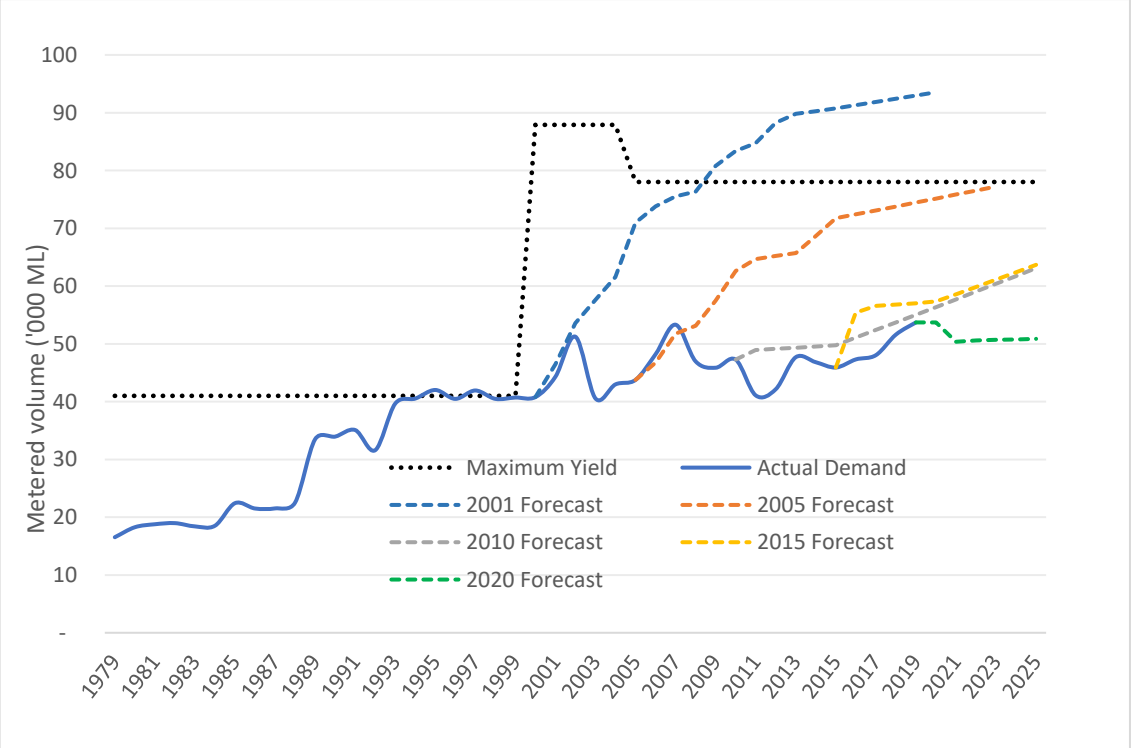
- reservation volumes—the total volume of water that GAWB agrees to supply to a customer during each year
- metered volumes—the actual volumes delivered
- reserved maximum daily quantity (MDQ)[299]—the maximum daily quantity of water that GAWB agrees to supply to a customer during any day
- metered MDQ—the 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).

8.4 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 ('000 ML)



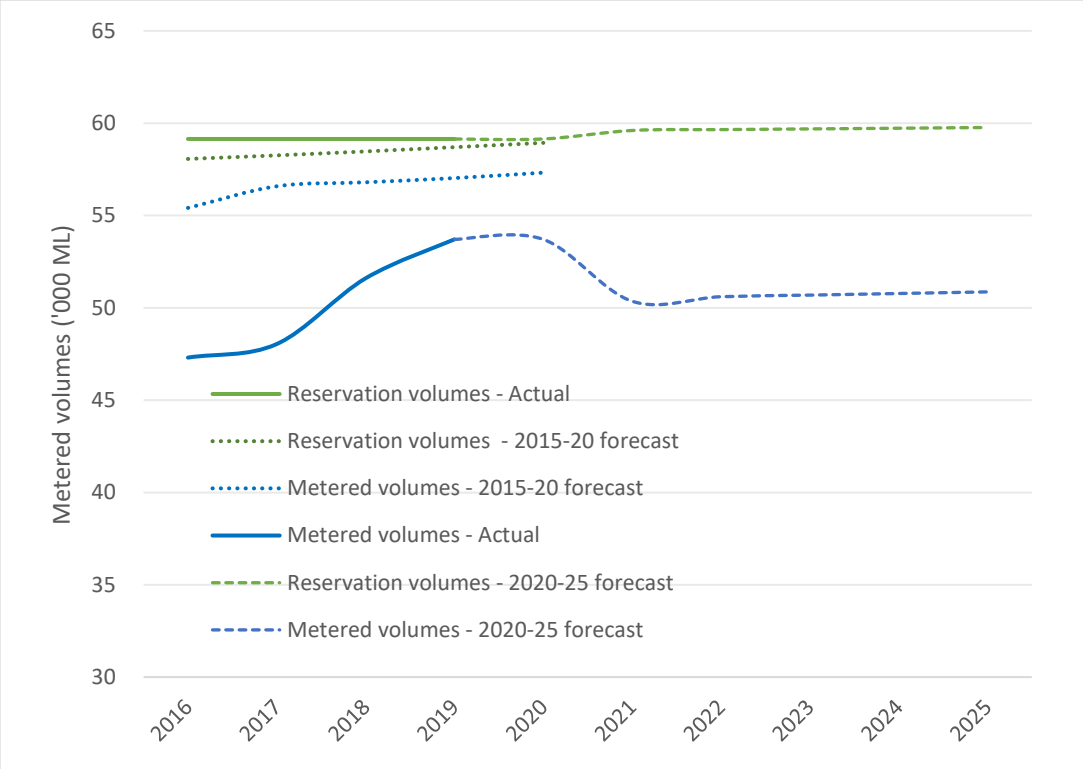
[299] MDQ is explained in Chapter 9.

Note: 2019–20 estimated volumes are assumed to be consistent with 2018–19 reported actual levels. 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.

Figure 14 Total volumes—historical and forecasts ('000 ML)



Notes: 2019–20 estimated volumes are assumed consistent with 2018–19 reported actual levels. Forecasts are based on GAWB data derived from its 2020–25 pricing model, which differs from that 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 RFI19 and RFI90; 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.[300] GAWB attributed these outcomes, in part, to customer responsiveness to the pricing signals presented by MDQ pricing, including the 'ratcheting' mechanism.[301] GAWB noted customers had implemented new operational processes, or manual procedures, to reduce their peak daily capacity requirements, including onsite water storage.[302]

[300] Variances based on total current reserved MDQ as reported by GAWB in response to RFI19.
[301] GAWB, sub. 1, p. 44.
[302] GAWB, sub. 1, p. 129.

8.5 Forecast demand for 2020–25

GAWB's total demand forecast (raw and treated) for the 2020–25 period reflects a slight decline 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 then forecast to 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.[303] 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 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.

8.5.1 Forecast horizon

GAWB prepared a five-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 our report. We have not attempted to forecast demand beyond the 2020–25 period.

8.5.2 Methodology

GAWB engaged Wedgewood White Ltd (Wedgewood White) 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.[304]

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.[305] The forecasts assume normal hydrological conditions and do not attempt to model the possibility of drought-induced supply restrictions during the 2020–25 period.[306]

[303] GAWB, QCA RFI 89, pp. 8–9.
[304] GAWB, QCA RFI 89, p. 2.
[305] GAWB, QCA RFI 89, p. 7.
[306] GAWB, QCA RFI 89, p. 7.

GAWB noted that the forecasts take into account connection enquiries from potential customers that would require supply in the next five years.[307] However, these potential sources of new demand have been either excluded from the forecasts or assigned conservative weightings in the modelling and feature only in the 'high' demand scenario.[308] 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.[309] 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 it is continuing to refine its demand forecasts in consultation with its customers, and intends to submit revised forecasts in response to the QCA's draft report.[310]

8.5.3 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.[311]

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.[312] 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.[313] However, this closure is assumed to occur after 2025 and has therefore not affected GAWB's demand forecasts.[314]

[307] GAWB, sub. 1, p. 44.
[308] GAWB, QCA RFI 89, pp. 28–29.
[309] Revenue cap adjustments may be available to GAWB, should a material increment in demand eventuate during the pricing period (Chapters 7 and 10).
[310] GAWB, sub. 1, p. 44.
[311] GAWB, QCA RFI 89, p. 8.
[312] GAWB, QCA RFI 89, pp. 8–9.
[313] 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.
[314] GAWB, QCA RFI 89, pp. 9–10.

8.5.4 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.[315] 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.

We considered the historical relationship between reservation and metered volumes of GAWB's customers. Although we observe a general tendency for customers to over-contract (compared with actual demand), the extent of this is not consistent across GAWB's customers. Some customers operate within closer tolerances to reservation volumes (and sometimes exceed them), while other customers appear to maintain a wider margin.

We reviewed the variance between forecast reservation and metered volumes for each customer forecast and consider these variances are a reasonable reflection of historical outcomes. We consider 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.[316] 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.[317] 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. We consider GAWB's metered MDQ forecasts are reasonable, as they are based on the latest available information, historical trends and advice from customers.

[315] For the purposes of this analysis, actual volumes for 2019–20 are assumed to remain at 2018–19 levels.
[316] GAWB, sub. 1, pp. 9–10, 44.
[317] For the purposes of this analysis, actual total MDQs for 2019–20 are assumed to remain at 2018–19 levels.

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.

We understand GAWB will provide updated demand forecasts, which we will consider in preparing our final report.

9 PRICING PRACTICES

In this chapter, we assess GAWB's pricing practices, including the proposed zonal pricing, pricing structure and the use of over-run charges and premiums based on contract length.

9.1 Key points

The QCA finds GAWB's proposed pricing practices for 2020–25 appropriate, despite their granular and complex nature. In particular, we consider that GAWB's proposed zonal pricing, pricing structure, over-run charges and contract length premiums are consistent with the QCA's pricing principles.[318]

9.2 Pricing practices 2020–25

GAWB's proposed price structure comprises three distinct prices—storage, delivery and administration. Prices are further differentiated by customer according to the customer's use of specific components (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.[319]

Whilst we find GAWB's pricing practices to be economically sound, they are also quite granular and complex. Our concern is whether customers are able to understand their prices in terms of how both their and GAWB's actions affect those prices.

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.[320]

CPM emphasized the importance of revealing what impact movements in pricing parameters would have on users:

> 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.[321]

The implementation of simpler pricing practices would aid transparency and comprehension for customers. However, we acknowledge that GAWB's business is unique in terms of its predominately 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. However, for future pricing reviews, we suggest that GAWB should try to find an optimal compromise to its pricing

[318] 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.
[319] GAWB, sub. 1, pp. 126–35.
[320] CS Energy, sub. 14, pp. 1–2.
[321] CPM, sub. 11, p. 2.

practices to 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.

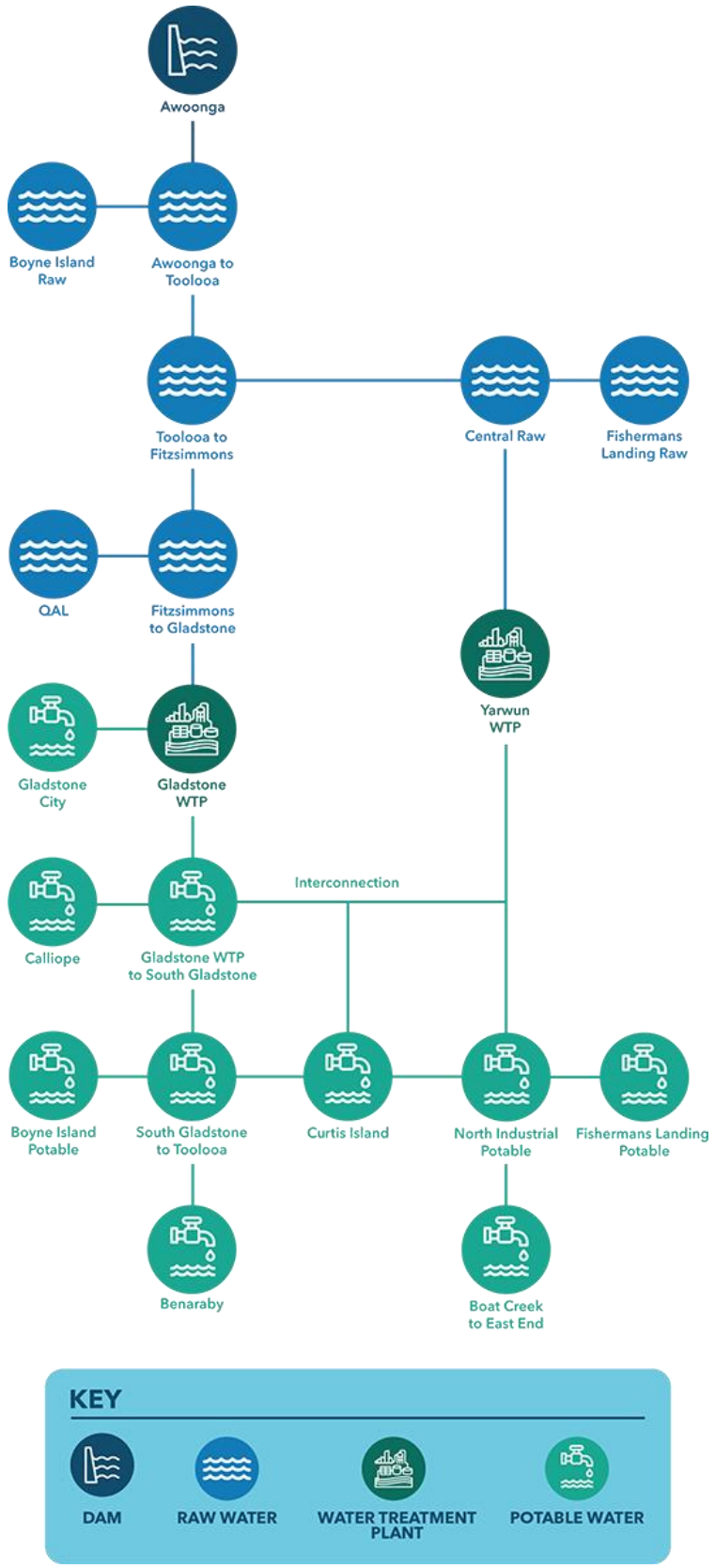
Simpler pricing practices, in effect, may improve customer engagement.

9.3 Zonal pricing

Consistent with the recommendations from our 2010 review, GAWB proposed differentiated prices for all customers, according to customers' use of specific components of GAWB's infrastructure network.[322] 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). Stakeholders did not comment on zonal pricing.

[322] GAWB, sub. 1, p. 127.

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 and the zone is presented as the Central Raw pricing zone.

Source: GAWB, sub. 1, p. 127.

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.

9.4 Pricing structure

GAWB's proposed pricing structure has three components: storage, delivery and administration.

9.4.1 Storage charges

GAWB proposed a two-part tariff structure for its storage charges, namely:

- a storage volumetric charge, based on the long-run marginal costs (LRMC)[323] 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).[324]

We consider GAWB's proposed pricing methodology for storage is appropriate, as it is consistent with the QCA's pricing principles[325] and previous regulatory decisions.[326] Stakeholders did not comment on storage charges.

9.4.2 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 remaining part of the delivery network annual revenue requirement that is not recovered via the volumetric delivery charges; it is based on reserved MDQ.[327]

We consider that GAWB's proposed pricing methodology for the delivery volumetric charge and delivery metered MDQ volumetric charge is appropriate, as it is consistent with the QCA's pricing principles[328] and previous regulatory decisions.[329] Stakeholders did not comment on these two delivery charges.

[323] 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.
[324] GAWB, sub. 1, p. 126.
[325] QCA, *Statement of Regulatory Pricing Principles for the Water Sector*, December 2000, p. 67.
[326] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, pp. 64–65.
[327] GAWB, sub. 1, p. 126.
[328] QCA, *Statement of Regulatory Pricing Principles for the Water Sector*, December 2000, p. 67.
[329] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 65.

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.[330] The QCA considered MDQ pricing was an appropriate means to recover fixed delivery costs and supported its introduction.[331]

GAWB proposed to continue basing its delivery access charge on reserved[332] MDQ for 2020–25, with MDQ charges based on a customer's reserved MDQ as at 1 July 2020. GAWB contended this recognises the benefits customers have had over the five-year transitional period from 2015–20 to regulate their peak daily flow rates and determine the right size of their reserved MDQ.

The Gladstone Regional Council (the council) queried whether the MDQ approach is relevant for an urban supply environment, where the majority of the infrastructure utilised 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.[333]

The council proposed:

> 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.[334]

The capacity that is required for any customer depends on their peak demand. A 30-day average may not reflect the peak usage of an industrial customer whose daily usage varies more than the council's. 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 during2015–20), 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[335], 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.

9.4.3 Administration charge

GAWB's costs 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

[330] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 65.
[331] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 67.
[332] 'Reserved' refers to a customer's reserved entitlement of MDQ.
[333] GRC, sub. 15, p. 5.
[334] GRC, sub. 15, p. 5.
[335] QCA, *Gladstone Area Water Board Price Monitoring 2015–20,* final report, May 2015, p. 67.

investigation in 2002.[336] These 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 30 GAWB's proposed administration charges

Charge	*Effort/volume ratio*	*Admiistration 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 was 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 accompanying 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.[337]

We consider that the effort ratios proposed in Table 30 that assign progressively higher administration costs to storage activities, raw water delivery activities and treated water delivery activities are broadly reflective of 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 that 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.

Finding A9.47—Tariff structure

The QCA finds GAWB's proposed pricing structures for storage, delivery and administration charges 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.

[336] QCA, *Gladstone Area Water Board Price Monitoring 2015–20*, final report, May 2015, p. 68.
[337] GRC, sub. 15, p. 5.

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 are 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 program affected (i.e. storage, delivery or administration). GAWB proposed additional revenue should also be excluded from the revenue cap adjustment.[338]

There are two types of over-run charges—storage and administration, and delivery.

9.5.1 Storage and administration over-run charges

For industrial customers, GAWB proposed a surcharge of:

- 25 per cent that 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 that will apply to the total charge for incremental volumes, where actual consumption is higher than 125 per cent of the reserved amount.[339]

We consider the proposed methodology for industrial customers appropriate and consistent with the methodology that we previously recommended.[340]

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).[341]

We consider that the lower charges and higher exceedance percentage proposed for council relative to industrial customers are appropriate, given the council's limited ability to control consumption. However, we note GAWB only proposed a surcharge of 10 per cent in its 2015 submission.[342] We seek stakeholder feedback on GAWB's proposal for 2020–25 on storage and administration over-run charges for the council.

Stakeholders did not comment on storage and administration over-run charges.

Finding A9.48—Storage and administration over-run charges

The QCA finds GAWB's proposed approach of storage and administration over-run charges for industrial customers appropriate.

The QCA seeks stakeholder feedback on GAWB's proposed increase of storage and administration over-run charges for the 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 their reserved MDQ in one month, GAWB used the actual MDQ recorded during the month to calculate water charges.

[338] GAWB, sub. 1, p. 79.
[339] GAWB, sub. 1, p. 128.
[340] QCA, *Gladstone Area Water Board: Investigation of Pricing Practices,* final report, *June 2010*, p. 36.
[341] GAWB, sub. 1, p. 128.
[342] GAWB, *2015 Price Monitoring Investigation Submission to the Queensland Competition Authority*, September 2014, p. 67.

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.[343]

GAWB indicated customers were able to apply to GAWB, over the course of the 2015–20 regulatory period, to modify their reserved MDQ, without penalty, 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.[344]

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).[345]

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, these customers were concerned with the resetting of the reserved MDQ over the remainder of the regulatory period, as the reset could result from a singular one-off incident.[346] In response, GAWB noted that its 2020–25 submission does not include a 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.[347]

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 that occurs in a month. 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.[348] The MDQ exceedance is determined as the difference between the monthly charge amounts resulting from the total MDQ charge[349] applied to actual and reserved MDQ. The over-run charge is then determined by multiplying the MDQ exceedance by two.[350]

GAWB's proposed calculation of the MDQ delivery over-run charge can be expressed in the

[343] GAWB, sub. 1, p. 129.
[344] GAWB, sub. 1, p. 130.
[345] GAWB, sub. 1, p. 130.
[346] GRC, sub. 15, p. 5; WICET, sub. 9, p. 2.
[347] GAWB, sub. 12, p. 2.
[348] 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.
[349] The total MDQ charge comprises the delivery access charge and delivery metered MDQ volumetric charge.
[350] GAWB, sub. 1, pp. 132–33.

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. GAWB contended this recognises the benefits customers have had over the five-year transitional period to regulate their peak daily flow rates and determine the right size of their reserved MDQ.[351]

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.[352]

GAWB reiterated that the main rationale for the introduction of 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 charges (net of additional costs incurred, this includes any tax payable associated with the additional revenue) is rebated to customers'.[353]

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 incidental spikes in MDQ.
- GAWB will provide a sufficiently strong signal to customers to reserve accurately.
- The additional revenue recovered from over-run charges[354] is rebated to customers.

[351] GAWB, sub. 1, p. 130.
[352] QCA, *Gladstone Area Water Board Price Monitoring 2015–20, final report*, May 2015, p. 68.
[353] GAWB, sub. 1, p. 131.
[354] Net of additional costs incurred, such as any tax payable associated with the additional revenue.

Finding A9.49—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 a surcharge being applied to contracts with a term 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 31).

Table 31 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.

Revenue from surcharges is to be included in the revenue cap and offset against the administration charge.

Finding A9.50—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.

10 REVENUE REQUIREMENTS AND INDICATIVE PRICES

This chapter outlines GAWB's revenue requirement and indicative prices for the 2020–25 regulatory period.

10.1 Key points

The QCA's key findings on GAWB's proposed revenue requirements and prices are:

- GAWB proposed a revenue requirement of $319 million, while we calculated an indicative revenue requirement of $309 million for the 2020–25 pricing period.[355]
- Our 2020–21 indicative price for the Awoonga pricing zone is 1 per cent higher than the price proposed by GAWB.
- Our 2020–21 indicative prices for all the other pricing zones are 1 to 6 per cent lower than the prices proposed by GAWB.[356]

10.2 Interpretation of these indicative prices

This investigation is a price monitoring review. Accordingly, we have calculated an indicative revenue requirement and associated prices for GAWB. We do not set or recommend prices charged by GAWB to its customers. The indicative prices are provided for information purposes only and are intended to help GAWB's customers understand the impact that our proposed changes to pricing inputs—as outlined in this draft 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.

10.3 Revenue requirement

We use a building block approach to calculate GAWB's total revenue requirement for the 2020–25 pricing period. The calculation of the revenue requirement includes the following components:

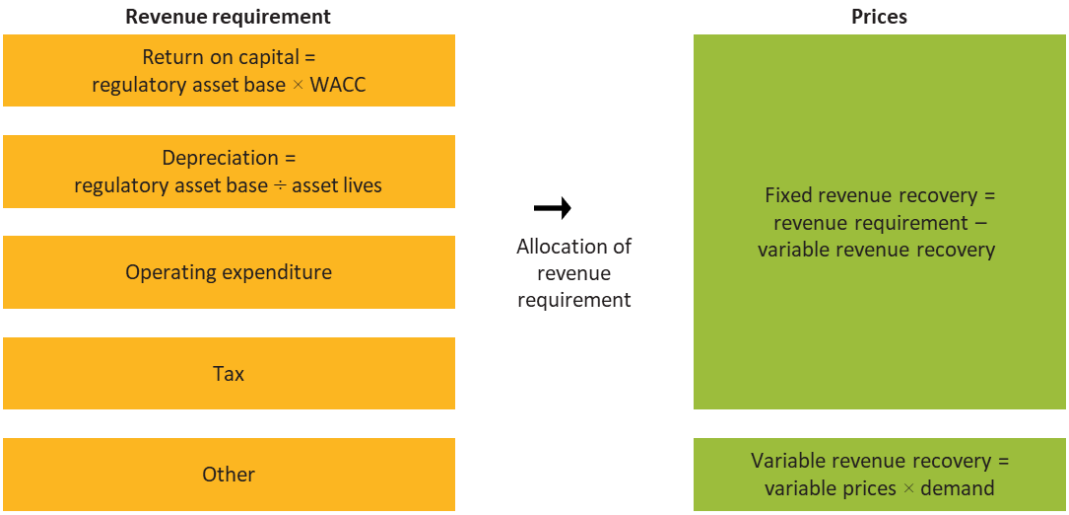
- operating expenditure—this represents our assessment of GAWB's prudent and efficient operating, maintenance and corporate costs
- return of capital or regulatory depreciation—this allowance recognises that capital infrastructure will degrade through the provision of services and that GAWB needs to recoup its prudent and efficient capital cost over the useful life of the infrastructure

[355] Excluding the Curtis Island pricing zone.
[356] GAWB's proposed and our indicative prices remain constant in real terms for the length of the regulatory period.

- return on capital—this is an allowance for a return on assets used for the provision of the regulated service, which represents the opportunity cost of capital provided by debt and equity investors
- tax—this represents GAWB's tax equivalent expenses
- other—includes prior period adjustments[357], rebates and unregulated revenues.

Our building block approach is summarised in Figure 16.

Figure 16 Building block approach



[357] GAWB's prior period adjustments include over-run charges, short-term contract length premiums, revenue cap adjustments and 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 2020–25: GAWB's proposal and QCA estimate ($ million, nominal)

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 regulatory asset base to maintain its nominal value, and then subtracted from the revenue requirement to avoid double counting.

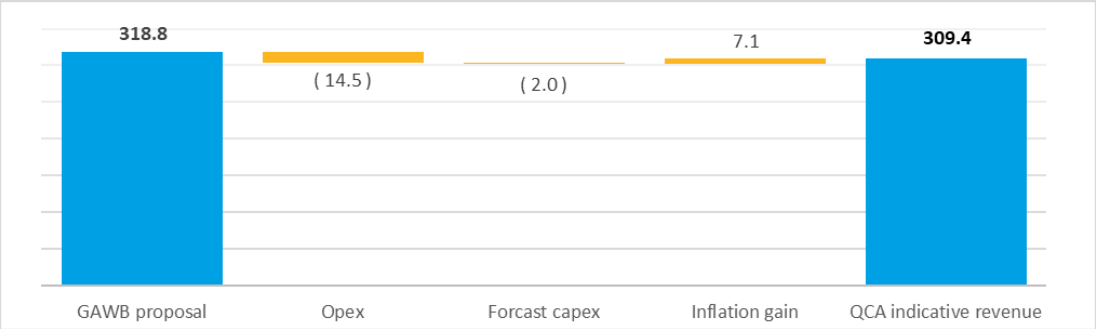
Sources: GAWB, Building Block Model, Submission, September 2019; QCA calculations.

The main drivers of the difference between GAWB's proposed and our indicative revenue requirement for the 2020–25 regulatory period are:

- a reduction in operating expenditure due to adjustments to individual operating expenditure cost categories, cost escalation factors and efficiency targets (Chapter 3)
- a reduction in capital expenditure based on our position on cost escalation (Chapter 4), which leads to decreases in regulatory depreciation (return of capital) and return on capital
- the use of an updated indicator for inflation (Chapter 3), which results in decreased inflation gain being netted off the revenue requirement.

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 ($ million, nominal)



Sources: GAWB, Building Block Model, Submission, September 2019; QCA calculations.

Based on our assessment of the costs that GAWB submitted, our estimate of GAWB's revenue requirement is $299 million for the 2020–25 regulatory period (real 2019–20 dollars)[358]. This is $8.9 million (2.9%) lower than the amount submitted by GAWB and $72.6 million (19.5%) lower than for the 2015–20 regulatory period (Table 32).

Table 32 GAWB's revenue requirement ($ million, 2019–20 real dollars)

	QCA estimate 2015–20	*GAWB's proposal 2020–25*	*QCA estimate 2020–25*	*QCA 2015–20 estimate vs QCA 2020–25 estimate*	*GAWB's proposal vs QCA estimate for 2020–25*
Revenue carryover	103	–	–	(100%)	–
Operating expenditure	116	164	150	30%	(9%)
Return of capital	67	82	80	20%	(2%)
Return on capital	151	139	137	(10%)	(2%)
Inflation gain	(69)	(70)	(62)	(11%)	(12%)
Tax	6	7	8	38%	16%
Other	(2)	(15)	(15)	636%	2%
Total revenue requirement	372	308	299	(20%)	(3%)

Note: Excludes Curtis Island pricing zone.

Source: GAWB, Building Block Model, Submission, September 2019; QCA calculations.

[358] Note the calculation of GAWB's revenue requirement in Table 32 is less than those reported in Figure 18 and Figure 19. This is due to these numbers being converted from nominal dollars to real 2019–20 dollars to enable comparison of revenues over different regulatory periods.

Table 33 shows our indicative individual annual revenue requirements for storage, administration changes and for each delivery pricing zone.

Table 33 QCA indicative annual revenue requirement by charge type and zone ($ million)

Charge	*Zone*	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*
Storage	Awoonga	20.9	21.2	20.2	21.3	23.0
Delivery	Awoonga to Toolooa	13.0	11.8	11.8	12.2	12.5
	Toolooa to Fitzsimmons	2.9	2.7	2.7	2.9	3.0
	Boyne Raw	0.2	0.2	0.2	0.2	0.2
	Central Raw	1.4	1.4	1.3	1.4	1.4
	Fitzsimmons to Gladstone	0.5	0.5	0.5	0.5	0.6
	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	9.0	8.8	8.9	9.3	9.7
	Gladstone City	0.2	0.1	0.1	0.1	0.1
	Gladstone WTP to South Gladstone	1.9	1.8	1.7	1.8	2.1
	Calliope	0.6	0.7	0.7	0.7	0.7
	South Gladstone to Toolooa	0.7	0.7	0.7	0.8	0.8
	Boyne Potable	0.5	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	1.8	1.8
	North Industrial Potable	0.9	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	0.6	0.6	0.7	0.7	0.7
Administration	Corporate	6.0	5.8	5.8	5.7	6.0
	Total revenue requirement excluding Curtis Island Pipeline	62.4	60.5	59.6	61.9	65.1

Note: The individual revenue requirements do not always add up to the total in the table due to rounding.

Source: QCA calculations.

Finding A10.51

The QCA calculates GAWB's indicative revenue requirement at $309 million (nominal dollars, excluding the Curtis Island pricing zone) for the 2020–25 regulatory period.

10.4 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 forecast demand (Table 34). GAWB's prices should reflect efficient outcomes and provide GAWB with the revenues necessary to promote sustainable investment and take account of public interest matters.

Table 34 QCA indicative prices (1 July 2020)

Price zone	*Reservation and storage*		*Delivery*		*Admin*	*Indicative average price*
	Storage access	*Storage volumetric*	*Delivery access*	*Delivery volumetric*	*($/res. ML)*	*($/res. ML)*
	($/reserved ML)	*($/metered ML)*	*($/reserved MDQ)*	*($/metered ML*		
Awoonga	368.95	1.76	—	—	30.82	401.27
Awoonga to Toolooa	368.95	1.76	6,142.67	36.67	92.45	761.65
Toolooa to Fitzsimmons	368.95	1.76	7,778.98	36.67	92.45	832.19
Boyne Raw	368.95	1.76	10,619.56	36.67	92.45	998.07
Central Raw	368.95	1.76	9,680.42	36.67	92.45	917.47
Fitzsimmons to Gladstone	368.95	1.76	8,295.46	36.67	92.45	853.87
QAL	368.95	1.76	10,017.13	36.67	92.45	933.14
Fishermans Landing Raw	368.95	1.76	13,624.87	37.32	92.45	1,363.18
Gladstone WTP	368.95	1.76	23,917.80	115.84	215.72	1,646.61
Gladstone City	368.95	1.76	27,152.56	115.84	215.72	1,778.24
Gladstone WTP to South Gladstone	368.95	1.76	28,655.98	115.89	215.72	1,829.16
Calliope	368.95	1.76	40,315.18	132.43	215.72	2,321.30
South Gladstone to Toolooa	368.95	1.76	37,134.47	118.80	215.72	2,188.00
Boyne Potable	368.95	1.76	44,869.42	119.11	215.72	2,515.70
Benaraby	368.95	1.76	67,915.51	144.52	215.72	3,460.10
Yarwun WTP	368.95	1.76	32,871.54	127.28	215.72	2,602.02
North Industrial Potable	368.95	1.76	39,552.72	123.52	215.72	3,222.09
Fishermans Landing Potable	368.95	1.76	57,329.72	123.52	215.72	5,989.54
Boat Creek to East End	368.95	1.76	81,859.01	323.98	215.72	9,825.31

Notes: These prices are exclusive of 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 indicative prices for the 2020–25 regulatory period will lead to price changes (Table 35). The 2020–21 indicative price:

- for the Awoonga pricing zone is 1 per cent higher than that proposed by GAWB, primarily due to the impact of decreased inflation gain being netted off the revenue requirement (increases revenue requirement) of $4.2 million, being greater than offsetting reductions in forecast operating and capital expenditure of $3.9 million (decreases revenue requirement)

- for all the delivery pricing zones is between 1 and 6 per cent lower than those proposed by GAWB, primarily due to reductions in forecast operating and capital expenditure of $13.6 million (decreases revenue requirement) being greater than the impact of decreased inflation gain being netted off the revenue requirement (increases revenue requirement) of $3.4 million.

Table 35 Summary of 2020–21 indicative price movements ($/ML)

Price zone	*GAWB 2015–16 price escalated to 2020–21*	*GAWB proposed price 2020–21*	*QCA indicative price 2020–21*	*QCA 2020–21 vs GAWB escalated 2020–21*	*QCA 2020–21 vs GAWB 2020–21*
Awoonga	421.68	397.91	401.27	(5%)	1%
Awoonga to Toolooa	738.88	774.91	761.65	3%	(2%)
Toolooa to Fitzsimmons	793.10	847.10	832.19	5%	(2%)
Boyne Raw	1,276.25	1,008.77	998.07	(22%)	(1%)
Central Raw	912.17	929.57	917.47	1%	(1%)
Fitzsimmons to Gladstone	806.15	869.48	853.87	6%	(2%)
QAL	866.64	949.28	933.14	8%	(2%)
Fishermans Landing Raw	1,407.49	1,384.85	1,363.18	(3%)	(2%)
Gladstone WTP	1,510.04	1,713.57	1,646.61	9%	(4%)
Gladstone City	1,634.63	1,846.97	1,778.24	9%	(4%)
Gladstone WTP to South Gladstone	1,663.57	1,896.91	1,829.16	10%	(4%)
Calliope	2,174.27	2,477.38	2,321.30	7%	(6%)
South Gladstone to Toolooa	1,900.69	2,269.98	2,188.00	15%	(4%)
Boyne Potable	2,219.11	2,599.99	2,515.70	13%	(3%)
Benaraby	3,147.59	3,597.11	3,460.10	10%	(4%)
Yarwun WTP	2,224.48	2,716.05	2,602.02	17%	(4%)
North Industrial Potable	2,638.70	3,318.84	3,222.09	22%	(3%)
Fishermans Landing Potable	8,404.68	6,194.25	5,989.54	(29%)	(3%)
Boat Creek to East End	8,787.29	10,323.50	9,825.31	12%	(5%)

Sources: GAWB, Building Block Model, Submission, September 2019; QCA calculations.

Finding A10.52

The QCA has calculated indicative prices for GAWB in accordance with Table 35.

Annual indexation of prices

In the 2015 review, we recommended that a CPI measure based on the 'Brisbane All Groups' classification should be used for the purpose of annual price adjustments within the price period. We support the continued use of the same CPI measure for annual price adjustments for the 2020–25 regulatory period.

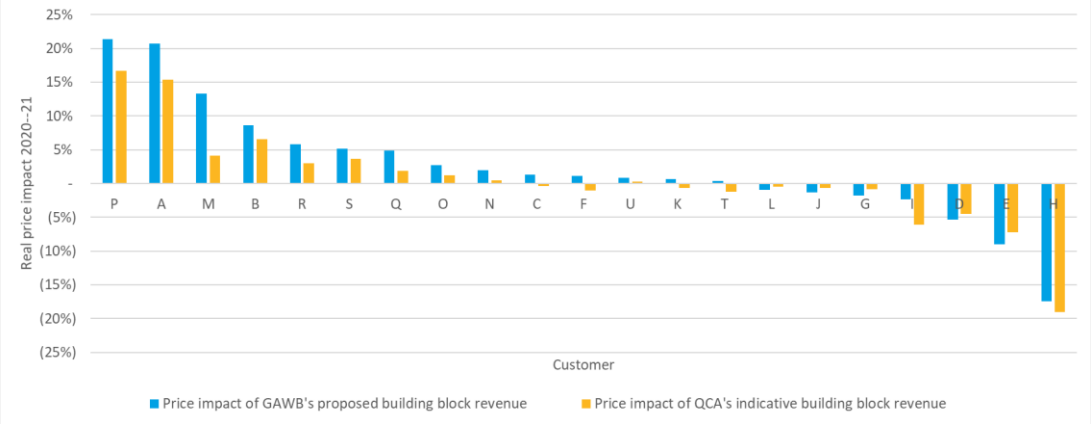
Finding A10.53

The QCA recommends that GAWB's prices from 2020–25 are adjusted annually for CPI based on the 'Brisbane All Groups' classification.

10.5 Impact on customers

Figure 19 shows the customer price impacts of adopting our indicative revenue requirement relative to GAWB's proposal for 2020–21. Our indicative revenue requirement predominately results in reductions to customers' price impacts, reflecting the fact that it is $10 million less than GAWB's over the 2020–25 regulatory period or $1.4 million for 2020–21. However, five customers have an increased price impact. The variation in impacts across customers is driven by how our identified changes to forecast inflation, and operating and capital expenditure affect each pricing zone. As set out in Chapter 9, an individual customer's prices are a product of which zones of the GAWB infrastructure network are involved in the delivery of water to that particular customer.

Figure 19 Customer price impact of QCA indicative prices relative to GAWB's proposal (2020–21)



Note: The impact of capitalising the under-recovery associated with the Awoonga Dam (see Part B of this report) augmentation is not included in ***Error! Reference source not found.****.*

Source: GAWB, Building Block Model, Submission, September 2019.

Price changes in each of GAWB's pricing zones are driven by the following impacts in 2020–25, relative to 2015–20:

- capital and operating expenditure for each zone
- the WACC applied to GAWB's regulatory asset base
- pricing zone demands
- the change in the pricing smoothing approach (i.e. 5 years instead of 20 years).

It has been difficult to determine the magnitude of these impacts on each pricing zone (over 2020–25), due to insufficient data being made available by GAWB. We will endeavour to work with GAWB after the draft report to determine more precisely the drivers of price zone changes, for inclusion in our final report.

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
CEPA	Cambridge Economic Policy Associates
CIP	Curtis Island Pipeline
Council	Gladstone Regional Council
CPI	Consumer Price Index
CPM	Callide Power Management
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
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 Plans
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
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
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
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 36 Submissions

Stakeholder	*Sub. no.*	*Type of submission*	*Date*
Callide Power Management	11	Submission on GAWB's proposal	28 October 2019
	17	Submission in response to under-recovery	29 November 2019
CS Energy	14	Submission on GAWB's proposal	25 October 2019
	18	Submission in response to under-recovery	29 November 2019
Conoco Phillips (APLNG)	16	Submission in response to under-recovery	29 November 2019
Gladstone Regional Council	15	Submission on GAWB's proposal	8 November 2019
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
	8	GAWB's, Part B—confidential version	30 September 2019
	12	Submission in response to WICET's initial submission	28 October 2019
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
Wiggins Island Coal Export Terminal (WICET)	9	Initial submission	30 September 2019
	13	Submission on GAWB's proposal	28 October 2019

REFERENCES

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