Queensland Competition Authority

Final Report

Seqwater Bulk Water Price Review 2018–21

March 2018

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Contents

EXECUTIVE SUMMARY

The Queensland Government (the Government) directed the Queensland Competition Authority to recommend prices for the supply of bulk water by Seqwater for the period 1 July 2018 to 30 June 2021.

These are the prices charged by Seqwater to the five water retailers operating in the following 11 council areas in south east Queensland: Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Noosa, Redland City, Scenic Rim, Somerset and Sunshine Coast. Retailers pass on bulk water prices to households and businesses as a separate charge on water bills.

This report sets out our final recommendations on Seqwater's bulk water prices and explains how we arrived at these recommendations.

About our review

The starting point for the existing regulatory framework for bulk water pricing was in 2008 when, in response to low water availability, the Government took over responsibility for bulk water supply from local councils in south east Queensland. To reduce the price impact of significant investments made in water infrastructure in response to low water availability, bulk water price increases were to be phased in over time through a bulk water price path. Starting in 2008, prices were to initially recover less than the cost of supplying bulk water, with the accumulated under-recovery (known as the 'price path debt') to be repaid by 2028.

We have conducted this review under a referral issued by the Government under section 23 of the *Queensland Competition Authority Act 1997*. Under the referral, we have been asked to recommend prices that provide Seqwater with sufficient revenue to recover the prudent and efficient costs of providing bulk water supply services and to repay 'price path debt' by 2028.

All prices and costs presented in this report are in nominal terms (unless otherwise stated).

Assessment of prudent and efficient costs

After assessing Seqwater's proposed costs for the 2018 to 2028 period for prudency and efficiency, we have:

- reduced Seqwater's proposed operating expenditure from $2,765 million[1] to $2,626 million (i.e. by 5 per cent)
- reduced Seqwater's proposed capital expenditure from $1,839 million[2] to $1,480 million (i.e. by 20 per cent)
- accepted the revised rate of return Seqwater proposed to earn on its investments[3], but updated it to reflect an increase in the risk-free rate since Seqwater made its submission. This results in a weighted average cost of capital of 6.33 per cent in 2018–19.
- adjusted other cost components, as set out in this report.

[1] This figure has been adjusted to remove revenue and costs not attributable to bulk water supply and does not include Seqwater's proposed costs to remobilise part of the recycled water scheme.
[2] Capital expenditure is presented on an as-commissioned basis. The figure presented here is higher than the draft report because it reflects Seqwater's revised cost proposals for three major projects.
[3] In response to the draft report, Seqwater revised its proposed rate of return to reflect the QCA's best estimate of the market risk premium.

Overall, we consider that Seqwater should be allowed to recover $8,380 million in costs between 2018 and 2028, which is $270 million higher than the indicative allowance in our draft report ($8,110 million). The key driver of the increase is the adoption of a higher rate of return. Higher operating and capital expenditure allowances also contribute to the increase, but to a lesser extent.

Repayment of price path debt

Under the terms of the referral, we have been asked to recommend two pricing options, both of which are to result in Seqwater fully repaying price path debt by 2028. Price path debt is expected to peak at $2.5 billion in 2018-19 and to reduce in each subsequent year until it is fully repaid in 2028.

The two pricing options differ slightly in their price path debt repayment profiles, with pricing option 1 resulting in higher repayments in the early years and lower repayments in the later years, relative to option 2.

Recommended prices

Under the referral, the pricing options should have the following characteristics:

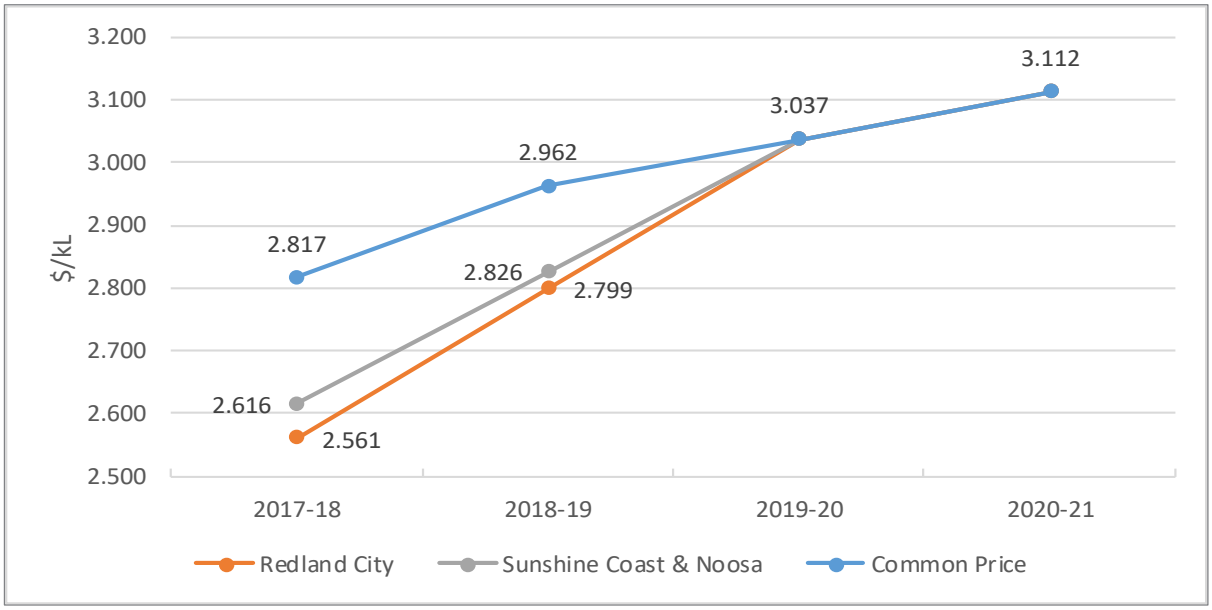
- Pricing option 1— the common price (for all council areas, except Redland City, Sunshine Coast and Noosa) is to be reset in 2018–19, followed by annual increases by inflation. Transitional price paths for Redland City, Sunshine Coast and Noosa council areas are to result in the common price being reached by 2019–20.
- Pricing option 2—price increases are to be smoothed for all council areas (including Redland City, Sunshine Coast and Noosa) over the three-year regulatory period.

We have been asked to recommend prices that are fully volumetric. A volumetric price refers to a price consumers pay for each kilolitre (kL) of water consumed.

Pricing option 1

Under pricing option 1, we recommend a common price of $2.962 in 2018–19, which is an increase of 5.16 per cent on the 2017–18 common price. This is followed by increases of 2.50 per cent per year in 2019–20 and 2020–21. Customers in Redland City, Noosa and Sunshine Coast would face larger increases and reach the common price in 2019–20, but they do currently pay lower prices than customers in other council areas.

Figure 1 Pricing option 1 ($/kL)

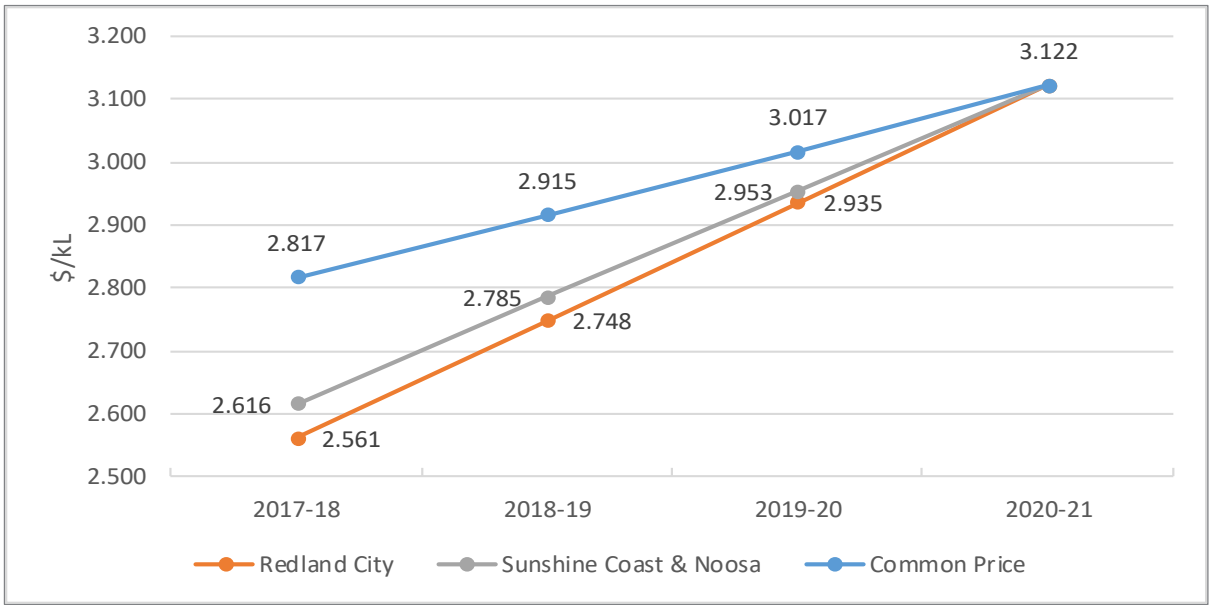


Pricing option 2

Under pricing option 2, we recommend a common price of $2.915 in 2018–19, which is an increase of 3.49 per cent on the 2017–18 common price. This is followed by increases of 3.49 per cent per year in 2019–20 and 2020–21. The common price under this pricing option is slightly lower in 2018–19 and 2019–20 than the common price under option 1.

In 2018–19 and 2019–20, customers in Redland City, Noosa and Sunshine Coast would face smaller increases than under option 1 and reach the common price in 2020–21 instead of 2019–20.

Figure 2 Pricing option 2 ($/kL)



Recommended prices—option 1 and 2

Our recommended prices under each pricing option are presented in Table 1. Prices are higher than the indicative prices in our draft report because of an increase in allowed costs, primarily due to an increase in the rate of return. The increase in allowed costs has been partially offset by a reduction in price path debt, which means price path debt repayments are slightly lower.

Table 1 Recommended prices

Council area	*Year*	*Pricing option 1*		*Pricing option 2*	
		$/kL	*% change*	*$/kL*	*% change*
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	2017–18 actual	2.817		2.817	
	2018–19	2.962	5.16%	2.915	3.49%
	2019–20	3.037	2.50%	3.017	3.49%
	2020–21	3.112	2.50%	3.122	3.49%
Sunshine Coast and Noosa	2017–18 actual	2.616		2.616	
	2018–19	2.826	8.04%	2.785	6.46%
	2019–20	3.037	7.44%	2.953	6.06%
	2020–21	3.112	2.50%	3.122	5.72%

Council area	*Year*	*Pricing option 1*		*Pricing option 2*	
		$/kL	*% change*	*$/kL*	*% change*
Redland City	2017–18 actual	2.561		2.561	
	2018–19	2.799	9.29%	2.748	7.31%
	2019–20	3.037	8.50%	2.935	6.81%
	2020–21	3.112	2.50%	3.122	6.38%

Indicative impact on water bills

Based on our recommended prices, the potential impact on the bulk water component of water bills under each pricing option is illustrated in Table 2. Calculations are based on average household consumption across south east Queensland of 160 kL per year.

As prices are wholly volumetric, the percentage increases in bills are the same as the percentage increases in prices.

Table 2 Indicative bulk water component of water bills for an average household

Council area	*Year*	*Pricing option 1*		*Pricing option 2*	
		$/year	*$ change*	*Bill amount*	*$ change*
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	2017–18 actual	450.72		450.72	
	2018–19	473.92	23.20	466.40	15.68
	2019–20	485.92	12.00	482.72	16.32
	2020–21	497.92	12.00	499.52	16.80
Sunshine Coast and Noosa	2017–18 actual	418.56		418.56	
	2018–19	452.16	33.60	445.60	27.04
	2019–20	485.92	33.76	472.48	26.88
	2020–21	497.92	12.00	499.52	27.04
Redland City	2017–18 actual	409.76		409.76	
	2018–19	447.84	38.08	439.68	29.92
	2019–20	485.92	38.08	469.60	29.92
	2020–21	497.92	12.00	499.52	29.92

Final recommendations

A summary of our recommendations is provided in Table 3.

Table 3 Summary of the QCA's recommendations

Number	*Recommendation*	*Chapter*
1	Bulk water prices for each council area should be set according to pricing option 1 or pricing option 2, as set out in Table 60 in Chapter 9.	9
2	The definition of feedwater quality events that we recommended in the 2015 review should not be changed.	10
3	Where Seqwater can demonstrate a change in prudent and efficient costs as a result of taking drought response measures in accordance with the Water Security Program, Seqwater should be able to recover these drought response costs as follows: (a) Where the impact is material, drought response costs should be recouped through a price adjustment during the three-year regulatory period. (b) Where the impact is not material, drought response costs should be recouped through an end-of-period adjustment.	10
4	The QCA should have discretion to undertake an ex post assessment of the prudency and efficiency of capex in future reviews, regardless of whether actual capex is higher or lower than allowed capex.	10

1 INTRODUCTION

The Queensland Government (the Government) has asked the Queensland Competition Authority (QCA) to recommend bulk water prices to apply in south east Queensland (SEQ) for the period 1 July 2018 to 30 June 2021. A referral notice for the review (the referral) was issued to the QCA under section 23 of the Queensland Competition Authority Act 1997 (the QCA Act).[4]

Bulk water prices are charged by Seqwater to the five water retailers operating in the following 11 council areas in SEQ: Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Noosa, Redland City, Scenic Rim, Somerset and Sunshine Coast. Retailers pass on bulk water prices to households and businesses as a separate charge on water bills.[5]

1.1 Background

The starting point for the existing regulatory framework for bulk water pricing was in 2008 when, in response to low water availability, the Government took over responsibility for bulk water supply from local councils in SEQ.

To reduce the price impact of significant investments made in water infrastructure in response to low water availability, bulk water price increases were to be phased in over time through a bulk water price path. Starting in 2008, prices were to initially recover less than the cost of supplying bulk water, with the accumulated under-recovery (known as the 'price path debt') to be repaid by 2028.

In parallel with these pricing arrangements, the Government undertook institutional reform of the SEQ bulk water supply sector by creating four government-owned water businesses:

- Seqwater (which owned and operated bulk water supply assets)
- WaterSecure (which owned and operated the manufactured water assets)
- LinkWater (which owned and operated bulk water transportation assets)
- the SEQ Water Grid Manager (which purchased bulk water supply services from the above entities and held contracts to provide water to retailers and power stations).

Following mergers in July 2011 (when WaterSecure merged with Seqwater) and January 2013 (when LinkWater and the SEQ Water Grid Manager merged with Seqwater), Seqwater became the bulk water supplier for SEQ.

While the Government determines the bulk water prices that Seqwater charges, it can ask the QCA to recommend prices. We completed our first review of Seqwater's bulk water prices in 2015 for the period 1 July 2015 to 30 June 2018 (the 2015 review).[6] The Government set bulk water prices for that three-year period that were consistent with our recommendations.

[4] The referral is provided in Appendix A.

[5] Section 99AV(4) of the *South-East Queensland Water (Distribution and Retail) Restructuring Act 2009* requires the bulk water component to be included in the water bill under a separate heading called 'State bulk water price'.

[6] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015.

Before the 2015 review, we were asked to recommend grid service charges (GSCs) for 2011–12 and 2012–13. These were the charges paid by the SEQ Water Grid Manager to the (then) grid service providers of Seqwater and LinkWater for the supply of bulk water services.

1.2 Overview of Seqwater's services

Seqwater owns and operates a network of water supply assets, including dams, weirs, water treatment plants, the Gold Coast Desalination Plant (GCDP)[7] and the Western Corridor Recycled Water Scheme (WCRWS)[8]. Seqwater's network of bulk water supply assets stretches from Noosa on the Sunshine Coast in the north to Tugun on the Gold Coast in the south, and from North Stradbroke Island in the east to Gatton in the west. Seqwater's pipeline network enables drinking water to be transported around the region.

1.2.1 Bulk water supply services

Seqwater is a registered drinking water service provider under the *Water Supply (Safety and Reliability) Act 2008* and is responsible for supplying treated bulk water to local council areas in SEQ. The water is supplied to bulk supply points and then delivered to businesses and households by the retailer servicing each area:

- Queensland Urban Utilities (QUU) supplies the Brisbane, Ipswich, Lockyer Valley, Scenic Rim, and Somerset council areas.
- Unitywater supplies the Moreton Bay, Sunshine Coast and Noosa council areas.
- Logan City Council, Redland City Council and Gold Coast City Council supply their respective council areas.

1.2.2 Other services

Seqwater provides bulk water supply services to Stanwell Corporation (for its power stations), Toowoomba Regional Council, irrigation customers and water entitlement holders (such as Gympie Regional Council). Prices for the services provided to these customers are not the subject of this review.

In addition, Seqwater provides flood mitigation services at Wivenhoe, Somerset and North Pine dams and access to recreation facilities at various dams.[9] In accordance with the referral, we have included the costs of providing these services in our recommended bulk water prices.[10]

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[7] The GCDP is currently operating in 'hot standby' mode. Under this mode, Seqwater advised that it can respond as a contingent supply and provide 33 per cent capacity within 24 hours and 100 per cent capacity within 72 hours (Seqwater, sub. 2, p. 47).

[8] The WCRWS is currently in 'care and maintenance' or 'cold standby' mode. Seqwater advised that the WCRWS is maintained so that it can be made operational and ready to deliver recycled water in two years (Seqwater, sub. 2, p. 48). Seqwater advised that it plans to soon remobilise a train at the Luggage Point Advanced Water Treatment Plant (AWTP) to reduce key risks to the restart of the full WCRWS (Seqwater, sub. 13, p. 54) and has proposed to recover the costs associated with this (Chapter 4).

[9] Seqwater advised that more than 2.6 million people visited its recreation sites in 2016–17 and that this access requires it to maintain public facilities such as car parks, picnic grounds and tables, barbecues, lavatories and boat ramps (Seqwater, sub. 1, pp. 16–17; Seqwater, sub. 2, p. 4).

[10] We note Unitywater's concern about the equity of including such costs in bulk water prices (Unitywater, sub. 11, p. 2); however, we recommend prices in accordance with the terms of the referral.

1.2.3 Seqwater's legislative and regulatory obligations

Seqwater must comply with a range of obligations when providing water services, as set out in a number of legislative and regulatory instruments.[11] More information about Seqwater's key obligations is provided in Appendix C.

1.3 The review process

The referral for this review was issued by the Government on 25 May 2017 and published in the Government Gazette on 2 June 2017.

Our review and public consultation process included:

- publishing a notice of investigation on 24 June 2017[12] and inviting initial submissions from stakeholders and interested parties, due by 15 September 2017; and releasing a guidance note with the notice of investigation to provide information about our review process and assist stakeholders with their submissions
- publishing Seqwater's submission on our website for comment in early August 2017
- engaging two external consultants to provide advice to assist with our review:
  - KPMG was engaged to provide advice on the prudency and efficiency of Seqwater's proposed operating and capital expenditure.
  - Incenta Economic Consulting (Incenta) was engaged to provide advice on firm-specific parameters of the weighted average cost of capital (WACC).
- preparing a draft report with our draft recommendations after considering submissions from Seqwater and other stakeholders, additional information obtained from Seqwater through a request for information (RFI) process, and advice from our consultants
- providing our draft report to the Government on 30 November 2017, publishing the draft report on our website on 7 December 2017 and inviting submissions, due by 31 January 2018
- preparing a final report with our final recommendations after considering submissions received on our draft report, additional information obtained from Seqwater, and further advice from KPMG.

The notice of investigation, guidance note, draft report, stakeholder submissions and consultant reports are available on our website, www.qca.org.au.

[11] Seqwater, sub. 1, p. 16.
[12] The notice of investigation was published in The Courier Mail and The Australian newspapers and on our website.

2 APPROACH TO THE REVIEW

In this chapter, we provide an overview of the principles guiding our review and our approach to calculating bulk water prices.

2.1 Guiding principles for this review

In conducting this review, we have considered the matters in section 26 of the QCA Act, inclusive of the terms of the referral[13]. These matters 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
- non-economic factors, including social welfare and equity considerations, the availability of goods and services to consumers and the social impact of pricing practices.

Regulatory tools are limited in their ability to achieve multiple and sometimes conflicting objectives. In this review, we have given priority to efficiency factors. Prices that reflect efficient costs promote efficient resource allocation, including efficient investment, and protect consumers from abuses of monopoly power. Sometimes the factors are not in conflict, for instance, prices that reflect efficient costs can be considered fair, because a higher or lower price would imply that the consumer is paying a price that is not his or her fair share.

We consider that non-economic factors are generally best addressed through government policy. In the context of this review, government policy addresses non-economic factors as reflected in, for instance, the terms of the referral, the legislative and regulatory obligations that apply to Seqwater, and targeted subsidies to customers to address affordability concerns.[14]

2.2 Our approach to calculating bulk water prices

Under the terms of the referral, we have been asked to recommend prices that provide Seqwater with sufficient revenue to recover the prudent and efficient costs of providing bulk water supply services and repay price path debt (with interest) by 2027–28. We have been asked to recommend prices for a three-year period from 1 July 2018 to 30 June 2021 and to recommend prices on the basis that prices will increase by inflation in each subsequent year until 2027–28.

Consistent with the guiding principles for this review, our approach has been to recommend prices that reflect the terms of the referral and our assessment of the prudent and efficient costs that Seqwater requires to provide bulk water supply services, and meet its legislative and regulatory obligations.

In conducting our review, we have carefully considered the matters raised in submissions.[15]

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[13] We note that section 26(3) states that sections 26(1) and (2) do not limit the matters to which the QCA may have regard in conducting an investigation. This would include the Minister's stated matters for consideration under section 24(1)(b).

[14] Queensland Government, 'Smart savings, Concessions and rebates', Energy and water category, https://campaigns.premiers.qld.gov.au/smart-savings/#category=Energy-and-water.

[15] Submissions are listed in Appendix B.

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

2.2.1 Building block costs

Consistent with the 2015 review, we used a building block approach to calculate Seqwater's bulk water costs for each year from 1 July 2018 to 30 June 2028. This approach involves developing forecasts that reflect our assessment of the prudent and efficient costs of the following cost components:

- operating expenditure (opex)—the ongoing costs of running the business and maintaining assets (Chapter 4)[16]
- a return on assets—an appropriate return on investments in assets to provide bulk water services. It reflects our assessment of capital expenditure (capex) (Chapter 5), the value of Seqwater's regulatory asset base (RAB) (Chapter 6), and an appropriate rate of return (Chapter 7).
- a return of assets (depreciation)—the cost of capital investments over the useful life of the assets (Chapter 6)
- a return on working capital—the cost of holding capital to allow Seqwater to manage the timing difference between the outflow of cash associated with current liabilities and the receipt of cash associated with current assets (Chapter 7)
- tax—consistent with our post-tax nominal approach to WACC, we include an allowance for tax as part of total costs (Chapter 7).

These are the costs of providing bulk water services, which we refer to in this report as *building block costs*.

2.2.2 Repayment of price path debt (including interest)

Under the referral, prices are to be set so that price path debt (including interest) is fully repaid by 2027–28, with interest on price path debt to be calculated using Seqwater's cost of debt, as advised by Queensland Treasury Corporation (QTC).

In accordance with the referral, we have presented two pricing options. The two options result in two slightly different debt repayment profiles, but both options result in the full repayment of price path debt in 2028 (Chapter 8).

For the purposes of this report, we refer to revenue from bulk water prices that exceeds building block costs as *price path debt repayment*.

2.2.3 Recommended prices

The sum of building block costs and price path debt repayment is the revenue to be recovered through bulk water prices each year. We refer to this as *total revenue*.

Under the referral, prices we recommend should be fully volumetric (i.e. prices should apply to each kilolitre (kL) of water used). This requires a forecast of water demand.[17] We used

[16] We have adjusted opex to remove the costs of supplying declared irrigation services and revenue Seqwater receives from sources other than bulk water prices.

[17] Demand forecasts are also relevant to the assessment of forecast capital and operating expenditure.

Seqwater's demand forecast after confirming it was consistent with the terms of the referral (Chapter 3).

In accordance with the terms of the referral, we have presented two pricing options:

- Pricing option 1—a pricing option that results in:
  - a common price (for all council areas, except Redland City, Sunshine Coast and Noosa) that is reset in 2018–19 and then increases by inflation
  - transitional price paths for Redland City, Sunshine Coast and Noosa council areas that reach the common price by 2019–20
- Pricing option 2—an alternative pricing option that smooths any price increases for all council areas (including Redland City, Sunshine Coast and Noosa) over the upcoming regulatory period.

Recommended prices under each option are provided in Chapter 9, along with indicative bill impacts.

3 DEMAND

A forecast of water demand is used to assess Seqwater's expenditure forecasts (see Chapters 4 and 5) and to calculate bulk water prices (see Chapter 9). The referral asks the QCA to accept Seqwater's demand forecast, provided it is within the range published in the SEQ Water Security Program (WSP).[18]

3.1 Seqwater's proposal

The WSP contains three demand forecasts (low, medium and high), which combine forecasts of per capita residential and non-residential consumption with forecasts of the service-connected population.[19] Seqwater uses the medium demand forecast for planning purposes, while the low and high forecasts are used for scenario analysis.[20]

For the purposes of this review, Seqwater proposed a hybrid demand forecast (Figure 3), which starts with the low WSP demand forecast and transitions to the medium WSP demand forecast, as follows:

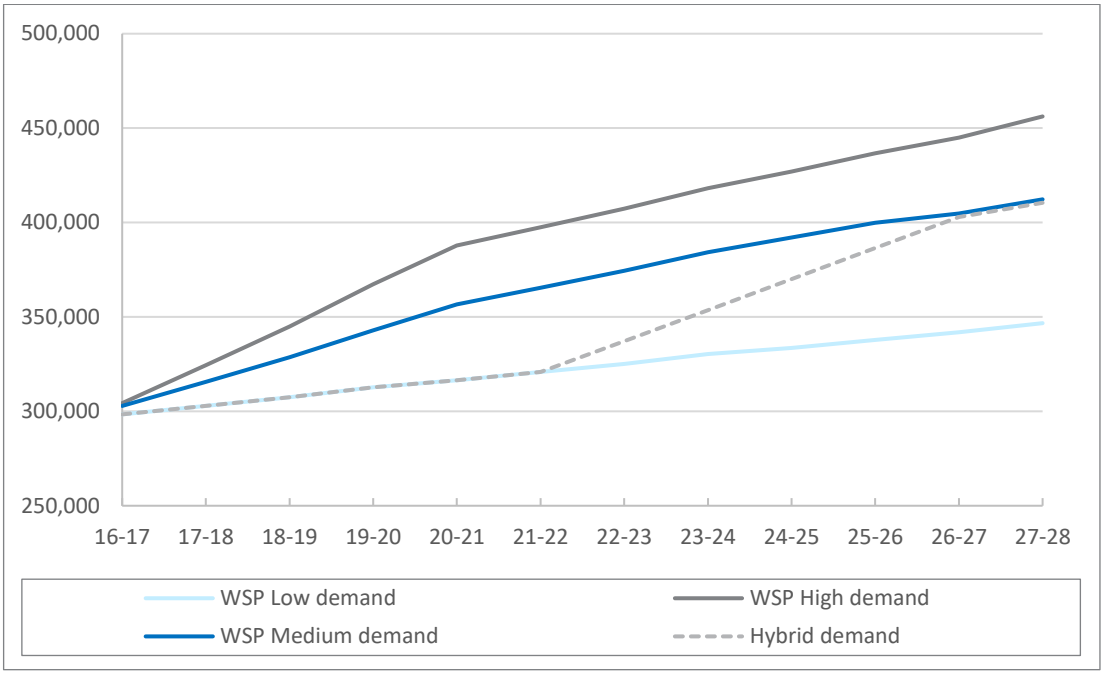
- From 2018–19 to 2021–22, demand grows in line with the low WSP demand forecast.
- From 2022–23 to 2026–27, demand transitions to the medium WSP demand forecast.
- For 2027–28, demand continues on the medium WSP demand forecast.

Under the hybrid demand forecast, Seqwater is forecasting total demand to increase from 307,430 megalitres (ML) in 2018–19 to 410,436 ML in 2027–28. This reflects the total amount of bulk water expected to be produced by Seqwater. Although Seqwater supplies water to bulk supply points (which is the point where the bulk supply network connects to the distribution network) and charges for water delivered to these points, Seqwater advised that a small amount of water is lost as it moves through the bulk supply network. Seqwater did not make a downward adjustment to account for losses, because it considered the amount (at around 0.0015 per cent of total water produced in 2016–17) was not material.[21]

Seqwater has not included demand from power stations or Toowoomba Regional Council in its hybrid demand forecast due to uncertainty about the volume of bulk water to be supplied.[22] We note that demand from power stations and Toowoomba Regional Council is not required to calculate bulk water prices.

[18] Seqwater, *Water for life: South East Queensland's Water Security Program 2016–46*, March 2017.
[19] Service-connected population refers to the estimated population in SEQ connected to the retail service supply network.
[20] Seqwater, *Water for life: South East Queensland's Water Security Program 2016–46*, March 2017, p. 43.
[21] Seqwater response to QCA RFI 3.
[22] Seqwater response to QCA RFI 3.

Figure 3 Seqwater's demand forecasts (ML per year)



Source: *Seqwater response to QCA RFI 12.*

Under Seqwater's hybrid demand forecast, total demand is lower than the forecast used in the 2015 review. For instance, in the 2015 review, residential per capita demand was forecast to increase to 185 litres per person per day (LPD) in 2018–19. However, Seqwater advised that demand is currently around 169 LPD. Under Seqwater's hybrid demand forecast, residential demand remains at 169 LPD until 2021–22 and then transitions over a five-year period to 185 LPD in 2026–27.[23]

Unitywater raised concerns about using a single regional average LPD, noting that sub-regional differences should be taken into account when assessing the supply–demand balance.[24] Seqwater advised that the WSP demand forecasts (for both residential and non-residential demand) were developed from a base year of actual consumption and service-connected population in each council area.[25] As a result, LPD is a SEQ weighted average of council-specific LPD consumption rates.

Council of the City of Gold Coast raised concerns about applying a forecast of 169 LPD that is lower than the estimated usage for 2016–17 of 173 LPD and requested that we undertake a detailed review of Seqwater's demand forecast.[26] Seqwater advised that demand in 2016–17 was affected by very dry conditions and was therefore much higher than in previous years.[27] We also note that, under the terms of the referral, the QCA has been asked to confirm that Seqwater's proposed demand forecasts are within the range published in the WSP, rather than to undertake an independent assessment.

[23] Seqwater, sub. 1, p. 5.
[24] Unitywater, sub. 11, pp. 2–3.
[25] Seqwater response to QCA RFI 3.
[26] Council of the City of Gold Coast, sub. 12, p. 1.
[27] Seqwater, sub. 1, p. 5.

The Queensland Council of Social Service (QCOSS) stated that it did not 'believe encouraging residents to use more water resources is an appropriate response to repay price path debt'.[28] An individual stakeholder considered that prices should be reduced when there is excess supply to increase demand.[29] The terms of the referral, however, ask the QCA to recommend prices that recover Seqwater's prudent and efficient costs and repay price path debt by 2028.

3.2 QCA analysis and conclusion

In accordance with the terms of the referral, we accept Seqwater's proposed demand forecast (Table 4), which we have confirmed is within the range published in the WSP.

Demand forecasts should be as accurate as possible, particularly given that prices are fully volumetric. If demand forecasts are significantly different from actual demand, then Seqwater will under- or over-recover its required revenue over the next regulatory period. An under-recovery of revenue will put upward pressure on prices beyond the next regulatory period. It is also important that demand forecasts are reasonable, so that the prudent and efficient level of costs can be assessed.

In future reviews, consideration should be given to asking the QCA to assess whether Seqwater's demand forecast is reasonable for pricing purposes.

[28] QCOSS, sub. 10, p. 2.
[29] Mr Derbyshire, sub. 7, p. 1.

Table 4 Seqwater's forecast annual water demand by council area (ML)

Year	*Brisbane*	*Gold Coast*	*Ipswich*	*Lockyer Valley*	*Logan*	*Moreton Bay*	*Scenic Rim*	*Somerset*	*Redland City*	*Sunshine Coast*	*Noosa*	*Total*
2018–19	118,589	60,418	20,910	2,922	21,831	31,785	1,986	1,870	14,364	27,365	5,390	**307,430**
2019–20	119,645	61,549	21,896	3,028	22,262	32,284	2,100	1,936	14,544	28,119	5,425	**312,788**
2020–21	119,971	62,328	22,810	3,120	22,571	32,602	2,205	1,995	14,640	28,715	5,430	**316,386**
2021–22	120,578	63,247	23,829	3,222	22,948	32,987	2,319	2,061	14,769	29,378	5,450	**320,787**
2022–23	124,543	66,549	26,576	3,518	24,273	34,493	2,620	2,247	15,366	31,351	5,672	**337,209**
2023–24	129,413	69,837	28,700	3,760	25,530	36,077	2,846	2,400	16,033	33,117	5,918	**353,630**
2024–25	134,150	73,138	30,920	4,008	26,793	37,648	3,085	2,558	16,692	34,898	6,161	**370,051**
2025–26	138,810	76,456	33,195	4,256	28,070	39,235	3,316	2,717	17,345	36,675	6,398	**386,473**
2026–27	136,314	83,163	36,216	4,697	31,587	38,954	4,085	2,713	17,849	40,287	7,029	**402,894**
2027–28	137,292	84,755	38,034	4,858	32,361	39,615	4,282	2,799	18,080	41,249	7,111	**410,436**

Note: *Totals may not add due to rounding.*

Source: *Seqwater pricing model 2017.*

4 OPERATING EXPENDITURE

Operating expenditure (opex) is the ongoing cost of providing bulk water supply services and includes corporate costs and costs associated with the operation and maintenance of water storage, treatment and transport assets. It forms a component of Seqwater's building block costs.

The referral asks us to recommend prices that reflect prudent and efficient opex (including costs associated with catchment management, recreational management and flood mitigation) and, in doing so, to focus on cost areas that are material to price changes.

This chapter sets out our assessment of the prudency and efficiency of Seqwater's proposed opex for the period 1 July 2018 to 30 June 2028, including our adjustments to remove costs and revenue not attributable to bulk water supply.

We engaged KPMG to provide advice to assist with our assessment.

4.1 Seqwater's proposed operating expenditure

Seqwater proposed total opex of $3 billion over the period 2018–28 (Table 5).[30] The category that makes up the majority of Seqwater's proposed opex is employee expenses, followed by contractors (service delivery) and other materials and services.

Table 5 Seqwater's proposed opex by category ($m, nominal)

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Employee expenses	94.0	96.8	99.7	799.5	1,090.1
Contract labour	11.0	11.3	11.6	93.3	127.3
Contractors (service delivery)	57.3	58.9	60.5	477.6	654.3
Chemicals	15.4	16.0	16.6	148.1	196.2
Electricity	26.8	28.5	30.8	308.4	394.5
Other materials and services	41.9	43.1	44.4	351.8	481.2
Base year costs plus escalation	**246.4**	**254.7**	**263.7**	**2,178.7**	**2,943.6**
Step changes and one-off costs	2.6	3.7	5.4	34.9	46.7
Continuing efficiency	–	(0.3)	(0.6)	(13.9)	(14.8)
Total opex	**249.1**	**258.1**	**268.6**	**2,199.8**	**2,975.5**

Notes: *Inclusive of non–bulk water costs. Totals may not add due to rounding.*

Source: *Seqwater pricing model 2017.*

Seqwater stated that it has applied a base-step-trend approach to forecast opex.[31] For fixed opex, this involved:

- establishing a baseline of efficient opex for 2018–19 through a budgeting process

[30] Seqwater, sub. 2. This includes non–bulk water costs such as irrigation costs.
[31] Seqwater, sub. 2, p. 17.

- making annual adjustments to the 2018–19 base year by subtracting one-off costs and adding new ongoing costs from 2019–20
- escalating input costs using appropriate measures of input cost inflation
- applying a continuing efficiency target (i.e. annual cost savings that Seqwater expects to achieve by operating more efficiently).

For variable opex, this involved:

- establishing a baseline of efficient variable costs per ML of production for 2018–19
- escalating annual production volumes using demand forecasts
- multiplying estimates of variable costs per ML of production by production volumes
- escalating variable costs using appropriate measures of input cost inflation
- applying a continuing efficiency target.

Seqwater then offset non–bulk water related costs and revenues from total opex.

4.1.1 2018–19 base year

Fixed opex

Seqwater's fixed opex forms the largest part (around 80 per cent) of its annual opex and includes:

- operations and maintenance activities
- the fixed component of electricity and chemical costs
- minor equipment purchases
- costs associated with engaging specialist consultants and contractors
- costs associated with implementing strategic initiatives
- corporate costs
- fixed contract fees associated with the operation and maintenance of the Gold Coast Desalination Plant (GCDP) and the Western Corridor Recycled Water Scheme (WCRWS). [32]

Seqwater's estimate of the base year fixed opex for 2018–19 is $210.4 million.[33] This is 5 per cent higher than actual fixed opex for 2016–17 (Table 6).

Table 6 Actual fixed opex versus base year fixed opex ($m, nominal)

	2015–16	***2016–17***	***2017–18[a]***	***2018–19[a]***
Fixed opex[b]	198.5	200.3	211.7	210.4[c]
Year-on-year change (per cent)		0.9	5.7	(0.6)

a *Budget figure.* ***b*** *Includes non–bulk water costs.* ***c*** *Includes adjustments for new items as shown in Table 10.*
Sources: *Seqwater, sub. 2, p. 20; QCA calculations.*

Seqwater's estimated base year fixed opex is 7 per cent lower than the fixed opex for 2018–19 that the QCA recommended in the 2015 review (Table 7).

[32] Seqwater, sub. 2, p. 19.
[33] Seqwater, sub. 2, p. 20.

Table 7 Fixed opex, 2015–19 ($m, nominal)

	2015–16	*2016–17*	*2017–18*	*2018–19*	*Total*
QCA recommendation from the 2015 review	217.5	224.3	223.9	226.6	892.3
Seqwater's actual fixed opex[a]	198.5	200.3	211.7	210.4	820.9
Difference (per cent)	(8.7)	(10.7)	(5.4)	(7.1)	(8.0)

a *2017–18 and 2018–19 figures are budget figures.*

Sources: *QCA, SEQ bulk water price path 2015–2018, final report, March 2015; Seqwater, sub. 2, p. 20; QCA calculations.*

Variable opex

Seqwater's variable opex relates mainly to electricity, chemicals and the disposal of sludge (wastewater products from its treatment plants). Seqwater's estimate of the base year variable opex for 2018–19 is $38.6 million.[34]

In developing its estimate of variable opex for the base year, Seqwater noted that its actual costs for 2015–18 were lower than the variable opex costs recommended by the QCA in the 2015 review (Table 8).

Table 8 Variable opex, 2015–19 ($m, nominal)

	2015–16	*2016–17*	*2017–18*	*2018–19*	*Total*
QCA recommendation from the 2015 review	34.2	36.2	38.4	40.9	149.7
Seqwater's actual variable opex[a]	28.8	32.9	35.3	38.6	135.6
Difference (per cent)	(15.7)	(9.3)	(8.2)	(5.5)	(9.5)

a *2017–18 and 2018–19 figures are budget figures.*

Sources: *QCA, SEQ bulk water price path 2015–2018, final report, March 2015; Seqwater pricing model 2017; QCA calculations.*

Seqwater advised that its variable opex savings over the 2015–18 period were tempered by higher-than-expected increases in its variable electricity costs per ML of water produced (Table 9).

Table 9 Change in variable opex per ML—actual versus recommended by the QCA in the 2015 review (%)

	2015–16	*2016–17*	*2017–18*	*2018–19*	*Total*
Electricity	(8)	11	16	18	9
Chemicals	(9)	(10)	(9)	0	(9)
Sludge	(37)	(39)	(24)	(21)	(25)

Sources: *QCA, SEQ bulk water price path 2015–2018, final report, March 2015; Seqwater, sub. 2, p. 26; Seqwater pricing model 2017; QCA calculations.*

[34] Seqwater, sub. 2, p. 27; Seqwater pricing model 2017.

Seqwater stated that, overall, its variable opex for the 2018–19 base year is based on similar costs (per ML) for chemicals and sludge as for the 2015–18 period, but that electricity costs (per ML) are higher due to recent large increases in electricity prices.

Seqwater also included a contingency in its variable opex for the 2018–19 base year to account for minor variations in feedwater quality. This was set at $1.2 million for 2018–19 (or 8 per cent of variable chemical costs). Seqwater stated that, if necessary, it would make a claim for any major feedwater quality events over the 2018–21 period through the review event mechanism.

4.1.2 Step changes to base opex

Seqwater submitted that, for the 2018–28 period, it has adjusted baseline fixed opex to remove one-off costs and include new ongoing costs. These adjustments amount to $46.7 million in total.

Key adjustments (Table 10) include:

- costs associated with the commencement of source water monitoring at the WCRWS
- year-on-year changes in fixed opex at the GCDP and the WCRWS
- costs associated with an outreach program to engage SEQ communities on future water supply options, including purified recycled water
- budget adjustments (which include one-off projects and accounting adjustments for 2018–19, such as the reclassification of costs from capex to opex)
- provision for fixed costs associated with the recommissioning of Ewan Maddock WTP and a new WTP for Beaudesert (the Wyaralong WTP).

Table 10 Step changes and one-off adjustments to fixed opex for 2018–19 base year ($m, nominal)

Adjustment	*2018–19*	*2019–20*	*2020–21*	*2021–28*	*Total*
Water quality reporting	0.4	0.4	0.4	0.8	1.9
GCDP and WCRWS	–	0.2	0.1	4.0	4.2
Communication and education for recycled water	1.1	1.1	1.2	9.3	12.7
Budget adjustments	0.3	1.2	1.2	9.5	12.1
Ewan Maddock WTP fixed costs	0.8	0.8	0.8	6.4	8.8
Wyaralong WTP fixed costs	–	–	0.8	6.4	7.2
Other	0.2	0.2	1.0	(1.5)	(0.3)
Total adjustments	**2.6**	**3.7**	**5.4**	**34.9**	**46.7**

Note: *Totals may not add due to rounding.*

Source: *Seqwater, sub. 2, p. 21.*

4.1.3 Input price growth

Seqwater engaged PricewaterhouseCoopers (PwC) to provide advice on appropriate cost escalation factors to apply to opex, to account for input price growth over the period 2019–28. The resulting escalation factors are summarised in Table 11.

Table 11 Seqwater's proposed annual cost escalation factors (%)

Cost category	*Basis for escalation factor*	*Forecast period*	*Escalation factor*
Employee and contract labour expenses	Queensland Treasury Wage Price Index (WPI) projections for 2019–20 and 2020–21	2019–21	3.0
	Long-term (15-year) historical growth in the Queensland WPI	2021–28	3.39
Contractors (service delivery)	Weighted average of WPI and Consumer Price Index (CPI)	2019–28	2.77 (in 2019-20) increasing to 2.99 (in 2021-28)
Electricity	Average annual growth rate (between 2020 and 2030) in the Australian Energy Market Operator's (AEMO's) Queensland commercial electricity price forecasts	2019–21	4.83
	Annual growth in AEMO's Queensland commercial electricity price forecasts	2021–28	Between 3.87 and 6.29
Chemicals	CPI (mid-point of the Reserve Bank of Australia (RBA) target range)	2019–28	2.5
Other materials and services	CPI (mid-point of RBA target range)	2019–28	2.5
Insurance	Based on forward-looking estimates prepared for Gladstone Area Water Board (GAWB) by the insurance broker Marsh.	2019–28	5.0

Sources: *Seqwater, sub. 2, p. 20; Seqwater pricing model 2017.*

4.1.4 Output growth

Seqwater stated that it based its production estimates (for variable opex) on its long-term demand forecast and assumed that production would occur under the least-cost mode of operations, where the water grid is optimised to minimise the overall cost of supply (Table 12).[35] Seqwater is forecasting average annual growth of 3 per cent in total water production over the period 2018–28.

Production volumes are multiplied by costs per ML (which are escalated by input cost inflation rates) to determine variable cost forecasts over the period 2018–28.

[35] Seqwater, sub. 2, p. 27.

Table 12 Forecast water production by plant, 2018–28 (ML)

	2018–19	*2019–20*	*2020–21*	*2021–22*	*2022–23*	*2023–24*	*2024–25*	*2025–26*	*2026–27*	*2027–28*
Off-grid communities	**7,074**	**6,813**	**6,974**	**7,122**	**7,271**	**7,419**	**7,567**	**7,715**	**7,854**	**7,994**
Grid-connected										
Banksia Beach WTP[a]	–	–	–	–	–	–	–	–	–	–
Capalaba WTP	1,800	1,800	1,800	1,800	1,800	1,800	1,816	1,888	1,923	1,937
Ewen Maddock WTP	1,800	1,800	1,800	1,800	1,800	1,800	1,800	2,152	1,997	2,777
Gold Coast Desalination Plant[b]	504	504	504	504	504	504	504	504	504	504
Image Flat WTP	5,597	6,384	6,768	6,768	6,768	6,768	6,768	6,768	6,768	6,768
Landers Shute WTP	36,495	36,495	36,495	36,495	36,495	36,495	36,495	36,495	36,495	36,495
Molendinar WTP	32,731	33,402	34,181	37,237	40,304	43,382	46,277	48,304	48,975	49,310
Mount Crosby East Bank WTP	109,292	112,521	112,790	109,866	118,546	126,332	134,151	141,864	153,661	158,008
Mount Crosby West Bank WTP	27,323	28,130	28,198	27,467	29,636	31,583	33,538	35,466	38,415	39,502
Mudgeeraba WTP	19,315	19,424	19,556	20,488	21,405	22,307	23,399	25,357	26,275	27,048
Noosa WTP	2,160	2,160	2,160	2,160	3,600	6,161	8,657	9,000	9,000	9,000
North Pine WTP	53,280	53,280	53,280	57,200	57,200	57,200	57,200	59,000	59,000	59,000
North Stradbroke Island WTP	10,060	10,074	10,080	10,080	10,080	10,080	10,080	10,160	10,227	10,294
Petrie WTP[c]	–	–	–	–	–	–	–	–	–	–
Wyaralong WTP	–	–	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Sub-total, grid-connected	**300,357**	**305,975**	**309,412**	**313,665**	**329,938**	**346,211**	**362,485**	**378,758**	**395,040**	**402,442**
Total water production	**307,430**	**312,788**	**316,386**	**320,787**	**337,209**	**353,630**	**370,051**	**386,473**	**402,894**	**410,436**

a *The plant is in care and maintenance mode.* ***b*** *The plant is in hot standby mode.* ***c*** *The plant is being decommissioned.*

Note: *Totals may not add due to rounding.*

Source: *Seqwater pricing model 2017.*

4.1.5 Continuing efficiency target

Seqwater stated that, since it has achieved and exceeded the efficiency target set by the QCA in the 2015 review, an aggressive efficiency target is unwarranted.[36] Instead, Seqwater proposed to incorporate a continuing efficiency target (which is the ongoing cost savings Seqwater expects to make from continuing efficiency improvements) of 0.2 per cent per annum (cumulative)[37] of base year controllable opex[38] across the remainder of the price-path period.

Table 13 Seqwater's proposed efficiency savings ($ million, nominal)

	2018–19	***2019–20***	***2020–21***	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***2025–26***	***2026–27***	***2027–28***
Controllable opex[a]	134.4	138.4	142.5	147.1	151.9	156.8	161.9	167.1	172.6	178.2
Continuing efficiency target (%)	–	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Efficiency savings	–	0.3	0.6	0.9	1.2	1.6	1.9	2.3	2.8	3.2

a *Seqwater applied the target to 2018–19 base year controllable opex adjusted for input cost escalation.*

Source: *Seqwater pricing model 2017.*

Seqwater submitted that a 0.2 per cent per annum target (cumulative) was consistent with the Independent Pricing and Regulatory Tribunal's (IPART's) 2016 pricing decision on Hunter Water (a vertically integrated business in regional NSW providing both water and sewerage services).[39] In that decision, IPART set a continuing efficiency target of 0.25 per cent (cumulative) of real controllable opex.[40]

4.1.6 Revenue and cost offsets

Revenue offsets

Seqwater submitted that it had netted off $14.9 million of non–bulk water revenues from its 2018–19 base opex.[41] These revenue offsets come from two main sources—Toowoomba Regional Council and Stanwell Corporation. Seqwater advised that it provides these customers with a back-up supply service in emergency and drought situations, and no demand has been forecast from either customer over the 2018–28 period.

Cost offsets

Seqwater separately accounted for costs associated with irrigation services, as stipulated under the terms of the referral. Specifically, Seqwater submitted that it reduced base opex by $3.6

[36] Seqwater, sub. 2, p. 26.

[37] The target applies from 2019-20 and is cumulative (i.e. increases by 0.2 per cent each year). This translates to an average annual target of 0.9 per cent over the price path period or 0.2 per cent over the three-year regulatory period.

[38] Seqwater defined controllable opex to include costs for labour and contractors but to exclude costs for which it pays market prices, such as insurance, chemicals and electricity. Controllable opex relates mainly to fixed opex and accounts for around 65 per cent of Seqwater's fixed opex.

[39] Seqwater, sub. 2, p. 26.

[40] IPART, *Review of prices for Hunter Water Corporation from 1 July 2016 to 30 June 2020*, final report, June 2016.

[41] Seqwater pricing model 2017.

million to reflect the allocation of costs to irrigation services[42] in accordance with the cost allocation approach approved by the QCA in the 2013 irrigation review.[43]

Summary

Table 14 summarises Seqwater's proposed revenue and cost offsets.

Table 14 Seqwater's proposed revenue and cost offsets, 2018–28 ($m, nominal)

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Revenue offsets					
Stanwell Corporation, Toowoomba Regional Council and other offsets	14.9	15.3	15.6	123.4	169.2
Total revenue offsets	14.9	15.3	15.6	123.4	169.2
Cost offsets					
Irrigation	3.4	3.5	3.6	28.9	39.4
Non-irrigators in irrigation schemes	0.1	0.1	0.1	1.2	1.6
Total cost offsets	3.6	3.7	3.8	30.1	41.0
Total offsets	18.4	18.9	19.4	153.4	210.2

Note: *Totals may not add due to rounding.*

Source: *Seqwater pricing model 2017.*

4.1.7 Additional proposal to remobilise a train at Luggage Point AWTP

In its submission to the draft report, Seqwater put in a proposal to recover additional opex of $3 million a year (and associated capex of $0.5 million a year relating to asset replacement and renewals) to remobilise one of three reverse osmosis trains at the Luggage Point AWTP, a component of the WCRWS.[44]

Seqwater stated that, while the scheme is in care and maintenance mode, this train is currently partially operational, as it is required to flush the scheme pipeline periodically to avoid water quality problems.[45] Seqwater stated that opex associated with running the train in care and maintenance mode is already included in its opex proposal.

Under the WSP, remobilisation of the WCRWS is required to commence once grid storages reach 60 per cent and be completed within two years. However, Seqwater considers that additional opex is required to recommission one train at Luggage Point AWTP in order to resolve technical and community acceptance risks prior to the potential remobilisation of the full scheme.

Seqwater submitted that, once the train is fully operational, it will produce 6 ML per day of recycled water for industrial and other users. Seqwater is in discussion with potential customers to take the recycled water as a substitute for potable water.

[42] This includes $0.1 million allocated to high priority water access entitlement holders who are located in irrigation schemes, but are not irrigators.
[43] Seqwater pricing model 2017.
[44] Seqwater, sub. 13, pp. 54-7.
[45] The train produces around 200 ML a year for pipe flushing.

4.1.8 Summary

Seqwater's proposed opex is summarised in Table 15.

Table 15 Seqwater's proposed opex ($m, nominal)[a]

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Base year fixed opex plus input cost escalation	207.8	213.9	220.2	1,753.5	2,395.4
Adjustments/step changes	2.6	3.7	5.4	34.9	46.7
Continuing efficiency savings	–	(0.3)	(0.6)	(13.7)	(14.5)
Fixed opex	210.4	217.3	225.1	1,774.8	2,427.6
Base year variable opex plus input cost escalation	38.6	40.1	42.4	412.0	533.2
Output growth	–	0.7	1.1	13.2	14.9
Continuing efficiency savings	–	0.0	0.0	(0.2)	(0.2)
Variable opex	**38.6**	**40.8**	**43.5**	**425.0**	**547.9**
Total opex	**249.1**	**258.1**	**268.6**	**2,199.8**	**2,975.5**
Revenue and cost offsets	(18.4)	(18.9)	(19.4)	(153.4)	(210.2)
Net opex	**230.6**	**239.2**	**249.2**	**2,046.3**	**2,765.3**

a *Excludes opex associated with partial remobilisation of the WCRWS.*

Note: *Totals may not add due to rounding.*

Sources: *Seqwater, sub. 2, p. 18; Seqwater pricing model 2017; Seqwater supplementary submission.*

4.2 QCA assessment

We have assessed the prudency and efficiency of Seqwater's proposed opex from 1 July 2018 to 30 June 2028. We consider opex to be prudent if the expenditure can be justified by reference to an identified need or cost driver, such as a legal or regulatory obligation. We consider opex to be efficient if it minimises Seqwater's long-run costs of providing bulk water supply services. We have considered the advice of our consultant, KPMG, in making this assessment.

4.2.1 Governance arrangements

KPMG undertook an assessment of Seqwater's governance arrangements (including the appropriateness of decision-making and corporate governance processes) in order to verify the prudency of Seqwater's opex decision-making.

KPMG did not identify any systemic issues in Seqwater's corporate governance relating to operating policies and procedures but recommended improvements in Seqwater's budgeting process to move to an activity based costing approach whereby costs categories (e.g. employee expenses) are built up by activity (e.g. operation of a WTP).[46]

Consistent with KPMG's advice, we suggest that Seqwater consider an activity based costing approach for opex budgeting.

[46] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 192.

4.2.2 Prudency and efficiency of proposed opex

KPMG applied a base-step-trend approach to determine the prudency and efficiency of Seqwater's proposed opex. This involved:

- determining a prudent and efficient level of base opex for 2018–19 by comparing Seqwater's proposed opex for 2018–19 to its historical opex and making adjustments to ensure that it reflects recurrent expenditure necessary to deliver on Seqwater's service and regulatory obligations
- projecting base opex across the forecast period by making adjustments for step changes in opex (e.g. due to new regulatory obligations) and forecast changes in input prices, output and productivity.

Base year

KPMG noted that the base year would typically be based on the last year of actual costs or the average of efficient actual costs over a number of years and that these costs would typically be adjusted to:

- remove any one-off or non-recurring expenditure items or to add recurring items that might not have been incurred in the year or years in question
- remove any cost savings expected to be realised prior to the commencement of the next regulatory period.[47]

KPMG noted that Seqwater had, instead, established its base year of 2018–19 on the basis of a budget forecast, with expenditure to be included only where it could be justified by evidence such as contractual obligations, baseline operating scenarios or historical trends in actual expenditure.[48]

KPMG noted that these approaches should, in principle, lead to similar outcomes, although Seqwater's budgetary approach made it difficult to verify whether the necessary adjustments had been made to the base year, as Seqwater does not apply an activity-based costing approach to its budgeting.[49]

In assessing the efficiency of Seqwater's proposed base year opex, KPMG looked at:

- **trends in historical expenditure**—KPMG compared actual fixed opex per ML of actual demand over 2015–18 with fixed opex per ML that we recommended in the 2015 review. KPMG noted that Seqwater's actual fixed opex per ML increased in 2017–18 relative to our recommended fixed opex per ML but that this was a result of an unanticipated contraction in actual demand compared to forecast. When using forecast volumes, KPMG found there was a clearly decreasing trend in actual fixed opex per ML compared to our recommended fixed opex per ML. KPMG considered that this reflected that Seqwater had achieved efficiencies in its fixed opex. While Seqwater's base variable opex per ML is higher than historical costs, this is consistent with the observable trend in actual opex over 2014–17

[47] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 190–1.
[48] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 191.
[49] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 192.

- **a comparison with recommended opex in the 2015 review**—KPMG noted that actual expenditure has been consistently below that recommended by the QCA in the 2015 review, lending support to the contention that Seqwater has achieved efficiencies over the regulatory period
- **benchmarking with similar entities in Australia**—while not definitive, KPMG considered that Seqwater compared favourably to its peers in terms of opex per ML
- **a comparison of the last available year of actual opex with the base year**—KPMG noted that, in real terms, Seqwater's proposed base year opex compares favourably with actual opex for 2014–17.

We have supplemented this analysis by considering historical trends in Seqwater's main opex categories (Table 16).

Table 16 Difference between the QCA's opex allowance (in the 2015 review) and Seqwater's actual expenditure (2015–17) and budgeted expenditure (2017–19) by category, 2015–19 (%)

	2015–16	***2016–17***	***2017–18***	***2018–19[a]***
Employee expenses	2.7	9.2	9.4	8.7
Contract labour	14.1	(18.2)	(52.7)	(58.1)
Contractors (service delivery)	(31.2)	(37.3)	(26.0)	(22.9)
Chemicals	(15.3)	(17.2)	(19.2)	(11.9)
Electricity	(6.2)	3.0	1.2	0.1
Other materials and services	9.5	0.1	7.0	(13.6)
Total	**(9.7)**	**(11.4)**	**(6.1)**	**(8.5)**

a *Seqwater provided additional information to correct for the allocation of costs between contract labour and contractors (service delivery).*

Sources: *QCA, SEQ bulk water price path 2015–2018, final report, March 2015; Seqwater pricing model 2017, Seqwater supplementary submission.*

Employee expenses were just under 3 per cent higher than we recommended for 2015–16 and are expected to stabilise at around 9 per cent higher than our allowance for each year over 2016–19. Conversely, Seqwater's expenditure for contract labour and contract services is expected to come in significantly below our allowance.

Seqwater submitted that it had reduced its expenditure on contractors and consultants and that over the period 2015–18 it had transferred some of its consulting and contracting costs into employee costs. Seqwater considered that its detailed workforce planning in 2015–16 has enabled it to optimise the skill set of its employee base and ensure it has the right people working in the right areas at the appropriate times.[50]

Seqwater also submitted that it had made improvements to its maintenance strategy by moving to an Insourced Collaborative Contract model in 2016 whereby Wood Group PSN has been chosen as a maintenance partner until 2021. Under the partnership, Wood Group PSN operates as an integrated workforce with Seqwater under a single management structure.[51]

[50] Seqwater, sub. 2, p. 16.
[51] Seqwater, sub. 2, p. 16.

Fixed opex

On balance, we are satisfied that the 2018–19 base fixed opex reflects a normalised year of efficient opex. However, on the recommendation of KPMG, we have adjusted base year opex to exclude $0.6 million of expenditure that is non-recurrent in nature from Seqwater's base year fixed opex.

KPMG noted that $0.6 million of proposed fixed opex relating to training and professional development and other allowances did not appear to be recurrent in nature. We have accepted this recommendation, as base opex should exclude one-off costs.

Variable opex

On balance, we are satisfied that the 2018–19 base variable opex reflects a normalised year of efficient opex. However, on the recommendation of KPMG, we have adjusted base year opex to exclude Seqwater's proposed contingency of $1.2 million for minor feedwater quality events from base year variable opex.

KPMG stated that it could not determine whether the proposed level was efficient without information on the frequency of these events and the costs associated with them.[52]

QUU submitted that the appropriate contingency to apply for feedwater quality events should be based on the long-term average of these costs.[53]

We note that Seqwater's actual chemical costs for 2015–18 have been relatively stable in real terms, which suggests that there is no significant variability in feedwater quality requiring a contingency allowance. Seqwater may be able to claim for variations in feedwater quality under the review events mechanism (Chapter 10). While Seqwater accepted our recommendation to exclude the contingency allowance, Seqwater submitted a claim for a feedwater quality event from 2017, which we have assessed in Chapter 8.

Summary

We have amended Seqwater's proposed base opex as shown in Table 17.

Table 17 Recommended adjustments to Seqwater's proposed 2018–19 base year opex ($m, nominal)

	Seqwater proposal	*QCA adjustment*	*QCA recommendation*
Base year fixed opex	207.8	(0.6)	207.2
Base year variable opex	38.6	(1.2)	37.4

Sources: *Seqwater, sub. 2; QCA analysis.*

Step changes

KPMG assessed Seqwater's proposed step changes using the following criteria:

- The step change should relate directly to a new obligation, a change in an existing obligation or some other new expenditure.
- The step change should be material relative to the total opex proposed.[54]

[52] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 212–3.
[53] QUU, sub. 8, p. 3.

- The expenditure associated with the step change should be prudent and efficient.

For our draft report, KPMG assessed some steps to be typical operational activities and ongoing in nature and recommended that these steps would be better accounted for through an adjustment to base opex.

However, we considered steps associated with typical operational activities to be business-as-usual activities. We stated that we would expect Seqwater to meet these costs within its base operating cost allowance.

Where a proposed step change was associated with a new obligation, a change in an existing obligation or some other new expenditure, we considered that it should be treated as a step change regardless of the materiality of the expenditure.

In response to our draft report, Seqwater stated that it had kept out some business-as-usual costs from base year expenditure and separately identified those costs in the year they were expected to be incurred, in order to enhance transparency.[55] These costs include the GCDP and WCRWS year-on-year changes ($4.2 million), provision of additional drafting services ($0.6 million), integrated master plan updates ($0.3 million) and EBA advice ($0.5 million). In the case of the GCDP and WCRWS, Seqwater stated that it had prepared a detailed forecast for these plants based on their required state of readiness (hot standby mode and care and maintenance mode, respectively).[56] Seqwater said that it was indifferent as to whether these costs were treated as base year opex or step changes but that it should be allowed to recover these costs as KPMG did not make a finding that the costs were not prudent or not efficient.[57]

Seqwater also:

- submitted that opex associated with the Wyaralong WTP upgrade should be reinstated as a step change as it had provided further information to justify the efficiency of the associated capex[58]
- provided further information to clarify that the proposed step change for budget adjustments referred to costs that it had mistakenly excluded from opex in previous years and other costs that it had mistakenly categorised as capex in previous years.[59]

We asked KPMG to reconsider its advice on the basis of the information provided by Seqwater.

We have summarised KPMG's recommended adjustments together with our response (Table 18).

[54] KPMG applied a materiality threshold of 0.2 per cent for the ratio of the expenditure associated with the step change to total opex. The threshold of 0.2 per cent is based on Seqwater's proposed continuing efficiency target.
[55] Seqwater, sub. 13, p. 8.
[56] Seqwater, sub. 13, pp. 8-9.
[57] Seqwater, sub. 13, p. 10.
[58] Seqwater, sub. 13, p. 10.
[59] Seqwater, sub. 13, pp. 12-13.

Table 18 QCA recommended adjustments to step changes ($m, nominal)

Step change	*KPMG recommendation*	*QCA position*	*QCA adjustment*
Assessment of major contracts	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial, and there are concerns regarding efficiency. The proposed step change should not be included in the base year, as it is not ongoing in nature.	Consistent with our draft report, we have accepted this recommendation.	(1.0)
Water quality reporting for recycled water	The proposed step change should not be included, as expenditure only applies to the first five years and is immaterial.	As the expenditure is associated with a new obligation for the period 2018–23, we have treated it as a step change. This is consistent with our view in the draft report.	–
GCDP and WCRWS—year on year changes in fixed opex	The proposed step change would be better classified as base opex as it appears to be associated with typical operational activity and is ongoing in nature. KPMG reassessed base year opex following its reclassification of this and other proposed step changes and recommended that the QCA accept the revised base as it compares favourably to the costs we approved in the last year of the current regulatory period as well as actual costs for 2017-18.	We have changed our draft report view. As KPMG's revised assessment has confirmed that Seqwater should be able to recover these costs through the base opex allowance and as it makes no difference to recommended opex whether the expenditure is treated as base opex or a step change, we have included it as a valid step change.	–
ICT projects	The proposed step change should not be included, as it appears to be associated with typical operational activity, is immaterial and prudency and efficiency has not been demonstrated.	Consistent with our draft report, we have accepted this recommendation.	0.5
Provision of additional drafting services	The proposed step change would be better classified as base opex as it appears to be associated with typical operational activity and is ongoing in nature. KPMG reassessed base year opex following its reclassification of this and other proposed step changes and recommended that the QCA accept the revised base as it compares favourably to the costs we approved in the last year of the current regulatory period as well as actual costs for 2017-18.	We have changed our draft report view. As KPMG's revised assessment has confirmed that Seqwater should be able to recover these costs through the base opex allowance and as it makes no difference to recommended opex whether the expenditure is treated as base opex or a step change, we have included it as a valid step change.	–
QCA reviews	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial. The proposed step should be included in the base year, as it is	The expenditure is associated with cyclical variations in an existing obligation. Consistent with our draft report, we have treated Seqwater's adjustment as a valid step change.	–

Step change	*KPMG recommendation*	*QCA position*	*QCA adjustment*
	related to typical operating activity and is ongoing in nature.		
Future water security program updates	The expenditure appears to be associated with a new obligation but the step change should not be included, as it is immaterial; rather, the step change should be accounted for in base opex.	Consistent with our draft report, as the expenditure appears to be associated with a new obligation, we have treated it as a valid step change.	–
Integrated master plan update	The proposed step change would be better classified as base opex as it appears to be associated with typical operational activity and is ongoing in nature. KPMG reassessed base year opex following its reclassification of this and other proposed step changes and recommended that the QCA accept the revised base as it compares favourably to the costs we approved in the last year of the current regulatory period as well as actual costs for 2017-18.	We have changed our draft report view. As KPMG's revised assessment has confirmed that Seqwater should be able to recover these costs through the base opex allowance and as it makes no difference to recommended opex whether the expenditure is treated as base opex or a step change, we have included it as a valid step change.	–
Communication and education for recycled water	The expenditure should be capped at three years, given that it relates to the implementation of a three-year program.	Consistent with our draft report, we have accepted this recommendation.	(9.3)
EBA advice	The proposed step change would be better classified as base opex as it appears to be associated with typical operational activity and is ongoing in nature. KPMG reassessed base year opex following the reclassification of this and other proposed step changes and recommended that the QCA accept the revised base as it compares favourably to the costs we approved in the last year of the current regulatory period as well as actual costs for 2017-18.	We have changed our draft report view. As KPMG's revised assessment has confirmed that Seqwater should be able to recover these costs through the base opex allowance and as it makes no difference to recommended opex whether the expenditure is treated as base opex or a step change, we have included it as a valid step change.	–
Additional leadership training	The proposed step change should not be included, as it appears to be associated with typical operational activity, is immaterial and prudency and efficiency has not been demonstrated.	Consistent with our draft report, we have accepted this recommendation.	(0.6)
Budget adjustments	The proposed step change would be better classified as base opex on the basis that KPMG has confirmed that Seqwater had: • mistakenly classified planning costs for the monitoring control systems (MCS) class of assets, that are recurrent in nature, as capex	We have changed our draft report view. As KPMG has now assessed that Seqwater should be able to recover these costs through the base opex allowance and as it makes no difference to recommended opex whether the expenditure is treated as base opex or a step change, we have included	–

Step change	*KPMG recommendation*	*QCA position*	*QCA adjustment*
	in the 2018–19 base year • mistakenly omitted planning costs for the MCS class of assets from opex from 2018-19 • mistakenly omitted recurrent expenditure related to public education campaigns and community research from base year opex as a result of an organisational restructure. However, KPMG noted that the reclassification of planning costs associated with the MCS asset class should lead to a corresponding reduction in capex associated with MCS assets and recommended a reduction in capex for 2022-28.	it as a valid step change. We also accept KPMG's recommendation to make a corresponding reduction to capex (see Chapter 5).	
Ewan Maddock fixed costs	Expenditure is related to capex aimed at increasing capacity, is material and should be included as a step change.	Consistent with our draft report, we have accepted this recommendation.	–
Wyaralong WTP fixed costs	Expenditure is related to capex aimed at increasing capacity, is material and should be included as a step change as the corresponding capex has been assessed to be prudent and mostly efficient.	We have changed our draft report view. We have accepted KPMG's revised recommendation.	–
Total adjustments			**(10.5)**

Note: *Totals may not add due to rounding.*

Sources: *KPMG, Seqwater expenditure review: Prudency and efficiency assessment, updated report for the QCA, March 2018, pp. 225—34; QCA analysis.*

QUU submitted that Seqwater had not provided sufficient justification for assuming that the $4 million annual Moreton Bay Outcome Contribution, associated with recycled water from the Murrumba Downs Advanced Water Treatment Plant, will continue beyond the current contract term of 2020.[60] Seqwater has advised that this is a contractual arrangement that is likely to be extended beyond 2020. We are satisfied that the contractual arrangement is likely to extend beyond 2020 and have therefore not made any adjustment to the proposed expenditure.

Based on our assessment above, we have therefore amended step changes (see Table 19).

[60] QUU, sub. 8, p. 3.

Table 19 Recommended adjustments to Seqwater's proposed step changes ($m, nominal)

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Seqwater's proposed step changes	2.6	3.7	5.4	34.9	46.7
QCA adjustment[a]	(–)	(0.7)	(0.3)	(9.9)	(11.0)
QCA recommended step changes	**2.6**	**2.9**	**5.1**	**25.1**	**35.7**

a *Includes updates to inflation forecasts.*

Note: *Totals may not add due to rounding.*

Sources: *Seqwater, sub. 2; QCA analysis.*

Input price growth

KPMG recommended that we accept all of Seqwater's proposed input price escalation factors with the exception of the escalation factors for insurance and electricity.

With respect to insurance, KPMG recommended that we reduce the escalation rate for 2019–21 from 5 per cent to 2.5 per cent (reflecting available inflation forecasts) on the basis that Seqwater had not provided sufficient explanatory documentation to justify a real increase and that, in any case, Seqwater is best placed to manage the risk of real increases in insurance premiums.

We agree that Seqwater is best placed to manage the risk of insurance premiums increasing beyond inflation and we therefore accept KPMG's recommendation. For the final report, we have revised the inflation forecast for 2019–20 from 2.5 per cent to 2.25 per cent to reflect the RBA's latest short-term inflation forecast.[61]

With respect to electricity, KPMG recommended that we update AEMO's 2016 forecasts with the latest 2017 forecasts. QUU also submitted that we should update AEMO's 2016 forecasts with the latest 2017 forecasts.[62]

QUU noted that the significant price escalation for electricity costs would appear to be influenced, in part, by Seqwater's procurement strategy (whereby it recontracts on a quarterly basis) and the volatility in the electricity wholesale market.[63] KPMG advised that its consultations with Seqwater revealed that Seqwater manages the risk of volatility in prices by using derivatives.[64]

We accept KPMG's recommendation and have updated the electricity cost escalation factor with the latest available AEMO forecasts.

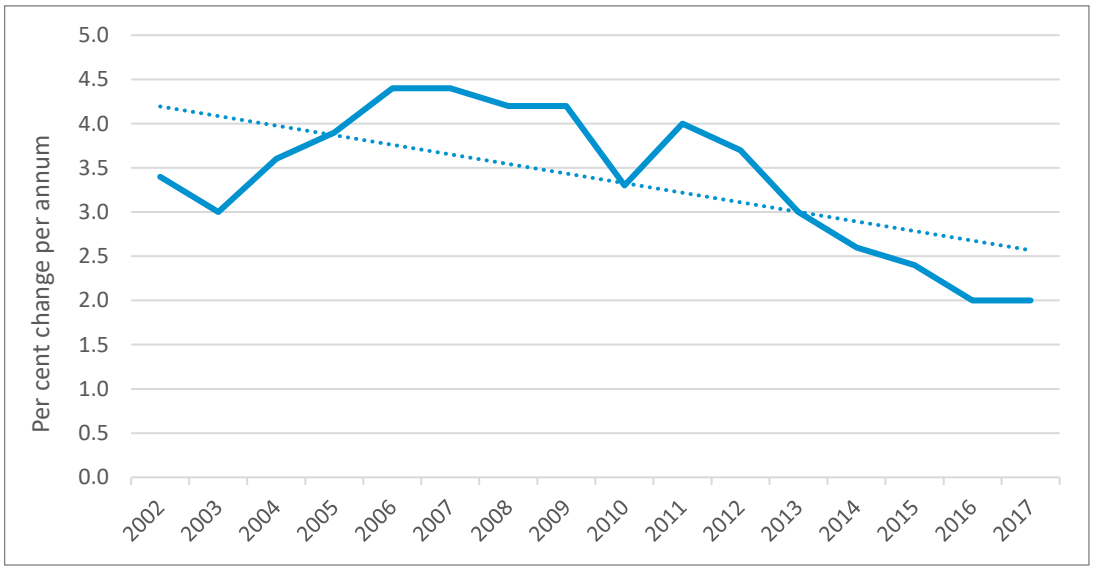
KPMG recommended that we accept Seqwater's proposed use of the Australian Bureau of Statistics (ABS's) long-term (15-year) average growth in the Queensland WPI (3.4 per cent) as the escalator for employee and contract labour expenses and the labour component of contractors (service delivery) for 2021–28, but we do not accept this recommendation. KPMG's recommendation was made on the basis that Seqwater's proposal is broadly similar to our recommendation in the 2015 review, where we approved Seqwater's proposal to apply the Queensland WPI forecast developed by Queensland Treasury.

[61] RBA, *Statement on Monetary Policy*, February 2018, p. 63.
[62] QUU, sub. 8, p. 3.
[63] QUU, sub. 8, p. 3.
[64] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 224.

As noted by PwC in its report for Seqwater[65], Queensland Treasury, in its most recent forecast of the Queensland WPI, noted that real wage growth has been sluggish (as a result of CPI growing even slower than nominal wages) and is expected to remain subdued, reflecting ongoing spare capacity in the labour market; but, it is then expected to pick up as conditions in the domestic market improve. However, it is not clear over what timeframe wages are expected to recover or how strong the recovery may be. Queensland Treasury forecasts that the WPI will recover before stabilising at 3 per cent in 2019–20 and 2020–21.[66]

We note that the long-term trend in the Queensland WPI, as determined by the ABS, has been decreasing (Figure 4).

Figure 4 Queensland WPI, 2002–17



Source: ABS, Wage Price Index, Australia, December 2017, Table 8a: Ordinary Hourly Rates of Pay Excluding Bonuses: All Sectors by State, Original, cat no 6345.0.

Given the evidence of a declining trend in the Queensland WPI, we have used the 10-year average of the Queensland WPI of 3.1 per cent, consistent with our approach in the review of GAWB's pricing practices.[67] We consider that this is a better forecast, as the Queensland WPI has not reached Seqwater's proposed forecast of 3.4 per cent since 2012.

In response to the draft report, Seqwater accepted our recommended adjustments to input cost escalators but advised of an error in KPMG's recommended input price escalator for electricity relating to the treatment of inflation.[68] KPMG has since corrected this error and we have accepted the revised forecast.[69] Our recommended adjustments to Seqwater's proposed input price escalators are summarised in Table 20.

[65] Seqwater, sub. 3, p. 14.
[66] Queensland Treasury, *Queensland Budget 2017-18, Budget Strategy and Outlook, Budget Paper No. 2*, June 2017, p. 49.
[67] QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, final report, May 2015.
[68] Seqwater, sub. 13, p. 13.
[69] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 227.

Table 20 QCA recommended adjustments to input cost escalation factors

Cost category	*Nature of adjustment*
Employee and contract labour expenses	Reduce proposed escalation factor for 2021–28 from 3.4 per cent to 3.1 per cent to reflect the 10-year average of the Queensland WPI.
Insurance	Reduce proposed escalation factor for 2019–21 from 5 per cent to 2.25 per cent (for 2019–20) and 2.5 per cent (from 2020–21) to reflect the position that Seqwater should bear the risk of real increases in insurance costs.
Contractors (service delivery)	Reduce WPI component of the escalation factor (for 2021–28) from 3.4 per cent to 3.1 per cent to reflect the 10-year average of the Queensland WPI.
Electricity	Update AEMO's Queensland commercial electricity price forecasts with latest available data.

Our recommended input price escalators are shown in Table 21.

Table 21 QCA recommended input cost escalation factors (%)

Cost category	*Forecast period*	*Escalation factor*
Employee and contract labour expenses	2019–21	3.0
	2021–28	3.1
Contractors (service delivery)	2019–28	2.77 (in 2019–20) increasing to 2.83 (in 2021–28)
Electricity	2019–21	–0.63 increasing to –0.30
	2021–28	Between –1.56 and 4.36
Chemicals	2019–28	2.5[a]
Other materials and services	2019–28	2.5[a]
Insurance	2019–28	2.5[a]

a *The 2019–20 escalation factor has been updated to 2.25 per cent to reflect the RBA's latest short-term inflation forecast.*

Sources: *KPMG, Seqwater expenditure review: prudency and efficiency assessment, updated report for the QCA, March 2018, pp. 218–228; QCA analysis.*

Output growth

Seqwater's proposed output growth forecasts are consistent with its forecast growth in demand. As we have accepted Seqwater's demand forecasts (Chapter 3), we also accept Seqwater's proposed output growth forecasts.

Continuing efficiency target

Regulators often apply efficiency targets to controllable opex. Two types of efficiency targets are commonly applied:

- a catch–up efficiency target—a firm-specific target to move a business closer to the efficient frontier (typically measured as the best performing comparable businesses)

- a continuing efficiency target—an industry-wide target reflecting the movement of the efficient frontier over time as productivity improves, for example, due to innovation and the adoption of new technologies.

We did not identify inefficiencies in Seqwater's proposed base opex and only made adjustments to remove non-recurrent expenditure. As such, we have not applied a catch-up efficiency target. However, we have considered Seqwater's proposal to apply a continuing efficiency target of 0.2 per cent per year (cumulative) of base year controllable opex.

For our draft report, KPMG advised that, relative to efficiency targets set by regulators in other jurisdictions, Seqwater's proposed continuing efficiency target is low.[70] As a result, KPMG recommended that we apply a continuing efficiency target of 1 per cent per year of controllable opex.

However, we chose to adopt a conservative approach by applying a continuing efficiency target of 0.2 per cent per annum (cumulative), as proposed by Seqwater, rather than 1 per cent, as recommended by KPMG. We asked Seqwater to provide more robust justification of its proposed target in response to the draft report and advised that, in the absence of more robust justification, we would consider applying a higher target in the final report.

In response to the draft report, Seqwater presented analysis to demonstrate that, when compared on a consistent basis, its proposed cumulative annual target of 0.2 per cent is comparable to targets set by regulators in other jurisdictions.[71] KPMG advised that it had a number of concerns with Seqwater's analysis, including:[72]

- Seqwater's assumption that the efficiency savings applied by the Essential Services Commission (ESC) are static (like Seqwater's proposed savings), when they are actually compounding. When savings in one year are not rolled into controllable opex in subsequent years the effect is that the opex allowance is higher than it would otherwise have been if savings had been embedded in base opex.
- Seqwater's adjustments to account for differences between cost escalators, output growth, economies of scale and efficiency. KPMG noted the interaction between these variables, but did not consider it appropriate to account for differences when making comparisons with other water businesses (as Seqwater has done with SA Water and the Victorian water businesses). Rather, each of these variables should be considered on its own merits. For example, while Seqwater does not escalate fixed opex for volume growth, this could be because it considers there are unrealised economies of scale in its fixed opex relative to other businesses.

When considering both the application of Seqwater's proposed approach and the level of efficiency savings proposed, KPMG remains of the opinion that Seqwater's proposed target is relatively low. However, KPMG acknowledged that direct comparisons between efficiency targets need to be undertaken with care.

KPMG sought to undertake analysis on the historical trends in the efficiency of Seqwater and comparable water businesses to better inform its advice. However, due to inconsistencies in the

[70] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, report for the QCA, November 2017, p. 185.
[71] Seqwater, sub. 13, pp. 14–8.
[72] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 238–9.

available data and different reporting arrangements for comparator water businesses, KPMG was unable to do so.

KPMG advised that, in the absence of more sophisticated analysis of efficiency, the QCA should accept Seqwater's proposal. However, the QCA may consider undertaking further analysis before the next review using techniques such as total factor productivity, stochastic frontier or data envelopment analysis.

Given the inherent difficulties of directly comparing efficiency targets and in the absence of empirical evidence to the contrary, we have accepted Seqwater's proposed continuing efficiency target.

KPMG also recommended that we expand Seqwater's definition of controllable opex to include contract based costs (on the basis that Seqwater can exert control to negotiate or renegotiate these costs), variable electricity and chemical costs (on the basis that Seqwater has control over how it uses these inputs) and other miscellaneous expenditures, such as property expenses (on the basis that these are within the capacity of Seqwater to control). This reclassification increases Seqwater's proposed controllable opex from $134.4 million to $211.8 million in 2018–19. We have accepted this recommendation and have adjusted the application of Seqwater's proposed continuing efficiency target accordingly. In response to our draft report, Seqwater accepted this recommendation.[73]

Table 22 QCA recommended efficiency savings ($ million, nominal)

	2018–19	***2019–20***	***2020–21***	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***2025–26***	***2026–27***	***2027–28***
Controllable opex	211.8	217.6	223.6	230.1	236.8	243.4	250.3	257.5	265.0	272.7
Continuing efficiency target (%)	–	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8
Efficiency savings	–	0.4	0.9	1.4	1.9	2.4	3.0	3.6	4.2	4.9

Source: *QCA analysis.*

Revenue and cost offsets

Seqwater has proposed to apply offsets for revenue and costs not attributable to bulk water supply. The purpose of these adjustments is to ensure that Seqwater does not recover more than its costs of supply. Under the terms of the referral, we have been asked to apply offsets for:

- costs associated with Seqwater's declared irrigation services, in accordance with the cost allocation approach adopted by the QCA in its 2013–17 irrigation price review
- revenue from the sale of water to power stations, Toowoomba Regional Council and other sources.

Cost offsets

Following the finalisation of Network Service Plans for its irrigation schemes, Seqwater provided the QCA with actual irrigation scheme costs for 2016–17. Seqwater submitted total scheme

[73] Seqwater, sub. 13, p. 14.

costs of $14.4 million, of which it allocated $3.3 million to irrigation services in accordance with the cost allocation approach adopted by the QCA in the 2013 irrigation price review. This cost was then escalated to determine a cost offset of $3.6 million for the 2018–19 base year which is $0.1 million higher than Seqwater's original submission. Seqwater also increased the allocation to high priority water access entitlement (WAE) holders in its irrigation schemes by $0.1 million from $0.1 million to $0.2 million.

We have reviewed this information and have confirmed that Seqwater has applied the cost allocation approach adopted in the 2013 irrigation price review to determine the irrigation cost share. However, we have removed $0.2 million representing the cost share of high priority WAE holders, as we have applied a revenue offset approach for these customers.

Revenue offsets

We have reviewed Seqwater's submission and additional information provided by Seqwater (including contracts with Toowoomba Regional Council and Stanwell Corporation) and consider the revenue offsets proposed by Seqwater are reasonable.

However, we consider that an additional revenue offset should apply to account for revenue received from the provision of services provided to high priority WAE holders who are not irrigators. While Seqwater proposed a cost offset approach, we consider that a revenue offset approach is more appropriate. This is consistent with our approach in the 2015 review and with the terms of the referral, which states that cost offsets are only to be applied for declared irrigation services. We have offset base opex by a further $0.7 million, representing Seqwater's forecast revenue from these customers in 2018–19.

Summary

Our adjustments to revenue and cost offsets are summarised in Table 23.

Table 23 Recommended adjustments to Seqwater's proposed revenue and cost offsets ($m, nominal)

	2018–19
Seqwater's initial proposal	18.4
Seqwater update to irrigation cost offset	0.1
Seqwater update to high priority WAE holders cost offset	0.1
QCA adjustment (cost offset)	(0.2)
QCA adjustment (revenue offset)	0.7
QCA's recommendation	**19.1**

Source: *QCA analysis.*

Seqwater's proposal to remobilise a train at the Luggage Point AWTP

KPMG reviewed Seqwater's additional proposal relating to expenditure to remobilise a train at the Luggage Point AWTP, which forms part of the WCRWS.

KPMG advised that Seqwater had not adequately demonstrated that the benefits of fully remobilising a train before the 60 per cent trigger is reached, would outweigh the costs that would be passed through to customers.[74] In particular, KPMG noted that:[75]

- Storages are currently above the 60 per cent trigger (80 per cent as of 6 March 2018[76]) and Seqwater has not provided any evidence that storages are expected to decrease materially in the short term necessitating the need to remobilise the WCRWS as a drought response measure.
- The QCA has allowed funding of $1 million per year over the next regulatory period for community engagement initiatives and it is not clear why the remobilisation of a train at Luggage Point AWTP would be required to support these initiatives.
- Seqwater has not offset the additional costs of remobilising the train with savings from producing less water at other water treatment plants.
- Once the train is remobilised, it would operate on an ongoing basis regardless of storage levels and end use customers could end up paying for recycled water that they do not need.
- Seqwater has not provided adequate evidence that community and stakeholder engagement could not be effectively completed during the two year lead period in which the WCRWS would be required to become fully operational following the 60 per cent trigger.
- In the event that the 60 per cent trigger was reached, Seqwater may be able to recover the additional costs of remobilising the plant through the drought response review event mechanism (see Chapter 10).

We accept KPMG's recommendation that Seqwater has not sufficiently justified its proposal to recover costs associated with remobilising a train at Luggage Point AWTP. We also note that Seqwater submitted this proposal late in the review, meaning there was limited time to consider the proposal and no opportunity to consult with stakeholders.

Summary

The QCA's recommended opex (Table 24) differs from Seqwater's proposed opex because of downward adjustments to base opex; input cost escalation rates, and step changes in base opex; and upward adjustments to the continuing efficiency target (to reflect the application of the target to a broader opex base), and revenue and cost offsets.

Relative to our draft report, we have increased the opex allowance by $24.5 million, or 0.9 per cent, reflecting the inclusion of step changes that Seqwater has demonstrated to be efficient.

[74] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 259.
[75] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 260.
[76] Seqwater, *South East Queensland dam storage levels*, viewed 6 March 2018, http://www.seqwater.com.au/water-supply/dam-levels.

Table 24 QCA's recommended opex ($m, nominal)

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Base year fixed opex plus input cost escalation	207.2	212.8	218.6	1,716.1	2,354.7
Adjustments/step changes	2.6	2.9	5.1	25.1	35.7
Continuing efficiency savings (fixed opex)	–	(0.4)	(0.7)	(18.0)	(19.1)
Fixed opex	**209.8**	**215.4**	**222.9**	**1,723.2**	**2,371.3**
Base year variable opex plus input cost and growth escalation	37.5	38.4	39.8	359.1	474.7
Continuing efficiency savings (variable opex)	–	(0.1)	(0.1)	(3.5)	(3.7)
Variable opex	**37.5**	**38.3**	**39.7**	**355.6**	**471.0**
Total opex (inclusive of non-bulk water costs)[a]	**247.3**	**253.7**	**262.6**	**2,078.8**	**2,842.3**
Revenue and cost offsets	(19.1)	(19.5)	(20.0)	(157.5)	(216.1)
QCA recommended net opex	**228.2**	**234.1**	**242.6**	**1,921.3**	**2,626.2**
Seqwater's proposed net opex[a]	**230.6**	**239.2**	**249.2**	**2,046.3**	**2,765.3**
Variance	**(2.4)**	**(5.0)**	**(6.5)**	**(125.1)**	**(139.1)**

a *Excludes costs associated with partial remobilisation of the WCRWS.*

Note: *Totals may not add due to rounding.*

Sources: *Seqwater pricing model 2017; Seqwater supplementary submission; QCA analysis.*

5 CAPITAL EXPENDITURE

Capital expenditure (capex) is expenditure to upgrade or replace an existing asset or invest in a new asset. Capex may relate to a diverse program of capital works on a single asset (e.g. a water treatment plant (WTP) upgrade or a dam safety upgrade) or a relatively uniform program of capital works on a series of assets (e.g. a meter replacement program). Capex that we assess to be prudent and efficient is included in Seqwater's regulatory asset base (RAB) and Seqwater earns a return on the RAB as part of its building block costs.

The referral asks us to form a view on prudent and efficient capex (including costs associated with catchment management, recreational management and flood mitigation). Specifically, we are to review:

- *actual capex (to the extent available) over the period 1 July 2014 to 30 June 2018, if it exceeds capex we recommended in the 2015 review*
- *forecast capex over the period 1 July 2018 to 30 June 2028.*

This chapter assesses the prudency and efficiency of Seqwater's capex. We engaged KPMG to provide advice to assist with our assessment.

KPMG's assessment and recommendations are based on the as-incurred values. Given that we only include capex in the RAB at the time of commissioning, the values presented in this section are on an as-commissioned basis. These values are in nominal terms and include interest during construction to the middle of the year of commissioning.

5.1 Seqwater's historical capital expenditure

Under the terms of the referral, we have been asked to review the prudency and efficiency of actual capex for the period 1 July 2014 to 30 June 2018, if it exceeds capex we recommended in the 2015 review. If actual capex is lower than capex we recommended in the 2015 review, we will roll it into Seqwater's RAB on an as-commissioned basis, as is our standard practice.

Seqwater submitted that its actual capex for 2014–18 was $132.2 million[77] lower than what the QCA recommended in the 2015 review (Table 25).

Table 25 Seqwater's actual capex, 2014–18 ($m, nominal)[a]

	2014–15	***2015–16***	***2016–17***	***2017–18***	***Total***
QCA recommendation from 2015 review	107.4	122.7	124.3	195.9	550.1
Seqwater actual/budget	106.6	88.4	93.6	129.4[b]	418.0
Difference[c]	(0.8)	(34.2)	(30.7)	(66.5)	(132.2)

a *Capex is on an as-commissioned basis.* ***b*** *Figures are based on budget.* ***c*** *Totals may not add due to rounding.*

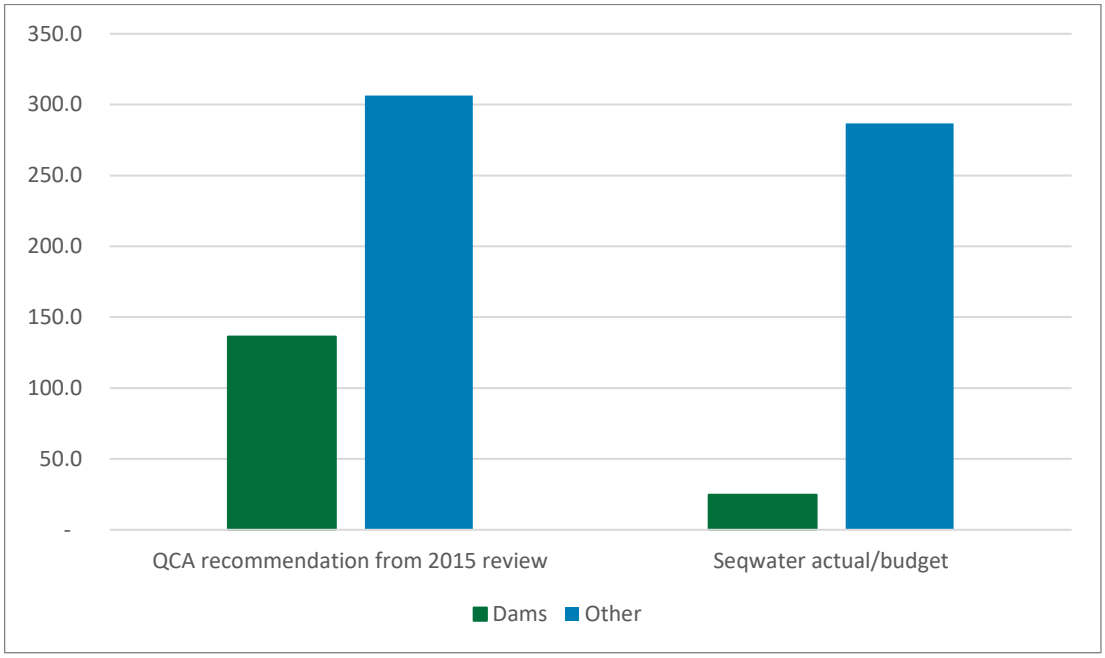
Sources: *QCA, SEQ bulk water price path 2015–18, final report, March 2015; Seqwater, sub. 2, p. 32; Seqwater pricing model 2017; Seqwater supplementary submission.*

As Seqwater has changed its approach to determining asset lives, involving a consolidation of asset types, it is not possible to undertake a full comparison, by asset type, between capex

[77] Seqwater provided an updated estimate for capex in 2017–18, as actual capex is not yet available.

recommended by the QCA in the 2015 review and Seqwater's actual capex. Figure 5 shows that Seqwater's capex savings were achieved mainly through an underspend on major dam safety capex. Seqwater advised that it had deferred commissioning dates for a number of major dam safety upgrades and improvement projects, including works at Lake MacDonald (now expected to be commissioned in 2022), Sideling Creek (now expected to be commissioned in 2021) and Ewen Maddock Dam (now expected to be commissioned in 2021).[78] As a result, Seqwater stated that it spent $111.6 million less on dam safety during the 2014–18 period than had been recommended by the QCA.[79]

Figure 5 Seqwater's actual capex (dam safety and other capex) compared to QCA's recommended capex from the 2015 review, 2014–18 ($m, nominal)



Note: *Capex is on an as-commissioned basis.*

Sources: *QCA 2015; Seqwater pricing model 2017; Seqwater response to QCA RFI 10.*

5.1.1 QCA assessment

In accordance with the referral, as Seqwater's actual capex is lower than we recommended in the 2015 review over 2014–15 to 2017–18, we have not assessed it further and have updated Seqwater's RAB to reflect actual capex (Chapter 6).[80]

Table 26 QCA recommended capex, 2014–18 ($m, nominal)[a]

	2014–15	***2015–16***	***2016–17***	***2017–18***	***Total***
QCA recommendation	106.6	88.4	93.6	125.1[b]	413.7

a *Capex is on an as-commissioned basis.* ***b*** *Updated for QCA modelling adjustments.*

Sources: *Seqwater, sub. 2, p. 32; Seqwater pricing model 2017; Seqwater supplementary submission; QCA analysis.*

[78] Seqwater, sub. 2, p. 33.
[79] Seqwater response to QCA RFI 10.
[80] As actual capex is not available for 2017–18, Seqwater provided an updated estimate. We have updated the RAB with this estimate.

5.2 Seqwater's proposed capital expenditure for 2018–28

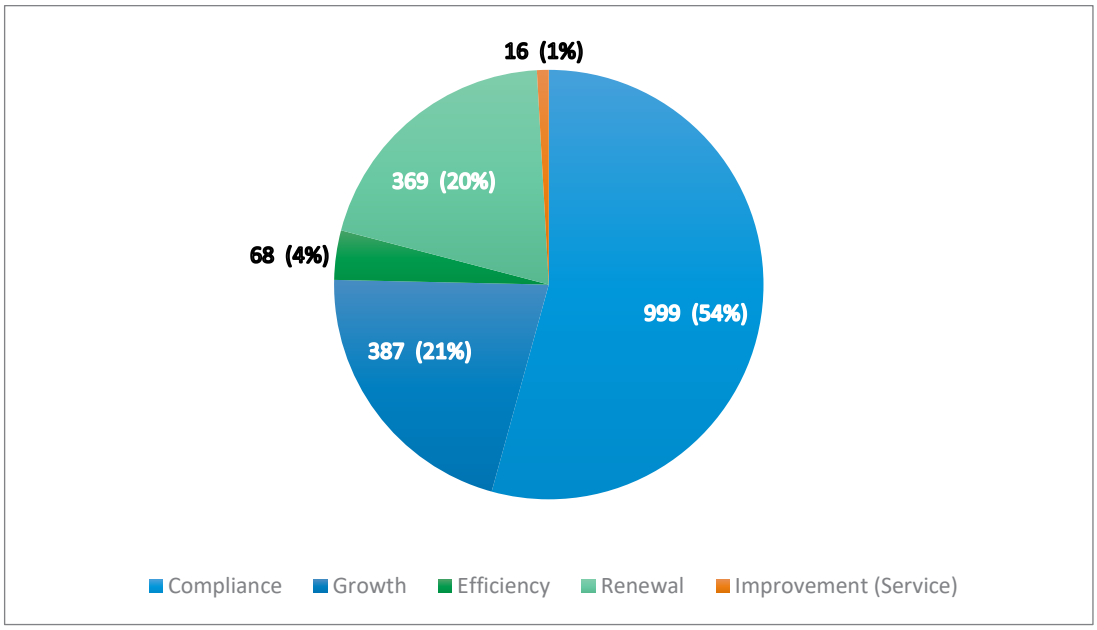
Under the terms of the referral, we have been asked to form a view on the prudency and efficiency of Seqwater's proposed capex for the 2018–28 period and, in doing so, to:

- focus on cost areas that are material to price changes
- give consideration to demand forecasts, which are to be within the range published in the WSP (see Chapter 3)
- accept the prudency of augmentations expected to be required under the WSP.

5.2.1 Seqwater's submission

Seqwater initially proposed capex of $1,558.1 million over the period 2018–28, but subsequently submitted a revised proposal for three projects which increased the overall claim to $1,839.2 million.[81] The biggest driver of the capex program is compliance, followed by growth, as shown in Figure 6 below.

Figure 6 Seqwater's forecast capex by investment driver, 2018–28 ($m, nominal)



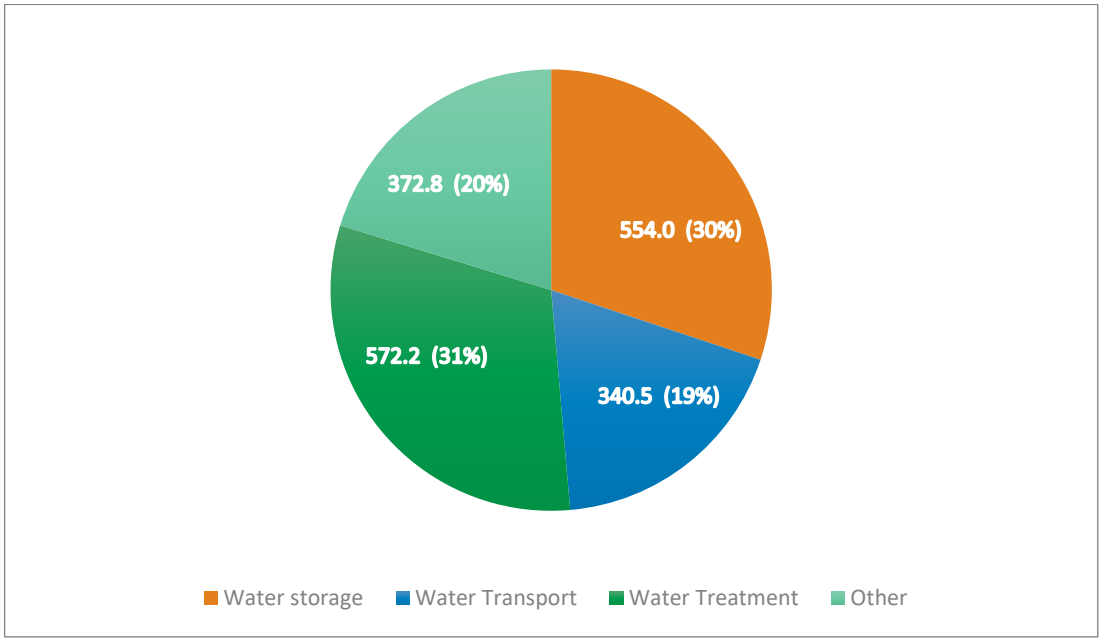
Note: *Capex is on an as-commissioned basis.*

Sources: *Seqwater pricing model 2017; Seqwater, sub. 13, pp. 22, 24, 26; Seqwater submitted that the revised cost for the Somerset dam safety upgrade was $353 million but subsequently corrected this to $344 million.*

By asset type, the largest category of capex is water treatment assets, followed by water storage and other (which includes other infrastructure projects and non-infrastructure projects) (Figure 7).

[81] Seqwater, sub. 13, pp. 19–27. Seqwater submitted that the revised cost for Somerset dam safety upgrade was $353 million, but subsequently corrected this to $344 million.

Figure 7 Seqwater's forecast capex by asset type, 2018–28 ($m, nominal)

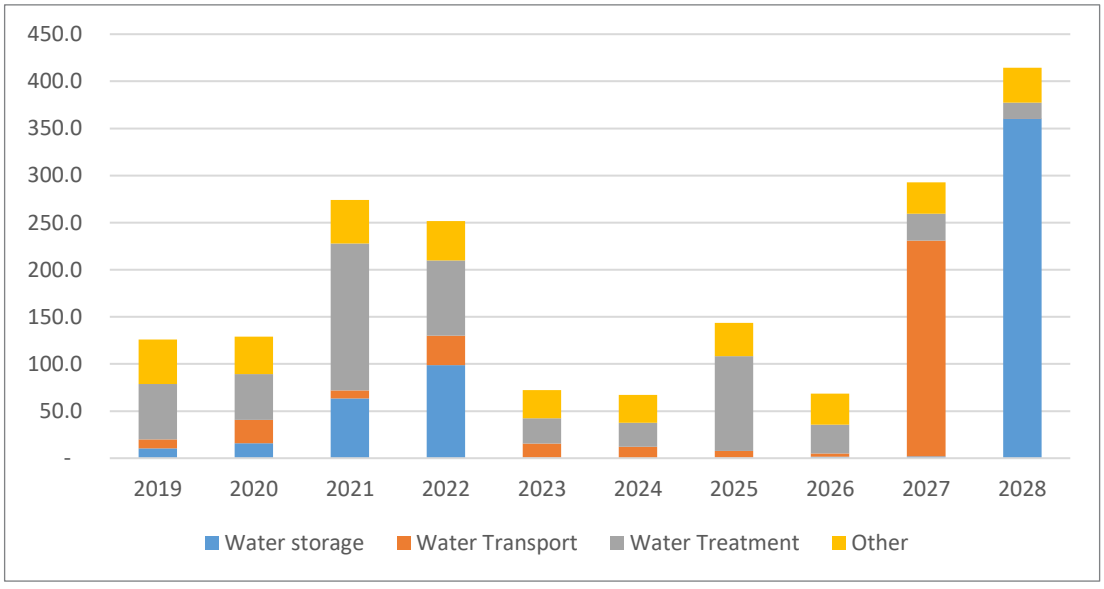


Note: *Capex is on an as-commissioned basis.*

Sources: *Seqwater pricing model 2017; Seqwater, sub. 13, pp. 22, 24, 26; Seqwater submitted that the revised cost for Somerset dam safety upgrade was $353 million but subsequently corrected this to $344 million.*

The majority of expenditure that Seqwater expects to capitalise in the next regulatory period is on water treatment assets. The majority of expenditure that Seqwater expects to capitalise towards the end of the 10-year price path is on water storage and water transport assets (Figure 8).

Figure 8 Seqwater's forecast capex by asset type and year of commissioning ($m, nominal)



Note: *Capex is on an as-commissioned basis.*

Sources: *Seqwater pricing model 2017; Seqwater, sub. 13, pp. 22, 24, 26; Seqwater submitted that the revised cost for Somerset dam safety upgrade was $353 million but subsequently corrected this to $344 million.*

5.2.2 QCA assessment

We have assessed the prudency and efficiency of Seqwater's proposed capex for the 2018–28 period. We consider capex to be prudent if the expenditure can be justified by reference to an identified need or cost driver, such as a legal or regulatory obligation. We consider capex to be efficient if it is the least cost option to deliver on an appropriately defined scope and standard of works.

We engaged KPMG to provide advice to assist with our assessment. KPMG's assessment involved:

- reviewing Seqwater's governance, capital planning and asset management frameworks
- undertaking detailed project reviews against Seqwater's key drivers and obligations (including the range of alternatives considered and efficiency of proposed cost estimates)
- identifying any systemic issues from the project reviews and drawing on the assessment of Seqwater's governance, capital planning and asset management frameworks
- assessing trade-offs between capex and opex.

Adequacy of Seqwater's governance, capital planning and asset management frameworks

KPMG reviewed Seqwater's corporate governance arrangements for capital expenditure and delivery to determine whether there were any systemic issues. In assessing corporate governance, KPMG applied the ISO 55001 international standard and specifically considered Seqwater's risk management, compliance, investment governance and procurement processes.

KPMG noted that Seqwater had made progress in its corporate governance arrangements since the last review and noted that the overarching corporate governance and procurement procedures are now, in large part, designed to be fit for purpose with ongoing improvements in embedding these procedures.

Overall, KPMG considered Seqwater's corporate governance and procurement framework to be one that provides an effective approach to managing key asset and investment risks and compliance obligations, but identified some potential improvements in a few areas (Box 1).[82]

KPMG considered that**,** overall, Seqwater's capital planning framework is commendable and consistent with its legislative requirements and good industry practice, but identified a number of areas in asset management where Seqwater could make improvements (Box 1).[83]

[82] KPMG, *Seqwater expenditure review: prudency and efficiency assessment,* updated report for the QCA, March 2018, p. 50.
[83] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 65–7.

Box 1: Potential improvements to governance, capital planning and asset management frameworks

Governance arrangements

Seqwater should consider improvements by:

(a) using data driven metrics from condition and performance assessments to help predict the likelihood and consequence of asset failure and better prioritise investments

(b) including additional procedures to its investment gateway process to minimise the risk of projects passing through gateways without appropriate documentation, review or completion of necessary approvals

(c) automating low value spend (i.e. below $5,000) to free up resources to monitor larger projects with significantly higher spend.

Capital planning and asset management frameworks

Seqwater should consider improvements to asset management by:

(a) ensuring that the asset management system includes relevant resourcing requirements

(b) ensuring that the selection and prioritisation of work in the asset portfolio master plan is based on criteria that have been agreed with customers

(c) formalising the asset management policy and communicating it widely through the organisation

(d) ensuring that key performance indicators are informed by asset management objectives

(e) ensuring that the strategic asset management plan evolves to focus on setting a direction for asset management and providing a roadmap for future improvements

(f) finalising asset class plans to gain a clearer view of lifecycle activities

(g) prioritising the testing and implementation of a renewals support tool to increase analytical capability.

Recommended adjustments to forecast capex program

KPMG undertook its review of prudency and efficiency of the forecast capex program in two steps. In the first step, KPMG undertook a detailed review of a sample of capex projects. In the second step, KPMG applied its findings from the sampled projects to the broader capex program where it considered that it had found systemic issues in its assessment of the sampled projects.

KPMG's review was also informed by its assessment of the substitution possibilities between capex and opex.

Recommended adjustments to reviewed capex sample

KPMG selected a sample of 12 capex projects (including the largest projects by value) for detailed analysis. This sample represents 48 per cent of the as-commissioned value of

Seqwater's proposed capex and includes a representative mix of capex by driver and asset type (Table 27).

Table 27 Capital expenditure sample reviewed by KPMG ($m, nominal)

Project	*Primary driver*	*Year of commissioning[a]*	*As-incurred cost*	*As-commissioned cost*
Beaudesert pipes upgrade	Growth	2023[b]	128.3[b]	195.1[b]
Mount Crosby East Bank WTP filtration upgrade	Compliance	2021	30.4	35.6
Mount Crosby East Bank WTP sedimentation upgrade	Growth	2021	32.7	33.7
North Pine WTP filtration capacity upgrade (250 ML/day)	Growth	2025	45.1	46.7
Enterprise Resource Planning Program	Efficiency	Ongoing	33.7[b]	33.7[b]
Holts Hill Reservoir pH correction upgrade	Improvement (Service)	2021	8.9	9.3
Somerset Dam safety upgrade	Compliance	2026[b]	285.5[b]	343.7[b,c]
Lake MacDonald Dam upgrade stage 2	Compliance	2022	82.9	95.7
Leslie Harrison Dam upgrade stage 1	Compliance	2021	23.9	29.6
Mobile plant and fleet renewals	Renewal	Ongoing	19.3	19.3
Mudgeeraba WTP long term renewals	Renewal	Ongoing	21.2	21.2
Mount Crosby East Bank water pump station (WPS) long term renewals	Renewal	Ongoing	24.8	24.8
Total sampled capex			**736.5[b]**	**888.3[b]**
Total proposed capex			**1,598.2[b]**	**1,839.2[b]**
Sample as a proportion of total (per cent)			**46.1**	**48.3**

a *Ongoing capex relates mainly to renewal expenditure and is capitalised into the RAB as it is incurred.* ***b*** *Reflects Seqwater's revised proposal, which was submitted in response to the draft report.* ***c*** *Seqwater submitted that the revised cost for Somerset dam safety upgrade was $353 million but subsequently corrected this to $344 million.*

Note: *Totals may not add due to rounding*

Source: *KPMG, Seqwater expenditure review: Prudency and efficiency assessment, updated report for the QCA, March 2018, p. 94.*

In assessing prudency, KPMG considered, among other things:[84]

- the level of documentation of key expenditure drivers

[84] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 72.

- evidence documenting the problem to be addressed and the approach to addressing the problem
- demonstration of the appropriateness of proposed project timing, including commencement and completion dates.

In assessing efficiency, KPMG considered factors such as whether:[85]

- the scope of works reflects the most appropriate means of resolving the need identified
- the standard of works complies with relevant legislative, regulatory and industry obligations, standards and codes for design and construction and the works are compatible with existing infrastructure and take account of modern engineering options and technology
- the cost of the proposed solution represents the least overall cost to deliver the works consistent with conditions in relevant input markets.

In the draft report, we relied on KPMG's assessment that, while the prudency of all but one project had been demonstrated, it was not possible to verify the efficiency of projects that were at an early stage in Seqwater's investment gateway process (typically between gateway 0 and gateway 2) as there was insufficient supporting information available. Where Seqwater had not adequately demonstrated the efficiency of a project, we accepted KPMG's recommendation to remove the proposed expenditure associated with that project. We did not consider it appropriate to accept projects into the RAB that lacked robust justification to demonstrate efficiency.

In response to the draft report, Seqwater did not agree that the total cost of projects found to be prudent should be removed when the QCA judges that there is insufficient information to demonstrate efficiency.[86] Seqwater said that this approach:[87]

- could create uncertainty about the future regulatory treatment of the expenditure, which could affect investment decisions
- could introduce price shocks once the projects are included in the RAB
- could incentivise Seqwater to prepare fully completed and scoped business cases to fit with regulatory cycles, rather than follow good asset management practice
- is inconsistent with the QCA's regulatory pricing principles (relating to cost reflective and forward looking prices, and revenue adequacy and promotion of sustainable investment)
- is inconsistent with the QCA's prior approach and the approach in other jurisdictions.

Seqwater submitted that the QCA should either include a reasonable proportion of project costs in prices where the project is not fully scoped, costed or internally approved; or set the reasonable estimate of costs as the lower-end of the range implied by the accuracy of the proposed costs (e.g. if the proposed cost has an accuracy of plus or minus 30 per cent, then the QCA could apply 70 per cent of the proposed cost).

We consider that capex should be allowed into the RAB if it is demonstrated to be prudent and efficient. The last two referrals from the Government have included a provision for an ex post assessment of the prudency and efficiency of capex and we recommend that the QCA should

[85] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 72.
[86] Seqwater, sub. 13, p. 19.
[87] Seqwater, sub. 13, p. 28, pp. 43-6.

have the discretion to undertake ex post assessments of capex in future reviews (see Chapter 10). This approach mitigates the risk to Seqwater of differences between forecast and actual capex, because it recognises that forecasting capex over a long time horizon is difficult, particularly where the program contains several large and complex projects. The approach also provides incentives for Seqwater to make efficient investment decisions, because it provides a mechanism for capex to enter the RAB if it is assessed as efficient.

We do not consider that our approach, when applied to sampled projects, will introduce price shocks once the projects are included in the RAB. We note that deferring the inclusion of individual projects in the RAB by three years will have very little impact on prices as these projects have long asset lives, with some due to be included in the RAB towards the end of the price path period.

Contrary to Seqwater's submission, we consider that our approach incentivises Seqwater to only include projects in its regulatory submission that have sufficient detail on options analysis, scope and standard of works to enable a reasonable assessment of efficient costs. However, if the QCA does not provide an ex ante allowance for a project because the efficiency of that project has not been demonstrated, this should not be interpreted to mean that the QCA does not approve the project or considers the project should not proceed.

As noted by KPMG, the approach is also consistent with that adopted by other Australian regulators. For example, in Victoria, the ESC has stated that, where capital projects are not fully scoped, costed or internally approved, it would consider a number of options for mitigating construction and capital forecasting risk, including applying an 'uncertain or unforeseen event' mechanism whereby the actual project costs are passed through to prices at the end of the period.[88] The ESC also considers options that involve including some portion of project costs (such as project development costs) in the RAB.[89] However, as noted by KPMG, the ESC adds capex to the RAB as it is incurred which makes it reasonable to include a forecast of project development costs, expected to be incurred in a given year, in the RAB. In contrast, we add capex to the RAB in the year of commissioning. This requires us to form a holistic view of the efficient 'as commissioned' cost of a project, rather than including a portion of project costs in the RAB.

Contrary to Seqwater's submission, our approach is not novel to this review. For example, in the 2015 review, we recommended adjustments to five of 10 projects reviewed by our consultant, CH2M Hill. For some of these projects, such as Mount Crosby to Greenhill Pipeline, we excluded the entire expenditure at the draft report stage, as recommended by CH2M Hill, on the basis that insufficient evidence was provided to support the proposed cost estimate. For the Mount Crosby to Greenhill Pipeline project, Seqwater subsequently provided additional information on two minor sub-projects which CH2M Hill assessed to be prudent and efficient and which we then included in the RAB for the purposes of our final report.[90]

For our 2015 price monitoring investigation of Gladstone Area Water Board (GAWB), our consultant, Jacobs, sampled GAWB's capex program to assess prudency and efficiency and, in all cases where Jacobs found a project to be prudent and efficient, a preferred option had been identified. In one instance, the project was at a relatively early stage. However, a preferred option had been identified and the associated works had been appropriately scoped. In that

[88] ESC, *2018 Water Price Review*: *Guidance paper*, November 2016, p. 35.
[89] ESC, *2018 Water Price Review: Guidance paper*, November 2016, p. 35.
[90] CH2M Hill, *Seqwater: Operating and Capital Expenditure Review, Assessment of Prudency and Efficiency*, March 2015.

case Jacobs assessed the independent cost estimate developed for the works to be appropriate for the phase of the project as Jacobs anticipated that the standard of works would likely be consistent with good industry practice.[91] We agree that, where possible, reasonable cost estimates of prudent capex should be included in the RAB. However, where project development is at such an early stage that a preferred option is yet to be identified, we consider that deferring the inclusion of project costs in the RAB is appropriate.

We note that three of the projects assessed by KPMG for this review were previously assessed to be efficient in the 2015 review. These are safety upgrades at Somerset, Leslie Harrison and Lake Macdonald dams. It is instructive to note that we have revised our efficient cost estimate by much more for projects that were at a relatively early stage in the investment lifecycle at the time of the 2015 review (Somerset Dam safety upgrade and Leslie Harrison Dam safety upgrade). For example, we have reduced our estimate of the efficient cost of the Leslie Harrison Dam safety upgrade, which was at the conceptual options assessment stage (or Gate 1) of Seqwater's then System Master Planning process, by more than 250 per cent between the 2015 review and this review. Conversely, our estimate of the efficient cost of Lake Macdonald Dam Safety upgrade, which was at the validation, planning and investment committee stage (or Gate 3) with an approved business case, has increased by around 20 percent mainly because of an updated geotechnical study. This highlights the significantly greater cost uncertainty associated with projects at a relatively early stage of the investment gateway process.

For these reasons, we consider it appropriate to exclude costs from the RAB where there is insufficient documentation to substantiate efficiency.

In response to the draft report, Seqwater submitted additional information to demonstrate the efficiency of the Somerset Dam safety upgrade, Beaudesert pipes upgrade and the Enterprise Resource Planning program.[92] In light of this information, we have revised our findings for these projects. However, we have maintained our findings for other projects.

We have explained our adjustments to sampled capex (which considers this new information) and our final recommendation in Table 28.

Table 28 QCA's recommended adjustments to the value of sampled capex projects ($m, nominal)

Project	*Assessment of prudency*	*Assessment of efficiency*	*Adjustment*	*Comments*
Beaudesert pipes upgrade	Prudent	Mostly efficient	(52.4)	Seqwater has identified a growth driver for this project making it prudent. The project consists of three sub projects, to be undertaken within the price path period, including a new storage plant at Beaudesert, a pipeline from Beaudesert to Logan City Council's network and the first stage of an upgrade to the Wyaralong WTP. These projects are all appropriately scoped and the standard of proposed works is appropriate. Seqwater has generally demonstrated the robustness of its cost estimates except for assumptions

[91] QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, May 2015, p. 37.
[92] Seqwater, sub. 13, pp. 20-7.

Project	*Assessment of prudency*	*Assessment of efficiency*	*Adjustment*	*Comments*
				regarding contingency allowances and indirect costs.
Mount Crosby East Bank WTP filtration upgrade	Prudent	Efficient	–	Seqwater demonstrated the need to address compliance obligations and growth. Seqwater provided robust supporting documentation around the scope, standard and cost of the proposed works.
Mount Crosby East Bank WTP sedimentation upgrade	Prudent	Efficiency not demonstrated	(33.7)	Seqwater has established an appropriate growth and compliance driver for this project. However, the project scope is yet to be fully established, the standard of works is dependent on the completion of a full options assessment and there is significant uncertainty around the ultimate project costs. KPMG advised it would be expected that a project that is due to commence within the regulatory period would have a greater degree of certainty around the scope, standard and cost of works.
North Pine WTP filtration capacity upgrade	Prudent	Efficiency not demonstrated	(46.7)	The project is prudent, as the WSP requires the capacity of the plant to be increased to meet growing local and regional demand. However, the project scope is yet to be fully established, the standard of works is dependent on the completion of future design work and the cost of the project will be dependent on the preferred option selected.
Enterprise Resource Planning Program	Prudent	Mostly efficient	(12.3)	The project is prudent as Seqwater has demonstrated the need to replace a failing platform that is close to reaching the expiry of the associated contract. Seqwater is undertaking a rigorous, market led process to develop an appropriate technology solution and scope of works. While Seqwater has clearly detailed the basis of its cost estimates and applied appropriate levels of contingency, it has made some errors in referencing costs from the business case and converting nominal values into real values. We do not consider Seqwater has demonstrated the efficiency of its proposed renewal expenditure for the new technology because a new technology would not be expected to require significant renewal expenditure immediately after the investment.
Holts Hill Reservoir pH correction upgrade	Prudent	Efficiency not demonstrated	(9.3)	Seqwater has identified an appropriate driver and provided sufficient evidence to justify the proposed works. However, further work is required to determine the

Project	*Assessment of prudency*	*Assessment of efficiency*	*Adjustment*	*Comments*
				appropriate scope, standard and cost of works. KPMG advised it would expect a project that is due to commence within the regulatory period to have a greater degree of certainty around the scope, standard and cost of works.
Somerset Dam safety upgrade	Prudent	Mostly efficient	(72.2)	Seqwater has identified an appropriate driver and provided sufficient evidence to justify the proposed works. While Seqwater has a preferred option for delivering the project, it is progressing four alternatives, along with the preferred option, as they are similar in scope and one of them could potentially replace the currently preferred option in the event that it proves unfeasible. Seqwater has established a robust scope of works for each of the options to support a more detailed assessment and has demonstrated that the required standard of works has been implemented in the design process. Seqwater has generally demonstrated the robustness of its cost estimates except for some unit rates and assumptions regarding contingency allowances.
Lake MacDonald Dam upgrade stage 2	Prudent	Efficient	–	Seqwater has demonstrated a need for the project (which is to address a compliance obligation). Seqwater provided robust supporting documentation around the scope, standard and cost of the proposed works.
Leslie Harrison Dam upgrade stage 1	Prudent	Efficient	–	Seqwater has demonstrated a need for the project (which is to address a compliance obligation). Seqwater provided robust supporting documentation around the scope, standard and cost of the proposed works.
Mobile plant and fleet renewals	Prudent	Efficient	–	Seqwater has established the prudency of replacing the vehicle fleet consistent with its replacement policies. Seqwater provided robust supporting documentation around the scope, standard and cost of the proposed renewal program.
Mudgeeraba WTP long term renewals	Prudent	Efficient	–	Seqwater has established the prudency of the renewal program and provided robust supporting documentation around the scope, standard and cost of the proposed works.

Mount Crosby East Bank WPS long term renewals	Prudent	Efficient	–	Seqwater has established the prudency of the renewal program and provided robust supporting documentation around the scope, standard and cost of the proposed works.
Total			**(226.7)**	

Note: *Capex is on an as-commissioned basis. Total may not add due to rounding*

Sources: *QCA analysis; KPMG, Seqwater expenditure review: Prudency and efficiency assessment, updated report for the QCA, March 2018, pp. 93–174.*

Based on this assessment, we have revised sampled capex as summarised in Table 29.

Table 29 QCA's recommended capex for sampled capex projects, 2018–28 ($m, nominal)

Project	*Seqwater's proposal*	*QCA adjustment*	*QCA recommended*
Beaudesert pipes upgrade	195.1[a]	(52.4)	142.7
Mount Crosby East Bank WTP filtration upgrade	35.6	–	35.6
Mount Crosby East bank WTP sedimentation upgrade	33.7	(33.7)	–
North Pine WTP filtration capacity upgrade (250 ML/day)	46.7	(46.7)	–
Enterprise Resource Planning Program	33.7[a]	(12.3)	21.3
Holts Hill Reservoir pH correction upgrade	9.3	(9.3)	–
Somerset Dam safety upgrade	343.7[a]	(72.2)	271.5
Lake MacDonald Dam upgrade stage 2	95.7	–	95.7
Leslie Harrison Dam upgrade stage 1	29.6	–	29.6
Mobile plant and fleet renewals	19.3	–	19.3
Mudgeeraba WTP long term renewals	21.2	–	21.2
Mount Crosby East Bank WPS long term renewals	24.8	–	24.8
Total	**888.3**	**(226.7)**	**661.6**

a *Reflects Seqwater's revised proposal, which was submitted in response to the draft report.*

Notes: *Capex is on an as-commissioned basis. Totals may not add due to rounding.*

Source: *QCA analysis.*

Recommended adjustments to the broader capital expenditure program

KPMG assessed the potential for systemic issues in the broader capex program based on its review of sampled capex and Seqwater's corporate governance arrangements, and capital planning and asset management practices.

For the draft report, we relied on KPMG's advice that, while it had not identified any systemic issues with the development of Seqwater's renewals program, its sample assessment had raised an issue related to capital planning—namely the early gateway status of some projects. KPMG advised that its review of sampled projects showed a fairly clear correlation between the gateway status of a project and the likelihood of it being assessed to be efficient, with efficiency not demonstrated for all projects at the early stage of the gateway process (gateway 0, 1 or 2). KPMG's assessment was that this correlation was due to these early stages involving a wider range of options with cost estimates at a higher level and with a greater degree of uncertainty compared to later stages.

On the basis of this assessment, KPMG advised that it was likely that a large number of capital projects in the 10-year price path period would fail the efficiency test primarily due to lack of supporting documentation. However, rather than removing all projects of this type from the broader capex program, as with the sampled projects, KPMG stated that it had also taken project commencement into account. Specifically, KPMG said that, from a capital planning perspective, it would expect projects commencing in the next three years to have a robust level of supporting documentation to demonstrate efficiency while this would be unreasonable to expect for projects commencing further out.[93]

Based on this assessment, KPMG recommended a systemic adjustment to the broader capex program to remove costs of non-renewal projects that are at an early stage in the gateway process (i.e. gateway 0, 1 or 2) and expected to commence within the next regulatory period.

We noted KPMG's advice that it may be unreasonable to expect full documentation to demonstrate efficiency for projects commencing more than three years in advance, but also noted that the referral asks the QCA to assess the prudency and efficiency of capex over a 10-year period.

We considered that, given KPMG's advice of a fairly clear correlation between the gateway stage of a sampled project and the likelihood that the efficiency of the project can be demonstrated, there could be an argument to remove the costs of all non-renewal projects between gateways 0 and 2 over the 10-year period. However, as we also considered there was some uncertainty as to whether this correlation could be fully extrapolated to the broader capex program, we chose to adopt a more conservative approach by focussing on the capex program expected to be delivered in the next regulatory period. Consequently, for the purposes of the draft report, we only removed the costs of non-renewal projects that were at an early stage in the gateway process (i.e. gateway 0, 1 or 2) and expected to be commissioned within the next regulatory period. This amounted to $168.1 million on an as commissioned basis.

As with sampled capex, Seqwater submitted that it did not agree with the general methodological approach of removing the total cost of projects (in this case un-sampled, non-renewal projects between gateways 0 and 2 to be commissioned by 2021) when the QCA judges that there is likely to be insufficient information to demonstrate efficiency.[94] However, as discussed above in relation to sampled capex, we maintain our view that it is appropriate to remove projects from the capex program where efficiency is unlikely to be demonstrated.

[93] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, report for the QCA, November 2017, p. 137.

[94] Seqwater, sub. 13, pp. 43–45.

Seqwater also raised a number of specific issues with our assessment which we address in turn.[95]

Seqwater submitted that, in practice, the most efficient option for delivering a project is determined within gateway 2 and that, of the gateway 2 projects that we removed from non-sampled capex, $31 million (or 80%) worth of projects had a preferred option.

KPMG tested this claim by assessing updated information on sampled projects at gateway 2 with a preferred option and, on this basis, advised that Seqwater has demonstrated that projects within gateway 2, with a preferred option, tend to have sufficient documentation to justify the scope and standard of works. However, KPMG advised that while these projects tend to have a robust cost build up, assumptions about contingency allowances and indirect costs are not consistent with industry standards and thus the associated costs should be adjusted to reflect appropriate allowances. We accept KPMG's recommendation to reinstate projects at gateway 2 with a preferred option, subject to making adjustments for contingency allowances and indirect costs, which KPMG advised tended to be overstated by 18 per cent in the sample of projects it reviewed.[96]

Seqwater also stated that some projects at gateways 0, 1 and 2 that we removed from non-sampled capex have since either progressed to gateway 2 with a preferred option (in the case of projects initially at gateways 0 and 1) or progressed beyond gateway 2.

As we have not received any revisions in cost associated with the progression of these projects through the gateway process, we have not made any adjustments to account for progression through the gateway process.

Seqwater also submitted that some projects at gateways 0 and 1, such as capital works on natural assets or involving technology (e.g. control systems) and works on the Mount Crosby flood resilience program, are akin to renewals and should be reinstated in the capex program, because KPMG had not identified any systemic issues with Seqwater's renewals program.

KPMG assessed this information and concluded that Seqwater had demonstrated that natural assets and 75 per cent of control system assets are similar to renewal projects and should be reinstated on the basis that KPMG had not identified any systemic issues with Seqwater's renewals program. However, KPMG found that Seqwater had not demonstrated that the Mount Crosby flood resilience program reflected an asset renewals program and recommended that we treat this program as non-renewal expenditure.[97] We accept these recommendations.

We have adjusted Seqwater's proposed capex as summarised in Table 30. We maintain our position in the draft report that it is appropriate to adopt a conservative approach by continuing to limit adjustments to the un-sampled capex program expected to be commissioned in the next regulatory period.

[95] Seqwater, sub. 13, pp. 31–8.
[96] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, p. 184.
[97] KPMG, *Seqwater expenditure review: Prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 182–3.

Table 30 QCA's recommended capex for the remainder of the capex program, 2018–28 ($m, nominal)[a]

	2018–28
Seqwater's proposal[b]	950.9
less non-renewal projects[c] at gateways 0 and 1 over the 2018–21 regulatory period	106.9
less non-renewal projects[c] at gateway 2, without a preferred option identified, over the 2018–21 regulatory period[d]	9.6
QCA's recommendation	**834.4**

a *Capex is on an as-commissioned basis.* ***b*** *Exclusive of projects sampled by KPMG.* ***c*** *Non-renewal projects are exclusive of natural assets and 75 per cent of MCS assets.* ***d*** *Includes an adjustment to contingency allowances and indirect costs for non-renewal projects at gateway 2 with a preferred option identified.*

Source: *QCA analysis.*

Substitution possibilities between capex and opex

KPMG reviewed Seqwater's asset management processes and sought evidence that Seqwater had assessed all options, including non-infrastructure solutions, when assessing the prudency of Seqwater's proposed capex program. KPMG did not identify any deficiencies in Seqwater's processes.

Overall assessment of forecast capex program

Our recommended adjustments result in an allowance of $129 million (December 2017 dollars) per year (on average) over the forecast period (see Table 32 below).[98] This is higher than Seqwater's historical capex in recent years, which averaged around $106 million (December 2017 dollars) per year over 2014-18. While comparisons of average capex over different periods need to be undertaken with care, given the general lumpiness of capex, we consider Seqwater's capex allowance over the forecast period provides a reasonable ex ante allowance.

As noted above, we consider it appropriate to undertake ex post assessments of capex in future reviews. This mitigates the risk to Seqwater of differences between forecast and actual capex, while incentivising Seqwater to make efficient investment decisions, because it provides a mechanism for capex to enter the RAB if it is assessed to be prudent and efficient.

Cost escalation factor for capex

As in the 2015 review, Seqwater has forecast its capex program in real terms (i.e. December 2016 dollars) and then, for the purposes of price modelling, converted these forecasts into nominal dollars using a capex escalator.

Seqwater applied the RBA's short-term inflation forecast as the escalation factor for 2016-18 as data on the growth in the Queensland engineering construction activity implicit price deflator, which we accepted in the last review, is only available to 2015–16. We accept this approach. However, we have updated the 2016-17 escalator for actual inflation and the 2017-18 escalator for the RBA's most recent short-term inflation forecast.[99]

Seqwater applied the midpoint of the RBA's inflation target range (2.5 per cent) as the capex escalator for 2018–28. This is consistent with the capex escalator that we accepted in the 2015

[98] We have expressed the recommended allowance in real terms to facilitate comparison with Seqwater's historical capex.

[99] ABS, *Consumer Price Index, Australia, September 2017, Table 1: All Groups Index Numbers and Percentage Changes*, cat. No. 6401.0; RBA, *Statement on Monetary Policy*, February 2018, p. 63.

review. Consistent with this previous practice, the QCA accepts this approach. However, we have updated the capex escalators for 2018-19 and 2019-20 with the RBA's most recent short-term inflation forecasts of 2.25 per cent for each year.[100]

Interest during construction

Seqwater has included an allowance for interest during construction (IDC) for multi-year capex projects. For capex over the period 2018–28, Seqwater has calculated IDC using its proposed WACC. The QCA considers that the WACC is an appropriate discount rate to apply for IDC and has applied the WACC as determined in Chapter 7.

Allocation of assets to declared irrigation services

Seqwater allocated capex expected to be commissioned over the period 2018–28 between declared irrigation services and urban bulk water services using various allocation methods for the tariff groups in its irrigation schemes as shown in Table 31.

Table 31 Recommended (non-metering) bulk renewal cost allocation (%)

Tariff group	*Method[a]*	*Allocation to irrigation customers*
Cedar Pocket Dam	None required—MP only	100
Central Brisbane River	Adjusted ratio of MP to HP	1.6
Central Lockyer Valley	Share of nominal WAE	98.9
Logan River	HUF	16
Lower Lockyer Valley	None required—MP only	100
Mary Valley	HUF	26
Warrill Valley	HUF	11

a *MP refers to medium priority entitlement holders (i.e. irrigation customers), HP refers to high priority entitlement holders (i.e. urban bulk water customers), WAE refers to water access entitlement, and HUF refers to headworks utilisation factor.*

Source: *Adapted from QCA, Seqwater Irrigation Price Review 2013–17, final report, Volume 1, April 2013, p. 149.*

This is consistent with our recommended approach and the allocation factors used in the 2013 irrigation price review. It is therefore consistent with the terms of the referral and we have accepted this approach.

Summary

Our recommended capex for 2018–28 is summarised in Table 32.

Relative to our draft report, we have increased the capex allowance by $472 million, or 47 per cent, to reflect further information provided by Seqwater to substantiate the efficiency of three of the sampled projects and a portion of the non-sampled projects.

[100] RBA, *Statement on Monetary Policy*, February 2018, p. 63.

Table 32 QCA's recommended capex for 2018–28 ($m, nominal)[a]

	2018–19	*2019–20*	*2020–21*	*2021–28*	*Total*
Seqwater's proposed capex	126.1	128.8	274.0	1,310.3	1,839.2
QCA adjustment to sampled projects[b]	(0.5)	(0.4)	(43.6)	(182.2)	(226.7)
QCA adjustment to remainder of the capex program	(14.6)	(40.9)	(61.0)	–	(116.5)
QCA modelling adjustments[c]	(0.8)	(0.5)	(1.0)	(14.3)	(16.5)
QCA recommendation	**110.2**	**87.0**	**168.4**	**1,113.9**	**1,479.5**

a *Capex is on an as-commissioned basis.* ***b*** *Includes adjustment for capex that has subsequently been reclassified as opex (see Chapter 4).* ***c*** *Adjustments for QCA modelling correction, updated CPI forecasts and the application of our recommended WACC.*

Note: *Totals may not add due to rounding*

Source: *QCA analysis.*

6 REGULATORY ASSET BASE

The regulatory asset base (RAB) represents the value of assets. It is used for the purpose of determining the return on assets, a component of building block costs. The value of the RAB changes over time to reflect additions for capital expenditure and asset appreciation (inflationary gain), and deductions for depreciation.

This chapter shows how we have calculated the opening value of the RAB at 1 July 2018 by applying the approach specified in the referral. We have then calculated the value of the RAB in each subsequent year to 2027–28.

6.1 Opening value of the RAB at 1 July 2018

Consistent with the referral, we established the opening value of the RAB at 1 July 2018, by:

- starting with the value of the RAB at 1 July 2014, not optimising this value and accepting the remaining asset lives used in our 2015 review
- rolling forward the RAB to 30 June 2018 to reflect the following adjustments:
  - adding actual capital expenditure (adjusted for the findings of an ex post assessment, if required)
  - calculating asset appreciation (which we refer to as inflationary gain) using actual inflation
  - calculating depreciation using actual inflation over the period and applying the straight-line depreciation method.

The value of the RAB as at 1 July 2014 is $8,439 million.[101] We have calculated the RAB in each year to 1 July 2018 by adding capital expenditure and an inflationary gain, and deducting for depreciation.

6.1.1 Capital expenditure

Consistent with the referral, we have used Seqwater's actual capital expenditure for 2014–15, 2015–16 and 2016–17, and estimated capital expenditure for 2017–18 (Chapter 5).

6.1.2 Inflationary gain

Consistent with standard QCA practice, we index the RAB each year by the inflation rate. However, as we apply a nominal rate of return on assets, we make an adjustment to building block costs to deduct an amount equivalent to the inflationary gain in the RAB value.[102] This avoids the double counting of inflation that would otherwise occur from indexing the RAB by inflation and applying a nominal rate of return on assets (Chapter 7, section 7.2.1).[103]

[101] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, p. 40.

[102] The inflationary gain added to the RAB is reported in end-of-year values, while the inflationary gain component deducted from building block costs will be reduced by a cash flow adjustment to reflect mid-year values.

[103] QCA, *Financial Capital Maintenance and Price Smoothing*, information paper, February 2014, p. 12, http://www.qca.org.au/getattachment/ba6b1a87-d2b5-4941-b5d4-6736fb4c1d43/Financial-Capital-Maintenance-and-Price-Smoothing.aspx.

As requested in the referral, we have indexed the RAB by applying actual inflation for 2015–16 and 2016–17 and forecast inflation for 2017–18 (Table 33).

Table 33 Inflation rates (%)

	2014–15 actual	*2015–16 actual*	*2016–17 forecast/actual[a]*	*2017–18 forecast[b]*
Seqwater proposal	1.51	1.49	2.00	2.00
QCA recommendation	1.51	1.49	1.83	2.00

a *Actual inflation for 2016–17 of 1.83 percent became available after Seqwater's initial submission. Actual inflation for 2014–15 to 2016–17 is based on Brisbane All Groups CPI index published by the ABS.* ***b*** *Seqwater's proposed 2017–18 inflation forecast is based on the mid-point of the RBA's short-term forecast in the February 2017 Statement on Monetary Policy. We note the RBA's short-term forecast in the February 2018 Statement on Monetary Policy is 2 per cent, requiring no change to Seqwater's forecast inflation rate.*

Sources: *Seqwater, sub. 2, p. 9; ABS, Consumer Price Index, Australia, September 2017, Table 1: All Groups, Index Numbers and Percentage Changes, cat. no. 6401.0; RBA, Statement on Monetary Policy, February 2018, p. 63.*

6.1.3 Depreciation

An allowance for depreciation is a component of building block costs that is also used to calculate the value of the RAB.[104] An allowance for depreciation allows Seqwater to recover the cost of prudent and efficient capital investments over the useful life of the assets.

Depreciation—for any given year—is a function of the opening RAB, the amount of capital expenditure added, inflationary gain and asset lives. Consistent with the referral, we have accepted the remaining lives of assets that entered the RAB before 1 July 2014 and calculated depreciation using the straight-line method. We have accepted Seqwater's proposed asset lives for assets entering the RAB from 2014–15 to 2017–18, which are based on capital expenditure as commissioned (or forecast, in the case of 2017–18).

6.1.4 Asset disposals

In its submission, Seqwater noted that it had received proceeds from the sale of assets over the three years to 2016–17.[105] While we would generally make an adjustment to the RAB to remove the value of the disposed assets, Seqwater proposed deducting these costs from building block costs, given it was not able to identify the individual assets in the RAB.[106] Because the costs are immaterial and Seqwater could not identify the individual assets in the RAB, we have made an adjustment to building block costs (see Chapter 8, section 8.1.1).

6.1.5 Summary

A summary of our calculation of the RAB over the period 1 July 2014 to 30 June 2018 is provided in Table 34. The closing value of the RAB as at 30 June 2018 is $8,523.4 million and this becomes the opening value of the RAB at 1 July 2018.

[104] Similar to inflationary gain, the depreciation allowance included in building block costs is reduced by a mid-year cash flow adjustment.
[105] Seqwater, sub. 1, p. 54.
[106] Seqwater response to QCA RFI 4.

Table 34 RAB roll-forward to 30 June 2018 ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
Opening RAB	8,439.1	8,456.1	8,447.4	8,465.7
plus capital expenditure	106.6	88.4	93.6	125.1
plus inflationary gain	128.4	126.6	155.8	170.6
less depreciation	218.1	223.7	231.2	237.9
Closing RAB	**8,456.1**	**8,447.4**	**8,465.7**	**8,523.4**

Notes: *Capital expenditure, inflationary gain and depreciation for 2017–18 are forecasts only. All values are reported as end-of-year values. Totals may not add due to rounding.*

Source: *QCA calculations.*

6.2 RAB roll-forward from 1 July 2018

In this section we explain how we have calculated the value of the RAB in each year from 1 July 2018 to 30 June 2028. We start with the opening value of the RAB as at 1 July 2018 and then roll-forward the RAB by:

- adding capital expenditure we have assessed to be prudent and efficient
- indexing the RAB for forecast inflation (inflationary gain)
- deducting depreciation.

This section focuses on the RAB roll-forward for the three-year period from 1 July 2018 to 30 June 2021, with a summary of the RAB roll-forward calculations for the period 1 July 2018 to 30 June 2028 provided in Table 38.

6.2.1 Capital expenditure

Capital expenditure that we assess to be prudent and efficient is added to the RAB in the year the project in commissioned (Chapter 5). The capital expenditure that we recommend adding to the RAB is provided in the RAB roll-forward table (Table 38).

6.2.2 Inflationary gain

As explained in section 6.1.2, we index the RAB each year by the inflation rate. This requires an inflation forecast. We agree with Seqwater's proposed approach for 2018–19 onwards, noting the inflation forecasts reflect:

- for 2018–19, the RBA short-term forecast
- for 2019–20 onwards, the mid-point of the RBA inflation target range of 2 to 3 per cent.

However, we have updated the 2018–19 and 2019–20 inflation forecasts to 2.25 per cent, to reflect the updated forecasts in the RBA's February 2018 Statement on Monetary Policy.[107]

Table 35 shows the RAB inflationary gain over the 2018–21 regulatory period. Our recommended inflationary gain differs from Seqwater's, due to the changes in the opening RAB each year and the revised inflation forecast for 2018–19 and 2019–20.

[107] RBA, *Statement on Monetary Policy*, February 2018, p. 63.

Table 35 Inflationary gain ($m, nominal)

	2018–19	*2019–20*	*2020–21*
Seqwater proposal	215.1	217.5	221.7
QCA recommendation	193.0	194.1	217.4

Note: *All values are reported as end-of-year values.*

Sources: *Seqwater pricing model 2017; QCA calculations.*

6.2.3 Depreciation

The referral asks us to calculate depreciation using the straight-line method. This is consistent with our approach in the 2015 review.

As part of our investigation, we undertook an analysis of Seqwater's proposed asset lives for future capital expenditure. Upon requesting further information from Seqwater, we have made minor adjustments to reflect the asset lives in Seqwater's APMP, which Seqwater advised are based on internal engineering advice.[108] Our recommended asset life schedule is presented in Table 36 below.

Table 36 QCA-recommended asset lives to 2020–21

	1 July 2018 RAB	*2018–19 capex*	*2019–20 capex*	*2020–21 capex*
Value ($m)	8,523.4	110.2	87.0	168.4
Weighted-average asset life (years)	56.1	55.6	54.2	86.3

Source: *QCA calculations.*

Our recommended depreciation is lower than Seqwater's proposed depreciation for each year of the 2018–21 period, due to changes in the RAB and our adjustments to asset lives (Table 37).

Table 37 Depreciation ($m, nominal)

	2018–19	*2019–20*	*2020–21*
Seqwater proposal	243.6	250.5	257.9
QCA recommendation	243.4	249.6	256.2

Note: *All values are reported as end-of-year values.*

Sources: *Seqwater pricing model 2017; QCA calculations.*

6.2.4 Summary

Table 38 summarises our RAB roll-forward calculations for the period 1 July 2018 to 30 June 2028. The closing RAB, across all years, is higher than the closing RAB in the draft report, primarily due to an increase in capex (Chapter 5).

[108] Seqwater response to QCA RFI 6.

Table 38 RAB roll-forward ($m, nominal)

	2018–19	***2019–20***	***2020–21***	***2021–22***	***2022–23***	***2023–24***	***2024–25***	***2025–26***	***2026–27***	***2027–28***
Opening RAB	8,523.4	8,583.1	8,614.6	8,744.2	8,951.0	8,974.2	8,985.7	9,020.0	9,020.7	9,187.6
plus capital expenditure	193.0	194.1	217.4	221.7	224.6	225.1	225.8	226.3	228.5	233.9
plus inflationary gain	110.2	87.0	168.4	248.0	68.8	63.8	93.0	65.2	236.4	338.7
less depreciation	243.4	249.6	256.2	262.9	270.2	277.4	284.5	290.7	297.9	305.6
Closing RAB	8,583.1	8,614.6	8,744.2	8,951.0	8,974.2	8,985.7	9,020.0	9,020.7	9,187.6	9,454.6

Notes: *All values are reported as end-of-year values. Totals may not add due to rounding.*

Source: *QCA calculations.*

7 RETURN ON ASSETS, WORKING CAPITAL ALLOWANCE AND TAX

This chapter explains how we have calculated the rate of return, return on assets, working capital allowance and tax allowance.

The return on assets is a significant component of building block costs. It is calculated by applying a rate of return to the RAB. The working capital allowance reflects the costs of holding capital to allow a business to manage the timing difference between the outflow of cash associated with current liabilities and the receipt of cash associated with current assets. It is calculated by applying a rate of return to the working capital balance. The tax allowance compensates a business for its tax liabilities.

7.1 Rate of return

Under the referral, we have been asked to apply a rate of return to calculate the return on assets and working capital allowances. This rate of return reflects the weighted average cost of capital (WACC).

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 capital structure of the firm. It is the rate of return an investor expects to earn on an asset of comparable risk and represents the opportunity cost of the capital invested to provide the relevant service. Setting prices that reflect an appropriate WACC ensures that revenue is sufficient to provide an appropriate rate of return on capital and to promote efficient investment, but no higher.

The QCA's standard approach, like the approach of most other regulators, is to estimate a benchmark WACC. The cost of equity and cost of debt components are set with reference to relevant, external benchmarks. Firm-specific parameters such as the capital structure, for example, are benchmarked against those of firms with comparable cash flow volatility. This creates an incentive for the regulated business to outperform the benchmark by adopting the most efficient financing practices, driving costs towards efficient levels. Market parameters, such as the risk-free rate (RFR) and market risk premium (MRP), are more general in nature and are unlikely to differ from business to business.

Under the terms of the referral, we have been asked to determine a WACC using a cost of equity as determined by the QCA for the equity component, and Seqwater's cost of debt as estimated by QTC for the debt component.[109] As the referral asks the QCA to adopt Seqwater's cost of debt for the debt component, we have diverged from our standard WACC approach for the purposes of this review. We have also diverged from our standard WACC approach in the 2015 review, when we were asked to adopt a rate of return reflecting the long-term cost of debt advised by QTC.[110]

[109] However, the referral states that if the cost of equity calculation determined by the QCA is lower than Seqwater's cost of debt, the rate of return applying to assets should be Seqwater's cost of debt as advised by QTC.

[110] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 103–106.

We engaged Incenta Economic Consulting (Incenta) to provide advice on the appropriate values for the firm-specific parameters, which include the benchmark asset beta, equity beta, and capital structure.[111]

7.1.1 Capital structure

We have adopted a benchmark capital structure to determine the relative weights for the debt and equity components of the cost of capital. In doing so, our objective has been to estimate the WACC of a firm with an efficient benchmark capital structure.

Seqwater proposed a capital structure of 60 per cent debt and noted:

- A gearing of 60 per cent debt has almost uniform support from Australian regulators of water businesses.
- Such a gearing is consistent with the QCA's recommendation in the 2012–13 review of grid service charges (GSC).[112]
- Seqwater does not carry the same risks as GAWB, where the QCA adopted a capital structure of 50 per cent debt.[113]

Incenta assessed Seqwater's submission and supporting documentation and agreed with Seqwater's view that the Australian regulatory precedent for water businesses is a benchmark capital structure of 60 per cent debt. Incenta also agreed with Seqwater's view that the circumstances applying to GAWB do not apply to Seqwater.[114]

This regulatory precedent for a benchmark capital structure of 60 per cent debt originated from the regulated Australian energy sector, as there are no publicly listed, regulated water businesses in Australia. As a result, Incenta reviewed the energy sector to assess whether 60 per cent debt continues to remain appropriate for Seqwater. Incenta's analysis showed that the average capital structure of the three energy businesses that are listed, over 10 years, is close to 60 per cent debt.[115]

In its assessment of an appropriate asset beta, Incenta selected a number of listed regulated water businesses, based in the United States (US) and United Kingdom (UK), for its sample. Incenta analysed the capital structures of these firms and concluded that the average capital structure is 38 per cent debt. However, for the UK firms, this figure is close to 50 per cent debt. Incenta considered the UK firms' capital structures to be more relevant because of the similarity between the UK and Australian tax regimes and regulatory approaches.[116]

Incenta said that while 60 per cent debt is materially higher than the observed capital structures of the US firms, and 10 per cent higher than the UK firms, it is consistent with its observation of the three remaining listed energy businesses. Taking into account the UK water evidence and

[111] Incenta's report is available on our website.
[112] We were asked to accept a capital structure of 50 per cent for the 2012–13 review of GSC.
[113] Seqwater, sub. 2, p. 55.
[114] Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation,* November 2017, p. 28.
[115] Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation,* November 2017, p. 28.
[116] Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation,* November 2017, pp. 28–29.

the Australian energy sector evidence, Incenta recommended a benchmark capital structure of 60 per cent debt for Seqwater.[117]

Conclusion

On the basis of Incenta's advice, we accept Seqwater's proposal to apply a benchmark capital structure of 60 per cent debt.

7.1.2 Cost of debt

In other decisions, we have estimated the benchmark cost of debt using the on-the-day rate consistent with the benchmark credit rating of the regulated business. However, in accordance with the referral, we have applied Seqwater's forecast cost of debt, as advised by QTC.

Following our draft report, Seqwater submitted updated cost of debt estimates provided by QTC (Table 39). The updated cost of debt estimates are slightly higher than Seqwater's initial submission, across all years, with the exception of 2027–28, where it is unchanged.[118]

Table 39 Cost of debt, proposed by Seqwater (%)

	2019	***2020***	***2021***	***2022***	***2023***	***2024***	***2025***	***2026***	***2027***	***2028***
Initial cost of debt	5.50	5.25	5.10	4.95	4.80	4.70	4.65	4.60	4.55	4.55
Updated cost of debt	5.55	5.35	5.15	5.00	4.90	4.80	4.70	4.65	4.60	4.55

Sources: *Seqwater, sub. 2, p. 55; Seqwater, email to the QCA, 1 March 2018.*

Conclusion

In accordance with the referral, we accept Seqwater's proposed cost of debt, as advised by QTC.

7.1.3 Cost of equity

In its initial submission, Seqwater proposed a cost of equity of 6.82 per cent, which is the sum of its proposed RFR of 1.84 per cent and its proposed equity premium of 4.98 per cent.[119]

Seqwater said that while the parameters underpinning its proposed WACC are based on our past decisions, the QCA's approach to estimating some of the parameters could be improved. Seqwater proposed to contribute to the ongoing development of the QCA's approach in future reviews and provided reports by Frontier Economics, which provides alternative views on the estimation of the RFR, MRP and gamma.[120]

In our draft report, we accepted Seqwater's proposed cost of equity. However, consistent with Seqwater's proposal, we updated the RFR based on the latest market information. This resulted in a cost of equity of 7.05 per cent.[121]

In response to our draft report, Seqwater submitted that the QCA should set the cost of equity to reflect an MRP that the QCA considers appropriate in the prevailing market conditions.[122] We estimated this to be 7 per cent in our draft report.[123]

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[117] Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation,* November 2017, pp. 28–29.
[118] Seqwater, email to the QCA, 1 March 2018.
[119] Seqwater, sub. 2, p. 57.
[120] Seqwater, sub. 2, pp. 54–58; Seqwater, sub. 13, p. 48; Seqwater, sub. 14, p. 5.
[121] QCA, *Seqwater bulk water price review 2018–21*, draft report, November 2017, p. 57.

Risk-free rate

The RFR is the rate of return on an asset with zero default risk. The rate of return on a risk-free asset compensates the investor for the time value of money and is the base to which the investor adds a premium for risk (i.e. the equity premium).

Seqwater proposed a RFR of 1.84 per cent, which it advised was based on the following approach applied by the QCA in previous decisions:

- using Commonwealth Government bonds as a proxy for a risk-free asset
- aligning the term to maturity to the length of the regulatory period (three years)
- applying a 'current' rate, as proxied by a short-term average over 20 business days close to the start of the regulatory period.
- Seqwater considered that its estimate, which was based on an indicative 20-day averaging period ending on 21 April 2017, should be updated for the final report.[124]

We accept Seqwater's proposed methodology, as it is based on the approach we have adopted in other decisions. Consistent with our draft report, which said we would update the RFR for the final report, we recommend a RFR of 2.14 per cent, reflecting a 20-day averaging period to 28 February 2018. This estimate is higher than the indicative RFR of 2.07 per cent in our draft report.

Equity premium

The equity premium is the additional return above the RFR that investors require to invest in an asset of comparable risk.[125]

In our draft report, we accepted Seqwater's proposed equity premium of 4.98 per cent. We considered it was consistent with the aim of protecting consumers from monopoly pricing because it was lower than our estimate of the benchmark equity premium. We also considered it was consistent with the promotion of efficient investment because:

- as a monopoly business, we expected Seqwater to propose a cost of equity (as part of an overall WACC) that provides sufficient incentives to invest
- it was within the range of estimates from recent regulatory decisions in the water sector.[126]

In response to our draft report, Seqwater said that the QCA should not have accepted Seqwater's proposed equity premium because it was based on an MRP of 6.5 per cent, rather than the QCA's current, best estimate of 7 per cent. Seqwater said that its initial proposal on the MRP was solely based on the QCA's previous decisions, and developed using an approach that Seqwater had clearly stated was inadequate and not based on the latest information.[127]

Seqwater argued that there are a number of problems with the QCA accepting an MRP that is below a figure the QCA considers appropriate, including that it is inconsistent with incentive-

[122] Seqwater, sub. 13, p. 48.
[123] QCA, *Seqwater bulk water price review 2018–21, draft report*, November 2017, p. 54.
[124] Seqwater, sub. 2, p. 57.
[125] It is a product of the MRP and equity beta.
[126] QCA, *Seqwater bulk water price review 2018–21*, draft report, November 2017, pp. 56–7.
[127] Seqwater, sub. 13, p. 48.

based regulation and the QCA's approach of updating the RFR for more recent market data.[128] Seqwater also submitted a report by Frontier Economics that contested aspects of our approach to estimating the MRP, but the report nevertheless concluded that the relevant evidence supported an MRP of at least 7 per cent.[129]

While we do not agree with all aspects of Seqwater's submission on this matter, we accept Seqwater's argument that an equity premium that reflects the QCA's best estimate of the MRP (7 per cent) is appropriate. However, in future, we encourage Seqwater to submit a proposal it can support and justify.

After updating the MRP to reflect our best estimate, we recommend an equity premium of 5.36 per cent.

Conclusion

Our final position is to adopt a cost of equity of 7.50 (compared to 7.05 per cent in the draft report), based on an RFR of 2.14 per cent and an equity premium of 5.36 per cent.

7.1.4 Summary of WACC

We recommend a WACC of 6.33 per cent in 2018–19, decreasing to 5.73 per cent in 2027–28, in line with the scheduled reductions in the cost of debt (see Table 40 for our recommended WACC for the three years to 2020–21).

Table 40 WACC, recommended by the QCA (%)

Parameter	*2018–19*	*2019–20*	*2020–21*
Capital structure	60	60	60
Cost of debt	5.55	5.35	5.15
Cost of equity	7.50	7.50	7.50
Post-tax nominal (vanilla) WACC	**6.33**	**6.21**	**6.09**

Source: *QCA analysis.*

7.2 The return on assets and working capital allowance

We have applied the QCA-recommended WACC to calculate the return on assets and working capital allowance.

7.2.1 Return on assets

The return on assets is calculated by applying the WACC to the RAB. Our recommended allowance for the return on assets is higher than the indicative allowance in the draft report, primarily due to our higher recommended WACC (Table 41).

[128] Seqwater, sub. 13, p. 48.
[129] Seqwater, sub. 14, p. 5.

Table 41 Return on assets ($m, nominal)

	2019	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*
QCA recommendation	526.7	519.9	514.4	516.8	518.7	514.7	511.1	509.7	511.9	521.4

Source: *QCA analysis.*

The RAB is rolled forward for inflation, at a forecast inflation rate, to maintain the real value of those assets (Chapter 6). Given this adjustment, it follows that a deduction for inflationary gain is required from building block costs to avoid double counting.

The deduction for inflationary gain is generally higher than the deduction in the draft report, because the RAB we recommend in this report is higher (Table 42). However, the deduction for inflationary gain in 2019–20 is lower, because the 2019–20 inflation forecast is now lower (Chapter 6, section 6.2.2).

Table 42 Deductions for inflationary gain ($m, nominal)

	2019	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*
QCA recommendation	187.2	188.3	211.1	215.3	218.2	218.8	219.5	220.0	222.1	227.5

Source: *QCA analysis.*

7.2.2 Working capital allowance

The working capital allowance Seqwater proposed was calculated by applying the proposed WACC to Seqwater's working capital balance (i.e. accounts receivable *plus* inventory *minus* accounts payable), where:

- accounts receivable = building block costs x days receivable / days in a year = building block costs x 45 / 365
- inventory = operating expenditure x days in inventory / days in a year = operating expenditure x 3 / 365
- accounts payable = operating expenditure x days payable / days in a year = operating expenditure x 30 / 365.

We accept Seqwater's proposed methodology, which is consistent with the approach we applied in the 2015 review.

We confirm that Seqwater's contract terms require water retailers to pay within 30 days upon receiving an invoice. This is the number of days receivable between the recording of credit sales and the receipt of cash from its customers.

Consistent with past decisions (i.e. the 2011–12 and 2012–13 GSCs investigations, and the 2015 review) we have allowed an additional 15 days receivable, or a total of 45 days, based on the assumption that services are delivered, on average, in the middle of the month.

Table 43 sets out our recommended allowance for working capital.

Table 43 Working capital allowance ($m, nominal)

	2019	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*
QCA recommendation	5.1	5.0	4.8	4.7	4.8	4.8	4.7	4.8	4.8	5.0

Source: *QCA analysis.*

7.3 Tax allowance

Under the referral, we have been asked to provide Seqwater with an allowance for tax (if applicable). As we apply a nominal post-tax WACC to calculate the return on assets (see section 7.1.4), our general approach is to include an explicit allowance for tax that reflects the benchmark tax liabilities of the regulated business. We calculate tax by applying a tax rate of 30 per cent (adjusted for the effects of dividend imputation) to taxable income.

We did not provide an allowance for tax in our 2015 review, because Seqwater's return on assets reflected a cost of debt rate of return only. Under a cost of debt rate of return, no tax is expected to be paid, as tax losses generally accrued in the early life of assets can be used to offset tax payable in future.

7.3.1 Seqwater's proposal

Seqwater advised that it is now appropriate to include a tax component, because a WACC rate of return, which incorporates a return on equity and a benchmark capital structure that is no longer 100 per cent debt, will apply from 2018.[130]

Seqwater proposed a tax allowance calculated on the basis of building block costs rather than total revenue.[131] Total revenue is less than building block costs in the early years of the price path, but exceeds building block costs in the later years to recover price path debt.

In Seqwater's proposed tax allowance, no accumulated tax losses are recognised before 1 July 2018. As a result, the proposed tax allowance commences from 2018–19, which corresponds to the first year Seqwater anticipates earning positive taxable income for regulatory purposes.

Seqwater has derived tax depreciation by deflating regulatory depreciation back to the year of commissioning of the underlying capital expenditure. For existing assets, Seqwater has deflated depreciation back to when the existing RAB was conceptually incurred on 1 July 2013.

7.3.2 QCA's assessment

We accept Seqwater's proposal to calculate the benchmark tax allowance on the basis of building block costs. Setting a tax allowance based on total revenue would require the establishment of a RAB and tax asset base at the start of the price path in 2008, to ensure symmetry in the treatment of tax losses over the price path. This is not possible, as we were asked to accept the RAB as at 1 July 2013—as advised by the Minister for Energy and Water Supply—for the purposes of the 2015 review, which was our first review of bulk water prices.

We note that Seqwater has not provided any information about its tax assets and asset lives. Instead, its pricing model derives tax depreciation based on RAB depreciation deflated to when

[130] Seqwater, sub. 1, p. 36.
[131] Seqwater, sub. 1, p. 36.

the underlying capex or RAB was incurred. This effectively sets the tax value of assets equal to the existing RAB at 1 July 2013.

We have assessed whether Seqwater would have accumulated tax losses since the establishment of the RAB (and, in effect, the tax asset base) when its cash flows are modelled on a benchmark basis. We consider that tax losses accumulated over this period should be taken into account, because tax losses can be used to reduce Seqwater's future tax liability. This is consistent with the request in the referral to recommend prices that allow Seqwater to recover prudent and efficient costs incurred between 2018–19 and 2027–28.

We have calculated Seqwater's tax allowance based on building block costs and the application of a benchmark estimate of Seqwater's accumulated tax losses commencing from 1 July 2013 (Table 44).

Table 44 Tax allowance ($m, nominal)

	2019	***2020***	***2021***	***2022***	***2023***	***2024***	***2025***	***2026***	***2027***	***2028***
QCA recommendation	–	–	–	–	–	–	–	–	–	6.9

Source: *QCA analysis.*

8 TOTAL REVENUE

In this chapter, we explain how we have calculated:

- *the opening price path debt balance as at 1 July 2018*
- *the price path debt repayment, from 1 July 2018 to 30 June 2028, which would allow Seqwater to repay price path debt (including interest) by 2027–28*
- *total revenue, which is the sum of the building block costs and price path debt repayment.*

8.1 Establishing opening price path debt balance as at 1 July 2018

Since 2008, bulk water prices have recovered less than the cost of supply, and this accumulated under-recovery is known as the price path debt.

Consistent with the referral, we established the opening price path debt balance as at 1 July 2018 by rolling forward the price path debt balance as at 1 July 2014 (from the 2015 review) based on:

- updating the building block costs[132] from 1 July 2014 to 30 June 2018, by adjusting for the updated capital costs based on rolling forward the RAB, and applying asset indexation and inflationary gain consistent with the approach used in the 2015 review
- updating interest costs for the actual cost of debt, as advised by QTC
- any prudent and efficient costs arising from review events
- Seqwater's actual revenue from 1 July 2014 to 30 June 2017 and forecast revenue for 1 July 2017 to 30 June 2018.

8.1.1 Building block costs

Seqwater proposed an update to building block costs that is $149.9 million higher over the 2014–18 period than the building block costs we recommended in the 2015 review (Table 45). In deriving these updated costs, Seqwater used the RBA's inflation forecast of 2 per cent for 2016–17 and 2017–18.

Seqwater's higher building block costs are primarily due to the lower-than-expected inflationary gain deduction (inflationary gain is deducted from building block costs to avoid double counting (Chapter 6, section 6.1.2)). Due to lower-than-expected inflation, the inflationary gain deduction from the updated building block costs was less than expected.

[132] The term 'maximum allowable revenue' in the referral is equivalent to the term 'building block costs' in this report.

Table 45 Seqwater's proposed update to building block costs ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
QCA recommendation (2015 review)	823.5	731.9	771.4	784.2
Seqwater updated assessment	802.5	835.6	808.0	814.9

Note: *Seqwater's updated assessment excludes its proposed value of asset disposals.*

Source: *Seqwater, sub. 2, p. 9.*

We have updated building block costs in accordance with the terms of the referral (Table 48), which includes, among other things, adjusting for our recommendation on the RAB (Chapter 6). We have also made an adjustment to Seqwater's proposed value of asset disposals, which was not included in Seqwater's proposed building block cost update.

Asset disposals

Seqwater proposed $2.8 million in land, fleet and other asset disposals between 2014–15 and 2016–17. Seqwater's proposal does not reflect the full value of the proceeds of sale ($3.7 million) because it proposes to share the proceeds from the disposal of land equally between itself and customers (Table 46).[133] This is based on Seqwater's proposal to establish an incentive mechanism for the disposal of land into future regulatory arrangements.[134]

Table 46 Seqwater's proposed value for asset disposals ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
Land	0.15	0.71	0.05	–
Fleet	0.52	0.77	0.55	–
Other	0.04	–	–	–
Total	**0.72**	**1.48**	**0.60**	**–**

Source: *Seqwater pricing model 2017.*

We do not accept Seqwater's proposal. As the incentive scheme has been proposed ex post, that is, after the land assets have already been disposed, it is unclear that the justification to dispose of land assets (at the time) and the incentives driving those decisions, would be appropriate in a revenue-sharing mechanism as proposed by Seqwater.

We consider the value of asset disposals should reflect the full value of the proceeds from sale, which is $3.7 million (Table 47).[135] Lastly, we note that further consideration should be given to the establishment of incentive mechanisms when the regulatory framework is more conducive to the provision of regulatory commitments and after proper consideration of the costs and benefits (Chapter 10, section 10.4).

[133] Seqwater response to QCA RFI 4.

[134] Seqwater, sub. 1, p. 54.

[135] This is consistent with our recommendation in the draft report. Seqwater acknowledged this recommendation in its submission to our draft report (Seqwater, sub. 13, p. 60).

Table 47 QCA's recommended value for asset disposals ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
QCA recommendation	0.9	2.2	0.6	–

Source: *QCA analysis.*

Conclusion

Our recommended update to building block costs (Table 48) differs from Seqwater's proposed update, primarily as a result of the following:

- For 2016–17, we updated Seqwater's inflation forecast to reflect actual inflation (1.83 per cent[136]), which decreased the inflationary gain deduction, leading to higher building block costs in that year.
- We have not made an adjustment to reflect Seqwater's proposed operating cost savings, which increased building block costs across all years (section 8.1.4).
- Our adjustments for asset disposals decreased our recommended update across all years, except in 2017–18 where the adjustment is zero.

Table 48 QCA's recommended update to building block costs ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
QCA update to building block costs	803.5	837.1	822.9	817.8
less adjustment for asset disposals	0.9	2.2	0.6	0.0
Total	**802.7**	**834.9**	**822.3**	**817.8**

Source: *QCA analysis.*

8.1.2 Interest on price path debt

For the 2015 review, we determined the amount of interest on price path debt by applying QTC's cost of debt estimates to the price path debt. Seqwater proposed an update to interest on price path debt based on the actual cost of debt, as advised by QTC (Table 49 and Table 50).

Table 49 Cost of debt applicable to interest on price path debt (%)

	2014–15	*2015–16*	*2016–17*	*2017–18*
2015 review cost of debt	5.90	6.25	6.25	6.25
Actual cost of debt (QTC)	5.71	5.61	5.44	5.11

Source: *Seqwater, sub. 2, p. 9.*

Table 50 Seqwater's proposed update to interest on price path debt ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
Seqwater updated assessment	110.1	118.1	124.7	122.4

Source: *Seqwater, sub. 2, p. 9.*

[136] ABS, *Consumer Price Index, Australia, Sep 2017*, Table 1: All Groups, Index Numbers and Percentage Changes, cat. no. 6401.0.

QUU said that a 'true-up' for the interest costs is inappropriate because the debt composition is a commercial decision for Seqwater.[137] However, consistent with the referral, we have updated interest costs for QTC's actual cost of debt (Table 51).

We have adopted Seqwater's methodology for calculating interest costs. However, our interest costs are slightly different, because of slight differences in the inputs to our calculations.

Table 51 QCA's recommended update to interest on price path debt ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
QCA recommendation	112.5	121.1	125.2	121.6

Source: *QCA analysis.*

8.1.3 Review events

Under the referral, review events are:

- 'review events' as defined by the QCA in the 2015 review—emergency events, changes in law or government policy events, and feedwater quality events that cause a change in revenue, or prudent and efficient costs, and cost of debt events[138]
- drought response measures taken in accordance with the WSP, where the costs associated with those measures are efficient and material.

Emergency events

After the release of our draft report, Seqwater submitted a claim of $1.5 million associated with damage to its assets from cyclone Debbie, which occurred in March 2017. Seqwater said these costs reflect its actual incremental operating cost in 2016–17, which were incurred to allow the water grid to continue to deliver water.[139,140]

KPMG assessed the prudency and efficiency of Seqwater's proposed claim and said:

- Cyclone Debbie was an event that was outside of the control of Seqwater, which was not reasonably foreseeable earlier than a week in advance of the event. The magnitude of the event meant that it could not be responded to under normal network operations, and required Seqwater to incur additional costs to ensure the continued operation of the water grid. The event meets the criteria of an emergency event, as defined in the 2015 review.
- Seqwater has generally provided robust evidence and analysis in support its claim, however there were some unjustified costs ($0.08 million) related to another weather event that should not be recovered. KPMG recommends that Seqwater be allowed to recover prudent and efficient costs of $1.4 million (which is $0.08 million lower than Seqwater's claim).[141]

We accept KPMG's advice that Seqwater's proposal to recover $1.4 million for this emergency event is appropriate.

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[137] QUU, sub. 8, p. 2.
[138] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 91–94.
[139] Seqwater response to QCA RFI 104.
[140] Seqwater intends to submit further claims for costs incurred in 2017-18 at the next review, currently estimated at $1.5 million in opex and $1.5 million in capex (Seqwater response to QCA RFI 104).
[141] KPMG, *Seqwater expenditure review: Prudency and efficient assessment*, updated report for the QCA, March 2018, pp. xxiv, 244–60.

Changes in law or government policy events

Seqwater did not propose any review event adjustments due to changes in law or government policy.[142]

Feedwater quality events

After the release of our draft report, Seqwater submitted a claim of $0.4 million for a feedwater quality event in October 2017. Seqwater said it incurred these costs in 2016–17.[143]

Seqwater said the claim was triggered by rainfall from 15 to 22 October 2017, where the Mt Crosby WTPs experienced three conductivity spikes, each lasting several days. To maintain water quality, Seqwater used additional chemicals from 20 October to 15 November 2017.[144]

KPMG assessed the prudency and efficiency of Seqwater's proposed claim and said:

- Water quality levels were breached at the Mt Crosby WTPs, which triggered Seqwater's procedure for responding to extraordinary water events. The event meets the definition of a feedwater quality event, as defined in the 2015 review.
- Seqwater tracked and claimed for additional costs consistent with its operational procedure, and calculated its chemical costs using rates that reflect the average daily cost. KPMG recommends Seqwater be allowed to recover prudent and efficient costs of $0.4 million, as proposed.[145]

We accept KPMG's advice that Seqwater's proposal to recover $0.4 million for this feedwater quality event is appropriate.

Cost of debt events

The cost of debt drives the following:

- interest on price path debt
- the rate of return, which is primarily used to calculate the return on assets.

In accordance with our definition of cost of debt events in the 2015 review, a cost of debt event is triggered if QTC advises the actual cost of debt.[146] The QCA would then update the cost of debt estimates for the actual cost of debt. Alternatively, the Government could request an update to the cost of debt through the referral.

Consistent with the referral, we have updated interest costs on price path debt for the actual cost of debt, as advised by QTC (see section 8.1.2 above).

After the draft report, Queensland Treasury provided actual cost of debt figures from QTC for the rate of return, which is used to calculate the return on assets and working capital allowances (Table 52).

[142] Seqwater, sub. 2, p. 10.
[143] Seqwater, sub. 13, p. 49.
[144] Seqwater, sub. 13, p. 49.
[145] KPMG, *Seqwater expenditure review: Prudency and efficient assessment*, updated report for the QCA, March 2018, pp. xxiv, 260–2.
[146] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, p. 94.

Table 52 Cost of debt applicable to the rate of return (%)

	2014–15	*2015–16*	*2016–17*	*2017–18*
2015 review cost of debt	5.90	6.25	6.25	6.25
Actual cost of debt (QTC)	6.15	6.20	6.05	5.70

Sources: *Seqwater, sub. 2, p. 9; Queensland Treasury, email to the QCA, 5 March 2018.*

We have updated the return on assets and working capital allowances for the actual cost of debt, as advised by QTC (Table 53).

Table 53 QCA's recommended update to the return on assets and working capital allowances ($m, nominal)

	2014–15	*2015–16*	*2016–17*	*2017–18*
QCA recommendation	20.1	(4.0)	(16.1)	(44.5)

Source: *QCA analysis.*

Drought response events

In its initial submission, Seqwater advised that it intended to make a claim for drought response costs associated with diverting bulk water to the northern region of south-east Queensland.[147]

After our draft report, Seqwater submitted a claim of $0.8 million ($0.4 million for 2016–17 and $0.4 million for 2017–18) in drought response costs. Seqwater said these costs reflect its actual incremental operating costs.[148,149]

Seqwater said the claim was triggered by Baroon Pocket Dam falling below the 50 per cent storage trigger level, stipulated in the WSP, in February 2017. As a result, Seqwater diverted bulk water from central SEQ to the Sunshine Coast.[150]

KPMG assessed the prudency and efficiency of Seqwater's proposed claim and said:

- The event was outside of Seqwater's control and required Seqwater to diverge from its normal operating procedures. Seqwater implemented operational procedures that were consistent with the WSP, which included operating the Northern Pipeline Interconnector in a northerly direction. The event meets the definition of a drought response event as defined in the referral.
- Seqwater provided extracts from its general ledger, and validated that it appropriately apportioned costs to this event. Seqwater also demonstrated the appropriateness of its cost estimates. KPMG recommends Seqwater be allowed to recover prudent and efficient costs of $0.8 million, as proposed. [151]

We accept KPMG's advice that Seqwater's proposal to recover $0.8 million in drought response costs ($0.4 million in 2016–17 and $0.4 million in 2017–18) is appropriate.

[147] Seqwater, sub. 2, pp. 10–11.
[148] Seqwater response to QCA RFI 105.
[149] Seqwater also said that it intends to submit another claim for the November 2017 to June 2018 period (at the next review) if the costs are material.
[150] Seqwater response to QCA RFI 105.
[151] KPMG, *Seqwater expenditure review: Prudency and efficient assessment*, updated report for the QCA, March 2018, pp. xxiv, 262–6.

However, the referral indicates that the costs should be material to be eligible for recovery by Seqwater, although a materiality threshold was not specified. We consider the costs are sufficiently material to accept because the QCA's costs to assess and incorporate the claim into recommended prices as part of this review are relatively low. In addition, Seqwater continues to incur costs, so it is reasonable to expect the costs associated with this review event will continue to grow.

8.1.4 Actual revenue

Due to lower-than-forecast water demand, Seqwater's actual revenue has been lower than the forecast at the 2015 review. Seqwater proposed an update to the price path debt to reflect actual revenue in 2014–15, 2015–16, and 2016–17 and forecast revenue in 2017–18 (Table 54).[152]

Table 54 Seqwater's update for actual revenues ($m, nominal)

	2014–15	***2015–16***	***2016–17***	***2017–18***
Total revenue in the 2015 review[a]	783.7	803.1	866.5	933.1
Proposed actual revenue	736.3	766.8	829.5	848.1[b]

a *Building block costs plus price path debt repayment.* ***b*** *This is based on Seqwater's updated forecast provided after the release of our draft report.*

Sources: *Seqwater, sub. 2, pp. 11–12; Seqwater, email to the QCA, 15 February 2018.*

Lower demand has also reduced total variable operating costs, and Seqwater has proposed to incorporate these savings in the total adjustments (not shown in Table 54). The total operational cost savings varied from $0.8 million in 2014–15 to $3.7 million in 2017–18.[153]

Consistent with our draft report, we accept Seqwater's adjustment to the price path debt based on actual and forecast revenues (Table 55), but we have not made an adjustment for the proposed operational cost savings.

We note Seqwater's submission to our draft report that an adjustment for operational cost savings would be consistent with the price path framework, whereby customers bear the long-term demand and volume risk.[154] However, we reiterate that we have followed the terms of the referral, which lists the adjustments to be made. An adjustment for operational cost savings is not listed.[155]

Table 55 QCA's recommended update for actual revenues ($m, nominal)

	2014–15	***2015–16***	***2016–17***	***2017–18***
QCA recommendation	736.3	766.8	829.5	848.1[a]

a *This is based on Seqwater's updated forecast provided after the release of our draft report.*

[152] Originally, Seqwater's 2016–17 actual revenue of $829.5m (Seqwater, sub. 2, pp. 11–12) was presented as a forecast. However, Seqwater has subsequently confirmed that this is actual revenue.
[153] Seqwater, sub. 2, pp. 11–12.
[154] Seqwater, sub. 13, p. 60.
[155] QCA, *Seqwater bulk water price review 2018–21*, draft report, November 2017, p. 67.

8.1.5 Conclusion

Based on our adjustments above, we recommend a price path debt opening balance of $2,463.2 million as at 1 July 2018 (Table 56).[156] Our opening balance is lower than Seqwater's proposal, primarily because we have updated the return on assets for the actual cost of debt, advised by QTC.

Table 56 QCA's recommended updated price path debt ($m, nominal)

	2014–15	***2015–16***	***2016–17***	***2017–18***
Opening balance	1,927.7	2,126.7	2,311.8	2,416.0
plus updated building block costs	802.7	834.9	822.3	817.8
plus updated interest costs	112.5	121.1	125.2	121.6
plus review event costs (emergency, feedwater quality and drought response events)	0.0	0.0	2.3	0.4
plus review event costs (cost of debt event)	20.1	(4.0)	(16.1)	(44.5)
plus actual revenue	(736.3)	(766.8)	(829.5)	(848.1)
Closing balance	**2,126.7**	**2,311.8**	**2,416.0**	**2,463.2**

Note: *Totals may not add due to rounding.*

Source: *QCA analysis.*

8.2 Price path debt repayment from 1 July 2018 to 30 June 2028

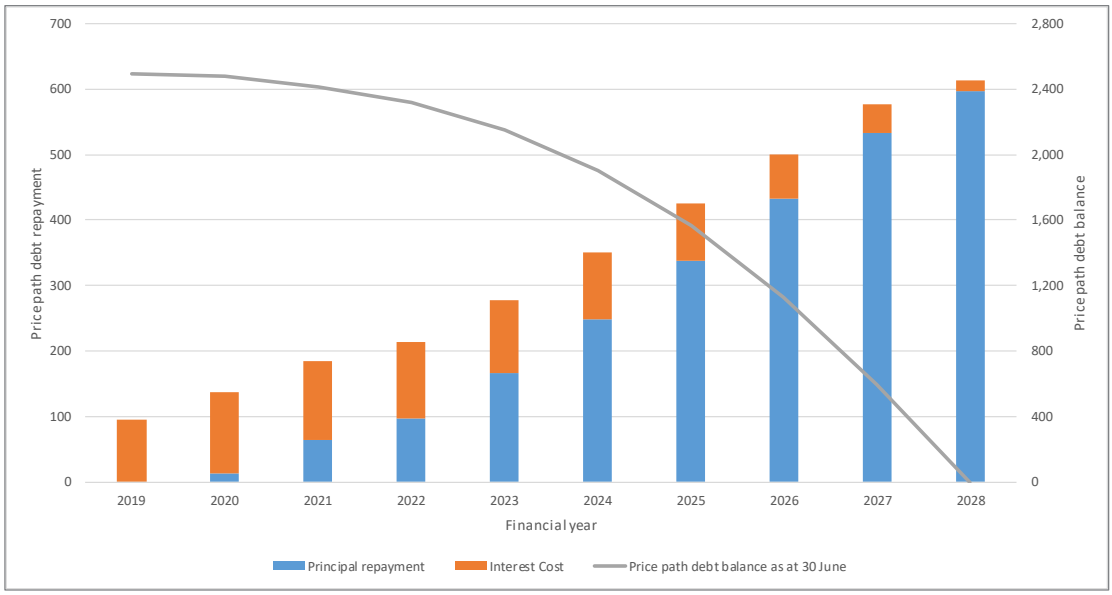
The price path debt repayment, and its calculation, consists of:

- the opening balance, as at 1 July for a particular financial year—we recommend an opening balance of $2,463.2 million as at 1 July 2018 (see section 8.1.5 above)
- the principal repayment—which is the difference between the price path debt repayment and interest costs
- the interest costs—where Seqwater's cost of debt estimates as advised by QTC (5.11 per cent per year over the 10 years to 2027–28) is applied to the debt balance
- the closing balance, as at 30 June for a particular financial year.

Under the terms of the referral, we have been asked to recommend two pricing options (Chapter 9), both of which are to result in Seqwater fully repaying price path debt by 2027–28. Each pricing option will result in a slightly different price path debt repayment profile, with pricing option 1 resulting in higher repayments in the early years and lower repayments in the later years, relative to option 2. Figure 9 shows the price path debt repayment profile for option 1.

[156] The opening balance as at 1 July 2018 is the same as the closing balance as at 30 June 2018.

Figure 9 QCA's price path debt repayment profile–pricing option 1, ($m, nominal)



Source: *QCA analysis.*

8.3 Total revenue

Total revenue is the sum of the building block costs and price path debt repayment.

Table 57 summarises our recommended building block costs. Unlike the price path debt repayment, these costs do not vary with the pricing approach. Building block costs are higher than in our draft report, primarily as a result of our higher recommended WACC, which has increased the return on assets.

Table 57 QCA's recommended building block costs ($m, nominal)

	2019	***2020***	***2021***	***2022***	***2023***	***2024***	***2025***	***2026***	***2027***	***2028***
Return on assets	526.7	519.9	514.4	516.8	518.7	514.7	511.1	509.7	511.9	521.4
plus return of capital (depreciation)	236.1	242.2	248.8	255.3	262.6	269.6	276.6	282.6	289.7	297.2
less inflation	187.2	188.3	211.1	215.3	218.2	218.8	219.5	220.0	222.1	227.5
plus operating expenditure	228.2	234.1	242.6	247.4	257.1	265.0	273.1	282.8	293.5	302.4
plus tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9
plus working capital allowance	5.1	5.0	4.8	4.7	4.8	4.8	4.7	4.8	4.8	5.0
Total	**808.8**	**812.9**	**799.4**	**809.0**	**824.8**	**835.3**	**846.0**	**859.9**	**877.8**	**905.4**

Source: *QCA analysis.*

Our assessment of total revenue to be recovered under each pricing option is presented in Tables 58 and 59. A comparison between pricing option 1 (Table 58) and pricing option 2 (Table 59) shows pricing option 1 results in higher price path debt repayments in the early years and lower repayments in the later years, relative to option 2.

Price path debt repayments are slightly lower than in the draft report, primarily because we updated the return on assets for the actual cost of debt from 2014–15 to 2017–18 (section 8.1.3 above).

Table 58 Total revenue based on pricing option 1 ($m, nominal)

	2019	***2020***	***2021***	***2022***	***2023***	***2024***	***2025***	***2026***	***2027***	***2028***
Building block costs	809	813	799	809	825	835	846	860	878	905
Price path debt repayment	95	137	185	214	278	350	425	501	576	613
Total revenue	**904**	**950**	**985**	**1,023**	**1,103**	**1,185**	**1,271**	**1,361**	**1,454**	**1,519**

Source: *QCA analysis.*

Table 59 Total revenue based on pricing option 2 ($m, nominal)

	2019	***2020***	***2021***	***2022***	***2023***	***2024***	***2025***	***2026***	***2027***	***2028***
Building block costs	809	813	799	809	825	835	846	860	878	905
Price path debt repayment	81	127	188	218	281	354	429	505	581	618
Total revenue	**890**	**940**	**988**	**1,027**	**1,106**	**1,189**	**1,275**	**1,365**	**1,459**	**1,523**

Source: *QCA analysis.*

9 RECOMMENDED PRICES

In this chapter, we present our recommendations on bulk water prices for the period 1 July 2018 to 30 June 2021, as well as indicative bill impacts.

Under the terms of the referral for this review, we have been asked to recommend two pricing options. Under each option, prices are calculated to enable Seqwater to recover its total revenue allowance, which includes building block costs and price path debt repayment components (see Chapter 8, Table 58 and Table 59). We converted total revenue to prices using Seqwater's demand forecasts (see Chapter 3, Table 4).

The Government will determine prices after considering whether to accept our recommended prices.

9.1 Pricing options

Under the referral, we have been asked to recommend two pricing options:

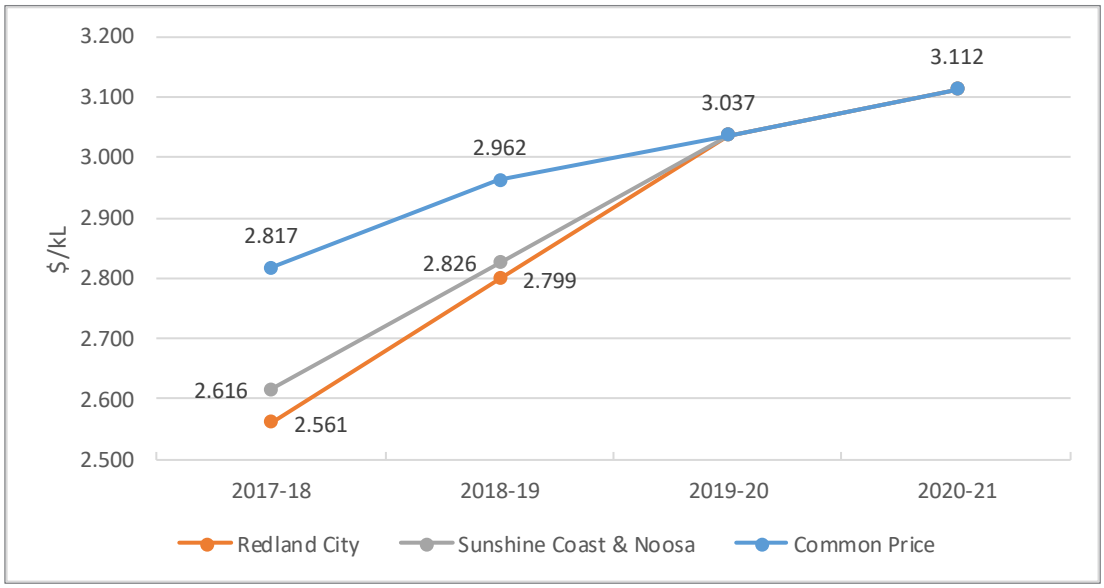
- Pricing option 1— the common price (for all council areas, except Redland City, Sunshine Coast and Noosa) is to be reset in 2018–19, followed by annual increases by inflation. Transitional price paths for Redland City, Sunshine Coast and Noosa council areas are to result in the common price being reached by 2019–20.
- Pricing option 2—price increases are to be smoothed for all council areas (including Redland City, Sunshine Coast and Noosa) over the three-year regulatory period.

We have been asked to recommend prices that are fully volumetric. A volumetric price refers to the price consumers pay for each kilolitre of water consumed.

Consistent with our approach in the 2015 review, we have smoothed increases in the common price (under pricing option 2) by applying a constant percentage increase each year, and smoothed increases in transitional prices (under both pricing options) by applying a constant dollar per kilolitre increase. We note that the referral does not specify a preference for any particular smoothing approach.

Under option 1 (Figure 10), we recommend a common price of $2.962 in 2018–19, an increase of 5.16 per cent on the 2017–18 common price. This is followed by increases of 2.50 per cent per year in 2019–20 and 2020–21. Customers in Redland City, Noosa and Sunshine Coast would face larger increases and reach the common price in 2019–20, but they do pay lower prices than customers in other council areas.

Figure 10 Pricing option 1 ($/kL)

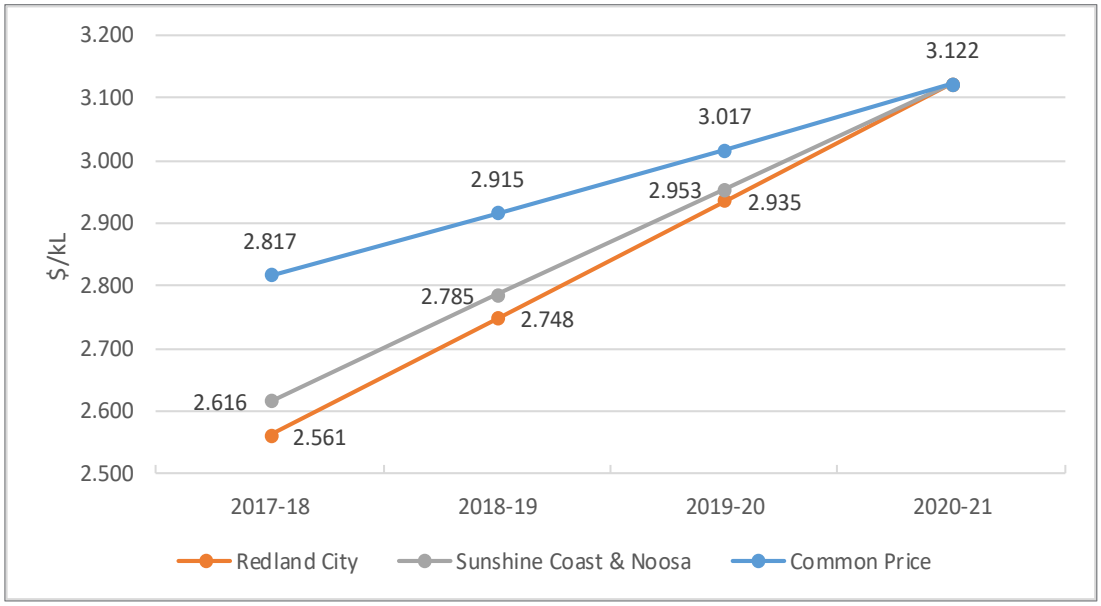


Source: *QCA calculations.*

Under option 2 (Figure 11), we recommend a common price of $2.915 in 2018–19, an increase of 3.49 per cent on the 2017–18 common price. This is followed by increases of 3.49 per cent per year in 2019–20 and 2020–21. In 2018–19 and 2019–20, the common price under pricing option 2 is slightly lower than the common price under option 1.

In 2018–19 and 2019–20, customers in Redland City, Noosa and Sunshine Coast would face smaller increases than under option 1 and reach the common price in 2020–21, instead of 2019–20.

Figure 11 Pricing option 2 ($/kL)



Source*: QCA calculations.*

Our recommended prices under each pricing option are presented in Table 60. Prices are higher than the indicative prices in our draft report, because of an increase in allowed costs, primarily due to an increase in the rate of return. The increase in building block costs has been partially

offset by a reduction in price path debt, which means price path debt repayments are slightly lower.

Table 60 Recommended prices

Council area	*Year*	*Pricing option 1*		*Pricing option 2*	
		$/kL	*% change*	*$/kL*	*% change*
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	2017–18 actual	2.817		2.817	
	2018–19	2.962	5.16%	2.915	3.49%
	2019–20	3.037	2.50%	3.017	3.49%
	2020–21	3.112	2.50%	3.122	3.49%
Sunshine Coast and Noosa	2017–18 actual	2.616		2.616	
	2018–19	2.826	8.04%	2.785	6.46%
	2019–20	3.037	7.44%	2.953	6.06%
	2020–21	3.112	2.50%	3.122	5.72%
Redland City	2017–18 actual	2.561		2.561	
	2018–19	2.799	9.29%	2.748	7.31%
	2019–20	3.037	8.50%	2.935	6.81%
	2020–21	3.112	2.50%	3.122	6.38%

Note: *% change reflects the year-on-year percentage change.*

Source: *QCA calculations.*

Stakeholders who commented on the pricing options preferred option 2 over option 1.[157] Unitywater supported option 2 because of the consistency (of price increases) it provides—noting customers are sensitive to inconsistent price changes—and because it eliminates cross-regional inequity.[158]

Moreton Bay Regional Council considered it to be inequitable for customers to pay different prices depending on their council area and contended that all customers should pay the same price.[159] Under the referral, we have been asked to continue to transition customers in Redland City, Sunshine Coast and Noosa council areas to the common price that is paid by customers in the other council areas. If our recommendations are adopted, customers in all council areas will pay the common price by 2019–20 (pricing option 1) or 2020–21 (pricing option 2).

QCOSS was concerned that low income and vulnerable households, who often rent their home, are impacted by wholly volumetric bulk water pricing because landlords are permitted to pass through volumetric prices.[160] The QCA notes QCOSS's submission, but under the referral, the QCA has been asked to recommend prices that are volumetric only. We discuss the potential for alternative tariff structures in Chapter 10.

[157] Redland City Council, sub. 16, p. 1; Unitywater, sub. 17, p. 2.
[158] Unitywater, sub. 17, p. 2.
[159] Moreton Bay Regional Council, sub. 9, p. 1.
[160] QCOSS, sub. 10, pp. 1–2.

Several stakeholders shared concerns about the impact of bulk water prices on customers.[161] We acknowledge these concerns; however, we have followed the terms of the referral to recommend prices that provide Seqwater with sufficient revenue to recover prudent and efficient costs and to repay price path debt over the next 10 years. We also note that the intention of the price path is to reduce the price impact of significant investments made in response to low water availability, by phasing in price increases over time.

Recommendation 1

Bulk water prices for each council area should be set according to pricing option 1 or pricing option 2, as set out in Table 60 above.

9.2 Indicative impact on water bills

Bulk water prices are included as a separate charge in the water bills of households and businesses. Based on our recommended prices, the potential impact on the bulk water component of water bills is illustrated in Table 61. Calculations are based on average household consumption across SEQ of 160 kL per year.[162]

As prices are wholly volumetric, the percentage increases in bills are the same as the percentage increases in prices (refer to Table 60 above).

Table 61 Indicative bulk water component of water bills for an average household

Council area	*Year*	*Pricing option 1*		*Pricing option 2*	
		$/year	*$ change*	*Bill amount*	*$ change*
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	2017–18 actual	450.72		450.72	
	2018–19	473.92	23.20	466.40	15.68
	2019–20	485.92	12.00	482.72	16.32
	2020–21	497.92	12.00	499.52	16.80
Sunshine Coast and Noosa	2017–18 actual	418.56		418.56	
	2018–19	452.16	33.60	445.60	27.04
	2019–20	485.92	33.76	472.48	26.88
	2020–21	497.92	12.00	499.52	27.04
Redland City	2017–18 actual	409.76		409.76	
	2018–19	447.84	38.08	439.68	29.92
	2019–20	485.92	38.08	469.60	29.92
	2020–21	497.92	12.00	499.52	29.92

Source: *QCA calculations.*

[161] QCOSS, sub. 10, p. 1; Council of the City of Gold Coast, sub. 12, p. 1; Unitywater, sub. 11, p. 2; Mr Buglar, sub. 6, p. 1; Mr Derbyshire, sub. 7, p. 1; Redland City Council, sub. 14, p. 1.

[162] Based on information provided by Seqwater, we estimate that average household consumption is around 160 kL per year. This reflects consumption of around 169 LPD and an estimate of average household size in SEQ of 2.53 (Seqwater response to QCA RFI 12).

10 FUTURE REVIEWS AND OTHER ISSUES

Other important issues, some of which are relevant to future price reviews, are discussed in this chapter. These issues are the review events framework; ex post assessments of capex; Seqwater's proposal to treat some operating expenditure (opex) as capital expenditure (capex); incentive mechanisms; tariff reform; prudent discounting; and stakeholder consultation and consumer engagement.

10.1 Review events framework

Seqwater supported the continuation of the review events framework beyond 1 July 2018, but proposed the following amendments:

- clarifying when feedwater quality events apply
- adding drought response events[163].

Feedwater quality events

Seqwater proposed that feedwater quality events only apply to extreme events (such as cyclones or floods) that lead to a sustained and severe deterioration in feedwater quality. Seqwater proposed to bear the risk of seasonal or climatic variations in the quality of feedwater and included a contingency within its opex proposal to account for this.[164]

In our draft report, we explained that it may be difficult to assess whether an event met the definition of an extreme event without establishing a review threshold. We also considered that Seqwater had provided insufficient justification to include a contingency allowance to account for minor variations in feedwater quality (see Chapter 4).

We maintain our draft recommendation (which Seqwater accepted[165]) that no change be made to the definition of feedwater quality events that we recommended in the 2015 review.

Recommendation 2

The definition of feedwater quality events that we recommended in the 2015 review should not be changed.

Drought response events

The referral provides for the QCA to review the efficiency of any additional costs for drought response, where these occur in accordance with the Water Security Program and the costs are material.

Seqwater proposed that drought response events should be included as a review event on an ongoing basis. We consider that Seqwater's proposal to amend the review event framework to

[163] Defined as changes to operating mode, response to regional drought triggers and local drought in off-grid areas (Seqwater, sub. 1, p. 53).
[164] Seqwater, sub. 1, pp. 44–45, 52–53.
[165] Seqwater, sub. 13, p. 49.

include drought response events is reasonable, particularly given that droughts are unpredictable and the impact on costs is uncertain.

Queensland Urban Utilities considered that any true-up for drought response costs should occur at the end of the regulatory period, because it would be difficult for retailers to manage customer price impacts if a true-up occurred during the regulatory period.[166] Consistent with our recommendations in the 2015 review[167], we consider that changes in costs that have material implications for Seqwater should be eligible for review during the regulatory period. We also still consider that the Government is best placed to determine when an impact is material and, therefore, when a within-period review is necessary.

Recommendation 3

Where Seqwater can demonstrate a change in prudent and efficient costs as a result of taking drought response measures in accordance with the Water Security Program, Seqwater should be able to recover these drought response costs as follows:

(a) Where the impact is material, drought response costs should be recouped through a price adjustment during the three-year regulatory period.

(b) Where the impact is not material, drought response costs should be recouped through an end-of-period adjustment.

Other review events

We consider our recommendations from the 2015 review regarding other review events, including emergency events and law or government policy events, continue to be appropriate.

10.2 Ex post assessments of capex

Under the terms of the referral, we were asked to undertake an ex post assessment of capex if actual capex is higher than the capex we approved in the 2015 review (see Chapter 5).

We recommend that we be given the discretion in future reviews to undertake an ex post review of capex, regardless of whether actual capex is higher or lower than allowed capex. Given that annual capex on an as-commissioned basis can be driven by lumpy, multi-period projects, the deferral of major projects may obscure potential inefficiencies in other projects.

Such discretion will give us the flexibility to apply further scrutiny as appropriate, for example, in circumstances where actual capex is lower than allowed capex as a result of the deferral of capex to future regulatory periods.

[166] Queensland Urban Utilities, sub. 8, pp. 2–3.
[167] QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 91–98.

Recommendation 4

The QCA should have discretion to undertake an ex post assessment of the prudency and efficiency of capex in future reviews, regardless of whether actual capex is higher or lower than allowed capex.

10.3 Treating opex as capex

In its submission to the draft report, Seqwater argued that some costs that would be categorised as opex by accounting standards should be treated as capex for regulatory pricing purposes.[168]

Seqwater explained that some opex associated with large capex projects is more akin to capex and is also difficult to estimate when projects are at an early planning stage. Seqwater provided the following examples:

- the costs of operating plants normally in hot-standby (such as the desalination plant) during major shutdowns when upgrading water treatment plants (WTPs) and dams. Seqwater argues that the costs of maintaining supply, over and above business-as-usual opex, is directly attributable to the upgrade projects, because the upgrades could not occur without an alternative supply source.
- payments to third parties for augmentations or modifications to assets owned by those third parties.

Seqwater advised that it had not included any of these costs in its opex proposal but considered that the additional opex should be capitalised over the life of the associated assets and recovered through the regulatory asset base (RAB) because:

- it avoids the need to include large and uncertain allowances in opex forecasts
- the costs are a direct result of capex. Including the costs in the RAB ensures current and future customers contribute to the costs because both groups benefit from the projects.

We asked KPMG to assess Seqwater's proposal. KPMG advised that Seqwater had not provided clear evidence of the need to move away from current accounting standards to classify expenditure.[169]

KPMG considered that the costs of operating plants (such as the desalination plant) to maintain supply during major shutdowns for works at other treatment plants are not direct inputs into capital works associated with upgrading offline assets. Rather, these assets help to ensure security of supply across the grid and the associated opex should not be treated differently to opex associated with the operation of Seqwater's other assets.

KPMG also advised that Seqwater should retain its treatment of payments to third party asset owners as opex, consistent with current accounting standards, as these payments are not

[168] Seqwater, sub. 13, pp. 51-54. These costs are not included in Seqwater's proposed opex or capex allowances.

[169] KPMG, *Seqwater expenditure review: prudency and efficiency assessment*, updated report for the QCA, March 2018, pp. 261.

directly attributable to the construction of assets, in which Seqwater retains rights and obligations.

In KPMG's view, departures from accounting standards are typically by exception and driven by the regulator seeking to address issues that may be significantly distorting outcomes.

We have considered KPMG's advice and the concerns it has raised with Seqwater's proposal. However, as Seqwater's proposal was received late in the review, there has been insufficient time to fully consider the proposal and its potential implications. There has also been no opportunity to consult with stakeholders and consider their views. It would be appropriate to consider this issue as part of the next review.

10.4 Incentive mechanisms

Seqwater submitted that the current arrangements for the disposal of land do not provide strong incentives to take up opportunities to sell surplus land, as the current arrangements could result in all proceeds from such a sale being removed from the RAB.

Seqwater considered it should be incentivised to dispose of surplus land and purchase strategic land around its dams, by sharing the proceeds of land sales with customers and retaining land sale proceeds (without any adjustment to the RAB), for the purchase of strategic land.[170]

Incentive mechanisms should not be developed in isolation, but should be considered holistically rather, through the development of a package of incentives that work together.

Incentive mechanisms may be established to provide incentives for firms to, for instance, reduce costs, better utilise existing assets by earning revenue from other sources (e.g. by leasing land to third parties or selling hydro-electric power) or sell assets that are no longer used, as noted by Seqwater.

Incentive mechanisms are generally approved prior to the beginning of the relevant regulatory period, rather than being approved ex post. A key component of an effective mechanism is the strength of up-front commitments by regulators not to claw back outperformance over the regulatory period. It is difficult for the QCA to provide such commitments, because our reviews are at the discretion of the Government and are based on government policy positions at the time of each review.

We consider that the establishment of incentive mechanisms should be further considered when the regulatory framework is more conducive to providing regulatory commitments and after proper consideration of the costs and benefits. Seqwater supported the development of an incentive framework in future.[171]

10.5 Tariff reform

Seqwater submitted that wholly volumetric tariffs mean that price resets are very sensitive to demand (i.e. where actual demand is lower than forecast, prices must increase to address the resulting shortfall in revenue). Seqwater submitted that this could be addressed by moving to a

[170] Seqwater, sub. 1, p. 54.
[171] Seqwater, sub. 13, p. 60.

two-part tariff that is more reflective of Seqwater's cost structure (i.e. high fixed costs relative to variable costs).[172]

We note that tariff reform involves both costs and benefits, and therefore requires careful consideration and consultation with stakeholders and customers. There may be merit in considering the matter of tariff reform further.

10.6 Prudent discounting framework

In its submission to the draft report, Seqwater highlighted that the current pricing arrangements may result in some end-use customers inefficiently bypassing the water supply network and investing in alternative water supply options (for example, desalination). Seqwater advised that the reduction in demand would adversely affect other customers, because prices would need to increase to enable Seqwater to recover its fixed costs.[173]

To address this issue, Seqwater proposed the introduction of a prudent discounting framework modelled on the arrangements applying in the electricity transmission sector under the National Electricity Rules. Seqwater considered that the ability to offer a discount to users with a viable alternative supply option could benefit all water users:[174]

- The water user receiving the discount would benefit, because the discounted price would be lower than the costs of the alternative supply option.
- Other users would be better off, because it would mitigate the increase in prices that would otherwise occur.

In accordance with the referral, we have recommended a fully volumetric common price for all customers (except those on a transitional price path). Inherent in this pricing arrangement is the potential for some customers to reduce their costs by investing in their own supply arrangements. This may result in inefficient duplication of water supply infrastructure and higher prices for other water users.

While considering Seqwater's proposed prudent discounting framework is outside the scope of this review, this is a proposal the Government may wish to investigate, potentially in conjunction with a review of tariff structures (section 10.5).

10.7 Stakeholder engagement

We note QCOSS's suggestion that consumer engagement could be improved. QCOSS considered that Seqwater should improve engagement with consumers and consumer advocacy organisations and that the QCA should consider extending the terms of reference for the QCA's Consumer Advisory Committee to include water issues.[175]

Seqwater advised that it works collaboratively with its customers (who are the water retailers) to improve outcomes, reduce costs and better manage risks, and that it consulted with customers about its capital expenditure forecast for the purposes of developing its

[172] Seqwater, sub. 1, p. 54.
[173] Seqwater, sub. 13, pp. 57–60.
[174] Seqwater, sub. 13, p. 57.
[175] QCOSS, sub. 10, pp. 2–3.

submission.[176] We encourage Seqwater to continue to consult and collaborate with customers in future, including when it develops its regulatory submission.

The QCA's Consumer Advisory Committee, which was established under the *Electricity Act 1994,* advises the QCA on electricity and gas issues, in which the QCA has an ongoing regulatory role. The QCA does not have an ongoing role in water pricing and does not regulate water prices, but provides advice at the request of the Government in accordance with the terms of reference established for each review. Therefore, the regulatory arrangements that apply to water pricing do not support establishing an advisory committee in relation to water issues at this time.

In any review, we aim to run an open and transparent review process and we encourage all stakeholders and interested parties to participate in the process by making submissions and, where relevant, attending workshops. When we prepare our advice and recommendations, we carefully consider all submissions received.

[176] Seqwater, sub. 1, pp. 26, 46.

GLOSSARY

2015 review	the QCA's review of bulk water prices for the period 1 July 2015 to 30 June 2018, which was completed in March 2015
ABS	Australian Bureau of Statistics
AEMO	Australian Energy Market Operator
APMP	asset portfolio master plan
AWTP	advanced water treatment plant
capex	capital expenditure
CPI	consumer price index
DEWS	Queensland Department of Energy and Water Supply (now the Queensland Department of Natural Resources, Mines and Energy)
DNRM	Queensland Department of Natural Resources and Mines (now the Queensland Department of Natural Resources, Mines and Energy)
EBA	enterprise bargaining agreement
ESC	Essential Services Commission (Victoria)
FTE	full time equivalent
GAWB	Gladstone Area Water Board
GCDP	Gold Coast Desalination Plant
GSC	grid service charge
HUF	headworks utilisation factor
ICT	information and communications technology
IDC	interest during construction
Incenta	Incenta Economic Consulting
IPART	Independent Pricing and Regulatory Tribunal (New South Wales)
kL	kilolitre (1,000 litres)
LOS	level of service
LPD	litres per person per day
MAR	maximum allowable revenue
MCS	monitoring control system
ML	megalitre (1 million litres)
MRP	market risk premium
Opex	operating expenditure
price path debt repayment	revenue from bulk water prices that exceeds building block costs, for the purpose of repaying price path debt by 2028.
QCA	Queensland Competition Authority
QCA Act	*Queensland Competition Authority Act 1997*

QCOSS	Queensland Council of Social Service
QTC	Queensland Treasury Corporation
QUU	Queensland Urban Utilities
RAB	regulatory asset base
RBA	Reserve Bank of Australia
RFI	Request for information
RFR	risk-free rate
SEQ	south east Queensland
the Government	the Queensland Government
the referral	the referral for the review issued by the Government to the QCA under section 23 of the QCA Act
the review	the QCA's review of bulk water prices for the period 1 July 2018 to 30 June 2021
UK	United Kingdom
US	United States
WACC	weighted average cost of capital
WAE	water access entitlement
WCRWS	Western Corridor Recycled Water Scheme
WPI	wage price index
WPS	water pump station
WSP	Water Security Program
WTP	water treatment plant

APPENDIX A: REFERRAL

The referral was issued by the Government on 25 May 2017 and published in the Government Gazette on 2 June 2017.

QUEENSLAND COMPETITION AUTHORITY ACT 1997
SECTION 23
MINISTER'S REFERRAL NOTICE

Referral

Pursuant to section 23(1) of the *Queensland Competition Authority Act 1997* (the Act), I refer the monopoly business activity of bulk water supply by the Queensland Bulk Water Supply Authority (Seqwater) in the local government areas listed below to the Queensland Competition Authority (the Authority) for an investigation about the pricing practices relating to that activity with the objective of recommending bulk water prices (Prices) for Seqwater in those local government areas for the period of 1 July 2018 to 30 June 2021 (the Regulatory Period).

Brisbane	Logan	Scenic Rim
Gold Coast	Moreton Bay	Somerset
Ipswich	Noosa	Sunshine Coast
Lockyer Valley	Redland	

(A) Pursuant to section 24 of the Act, I direct the Authority to consider and make recommendations about the following matters as part of its investigation:

(1) Recommend Prices for the Regulatory Period which allow Seqwater sufficient revenue to recover prudent and efficient costs incurred from providing bulk water supply services and to repay Price Path Debt (defined as per (C)(3)) by 2027-28 on the basis that the Government's position is as follows:

(2) Prices are to be consistent with the following:

(a) bulk water costs include, but are not limited to:
   i. prudent and efficient capital expenditure and operating expenditure as per (C)(1)-(C)(2) below;
   ii. a return on assets (including working capital);
   iii. an allowance for tax (where applicable);
   iv. interest on Price Path Debt;
   v. depreciation calculated as per (C)(8);
   vi. any costs detailed in Seqwater's bulk water supply agreements; and
   vii. additional prudent and efficient operating and capital costs arising from Review Events (defined as per (C)(18)).

(b) the regulated asset base (RAB) is to be established as per (C)(7) below and subject to the opening RAB dictated by (A)(4);

(c) repayment of Price Path Debt by 2027-28;

(d) a price path as per (C)(10)-(C)(14) below; and

(e) Seqwater's demand forecasts as per (C)(17).

(3) Price Path Debt is to be calculated as per (C)(4)-(C)(5) below;

(4) The opening RAB is to be established as per (C)(6) and (C)(7) below;

(5) The rate of return to be used for calculating Prices is as per (C)(9) below; and

(6) The other matters as per (C)(15)-(C)(16) below.

(B) Consultation and Timing

(1) Pursuant to section 24 of the Act, I direct the Authority to provide:

a) a Draft Report to me and the Minister for Energy, Biofuels and Water Supply, by 30 November 2017, following on a submission being made by Seqwater by 31 July 2017; and

b) a Final Report to me and the Minister for Energy, Biofuels and Water Supply by 31 March 2018.

HON. CURTIS PITT MP

Treasurer

Minister for Trade and Investment

(C) Definitions

Operational & Capital Expenditure

(1) Capital and operating expenditure includes activities related to the provision of bulk water supply services (including catchment management) as well as activities related to recreation management and flood mitigation costs.

(2) To assess operating expenditure and capital expenditure from 1 July 2018 to 30 June 2028, the Authority must adopt the following approach:

(a) form a view on the prudency and efficiency of capital expenditure and operational expenditure, with the focus on cost areas which are material to price changes rather than matters which are likely to have a minor and inconsequential impact;

(b) have regard to the strategic and operational plans approved by the responsible Ministers under the *South East Queensland Water (Restructuring) Act 2007*;

(c) capital expenditure must be reviewed giving consideration to demand forecasts as per (C)(17) below; and

(d) accept the prudency of any augmentations expected to be required under the Water Security Program, including augmentations to increase LOS yield or augmentations required to address system peak demand requirements.

Price Path Debt

(3) Price Path Debt is the accumulated under-recovery arising from the bulk water price path.

(4) To establish the opening Price Path Debt as at 1 July 2018, the QCA is to roll forward the Price Path Debt as at 1 July 2014 as used by the QCA in the 2015-18 review based on:

(a) an updated assessment of Maximum Allowable Revenue from 1 July 2014 to 30 June 2018 adjusting for the updated capital costs based on rolling forward the RAB as per item (C)(7) below and applying asset indexation and inflationary gain consistent with the approach used by the QCA in the 2015-18 review;

(b) updating interest costs for actual cost of debt as advised by QTC;

(c) any prudent and efficient costs arising from Review Events; and

(d) Seqwater's actual revenue from 1 July 2014 to 30 June 2017 and forecast revenue for 1 July 2017 to 30 June 2018.

(5) Interest on Price Path Debt from 1 July 2018 is to be calculated using Seqwater's cost of debt as advised by QTC.

RAB

(6) The opening RAB as at 1 July 2014 is not to be optimised and the QCA is to accept the remaining lives as used by the QCA in the 2015-18 review;

(7) To establish the opening RAB as at 1 July 2018, the Authority is to:

(a) review historical capital expenditure as follows:

i. in the event actual capital expenditure in 2014-15 and 2015-16 and, to the extent actual capital expenditure is available for 2016-17 and 2017-18 is at or below that previously allowed over the period then do not conduct an ex-post review;
ii. in the event actual capital expenditure in 2014-15 and 2015-16 and, to the extent actual capital expenditure is available for 2016-17 and 2017-18 is above that previously allowed over the period then conduct an ex-post review of those expenditures only;
iii. if required, any review of capital expenditure should focus on items that would have a material impact on the price path.

(b) roll forward the RAB from 1 July 2014 to 30 June 2018, using actual capital expenditure (to the extent capital expenditure is available), adjusted for any findings as per (C)(7)(a) above; and

(c) roll forward depreciation and asset appreciation based on actual inflation over the period.

(8) Depreciation is to be calculated using the straight-line method, reflecting the remaining useful life of the assets.

Rate of Return

(9) In regard to the rate of return to be used to calculate Prices, the following is to apply:

(a) for assets (including working capital), a benchmark weighted average cost of capital (WACC) return, using a cost of equity as determined by the QCA for the equity component, and Seqwater's cost of debt as estimated by QTC for the debt component;

(b) if the cost of equity calculation determined by the QCA is lower than Seqwater's cost of debt, the rate of return applying to assets should be Seqwater's cost of debt as advised by QTC; and

(c) Subject to a decision of the Government at the time, it is intended that the next price review (for prices to apply post 30 June 2021) will provide for an end-of-period adjustment for the difference between the estimated and actual cost of debt over the Regulatory Period.

Price Path Structure

(10) The prices for Redland, Sunshine Coast and Noosa are to be transitioned to the Common Price in 2019-20 unless this would result in a transitional price that is above the Common Price 2018-19, in which case prices should be set to the Common Price from 1 July 2018.

(11) The Price for Noosa is to be the same as the price for Sunshine Coast for consistency following the de-amalgamation;

(12) The Common Price for other council areas is to be reset from 1 July 2018, and prices are to remain constant in real terms once the Common Price has been reached until 2027-28.

(13) The QCA is to present one alternative option which smooths price increases (if any) for all council areas including Redland, Sunshine Coast and Noosa, over the three-year regulatory period. The smoothed prices are:

(a) to be net present value (NPV) neutral, with the under-recovery recovered through the price path over the period to 2027-28, consistent with the historic arrangements for the bulk water price path; and

(b) to result in a new Common Price that remains constant in real terms beyond the three-year regulatory period until 2027-28.

(14) Prices are to be volumetric only.

Other Matters

(15) Bulk water costs are to be offset by revenue from the sale of water to power stations, Toowoomba Regional Council and revenue from other water sales or any other source, as advised from Seqwater.

(16) Costs and revenues associated with Seqwater's declared irrigation services are to be excluded. The costs related to irrigation services are to be calculated consistent with the cost allocation approach adopted by the Authority in its prior review of Seqwater's irrigation price paths;

(17) Forecast demand is to be provided by Seqwater and is to include demand from power stations and Toowoomba Regional Council. QCA oversight is to ensure forecasts are within with the range (low-high) published in the SEQ Water Security Program.

Review Events

(18) Review Events are to be:

(a) defined in accordance with the Authority's recommendations from the previous price review, as set out in its March 2015 report.

(b) for the period 1 July 2015 to 30 June 2018 the QCA is to review any additional costs for drought response for efficiency where these occur in accordance with the Water Security Program and the costs are material.

APPENDIX B: STAKEHOLDER SUBMISSIONS

Stakeholder	*Submission number*	*Document/date of submission*
Initial submission from Seqwater		
Seqwater	1	Submission Part A, July 2017
Seqwater	2	Submission Part B, July 2017
Seqwater	3	Appendix 1, Cost escalation factors, final report, prepared by PwC, July 2017
Seqwater	4	Appendix 2, The weighted-average cost of capital for Seqwater, prepared by Frontier Economics, July 2017
Seqwater	5	Appendix 3, Updated cost of debt estimates for Seqwater, prepared by Queensland Treasury Corporation, July 2017
Initial submissions from other stakeholders		
Mr Buglar	6	June 2017
Mr Derbyshire	7	July 2017
Queensland Urban Utilities	8	September 2017
Moreton Bay Regional Council	9	September 2017
Queensland Council of Social Service	10	September 2017
Unitywater	11	September 2017
Council of the City of Gold Coast	12	September 2017
Submissions on the draft report		
Seqwater	13	Submission, January 2018
Seqwater	14	Attachment 1, Market risk premium issues in the QCA's draft report for Seqwater, prepared by Frontier Economics, January 2018
Seqwater	15	Attachment 2, Procedure for tracking and claiming of additional costs for extraordinary water events, January 2018
Redland City Council	16	January 2018
Unitywater	17	January 2018

APPENDIX C: OVERVIEW OF SEQWATER'S KEY OBLIGATIONS

The Water Supply Regulator (within the Department of Natural Resources, Mines and Energy) regulates the quality and provision of drinking and recycled water quality and service provider performance in Queensland. Seqwater is a registered drinking water service provider under the *Water Supply (Safety and Reliability) Act 2008* and must comply with a range of obligations in this Act and other legislative and regulatory instruments.[177]

Water quality obligations

Seqwater provides bulk water to water retailers that has been treated to drinking water quality standards.[178] Seqwater's bulk water supply agreements with the retailers[179] detail specific quality parameters, while also requiring compliance with the Australian Drinking Water Guidelines.[180] Seqwater must also meet obligations with respect to fluoride and E.coli levels[181], comply with an approved Drinking Water Quality Management Plan[182] and report its performance against drinking water quality standards.[183]

Water security planning obligations

Following its establishment on 1 January 2013, Seqwater assumed responsibility for long-term water security planning for SEQ.

The Water Act 2000 enables the creation of desired LOS objectives for water security in SEQ and the requirement for Seqwater to have a WSP to facilitate the achievement of the LOS objectives.

LOS objectives have been set in the Water Regulation 2002.[184] Broadly, they require that the bulk water supply network is able to supply enough water:[185]

- to meet the projected regional average urban demand (as estimated by Seqwater) for each year over the next 30 years
- so that medium level water restrictions on residential water use will not occur more than once every 10 years (on average) or restrict average water use to less than 140 LPD per day
- so that medium level water restrictions are expected to last no more than one year on average

[177] Seqwater, sub. 1, p. 16.
[178] Seqwater has bulk water supply agreements to supply raw water (rather than treated water) to other customers, including Stanwell Corporation and Toowoomba Regional Council.
[179] Agreements are determined by the Minister for Energy and Water Supply under s. 360G of the *Water Act 2000*.
[180] The Australian Drinking Water Guidelines, which are developed by the National Health and Medical Research Council, set minimum guideline values for drinking water quality at the bulk water supply point and also set out the practices for managing water quality risks.
[181] For example, under the *Public Health Act 2005*.
[182] Under the *Water Supply (Safety and Reliability) Act 2008*, the plan must be approved by the Water Supply Regulator.
[183] Seqwater is required to report on its performance under the Bulk Water Supply Code, which commenced on 1 January 2013 and was made by the Minister for Energy and Water Supply under s. 360M of the *Water Act 2000*.
[184] If changes are made to the LOS objectives, this may result in changes to the WSP. See Seqwater, *Water for Life: South East Queensland's Water Security Program 2016–46,* March 2017, p. 11.
[185] Seqwater, *Water for Life: South East Queensland's Water Security Program 2016–46*, March 2017, p. 144.

- to provide an essential minimum supply volume of 100 LPD and not be reduced to being able to supply only this volume more than once in every 10,000 years, on average.

The LOS objectives also require that the bulk water supply network should be operated so that three key storages (Baroon Pocket, Wivenhoe and Hinze dams) do not reach their minimum operating level more than 1 in every 10,000 years on average.

Seqwater's WSP covers the long-term planning arrangements in place to facilitate the LOS objectives for south east Queensland for the next 30 years. It includes information about operating the bulk water supply system, future bulk water infrastructure options and drought response.

Seqwater has released two versions of the WSP so far, with the latest version released in March 2017. The WSP remains in force until it is updated through a review, which must occur at least every five years.[186]

Dam safety and flood mitigation obligations

Seqwater is responsible for the safety of its dams under the *Water Supply (Safety and Reliability) Act 2008.*[187] Seqwater's obligations in relation to dam safety include:

- having an effective dam safety management program to minimise the risk of dams failing, and protect life and property, in accordance with the Queensland Dam Safety Management Guidelines[188]
- complying with the national guidelines of the Australian National Committee on Large Dams [189]
- having an approved emergency action plan in place for each dam[190]
- meeting requirements relating to acceptable flood capacity in the Guideline on Acceptable Flood Capacity for Water Dams[191]
- undertaking flood operations in accordance with approved flood mitigation manuals for Wivenhoe, Somerset and North Pine Dams.[192]

Other obligations

Seqwater must comply with the Bulk Water Supply Code and bulk water supply agreements with water retailers. These instruments include requirements relating to the establishment of operating protocols (governing requirements such as minimum storage levels in reservoirs, and flow rates and pressure at connection points), metering obligations and standards, provision of water consumption data, emergency planning, and the supply of sufficient water to meet customers' demand.[193]

Seqwater must also comply with a number of other obligations, including those relating to performance reporting, flood operations and notifications, water entitlements and resource management, development conditions, environmental obligations, licensing, and noxious weeds and pests.[194]

[186] Seqwater, sub. 2, pp. 4, 22.
[187] Seqwater, sub. 1, p. 29.
[188] DNRM, *Queensland Dam Safety Management Guidelines,* February 2002.
[189] Seqwater, sub. 1, p. 29.
[190] *Water Supply (Safety and Reliability) Act 2008*, s. 352E.
[191] DEWS, *Guidelines on Acceptable Flood Capacity for Water Dams*, July 2017.
[192] Flood mitigation manuals must be approved by the Minister for Energy and Water Supply, in accordance with the provisions of the *Water Supply (Safety and Reliability) Act 2008*.
[193] Seqwater, sub. 1, p. 16.
[194] Seqwater, sub. 1, pp. 16, 18.

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