

Queensland Competition Authority

Draft report

Seqwater Bulk Water Price Review 2018–21

November 2017

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

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SUBMISSIONS

Closing date for submissions: 31 January 2018

Public involvement is an important element of the decision-making processes of the Queensland Competition Authority (QCA). Therefore submissions are invited from interested parties concerning its review of Seqwater's bulk water prices for 2018–21. The QCA will take account of all submissions received within the stated timeframes.

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

Queensland Competition Authority
GPO Box 2257
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www.qca.org.au/submissions

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

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EXECUTIVE SUMMARY

The Queensland 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 in water bills, where they appear as a separate charge.

This report sets out our draft recommendations on Seqwater's bulk water prices and explains how we arrived at these draft 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 Queensland 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 are conducting this review under a referral issued by the Treasurer and Minister for Trade and Investment under section 23 of the *Queensland Competition Authority Act 1997*. 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

We have assessed Seqwater's proposed costs for the 2018 to 2028 period for prudence and efficiency. As a result of this assessment, we have:

- reduced Seqwater's proposed operating expenditure from \$2,765 million¹ to \$2,602 million (5.9 per cent)
- reduced Seqwater's proposed capital expenditure from \$1,558 million² to \$1,008 million (35.3 per cent)
- accepted the rate of return Seqwater proposes to earn on its investments, 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 6.12 per cent in 2018–19, compared to 6.03 per cent proposed by Seqwater
- adjusted other cost components, as set out in this draft report.

Overall, we consider that Seqwater should be allowed to recover \$8,110 million in costs between 2018 and 2028, which is \$297 million (or 3.5 per cent) lower than Seqwater proposed.

¹ This figure has been adjusted to remove revenue and costs not attributable to bulk water supply.

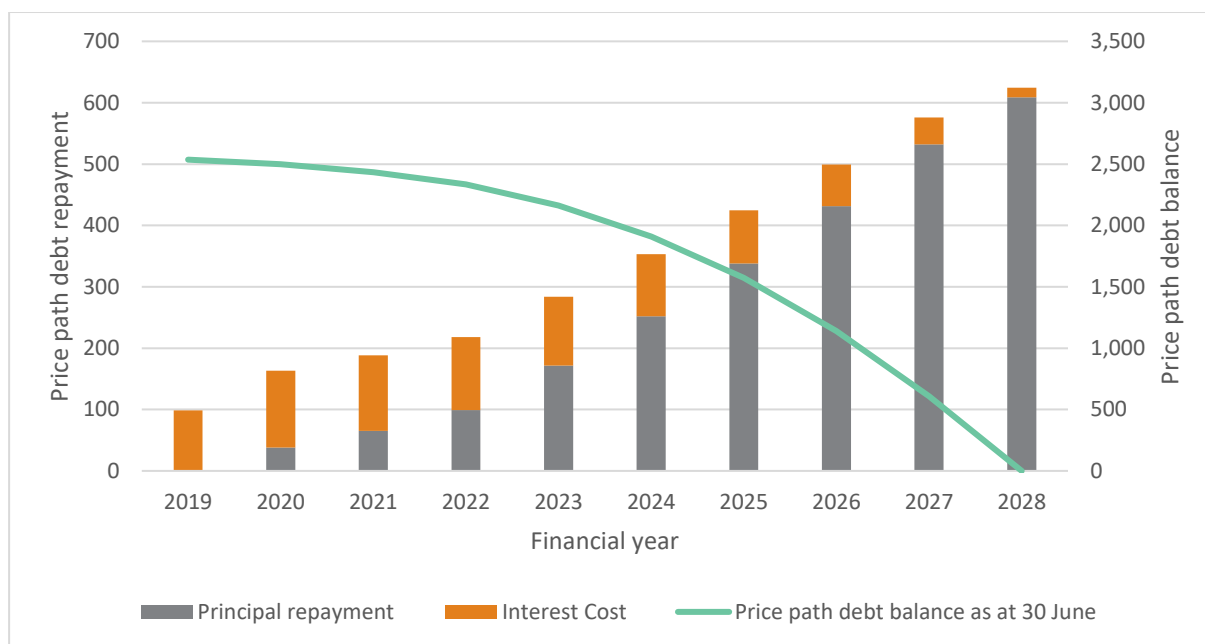
² Capital expenditure is presented on an as-commissioned basis.

Repayment of price path debt

Under the terms of the referral, we have been asked to recommend two pricing options (see below), both of which are to result in Seqwater fully repaying price path debt by 2028.

Each pricing option will result in a slightly different price path debt repayment profile, with pricing option 1 resulting in slightly higher repayments in the early years and slightly lower repayments in the later years, relative to option 2. Figure 1 shows the price path debt repayment profile for option 1.

Figure 1 Price path debt repayment profile—pricing option 1, (\$m, nominal)



Source: QCA analysis.

Draft recommended prices

Under each pricing option, we have been asked to recommend prices that are fully volumetric, which means that a price applies to each kilolitre (kL) of water used.

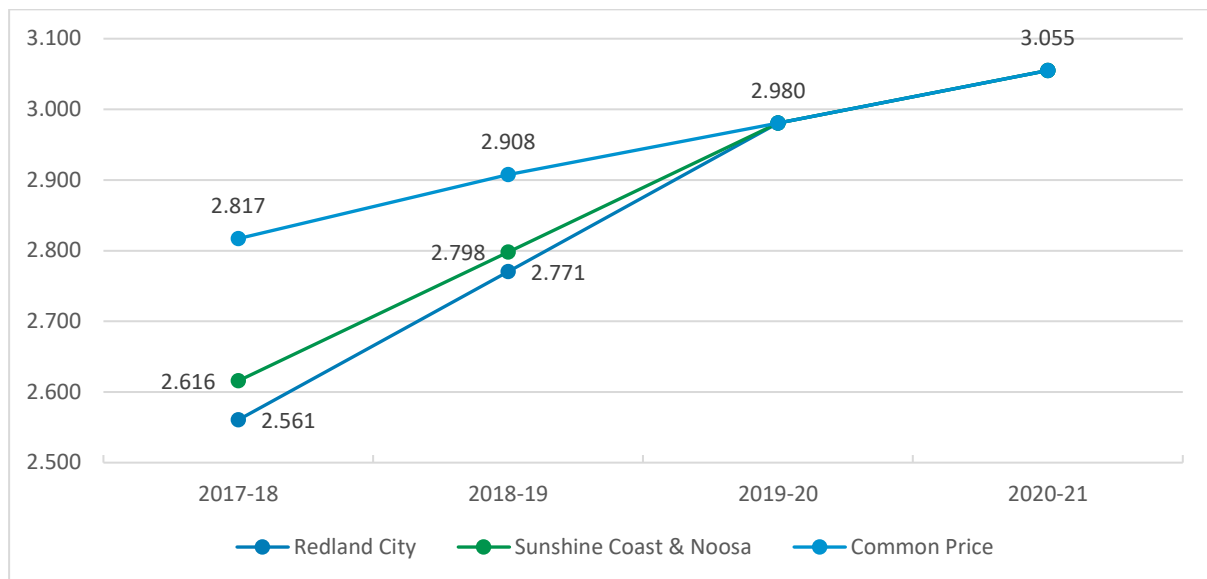
Pricing option 1

We have been asked to present a pricing option that meets the following criteria:

- 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.

Under this pricing option, we recommend a draft common price of \$2.908 in 2018–19, an increase of 3.22 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. Customers in these council areas currently pay lower prices than customers in other council areas.

Figure 2 Pricing option 1 (\$/kL)



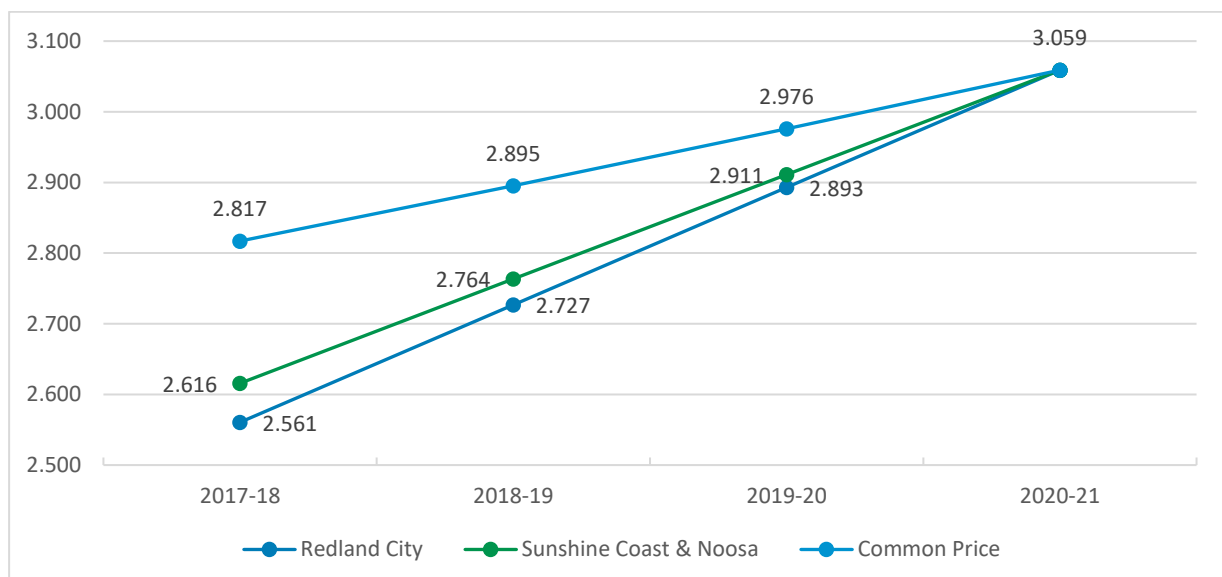
Pricing option 2

We have been asked to present 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.

Under this pricing option, we recommend a draft common price of \$2.895 in 2018–19, an increase of 2.78 per cent on the 2017–18 common price. This is followed by increases of 2.78 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 lower increases than under option 1 and reach the common price in 2020–21, instead of 2019–20.

Figure 3 Pricing option 2 (\$/kL)



Indicative bill impacts

Based on our draft recommended prices, we can illustrate the potential impact on the bulk water component of water bills. Table 1 provides indicative bill impacts under each pricing option, based on average household consumption across SEQ of 160 kilolitres per year.

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

Table 1 Indicative bulk water bill for an average household (\$ per annum)

<i>Council area</i>	<i>Pricing option</i>	<i>2018–19</i>	<i>2019–20</i>	<i>2020–21</i>
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	Option 1	465.28	476.80	488.80
	Option 2	463.20	476.16	489.44
Sunshine Coast and Noosa	Option 1	447.68	476.80	488.80
	Option 2	442.24	465.76	489.44
Redland City	Option 1	443.36	476.80	488.80
	Option 2	436.32	462.88	489.44

Draft recommendations

A summary of our draft recommendations is provided in Table 2 below.

Table 2 Summary of draft recommendations

<i>Number</i>	<i>Draft recommendation</i>	<i>Chapter</i>
1	Seqwater should consider improvements to its risk management, investment governance, procurement and asset management frameworks as suggested in section 5.2 of Chapter 5.	5
2	Bulk water prices for each council areas should be set according to pricing option 1 or pricing option 2, as set out in Table 59 in Chapter 9.	9
3	The definition of feedwater quality events that we recommended in the 2015 review should not be changed.	10
4	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 above to recover these costs in the following manner: (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
5	The QCA should have discretion to undertake an ex post assessment of the prudence and efficiency of capex in future reviews, regardless of whether actual capex is higher or lower than allowed capex.	10

Next steps

Public involvement is a key part of our decision-making process and we invite interested parties and stakeholders to comment on our draft report. Submissions are due by 31 January 2018.

The Queensland Government will decide bulk water prices after considering our final recommendations, which we must provide by 31 March 2018.

1 INTRODUCTION

The Queensland 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).³

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 in water bills, where they appear as a separate charge.⁴

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 Queensland 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 and recommended prices for the period 1 July 2015 to 30 June 2018 (the 2015 review).⁵

The government set bulk water prices for the three-year period that were consistent with our recommendations.

³ The referral is provided in Appendix A.

⁴ 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'.

⁵ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015.

While we had not been asked to recommend bulk water prices prior to 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)⁶ and the Western Corridor Recycled Water Scheme (WCRWS)⁷. 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 also 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.⁸ In accordance with the referral, we have included the costs of providing these services in our draft recommended bulk water prices.⁹

⁶ The GCDP is currently operating in a 'hot standby' operating 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).

⁷ The WCRWS is currently in 'care and maintenance' or 'cold standby mode'. Seqwater advised that it is maintained so that it can be made operational and ready to deliver recycled water in two years (Seqwater, sub. 2, p. 48).

⁸ 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).

⁹ We note Unitywater's concern about the equity of including such costs in bulk water prices (Unitywater, sub. 11, p. 2), but note we recommend prices in accordance with the terms of the referral.

1.2.3 Seqwater's 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.¹⁰ More information about Seqwater's key obligations is provided in Appendix C.

1.3 Timetable for the review

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

We commenced our review on 24 June 2017 by publishing a notice of investigation and inviting submissions from stakeholders and interested parties.¹¹ We received Seqwater's submission on 31 July 2017 and seven submissions from other stakeholders by the due date of 15 September 2017. Submissions are available on our website.

We now invite stakeholders to comment on this draft report, with submissions due by 31 January 2018. We must provide a final report, containing recommended bulk water prices, to the Queensland Government by 31 March 2018.

An indicative timetable for the remainder of our review is provided in Table 3.

Table 3 Timetable

<i>Task</i>	<i>Date</i>
Submissions on draft report due	31 January 2018
Final report provided to the Queensland Government	By 31 March 2018
Final report published	Early April 2018

¹⁰ Seqwater, sub. 1, p. 16.

¹¹ The notice of investigation was published in two newspapers (The Courier Mail and The Australian) and on our website. At the same time, we published a guidance note to assist stakeholders with their submissions.

2 APPROACH TO THE REVIEW

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

2.1 Guiding principles for this review

Our approach to this review is to recommend prices having considered the matters in section 26 of the QCA Act, inclusive of the terms of the referral¹². 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 often 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 will 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 also 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 the provision of targeted subsidies to customers to address affordability concerns.¹³

2.2 Our approach to calculating draft 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 increase by inflation in each subsequent year until 2027–28.

Consistent with the guiding principles for this review, our approach is to recommend prices that: reflect our assessment of the prudent and efficient costs that are consistent with the terms of the referral and that are required to enable Seqwater to meet its legislative and regulatory obligations; and enable price path debt to be repaid by 2027–28.

¹² 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).

¹³ Queensland Government, 'Smart savings, Concessions and rebates: Energy and water', <https://campaigns.premiers.qld.gov.au/smart-savings/#category=Energy-and-water>.

In conducting our review, we also carefully consider the matters raised in submissions.¹⁴

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)—to reflect the ongoing costs of running the business and maintaining assets (Chapter 4)¹⁵
- a return on assets—to reflect 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). Under the referral, we have been asked to establish the rate of return based on a weighted average cost of capital (WACC) that uses a QCA-determined cost of equity for the equity component and Seqwater's cost of debt, as estimated by Queensland Treasury Corporation (QTC), for the debt component.
- a return of assets (depreciation)—to recover the cost of capital investments over the useful life of the assets (Chapter 6)
- a return on working capital—to reflect the costs 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—to reflect estimated tax liabilities. 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. We have been asked to calculate interest on price path debt using Seqwater's cost of debt (as advised by QTC).

In accordance with the referral, we have presented two pricing options (see below) and each option will result in a slightly different debt repayment profile. Under each option, revenue exceeds building block costs in each year between 2018 and 2028. Both pricing options result in the full repayment of price path debt in 2028 (see 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.

¹⁴ Submissions are listed in Appendix B.

¹⁵ We have adjusted opex to remove the costs of supplying declared irrigation services and revenue Seqwater receives from sources other than bulk water prices.

2.2.3 Draft 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 that apply to each kilolitre (kL) of water used). This requires a forecast of water demand.¹⁶ We used Seqwater's demand forecast after confirming it was consistent with the terms of the referral (Chapter 3).

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

- Pricing option 1—a pricing option that meets the following criteria:
 - 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.

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

¹⁶ Demand forecasts are also relevant to the assessment of forecast capital and operating expenditure.

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).¹⁷

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.¹⁸ Seqwater uses the medium demand forecast for planning purposes, while the low and high forecasts are used for scenario analysis.¹⁹

For the purposes of this review, Seqwater proposed a hybrid demand forecast (Figure 4), 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.²⁰

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.²¹ We note that demand from power stations and Toowoomba Regional Council is not required in the calculation of bulk water prices.

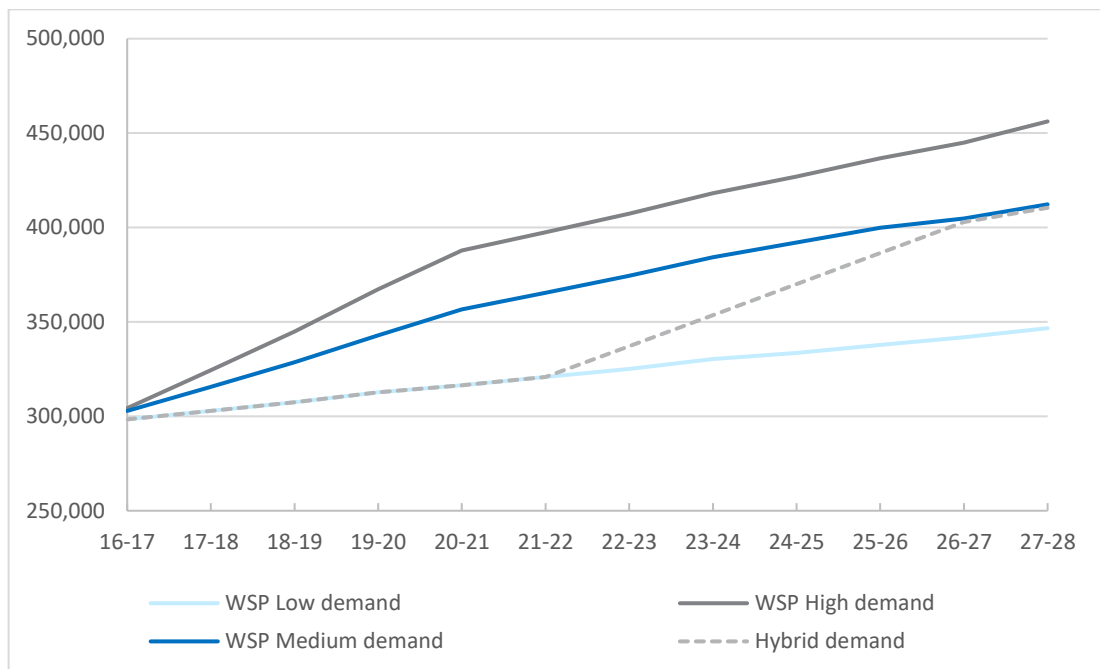
¹⁷ Seqwater, *Water Security Program 2016–46*, March 2017.

¹⁸ Service-connected population refers to the estimated population in SEQ connected to the retail service supply network.

¹⁹ Seqwater, *Water Security Program 2016–46*, March 2017, p. 43.

²⁰ Seqwater response to QCA RFI 3.

²¹ Seqwater response to QCA RFI 3.

Figure 4 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 2026–27.²²

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.²³ 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.²⁴ 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.²⁵ Seqwater advised that demand in 2016–17 was affected by very dry conditions and was therefore much higher than in previous years.²⁶ 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 undertaking our own assessment.

²² Seqwater, sub. 1, p. 5.

²³ Unitywater, sub. 11, pp. 2–3.

²⁴ Seqwater response to QCA RFI 3.

²⁵ Council of the City of Gold Coast, sub. 12, p. 1.

²⁶ 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'.²⁷ An individual stakeholder considered that prices should be reduced when there is excess supply to increase demand.²⁸ 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.

²⁷ QCOSS, sub. 10, p. 2.

²⁸ Mr Derbyshire, sub. 7, p. 1.

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

<i>Year</i>	<i>Brisbane</i>	<i>Gold Coast</i>	<i>Ipswich</i>	<i>Lockyer Valley</i>	<i>Logan</i>	<i>Moreton Bay</i>	<i>Scenic Rim</i>	<i>Somerset</i>	<i>Redland City</i>	<i>Sunshine Coast</i>	<i>Noosa</i>	<i>Total</i>
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 prudence 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).²⁹ 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
Global efficiency savings	–	(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 forecasting opex.³⁰ For fixed opex, this involved:

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

²⁹ Seqwater, sub. 2. This includes non–bulk water costs such as irrigation costs.

³⁰ 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 an ongoing 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 an ongoing 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).³¹

Seqwater's estimate of the base year fixed opex for 2018–19 is \$210.4 million.³² 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).

³¹ Seqwater, sub. 2, p. 19.

³² 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.³³

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.

Source: 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.

³³ 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)

<i>Adjustment</i>	<i>2018–19</i>	<i>2019–20</i>	<i>2020–21</i>	<i>2021–28</i>	<i>Total</i>
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 2018–28. The resulting escalation factors are summarised in Table 11.

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

<i>Cost category</i>	<i>Basis for escalation factor</i>	<i>Forecast period</i>	<i>Escalation factor</i>
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).³⁴ 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.

³⁴ 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 Ongoing efficiency target

Seqwater stated that, since it has achieved and exceeded the efficiency target set by the QCA in the 2015 review, an aggressive ongoing efficiency target is unwarranted.³⁵ Instead, Seqwater proposed to incorporate a cumulative ongoing efficiency target (which is the ongoing cost savings Seqwater expects to make from continuing efficiency improvements) of 0.2 per cent per annum of controllable costs³⁶ across the remainder of the price-path period.

Seqwater submitted that this figure 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).³⁷ In that decision, IPART set an ongoing efficiency target of 0.25 per cent.³⁸

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.³⁹ 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 million to reflect the allocation of costs to irrigation services⁴⁰ in accordance with the cost allocation approach approved by the QCA in the 2013 irrigation review.⁴¹

Summary

Table 13 summarises Seqwater's proposed revenue and cost offsets.

³⁵ Seqwater, sub. 2, p. 26.

³⁶ Seqwater defined these 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.

³⁷ Seqwater, sub. 2, p. 26.

³⁸ IPART, *Review of prices for Hunter Water Corporation from 1 July 2016 to 30 June 2020*, final report, June 2016.

³⁹ Seqwater pricing model 2017.

⁴⁰ This includes \$0.1 million allocated to high priority water access entitlement holders who are located in irrigation schemes, but are not irrigators.

⁴¹ Seqwater pricing model 2017.

Table 13 Seqwater's proposed revenue and cost offsets, 2018–28 (\$m, nominal)

	2018–19	2019–20	2020–21	2021–28	Total
<i>Revenue offsets</i>					
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
<i>Cost offsets</i>					
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 Summary

Seqwater's proposed opex is summarised in Table 14.

Table 14 Seqwater's proposed opex (\$m, nominal)

	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
Ongoing efficiency target	–	(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
Ongoing efficiency target	–	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

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 prudence 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 prudence 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).⁴²

4.2.2 Prudence and efficiency of proposed opex

KPMG applied a base-step-trend approach to determine the prudence 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.⁴³

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 and historical trends in actual expenditure.⁴⁴

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.⁴⁵

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.

⁴² KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, pp. 143-144, 152.

⁴³ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, pp. 146, 152-163.

⁴⁴ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 146.

⁴⁵ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 146.

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

- **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 15).

Table 15 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 (%)

	<i>2015–16</i>	<i>2016–17</i>	<i>2017–18</i>	<i>2018–19^a</i>
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.⁴⁶

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.⁴⁷

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.⁴⁸

QUU submitted that the appropriate contingency to apply for feedwater quality events should be based on the long-term average of these costs.⁴⁹

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).

Summary

We have amended Seqwater's proposed base opex as shown in Table 16.

⁴⁶ Seqwater, sub. 2, p. 16.

⁴⁷ Seqwater, sub. 2, p. 16.

⁴⁸ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, pp. 167-168.

⁴⁹ QUU, sub. 8, p. 3.

Table 16 Recommended adjustments to Seqwater's proposed 2018–19 base year opex (\$m, nominal)

	<i>Seqwater proposal</i>	<i>QCA adjustment</i>	<i>QCA recommendation</i>
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.⁵⁰
- The expenditure associated with the step change should be prudent and efficient.

Where KPMG has assessed a step to be a typical operational activity and ongoing in nature, it has recommended that the step not be accepted but that an adjustment be made to base opex to account for the expenditure. However, we consider steps associated with typical operational activity are business-as-usual activities. We do not consider that step changes are an appropriate mechanism for allowing the pass-through of annual budgeted costs associated with baseline business activities. We would expect Seqwater to meet these costs within its base operating cost allowance.

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

KPMG's recommended adjustments are summarised below together with our proposed response (Table 17).

Table 17 KPMG recommended adjustments to step changes (\$m, nominal)

<i>Step change</i>	<i>KPMG recommendation</i>	<i>QCA position</i>	<i>QCA adjustment</i>
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.	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 propose to treat it as a step change.	–

⁵⁰ 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 ongoing efficiency target.

Step change	KPMG recommendation	QCA position	QCA adjustment
GCDP and WCRWS—year on year changes in fixed opex	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial. The proposed step change should be included in the base year, as it is related to typical operating activity and is ongoing in nature.	We consider this represents a business-as-usual activity. We would expect Seqwater to meet this cost within its overall operating cost allowance.	(4.2)
ICT projects	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial.	We have accepted this recommendation.	0.5
Provision of additional drafting services	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 related to typical operating activity and is ongoing in nature.	We consider this represents a business-as-usual activity. We would expect Seqwater to meet this cost within its overall operating cost allowance.	(0.6)
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 related to typical operating activity and is ongoing in nature.	The expenditure is associated with cyclical variations in an existing obligation. We propose to treat Seqwater's adjustment as a valid step change.	–
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.	As the expenditure appears to be associated with a new obligation, we propose to treat it as a valid step change.	–
Integrated master plan update	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial. The proposed step change should be included in the base year, as it is related to typical operating activity and is ongoing in nature.	We consider this represents a business-as-usual activity. We would expect Seqwater to meet this cost within its overall operating cost allowance.	(0.3)
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.	We have accepted this recommendation.	(9.3)
EBA advice	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 related to typical operating activity	We consider this represents a business-as-usual activity. We would expect Seqwater to meet this cost within its overall operating cost allowance.	(0.5)

Step change	KPMG recommendation	QCA position	QCA adjustment
	and is ongoing in nature.		
Additional leadership training	The proposed step change should not be included, as it appears to be associated with typical operational activity and is immaterial. Operational benefits (efficiencies) associated with this activity should outweigh the costs over time.	We have accepted this recommendation.	(0.6)
Budget adjustments	The proposed step change should not be included, due to an inappropriate driver and an inability to establish efficiency. Expenditure appears to be corrections of the budget. Seqwater advised KPMG that it had incorrectly allocated some costs but wanted to retain these as step changes to account for potential technological changes over the long term.	We have accepted this recommendation.	(12.1)
Ewan Maddock fixed costs	Expenditure is related to capex aimed at increasing capacity, is material and should be included as a step change so long as the corresponding capex is prudent and efficient.	We have accepted this recommendation.	–
Wyaralong WTP fixed costs	Expenditure is related to capex aimed at increasing capacity and is material but may not be prudent and efficient as the efficiency of the corresponding capex has not been demonstrated.	We have accepted this recommendation. The expenditure was proposed in conjunction with capex to connect Beaudesert with the Wyaralong WTP. As the efficiency of this capex cannot be established at this time, we have removed it from the RAB and this step change is therefore no longer applicable.	(8.8)
Total adjustments			(37.0)

Note: Totals may not add due to rounding.

Sources: KPMG, Seqwater expenditure review: Prudency and efficiency assessment, November 2017; 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 2020.⁵¹ 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 as shown in Table 18.

⁵¹ QUU, sub. 8, p. 3.

Table 18 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	(1.2)	(2.9)	(2.5)	(30.4)	(37.0)
QCA recommended step changes	1.5	0.8	2.9	4.5	9.6

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 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.

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.⁵²

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.⁵³ KPMG advised that its consultations with Seqwater revealed that Seqwater manages the risk of volatility in prices by using derivatives.⁵⁴

We accept KPMG's recommendation and propose to update 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.

As noted by PwC in its report for Seqwater⁵⁵, 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

⁵² QUU, sub. 8, p. 3.

⁵³ QUU, sub. 8, p. 3.

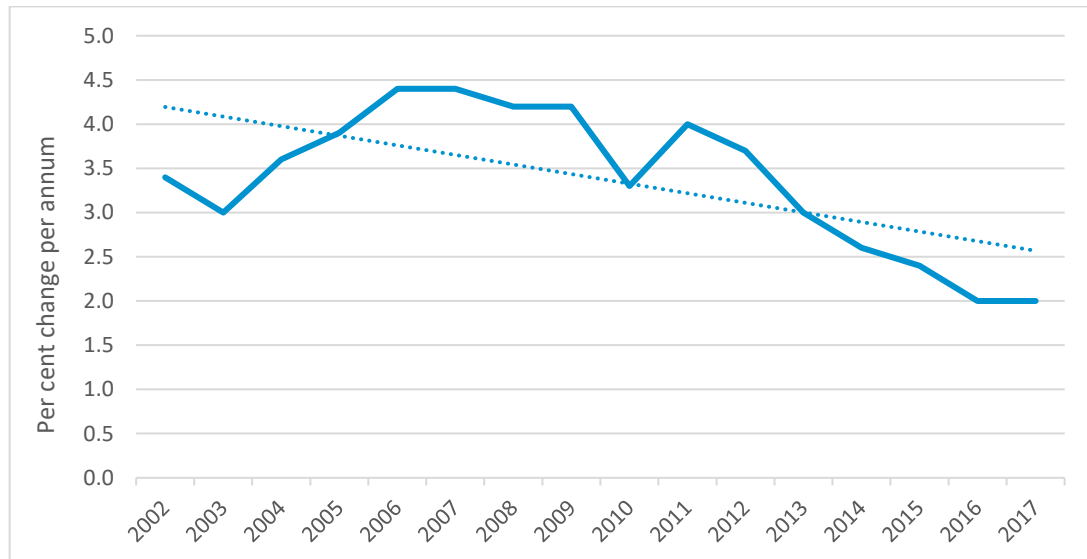
⁵⁴ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 176.

⁵⁵ Seqwater, sub. 3, p. 14.

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 2020–21.⁵⁶

We note that the long-term trend in the Queensland WPI, as determined by the ABS, has been decreasing (Figure 5).

Figure 5 Queensland WPI, 2002–17



Source: ABS, *Wage Price Index, Australia, June 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 propose to use 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.⁵⁷ 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.

Our recommended adjustments to Seqwater's proposed input price escalators are summarised in Table 19.

⁵⁶ Queensland Treasury, *Queensland Budget 2017-18, Budget Strategy and Outlook, Budget Paper No. 2*, June 2017, p. 49.

⁵⁷ QCA, *Gladstone Area Water Board Price Monitoring 2015–2020*, final report, May 2015.

Table 19 QCA recommended adjustments to input cost escalation factors

<i>Cost category</i>	<i>Nature of adjustment</i>
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 2.5 per cent 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 20.

Table 20 QCA recommended input cost escalation factors (%)

<i>Cost category</i>	<i>Forecast period</i>	<i>Escalation factor</i>
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	–0.55 increasing to –0.23
	2021–28	Between –1.56 and 4.36
Chemicals	2018–28	2.5
Other materials and services	2018–28	2.5
Insurance	2018–28	2.5

Sources: KPMG, *Seqwater expenditure review*, November 2017; 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.

Ongoing efficiency target

KPMG recommended that we increase Seqwater's proposed cumulative ongoing efficiency target from 0.2 per cent per year to 1 per cent per year of controllable costs, on the basis of regulatory precedent in the water industry in a number of Australian jurisdictions.⁵⁸

Ongoing efficiency targets reflect the ongoing productivity improvements that would be expected of an efficient business, including through innovation and the use of new technologies. KPMG advised that, relative to efficiency targets set by regulators in other

⁵⁸ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 185.

jurisdictions, Seqwater's proposed ongoing efficiency target is low. KPMG noted that the range of recent targets applied by other Australian regulators is between 0.25 per cent per annum and 2.5 per cent per annum.⁵⁹

For the purpose of this draft report, we have chosen to adopt a conservative approach by applying an ongoing efficiency target of 0.2 per cent per annum, as proposed by Seqwater, rather than 1 per cent, as recommended by KPMG. However, we expect Seqwater to provide more robust justification of its proposed target in response to the draft report. In the absence of more robust justification, we may consider applying a higher target in the final report.

Table 21 QCA recommended ongoing efficiency target (%)

	<i>Annual target</i>
Seqwater's proposal	0.2
QCA's recommendation	0.2

Source: QCA analysis.

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 ongoing efficiency target accordingly.

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 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.

⁵⁹ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 185.

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 22.

Table 22 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.

Summary

The QCA's recommended opex (Table 23) differs from Seqwater's proposed opex because of downward adjustments to base opex; input cost escalation rates, step changes in base opex; and upward adjustments to the ongoing efficiency target (to reflect the application of the target to a broader opex base), and revenue and cost offsets .

Table 23 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	212.9	218.7	1,716.9	2,355.7
Adjustments/step changes	1.5	0.8	2.9	4.5	9.6
Ongoing efficiency target (fixed opex)	-	(0.4)	(0.7)	(18.0)	(19.1)
Fixed opex	208.7	213.3	220.8	1,703.4	2,346.2
Base year variable opex plus input cost and growth escalation	37.5	38.4	39.9	359.9	475.7
Ongoing efficiency target (variable opex)	-	(0.1)	(0.1)	(3.5)	(3.7)
Variable opex	37.5	38.4	39.7	356.4	472.0
Total opex (inclusive of non-bulk water costs)	246.1	251.6	260.6	2,059.8	2,818.2
Revenue and cost offsets	(19.1)	(19.5)	(20.0)	(157.8)	(216.5)
QCA recommended net opex	227.1	232.1	240.5	1,902.0	2,601.7
Seqwater's proposed net opex	230.6	239.2	249.2	2,046.3	2,765.3
Variance	(3.6)	(7.1)	(8.6)	(144.4)	(163.6)

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 prudence 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 prudence 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 million⁶⁰ lower than what the QCA recommended in the 2015 review (Table 24).

Table 24 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

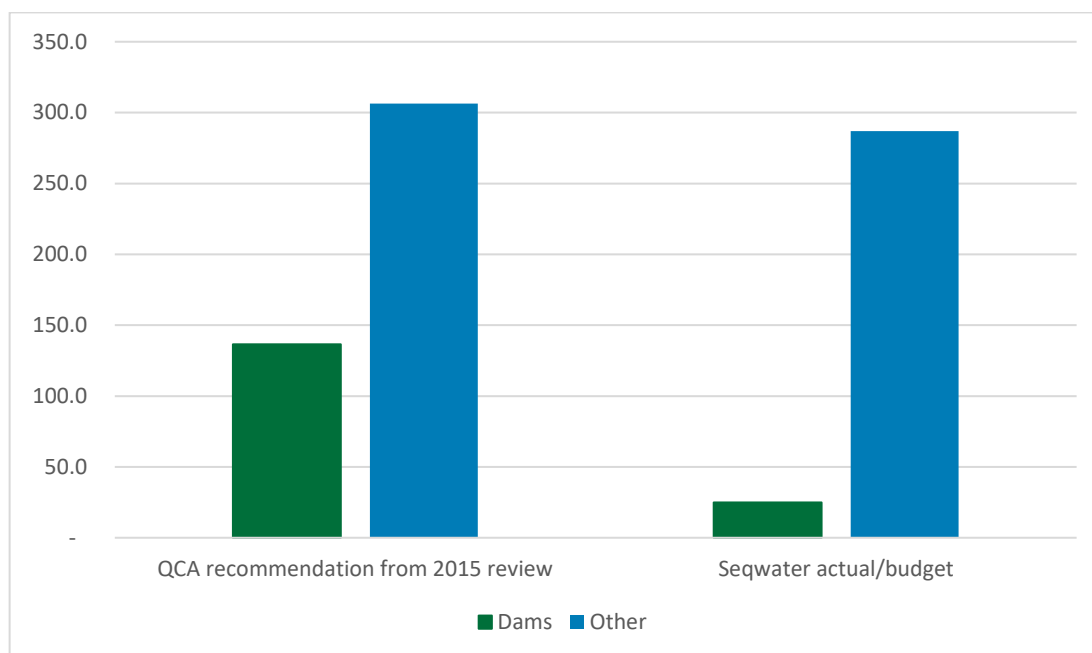
Sources: QCA, SEQ bulk water price path 2015–18, final report, March 2015; Seqwater, sub. 2, p. 32; Seqwater pricing model 2017; Seqwater supplementary submission.

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

⁶⁰ 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 6 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).⁶¹ 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.⁶²

Figure 6 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).⁶³

Table 25 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 correction.

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

⁶¹ Seqwater, sub. 2, p. 33.

⁶² Seqwater response to QCA RFI 10.

⁶³ 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

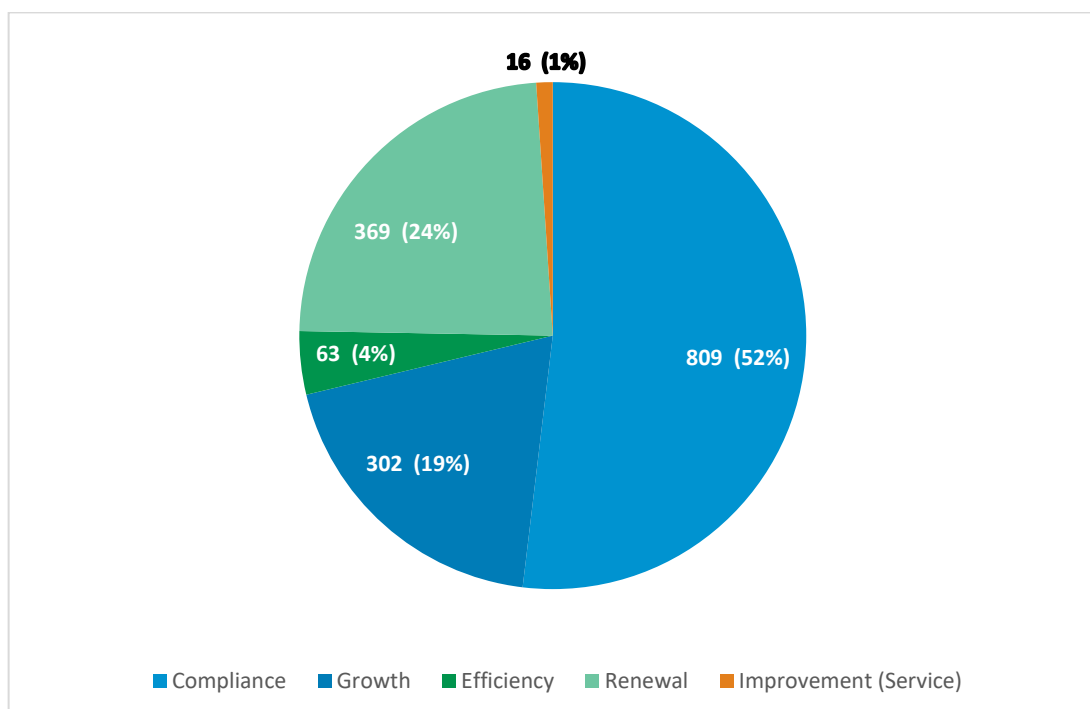
Under the terms of the referral, we have been asked to form a view on the prudence and efficiency of Seqwater's proposed capex for the 2018–28 period and, in doing so, to:

- 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 prudence of augmentations expected to be required under the WSP.

5.2.1 Seqwater's submission

Seqwater proposed capex of \$1,558.1 million over the period 2018–28. The biggest driver of the capex program is compliance, followed by renewals, as shown in Figure 7 below.

Figure 7 Seqwater's forecast capex by investment driver, 2018–28 (\$m, nominal)

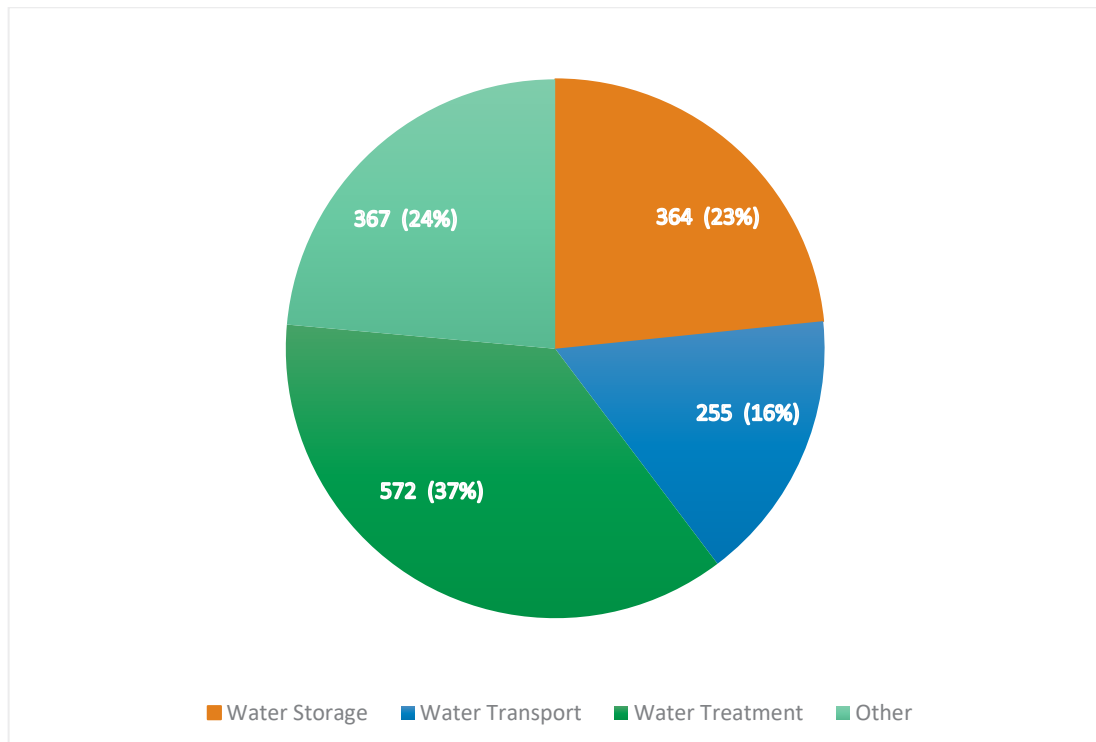


Note: Capex is on an as-commissioned basis.

Source: Seqwater pricing model 2017.

By asset type, the largest category of capex is water treatment assets, followed by other (which includes other infrastructure projects and non-infrastructure projects) and water storage (Figure 8).

Figure 8 Seqwater's forecast capex by asset type, 2018–28 (\$m, nominal)

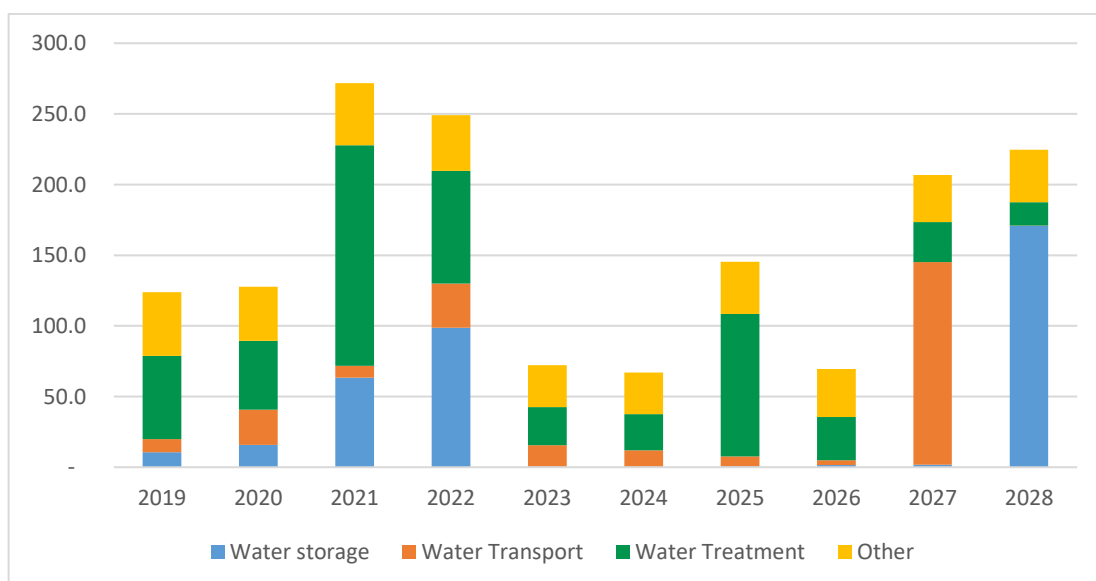


Note: Capex is on an as-commissioned basis.

Source: Seqwater pricing model 2017.

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 9).

Figure 9 Seqwater's forecast capex by asset type and year of commissioning (\$m, nominal)



Note: Capex is on an as-commissioned basis.

Source: Seqwater pricing model 2017.

5.2.2 QCA assessment

We have assessed the prudence 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.⁶⁴ KPMG however recommended improvements in the following areas:

- **Risk management:** Seqwater could improve the development and validation of the likelihood and consequence of identified asset risks to better prioritise investments. In particular, KPMG recommended that Seqwater should use data driven metrics from condition and performance assessments to help predict the likelihood of asset failure.⁶⁵
- **Investment governance:** Seqwater should consider 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.⁶⁶
- **Procurement:** Seqwater should consider automating low value spend (i.e. below \$5,000) to free up resources to monitor larger projects with significantly higher spend.⁶⁷

In addition to corporate governance, KPMG also assessed Seqwater's capital planning and asset management framework. KPMG identified a number of areas where Seqwater could improve, including:⁶⁸

⁶⁴ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 41.

⁶⁵ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 35.

⁶⁶ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, pp. 38–39.

⁶⁷ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 40.

- ensuring that the asset management system includes relevant resourcing requirements
- ensuring that the selection and prioritisation of work in the asset portfolio master plan (APMP) is based on criteria that have been agreed with customers
- formalising the asset management policy and communicating it widely through the organisation
- ensuring that key performance indicators are informed by asset management objectives
- ensuring that the strategic asset management plan evolves to focus on setting a direction for asset management and providing a roadmap for future improvements
- finalising asset class plans to gain a clearer view of lifecycle activities
- prioritising the testing and implementation of a renewals support tool to increase analytical capability.

⁶⁸ KPMG, *Seqwater expenditure review: prudence and efficiency assessment*, November 2017, p. 56.

Draft recommendation 1

Seqwater should consider improvements to its risk management, investment governance, procurement and asset management frameworks, 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
- (d) ensuring that the asset management system includes relevant resourcing requirements
- (e) ensuring that the selection and prioritisation of work in the asset portfolio master plan is based on criteria that have been agreed with customers
- (f) formalising the asset management policy and communicating it widely through the organisation
- (g) ensuring that key performance indicators are informed by asset management objectives
- (h) ensuring that the strategic asset management plan evolves to focus on setting a direction for asset management and providing a roadmap for future improvements
- (i) finalising asset class plans to gain a clearer view of lifecycle activities
- (j) prioritising the testing and implementation of a renewals support tool to increase analytical capability.

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 represented 39 per cent of the as-commissioned value of Seqwater's proposed capex and included a representative mix of capex by driver and asset type (Table 26).

Table 26 Capital expenditure sample reviewed by KPMG (\$m, nominal)

<i>Project</i>	<i>Primary driver</i>	<i>Year of commissioning^a</i>	<i>As-incurred cost</i>	<i>As-commissioned cost</i>
Beaudesert pipes upgrade	Growth	2027	81.4	109.2
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	Efficiency	Ongoing	28.4	28.4

<i>Project</i>	<i>Primary driver</i>	<i>Year of commissioning^a</i>	<i>As-incurred cost</i>	<i>As-commissioned cost</i>
Program CAPEX				
Holts Hill Reservoir pH correction upgrade	Improvement (Service)	2021	8.9	9.3
Somerset Dam safety upgrade	Compliance	2028	125.7	153.8
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 WPS long term renewals	Renewal	Ongoing	24.8	24.8
Total sampled capex			524.5	607.3
Total proposed capex			1,386.2	1,558.1
Sample as a proportion of total (per cent)			37.8	39.0

a Ongoing capex relates mainly to renewal expenditure and is capitalised into the RAB as it is incurred.

Note: Totals may not add due to rounding

Source: KPMG, Seqwater expenditure review: Prudence and efficiency assessment, November 2017.

In assessing prudence, KPMG considered, among other things:

- the level of documentation of key expenditure drivers
- 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:

- 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.

KPMG noted that, in general, it could not verify the efficiency of projects that are at an early stage in Seqwater's investment gateway process (typically between gateway 0 and gateway 2) as there is insufficient supporting information available. In the cases where KPMG considered that Seqwater had not adequately demonstrated the efficiency of a project but had otherwise demonstrated the prudence of the project, KPMG recommended that an adjustment be made to remove the expenditure. Overall, KPMG recommended a reduction of \$369.7 million to the sampled capex (Table 27).

Table 27 Recommended adjustments to the value of sampled capex projects (\$m, nominal)

<i>Project</i>	<i>Assessment of prudence</i>	<i>Assessment of efficiency</i>	<i>Adjustment</i>	<i>Comments</i>
Beaudesert pipes upgrade	Prudent	Efficiency not demonstrated	(109.2)	Seqwater has identified a growth driver for this project making it prudent. However, the project has gone through some revisions since the 2017 APMP with adequate documentation on the revised scope, standard and cost of the updated preferred option yet to be completed. The proposed project cost is based on a previously assessed option which was abandoned at the investment justification stage. Moreover, the currently preferred option has a profile of expenditure with some costs to be incurred beyond 2028 that would result in a commissioning date beyond 2028.
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 capex	Not prudent	Partly efficient	(17)	Seqwater has not demonstrated the prudence of increasing the renewals expenditure beyond historical levels. The scope, standard and cost of works are yet to be fully documented. Capex should therefore be maintained at historical levels.
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 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

<i>Project</i>	<i>Assessment of prudence</i>	<i>Assessment of efficiency</i>	<i>Adjustment</i>	<i>Comments</i>
				of certainty around the scope, standard and cost of works.
Somerset Dam safety upgrade	Prudent	Efficiency not demonstrated	(153.8)	Seqwater has identified an appropriate driver and provided sufficient evidence to justify the proposed works. However, the project is at the initial stage of the gateway process with significant uncertainty around the appropriate scope, standard and cost of the proposed works.
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 prudence 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 prudence 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 prudence of the renewal program and provided robust supporting documentation around the scope, standard and cost of the proposed works.
Total			(369.8)	

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

Source: KPMG, Seqwater expenditure review: Prudence and efficiency assessment, November 2017.

The QCA accepts KPMG's recommendation.

We do not consider it appropriate to accept projects into the RAB that lack robust justification to demonstrate efficiency. We also note KPMG's concerns about Seqwater's ability to deliver on the capex program for the next regulatory period. KPMG noted that:⁶⁹

- the majority of Seqwater's underspend in the current regulatory period was due to capex deferrals implying that Seqwater overstated the need for this capex or does not have the internal capacity to deliver a program of this magnitude

⁶⁹ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 79.

- capex expected to be commissioned in the next regulatory period is 68 per cent higher than commissioned in the current regulatory period
- a high proportion of expenditure in the next regulatory period relates to projects currently at gateways zero to two.

Unitywater expressed a similar concern submitting that:⁷⁰

- it was unclear whether Seqwater's underspend was associated with more efficient project delivery or the deferral of project expenditure
- Seqwater's forecast expenditure for 2020–21 is double the forecast in 2019–20 and it has concerns about Seqwater's ability to plan, achieve and prudently manage this increase
- Seqwater's capex profile may not be achievable and could represent a slippage of capital projects outside of the three-year price-setting period.

We have revised sampled capex as summarised in Table 28.

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

<i>Project</i>	<i>Seqwater's proposal</i>	<i>QCA adjustment</i>	<i>QCA recommended</i>
Somerset Dam safety upgrade	153.8	(153.8)	–
Beaudesert pipes upgrade	109.2	(109.2)	–
Lake MacDonald Dam upgrade stage 2	95.7	–	95.7
North Pine WTP filtration capacity upgrade (250 ML/day)	46.7	(46.7)	–
Mount Crosby East Bank WTP filtration upgrade	35.6	–	35.6
Mount Crosby East bank WTP sedimentation upgrade	33.7	(33.7)	–
Enterprise Resource Planning Program CAPEX	28.4	(17.0)	11.4
Leslie Harrison Dam upgrade Stage 1	29.6	–	29.6
Mount Crosby East Bank WPS Long Term Renewals	24.8	–	24.8
Mobile Plant and Fleet Renewals	19.3	–	19.3
Mudgeeraba WTP Long Term Renewals	21.2	–	21.2
Holts Hill Reservoir pH correction upgrade	9.3	(9.3)	–
Total	607.3	(369.8)	237.5

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

Source: QCA analysis.

⁷⁰ Unitywater, sub. 11, p. 3.

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.

Based on this assessment, KPMG advised that it had not identified any systemic issues with the development of Seqwater's renewals program but that it had identified some issues around capital planning. KPMG said 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). This correlation is 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.

Table 29 Gateway, commencement and commissioning status of sampled projects for which efficiency has not been demonstrated

<i>Project</i>	<i>Stage in gateway^a</i>	<i>Commencement</i>
Beaudesert pipes upgrade	2 (Investment Justification)	2018–19
Mount Crosby East bank WTP sedimentation upgrade	2 (Investment Justification)	2017–18
North Pine WTP filtration capacity upgrade	2 (Investment Justification)	2022–23
Enterprise Resource Planning capex	0 (Strategic Assessment)	2018–19
Holts Hill Reservoir pH correction upgrade	2 (Investment Justification)	2018–19
Somerset Dam safety upgrade	2 (Investment Justification)	2020–21

a At the time of assessment.

Sources: KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017.

KPMG said that it is 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.

For projects commencing further out, KPMG said that it would be unreasonable to expect full documentation in support of a single preferred option, robust detailed design and fully developed cost estimates.⁷¹ KPMG noted that the standard outcome of a normal capital planning process would be that documentation would be developed progressively to meet the required completion date for the project and that, in its experience, completing detailed project documentation more than three years in advance of project commencement is likely to result in a re-work of the documentation prior to commencement.⁷²

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

⁷¹ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 137.

⁷² KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 137.

process (i.e. gateway 0, 1 or 2) and expected to commence within the next regulatory period. This amounts to \$411.5 million on an as-commissioned basis or about 26.4 per cent of the entire capex program.

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

Given that KPMG advised there is 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 may 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 consider there is some uncertainty as to whether this correlation could be fully extrapolated to the broader capex program, we have chosen to adopt a more conservative approach.

We have, therefore, focused on the capex program expected to be delivered in the next regulatory period. KPMG advised that there was high likelihood that supporting documentation would be insufficient to demonstrate the prudence and efficiency of projects commencing in the next regulatory period, where projects are at an early stage of the gateway process. KPMG's assessment also raised concerns about Seqwater's ability to deliver on its capex program over the next regulatory period. The timeframe for delivering the proposed capex program over the next regulatory period does not appear reasonable, having regard to the high proportion (68 percent) of proposed capex in the early stage of the gateway process and the under-delivery of capex over the 2015–18 regulatory period.⁷³

Therefore, we propose to remove the 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 be commissioned within the next regulatory period. Our approach is more conservative than KPMG's recommendation to remove the cost of projects commencing in the next regulatory period, as many projects commencing in the next regulatory period will not be commissioned until after the regulatory period. Our adjustment reduces Seqwater's proposed capex for the next regulatory period to a level that is 3 per cent lower than the actual capex delivered by Seqwater in the current regulatory period.

Nevertheless, Seqwater's actual capex should be allowed into the RAB if it is prudent and efficient. Therefore, we recommend that the QCA should have the discretion to undertake an ex post assessment of the prudence and efficiency of capex as part of a future review (Chapter 10).

We have adjusted Seqwater's proposed capex as summarised in Table 30.

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 at gateways 0, 1 or 2 over 2018–21 regulatory period	168.1
QCA's recommendation	782.8

^a Capex is on an as-commissioned basis. ^b Exclusive of projects sampled by KPMG.

Source: QCA analysis.

⁷³ KPMG, *Seqwater expenditure review: Prudence and efficiency assessment*, November 2017, p. 79.

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 prudence of Seqwater's proposed capex program. KPMG did not identify any deficiencies in Seqwater's processes.

Cost escalation factor for capex

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

Seqwater has applied the midpoint of the RBA's inflation target range (2.5 per cent) as the escalation factor for 2018–28. This is consistent with the capex escalator that we accepted in the 2015 review. Consistent with this previous practice, the QCA accepts this approach.⁷⁴

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 (%)

<i>Tariff group</i>	<i>Method^a</i>	<i>Allocation to irrigation customers</i>
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.*

⁷⁴ We have updated the escalation factor for 2018-19 with the RBA's short-term forecast of 2.25 per cent as stated in the November 2017 Statement on Monetary Policy (RBA, *Statement on Monetary Policy*, November 2017, p. 67).

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.

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	123.8	127.6	271.9	1,034.9	1,558.1
QCA adjustment to sampled projects	(2.4)	(2.5)	(44.6)	(320.3)	(369.8)
QCA adjustment to remainder of the capex program	(29.5)	(57.6)	(81.0)	–	(168.1)
QCA modelling adjustments ^b	(1.0)	(0.8)	(1.7)	(9.1)	(12.7)
QCA recommendation	90.8	66.7	144.6	705.5	1,007.6

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

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

Under the referral, we have been asked to establish 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:
 - calculating asset appreciation (which we refer to as inflationary gain) using actual inflation
 - adding actual capital expenditure (adjusted for the findings of an ex post assessment, if required)
 - 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.⁷⁵ We have calculated the RAB in each year to 1 July 2018 by adding an inflationary gain and capital expenditure, and deducting for depreciation.

6.1.1 Inflationary gain

Consistent with standard QCA practice, we index the opening value of 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.⁷⁶ 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 that embodies the same inflation rate (Chapter 7, section 7.2.1).⁷⁷

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 (see Table 33).

⁷⁵ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, p. 40.

⁷⁶ 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.

⁷⁷ 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>.

Table 33 Inflation rates (%)

	2015–16 <i>actual</i>	2016–17 <i>forecast/actual^a</i>	2017–18 <i>forecast^b</i>
Seqwater proposal	1.49	2.00	2.00
QCA recommendation	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 2015–16 and 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 November 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, November 2017, p. 67.

6.1.2 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).

6.1.3 Depreciation

An allowance for depreciation is a component of building block costs that is also used to calculate the value of the RAB.⁷⁸ 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, 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 has received proceeds from the disposal of assets over the three years to 2016–17.⁷⁹ 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.⁸⁰ 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 the table below (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.

⁷⁸ Similar to inflationary gain, the depreciation allowance included in building block costs is reduced by a mid-year cash flow adjustment.

⁷⁹ Seqwater, sub. 1, p. 54.

⁸⁰ Seqwater response to QCA RFI 4.

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

<i>RAB roll-forward</i>	<i>2014–15</i>	<i>2015–16</i>	<i>2016–17</i>	<i>2017–18</i>
Opening RAB	8,439.1	8,456.1	8,447.4	8,465.7
<i>plus</i> inflationary gain	128.4	126.6	155.8	170.6
<i>plus</i> capital expenditure	106.6	88.4	93.6	125.1
<i>less</i> depreciation	(218.1)	(223.7)	(231.2)	(237.9)
Closing RAB	8,456.1	8,447.4	8,465.7	8,523.4

Notes: Inflationary gain, capital expenditure and depreciation for 2017–18 are forecasts only. All values 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:

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

This section focuses on the RAB roll-forward for the 2018–21 regulatory period, with a summary of the RAB roll-forward calculations for the period to 30 June 2028 provided in Table 38.

6.2.1 Inflationary gain

As explained in section 6.1.1, we index the opening value of 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 inflation forecast to 2.25 per cent to reflect the updated forecast in the RBA's November Statement on Monetary Policy.⁸¹ As the RBA's Statement on Monetary Policy is released quarterly, the inflation forecasts may be further revised in our final report.

Table 35 below 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.

⁸¹ RBA, *Statement on Monetary Policy*, November 2017, p. 67.

Table 35 Inflationary gain (\$m, nominal)

	2018–19	2019–20	2020–21
Seqwater proposal	215.1	217.5	221.7
QCA recommendation	192.8	214.9	216.7

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

Sources: Seqwater pricing model 2017; QCA calculations.

6.2.2 Capital expenditure

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

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.⁸² 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	90.8	66.7	144.6
Weighted average asset life (years)	56.1	55.5	60.1	90.3

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	243.2	249.6	255.8

Note: All values 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.

⁸² 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	8,563.8	8,595.8	8,701.2	8,904.8	8,928.9	8,941.3	8,976.5	8,978.3	9,002.7
<i>plus</i> inflationary gain	192.8	214.9	216.7	220.6	223.5	224.0	224.7	225.2	225.6	225.9
<i>plus</i> capital expenditure	90.8	66.7	144.6	245.2	70.1	65.1	94.4	66.6	95.2	68.7
<i>less</i> depreciation	243.2	249.6	255.8	262.2	269.5	276.8	283.9	290.0	296.4	302.3
Closing RAB	8,563.8	8,595.8	8,701.2	8,904.8	8,928.9	8,941.3	8,976.5	8,978.3	9,002.7	8,995.1

Notes: All values 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, which 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 most other regulators, is to estimate a benchmark WACC. This approach sets the cost of equity and cost of debt components 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. We have adopted our standard approach for the cost of equity component.⁸³ However, 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 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.⁸⁴

Seqwater proposed a WACC of 6.03 per cent in 2018–19, reducing gradually to 5.46 per cent in 2027–28 (Table 39). The reduction in the WACC over the period is due to the forecast cost of debt, as advised by QTC, decreasing over time.

⁸³ 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.

⁸⁴ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 103–106.

Table 39 Seqwater's proposed WACC (%)

<i>Parameters</i>	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Capital structure	60	60	60	60	60	60	60	60	60	60
Cost of debt	5.50	5.25	5.10	4.95	4.80	4.70	4.65	4.60	4.55	4.55
Cost of equity	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82	6.82
WACC	6.03	5.88	5.79	5.70	5.61	5.55	5.52	5.49	5.46	5.46

Source: Seqwater, sub. 2, p. 55.

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 a report by Frontier Economics, which provides alternative views on the estimation of the RFR, MRP and gamma.⁸⁵

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.

7.1.1 Capital structure

We adopt a benchmark capital structure to determine the relative weights of the debt and equity components of the cost of capital. In doing so, our objective is 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 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 GSC.⁸⁶
- Seqwater does not carry the same risks as GAWB, where the QCA adopted a capital structure of 50 per cent debt.⁸⁷

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. Incenta also agreed with Seqwater's view that the circumstances applying to GAWB do not apply to Seqwater.⁸⁸

This regulatory precedent for a benchmark capital structure of 60 per cent 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 continues to remain appropriate for Seqwater. Incenta's analysis showed that the average

⁸⁵ Seqwater, sub. 2, pp. 54–58.

⁸⁶ We note that we were asked to accept a capital structure of 50 per cent for the purposes of this review.

⁸⁷ Seqwater, sub. 2, p. 55.

⁸⁸ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, p. 28.

capital structure of the three energy businesses that are listed, over 10 years, is close to 60 per cent.⁸⁹

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), to be in its sample. Incenta analysed the capital structure of these firms and concluded that the average capital structure is 38 per cent. However, for the UK firms, this figure is close to 50 per cent. Incenta considered the UK firms' capital structure to be more relevant because of the similarity between the UK and Australian tax regimes and regulatory approaches.⁹⁰

Incenta said that while 60 per cent is materially higher than the observed capital structure 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 the Australian energy sector evidence, Incenta recommended a benchmark capital structure of 60 per cent debt for Seqwater.⁹¹

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, for the purposes of this review, we have applied Seqwater's forecast cost of debt, as advised by QTC.

Seqwater proposed a cost of debt (based on advice from QTC) that declines from 5.50 per cent in 2018–19 to 4.55 per cent in 2027–28 (Table 40).⁹²

Table 40 Seqwater's proposed cost of debt (%)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Cost of debt	5.50	5.25	5.10	4.95	4.80	4.70	4.65	4.60	4.55	4.55

Source: Seqwater, sub. 2, p. 55.

Conclusion

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

7.1.3 Cost of equity

Seqwater proposed a cost of equity of 6.82 per cent, based on an RFR of 1.84 per cent and an equity premium of 4.98 per cent.⁹³

⁸⁹ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, p. 28.

⁹⁰ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, pp. 28–29.

⁹¹ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, pp. 28–29.

⁹² Seqwater, sub. 2, p. 55.

⁹³ Seqwater, sub. 2, p. 56–58.

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.⁹⁴

We accept Seqwater's proposed methodology as it is based on the approach we adopted in other decisions. We also propose to update the estimate based on more recent market data.

Conclusion

We recommend an indicative RFR of 2.07 per cent (which is higher than Seqwater's proposed RFR of 1.84 per cent) because we have updated the estimate to reflect a more recent 20-day averaging period to 30 September 2017. We plan to further update the RFR for the final report.

Equity premium

The equity premium is the additional return above the RFR that investors require to invest in an asset of comparable risk.⁹⁵ Seqwater proposed an equity premium of 4.98 per cent, based on applying the capital asset pricing model (CAPM) with the following parameter values:

- MRP of 6.5 per cent
- debt beta of 0.11
- asset beta of 0.4
- equity beta of 0.77
- gamma of 0.47.

Market risk premium

The MRP is the additional return that an equity investor requires to be compensated for the risk of investing in a market portfolio of risky assets against purchasing a risk-free asset. Seqwater proposed a MRP of 6.5 per cent based on the QCA's past decisions.⁹⁶

We updated our MRP estimation methods for recent data, and assessed each resulting estimate on the basis of the relative strengths and weaknesses of the underlying method. In coming to a point estimate, we took these considerations into account and exercised our judgement. Our conclusion is that the best empirical estimate of the MRP is 7.0 per cent at this time.

Debt beta

The debt beta reflects the systematic risk of a firm's debt. Seqwater proposed a debt beta of 0.11.⁹⁷ In past decisions, we have used a debt beta of 0.12.⁹⁸

⁹⁴ Seqwater, sub. 2, p. 57.

⁹⁵ It is a product of the MRP and equity beta.

⁹⁶ Seqwater, sub. 2, pp. 57–58.

Asset beta

The asset beta (or unlevered beta) of an entity is a relative measure of the underlying business risk of the entity relative to the market as a whole. Seqwater proposed an asset beta of 0.40, based on the QCA's last review of GAWB.⁹⁹

Incenta assessed Seqwater's submission and supporting documentation and provided an estimate of Seqwater's benchmark asset beta based on a first principles analysis and empirical estimation. Incenta considered that a sample composed of regulated Australian water businesses would be appropriate. However, as no water businesses are publicly listed on the Australian stock market, Incenta considered that the next closest comparator businesses are regulated water businesses in countries similar to Australia.¹⁰⁰

Incenta selected 12 listed water entities in the US and UK. Incenta calculated the asset beta for these 12 comparator firms over 10 years, using both weekly and monthly return observations. The weekly and monthly observations returned average asset beta estimates of 0.49 and 0.33 respectively. Based on these two estimates, Incenta advised that best empirical estimate of the asset beta is the midpoint of 0.41.¹⁰¹

We also asked Incenta to provide us with a range for the asset beta. For the upper bound, Incenta selected the toll roads sector, because it exhibits similar characteristics to the water sector on some indicators, but is expected to face higher systematic risk than Seqwater. Incenta could not provide us with a lower bound because it could not identify another sector that, based on first principles, might be expected to have lower systematic risk than Seqwater.¹⁰²

Incenta estimated the asset beta for toll roads to be 0.47.¹⁰³ On the basis of this analysis, Incenta advised that the best empirical estimate of the asset beta is 0.41, with an upper bound of 0.47.

Equity beta

The equity beta (or levered beta) reflects not only this business risk but also the financial risk born by equity holders from the use of debt to partially fund the business. It is a function of the asset beta and debt beta.

Based on its proposed asset beta of 0.40 and debt beta of 0.11, Seqwater calculated an equity beta of 0.77.¹⁰⁴

Based on its best empirical estimate of an asset beta at 0.41, and the QCA's standard approach to levering betas (using the Conine approach), and gamma and debt beta values of 0.46 and

⁹⁷ Seqwater pricing model 2017.

⁹⁸ For example, we used a debt beta of 0.12 in our final decision on DBCT's Management's 2015 draft access undertaking (QCA, *DBCT Management's 2015 draft access undertaking*, November 2016, p. 81).

⁹⁹ Seqwater, sub. 2, p. 57.

¹⁰⁰ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, pp. 20–21.

¹⁰¹ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, p. 24–25.

¹⁰² Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, p. 1.

¹⁰³ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, pp. 8, 26–27.

¹⁰⁴ Seqwater, sub. 2, pp. 57–58.

0.12 respectively, Incenta recommended an equity beta of 0.77, with an upper bound of 0.91 (derived from toll roads).¹⁰⁵

Gamma

The Australian tax system allows companies to provide their shareholders with dividend imputation credits to reflect company taxes paid on profits that are distributed as dividends. Shareholders can then use these credits to reduce their own tax liabilities. The value of these credits is reflected through a parameter known as gamma. Gamma is the product of two elements: the utilisation rate of imputation credits and the distribution rate.

Seqwater proposed a gamma of 0.47 based on the QCA's past decisions.¹⁰⁶

We recently re-estimated the utilisation rate component of gamma and came to the view that the proportion of foreign ownership in Australian-listed equities has increased slightly since our previous assessment. As a result, our best empirical estimate of the gamma is now slightly lower, at 0.46.

QCA analysis and conclusion

We have assessed Seqwater's proposed equity premium (4.98 per cent) against an equity premium that reflects our best empirical estimates of each parameter (5.39 per cent) in the context of our overall approach to this review. An appropriate equity premium is one that is consistent with efficiency objectives, including promoting and maintaining efficient investments, and efficient resource allocation. At the same time, it should protect consumers from monopoly power.

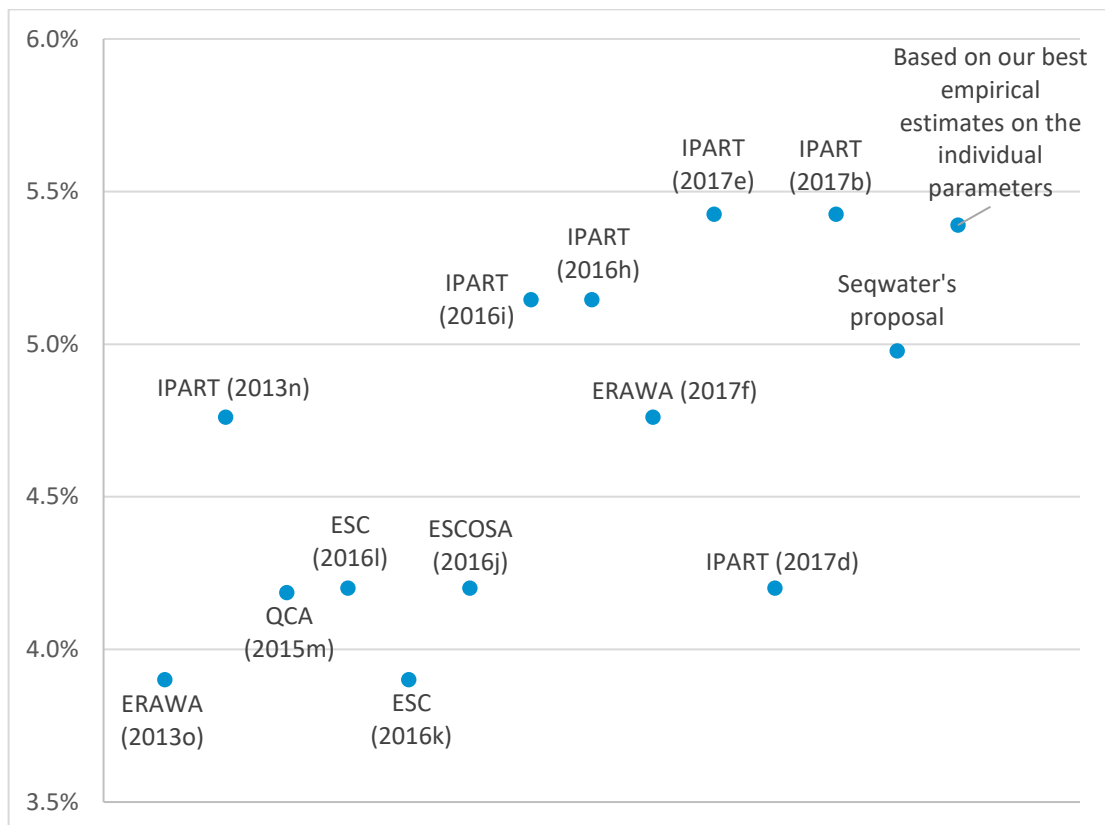
We also have compared Seqwater's proposed equity premium of 4.98 per cent¹⁰⁷ with the equity premiums provided to other water businesses in recent regulatory decisions (Appendix D) and found that it is within the range of those estimates (3.90 to 5.43 per cent).

The benchmark equity premium that reflects our best empirical estimates of each parameter is 5.39 per cent, which is near the top of the range (Figure 10).

¹⁰⁵ Incenta, *Estimating Seqwater's firm-specific WACC parameters for the 2018–21 bulk water price investigation*, November 2017, p. 1.

¹⁰⁶ Seqwater, sub. 2, p. 57.

¹⁰⁷ The post-tax nominal cost of equity minus the risk-free rate.

Figure 10 Recent regulatory decisions on the equity premium for water businesses in Australia

Notes: More detail on each regulatory decision is provided in Appendix D. The letters in brackets refer to the same references as in Appendix D.

Source: QCA analysis.

As Seqwater's proposed equity premium is lower than our estimate of the benchmark equity premium, we consider it is consistent with the aim of protecting consumers from monopoly pricing. We also consider that it is consistent with the promotion of efficient investment because:

- as a monopoly business, we expect Seqwater would propose a cost of equity (as part of an overall WACC) that provides sufficient incentives to invest
- it is within the range of recent regulatory decisions.

Therefore, we consider it is appropriate to accept Seqwater's proposed equity premium of 4.98 per cent.

Conclusion on cost of equity

We recommend an indicative cost of equity of 7.05, based on an indicative RFR of 2.07 per cent and an equity premium of 4.98 per cent. This is higher than Seqwater's proposed cost of equity, because we have updated the RFR proposed by Seqwater (1.84 per cent) based on more recent data.

Seqwater submitted that it will reconsider its position on WACC parameters at the next price review in 2021. The QCA would welcome a productive and collaborative discussion on these matters.

7.1.4 Summary of WACC

We recommend a WACC of 6.12 per cent in 2018–19, decreasing to 5.55 per cent in 2027–28, in line with the scheduled reductions in the cost of debt (see Table 41 for our recommended WACC for the three years to 2020–21).

Table 41 WACC (%)

	<i>Parameter</i>	<i>2018–19</i>	<i>2019–20</i>	<i>2020–21</i>
Seqwater proposal	Capital structure	60	60	60
	Cost of debt	5.50	5.25	5.10
	Cost of equity	6.82	6.82	6.82
	Post-tax nominal (vanilla) WACC	6.03	5.88	5.79
QCA recommendation	Capital structure	60	60	60
	Cost of debt	5.50	5.25	5.10
	Cost of equity	7.05	7.05	7.05
	Post-tax nominal (vanilla) WACC	6.12	5.97	5.88

Sources: Seqwater, sub. 2, p. 55; QCA analysis.

7.2 The return on assets and working capital allowance

We have applied our 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 differs from Seqwater's proposed allowance (Table 42) due to a combination of our higher recommended WACC and lower recommended RAB (Chapter 6).

Table 42 Return on assets (\$m, nominal)

	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>
Seqwater proposal	503.6	497.0	498.9	503.8	502.7	498.9	499.3	499.4	500.8	508.7
QCA recommendation	508.9	498.5	495.2	496.5	495.5	491.6	490.6	489.2	487.5	488.1

Sources: Seqwater pricing model 2017; QCA analysis.

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

Our recommended deduction for inflationary gain differs from Seqwater's deduction (Table 43) due to our use of a more up-to-date inflation forecast for 2018–19 (2.25 per cent) and our lower recommended RAB (Chapter 6).

Table 43 Deductions for inflationary gain (\$m, nominal)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Seqwater proposal	208.9	211.4	215.5	221.1	224.2	224.9	226.3	227.5	229.4	233.1
QCA recommendation	187.1	208.8	210.6	214.4	217.4	218.0	218.7	219.2	219.6	219.9

Sources: Seqwater pricing model 2017; QCA analysis.

7.2.2 Working capital allowance

Seqwater proposed a working capital allowance, which 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.

Our recommended allowance for working capital differs from Seqwater's proposed allowance (Table 44) each year, which reflects our recommendations on building block costs and operating expenditure.

Table 44 Working capital allowance (\$m, nominal)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Seqwater proposal	4.6	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.7	4.8
QCA recommendation	4.8	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.6

Sources: Seqwater pricing model 2017; 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 Chapter 7), 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 2018.¹⁰⁸

Seqwater proposed a tax allowance calculated on the basis of building block costs rather than total revenue.¹⁰⁹ 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 a 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 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. This results in a tax allowance of \$0 between 2018–19 and 2027–28, which is \$111.7 million lower than Seqwater's proposed tax allowance (Table 45).

¹⁰⁸ Seqwater, sub. 1, p. 36.

¹⁰⁹ Seqwater, sub. 1, p. 36.

Table 45 Seqwater's tax allowance 2018–28 (\$m, nominal)

<i>Tax allowance</i>	<i>2018–19</i>	<i>2019–20</i>	<i>2020–21</i>	<i>2021–28</i>
Seqwater proposal	5.4	6.7	7.9	111.7
QCA recommendation	–	–	–	–

Sources: Seqwater pricing model 2017; 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.

The referral asks the QCA to establish 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 costs¹¹⁰ 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 46). 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 6.1.1). Due to lower-than-expected inflation, the inflationary gain deduction from the updated building block costs was less than expected.

Table 46 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.

¹¹⁰ The term 'maximum allowable revenue' in the referral is equivalent to the term 'building block costs' in this draft report.

We have updated building block costs in accordance with the terms of the referral (Table 49), 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.

Asset disposals

Seqwater proposed \$3.6 million in land, fleet and other asset disposals between 2014–15 and 2016–17. Supplementary information provided by Seqwater showed a revised amount of \$3.7 million and clarified that the disposal amounts reflect proceeds from sale, not the RAB value (Table 47).¹¹¹

Table 47 Seqwater's proposed value for asset disposals (\$m, nominal)

	2014–15	2015–16	2016–17	2017–18
Seqwater proposal	0.8	1.5	0.4	–

Source: Seqwater pricing model 2017.

Seqwater has proposed sharing the \$1.8 million in proceeds from the disposal of land equally between customers and the business.¹¹² This proposed treatment is based on Seqwater's proposal to establish an incentive mechanism for the disposal of land into future regulatory arrangements.¹¹³ 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 recommend the value of the asset disposals to be the full value of the proceeds from sales (Table 48). 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 10.3).

Table 48 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 49) 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 cent¹¹⁴), 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 savings, which increased building block costs across all years (Chapter 8, section 8.1.4).¹¹⁵

¹¹¹ Seqwater response to QCA RFI 4.

¹¹² The balance of the asset disposals (\$1.9 million) reflects the disposal of non-land assets.

¹¹³ Seqwater, sub. 1, p. 54.

¹¹⁴ ABS, *Consumer Price Index, Australia, Sep 2017*, Table 1: All Groups, Index Numbers and Percentage Changes, cat. no. 6401.0.

- Our adjustments for asset disposals decreased our recommended update across all years, except in 2017–18 where the adjustment is zero.

Table 49 QCA's update to building block costs (\$m, nominal)

	2014–15	2015–16	2016–17	2017–18
QCA update to building block costs	803.4	837.1	823.1	818.1
Less adjustment for asset disposals	0.9	2.2	0.6	–
Total	802.5	834.9	822.4	818.1

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 forecast cost of debt 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 50 and Table 51).

Table 50 Cost of 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 51 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.

In its submission, QUU said that a 'true-up' for the interest costs is inappropriate because the debt composition is a commercial decision for Seqwater.¹¹⁵ However, consistent with the referral, we have updated interest costs for QTC's actual cost of debt (Table 52).

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 52 QCA's update to interest on price path debt (\$m, nominal)

	2014–15	2015–16	2016–17	2017–18
QCA recommendation	111.9	120.0	124.6	122.6

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 events¹¹⁷

¹¹⁵ It also impacted our building block costs in 2014–15, 2015–16, and 2016–17, but to a lesser degree.

¹¹⁶ QUU, sub. 8, p. 2.

- drought response measures taken in accordance with the WSP, where the costs associated with those measures are efficient and material.

Emergency events

Seqwater advised that it intends to make a claim for costs associated with damage to its assets from cyclone Debbie, which occurred in March 2017. Seqwater noted that the costs associated with this event are still being assessed, and that it will provide the QCA with a detailed claim as soon as possible.¹¹⁸ Since its submission, Seqwater has confirmed that it will submit its claim after the release of this draft report.

Changes in law or government policy events

Seqwater did not propose any review event adjustments due to changes in law or government policy.¹¹⁹

Feedwater quality events

Seqwater did not propose any review event adjustments due to a change in feedwater quality.¹²⁰ However, Seqwater has proposed a change to the definition of feedwater quality review events for the period beyond 1 July 2018 (see Chapter 10).

Cost of debt events

The cost of debt drives two components of Seqwater's costs:

- the rate of return
- interest on price path debt.

In accordance with our definition of cost of debt events in the 2015 review, to trigger a cost of debt event, the government must decide to approach QTC to advise the actual cost of debt.¹²¹ The QCA would then update the forecast cost of debt for the actual cost of debt. Alternatively, the government could request an update 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).

We have not updated the rate of return for the actual cost of debt, because there was no request to do so in the referral and QTC has not advised the actual cost of debt associated with Seqwater's water infrastructure borrowings. However, the absence of an ex post adjustment to the rate of return does appear to be inconsistent with:

- previous treatment under the existing SEQ bulk water regulatory framework, where ex post adjustments have been made to the rate of return to account for differences between the actual and forecast cost of debt¹²²

¹¹⁷ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 91–94.

¹¹⁸ Seqwater, sub. 2, p. 10.

¹¹⁹ Seqwater, sub. 2, p. 10.

¹²⁰ Seqwater, sub. 2, p. 10.

¹²¹ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, p. 94.

¹²² For example, this adjustment was made in the QCA's 2015 review (QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, p. 38) and in the QCA's 2012–13 review of SEQ grid service charges (QCA, *SEQ Grid Service Charges 2012–13*, final report, July 2012, pp. 81–83).

- the government's intention (stated in the referral) to apply an end-of-period adjustment for the 2018–21 period.

Due to the manner in which Seqwater's loans are structured, we expect that the actual cost of debt applying to the price path debt will be different to the actual cost of debt applying to the rate of return.¹²³

Drought response events

Seqwater submitted indicative drought response costs of \$0.5 million, which were incurred over the 2015–18 period. However, as these costs were still being finalised when Seqwater made its submission, it did not propose to incorporate the costs into the price path debt. Since its submission, Seqwater has confirmed that it will submit updated costs after the release of this draft report.

Seqwater said that the incurred costs relate to:

- operating the grid under drought-response mode (around \$0.4 million), which primarily involved changing the flow of water to the northern sub-region
- responding to drought at stand-alone supply schemes (around \$0.1 million), which involved carting water to Dayboro Plant (ended in April 2017).¹²⁴

Seqwater explained that, while the costs are relatively minor, it is important they are recovered, otherwise Seqwater bears the risks of these events going forward and could thus justify including an allowance in its cost forecasts.¹²⁵ Under the terms of the referral, any additional costs for drought response must be assessed as being material to be recovered.

In the absence of a detailed claim from Seqwater, we have not made any adjustments to allow for the recovery of drought response costs at this time.

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 53).¹²⁶

¹²³ QTC has also proposed different cost of debt forecasts for the interest rate on price path debt and the rate of return (Seqwater, sub. 5, pp. 2–3).

¹²⁴ Seqwater, sub. 2, pp. 10–11.

¹²⁵ Seqwater, sub. 2, pp. 10–11.

¹²⁶ 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.

Table 53 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	843.2 ^b

^a Building block costs plus price path debt repayment. ^b Actual revenue in 2017–18 is a forecast only.

Source: Seqwater, sub. 2, pp. 11–12.

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 53). The total operational cost savings varied from \$0.8 million in 2014–15 to \$3.7 million in 2017–18.¹²⁷

In accordance with the referral, we have accepted Seqwater's adjustment to the price path debt, based on actual and forecast revenues (Table 54). We have not made an adjustment for the operational cost savings, because the referral does not ask for this adjustment to be made.

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

	2014–15	2015–16	2016–17	2017–18
QCA recommendation	736.3	766.8	829.5	843.2 ^a

^a Actual revenue in 2017–18 is a forecast only.

8.1.5 Conclusion

Based on our adjustments above, we recommend a price path debt opening balance of \$2,509.0 million as at 1 July 2018 (Table 55).¹²⁸ Our opening balance is higher than what Seqwater proposed, primarily because we did not adjust for Seqwater's proposed operating cost savings.

Table 55 QCA's updated price path debt (\$m, nominal)

	2014–15	2015–16	2016–17	2017–18
Opening balance	1,927.7	2,105.9	2,294.0	2,411.5
plus updated building block costs	802.5	834.9	822.4	818.1
plus updated interest costs	111.9	120.0	124.6	122.6
less actual revenue	736.3	766.8	829.5	843.2
Closing balance	2,105.9	2,294.0	2,411.5	2,509.0

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 \$2,509.0 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

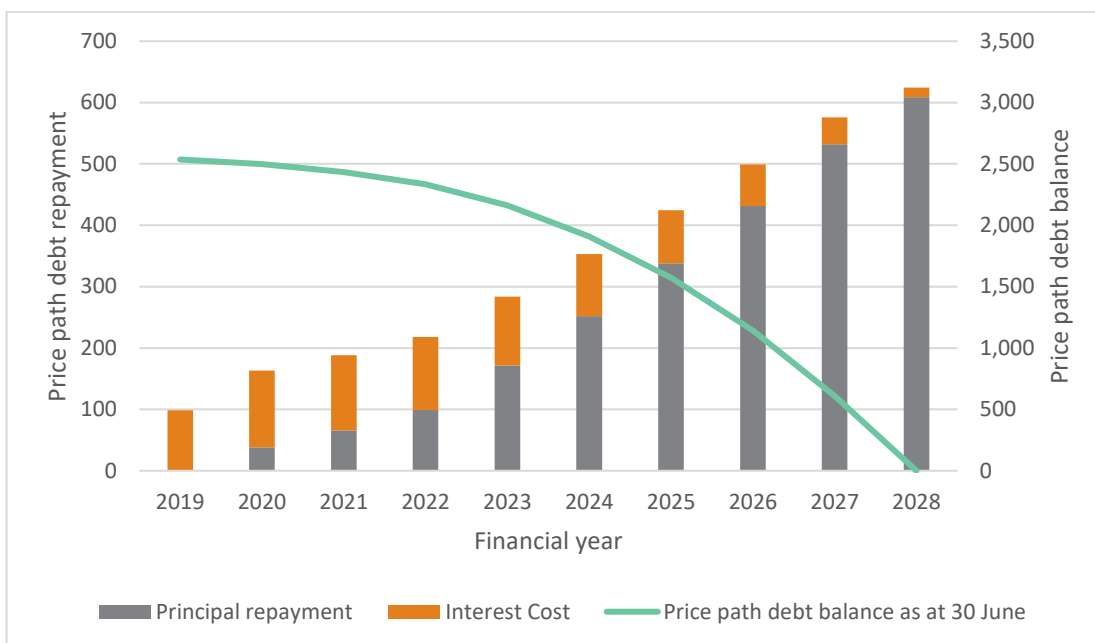
¹²⁷ Seqwater, sub. 2, pp. 11–12.

¹²⁸ The opening balance as at 1 July 2018 is the same as the closing balance as at 30 June 2018.

- the interest costs—where Seqwater's forecast cost of debt 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 slightly higher repayments in the early years and slightly lower repayments in the later years, relative to option 2. Figure 11 shows the price path debt repayment profile for option 1.

Figure 11 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 56 summarises our recommended building block costs. Unlike the price path debt repayment, these costs do not vary with the pricing approach.

Table 56 QCA's recommended building block costs (\$m, nominal)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Return on assets	508.9	498.5	495.2	496.5	495.5	491.6	490.6	489.2	487.5	488.1
plus return of capital (depreciation)	236.1	242.5	248.6	254.9	262.2	269.3	276.2	282.3	288.5	294.3
less inflation	187.1	208.8	210.6	214.4	217.4	218.0	218.7	219.2	219.6	219.9
plus operating expenditure	227.1	232.1	240.5	245.2	253.8	262.7	270.5	280.0	290.6	299.1
plus tax	–	–	–	–	–	–	–	–	–	–
plus working capital allowance	4.8	4.5	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.6
Total	789.8	768.8	778.2	786.6	798.6	810.1	823.1	836.8	851.5	866.2

Source: QCA analysis.

8.3.1 Conclusion

A comparison between pricing option 1 (Table 57) and pricing option 2 (Table 58) shows pricing option 1 resulting in slightly higher repayments in the early years and slightly lower repayments in the later years, relative to option 2.

Table 57 Total revenue based on pricing option 1 (\$m, nominal)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Building block costs	790	769	778	787	799	810	823	837	851	866
Price path debt repayment	99	163	188	218	284	353	425	499	576	624
Total revenue	888	932	967	1,005	1,082	1,163	1,248	1,336	1,427	1,490

Source: QCA analysis.

Table 58 Total revenue based on pricing option 2 (\$m, nominal)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Building block costs	790	769	778	787	799	810	823	837	851	866
Price path debt repayment	94	159	190	219	285	355	426	501	578	626
Total revenue	883	927	968	1,006	1,084	1,165	1,249	1,338	1,429	1,492

Source: QCA analysis.

9 DRAFT RECOMMENDED PRICES

In this chapter, we present our draft 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 recover Seqwater's total revenue, which includes building block costs and price path debt repayment components (see Chapter 8, Table 57 and Table 58). We converted total revenue to prices using Seqwater's demand forecasts (see Chapter 3, Table 4).

The prices we recommend in the final report may differ from the prices in this draft report. We also note that the government will determine prices after considering whether to accept our final recommendations.

9.1 Pricing options

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

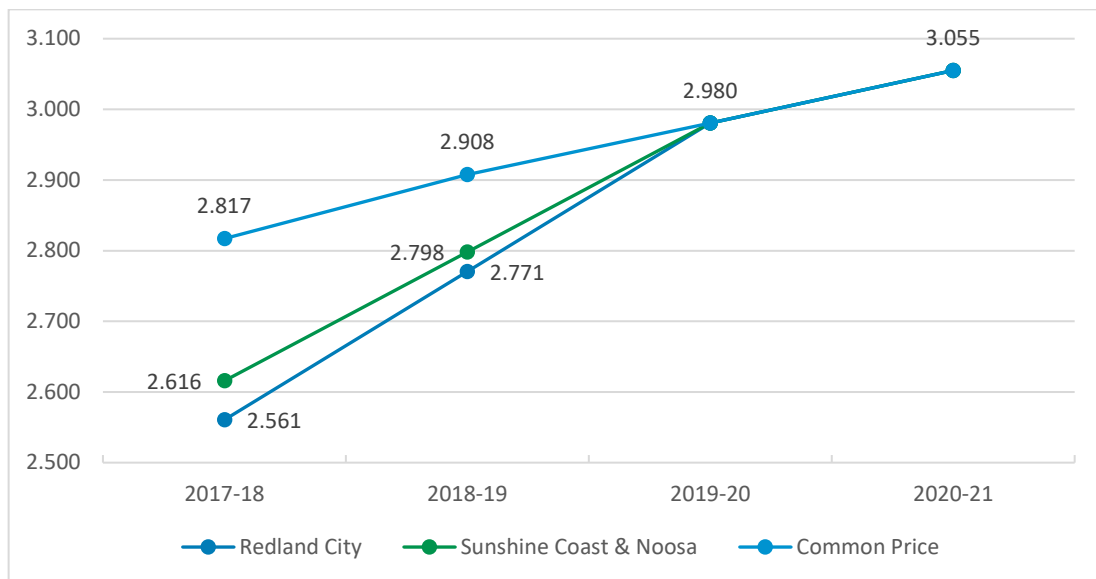
- Pricing option 1— the common price (for all council areas, except Redland City, Sunshine Coast and Noosa) is to be reset in 2018–19, followed by annual increases by inflation. Transitional price paths for Redland City, Sunshine Coast and Noosa council areas are to result in the common price being reached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

Under both options, we have been asked to recommend prices that are fully volumetric, which means that a price applies to each kilolitre of water consumed. Beyond the three-year regulatory period, the common price is assumed to increase by inflation only until price path debt is repaid in 2028.

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 12), we recommend a common price of \$2.908 in 2018–19, an increase of 3.22 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. Customers in these council areas currently pay lower prices than customers in other council areas.

Figure 12 Pricing option 1 (\$/kL)

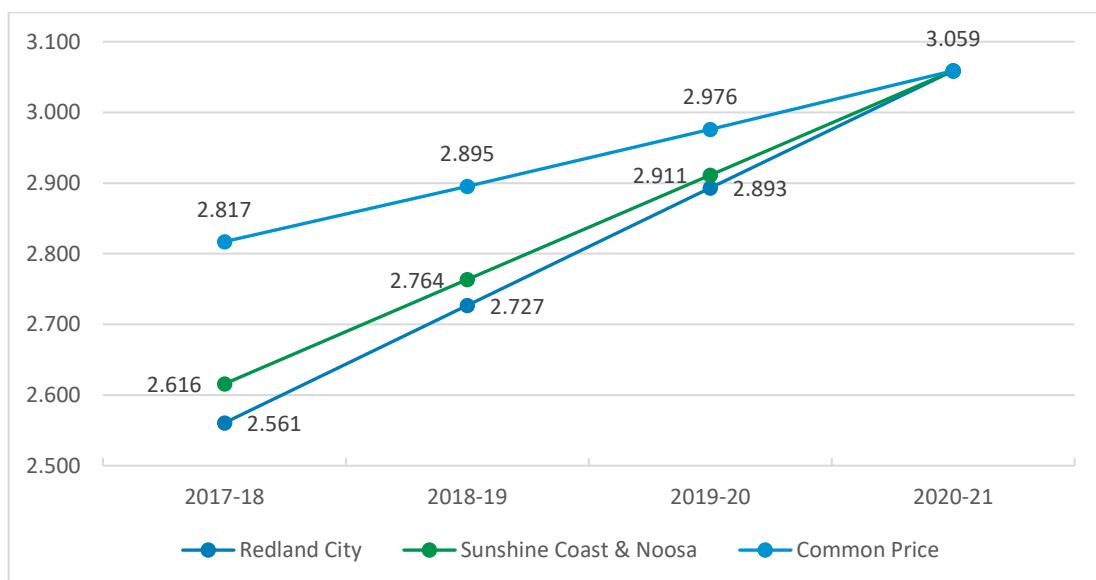


Source: QCA calculations.

Under option 2 (Figure 13), we recommend a common price of \$2.895 in 2018–19, an increase of 2.78 per cent on the 2017–18 common price. This is followed by increases of 2.78 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 lower increases than under option 1 and reach the common price in 2020–21, instead of 2019–20.

Figure 13 Pricing option 2 (\$/kL)



Source: QCA calculations.

Our draft recommended prices under each pricing option are presented in Table 59.

Table 59 Draft recommended prices

Council area	Pricing option	2018–19		2019–20		2020–21	
		\$/kL	% chg	\$/kL	% chg	\$/kL	% chg
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	Option 1	2.908	3.22%	2.980	2.50%	3.055	2.50%
	Option 2	2.895	2.78%	2.976	2.78%	3.059	2.78%
Sunshine Coast and Noosa	Option 1	2.798	6.97%	2.980	6.52%	3.055	2.50%
	Option 2	2.764	5.65%	2.911	5.35%	3.059	5.07%
Redland City	Option 1	2.771	8.20%	2.980	7.58%	3.055	2.50%
	Option 2	2.727	6.49%	2.893	6.09%	3.059	5.74%

Note: Percentage change reflects the year-on-year percentage change.

Source: QCA calculations.

Moreton Bay Regional Council (MBRC) 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.¹²⁹ 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. Under our draft recommendations, customers in all council areas would 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.¹³⁰ 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.

Several stakeholders shared concerns about the impact of bulk water prices on customers.¹³¹ 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.

Draft recommendation 2

Bulk water prices for each council areas should be set according to pricing option 1 or pricing option 2, as set out in Table 59 above.

9.2 Indicative bill impacts

Bulk water prices are included as a separate charge in the water bills of households and businesses. Based on our draft recommended prices, we can illustrate the potential impact on

¹²⁹ Moreton Bay Regional Council, sub. 9, p. 1.

¹³⁰ QCOSS, sub. 10, pp. 1–2.

¹³¹ 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.

the bulk water component of water bills. Table 60 provides indicative bill impacts under each pricing option, based on average household consumption across SEQ of 160 kL per year.¹³²

As prices are wholly volumetric, the percentage increases in bills are the same as the percentage increases in prices (refer to Table 59 above).

Table 60 Indicative bulk water bill for an average household (\$ per annum)

<i>Council area</i>	<i>Pricing option</i>	<i>2018–19</i>	<i>2019–20</i>	<i>2020–21</i>
Brisbane, Gold Coast, Ipswich, Lockyer Valley, Logan, Moreton Bay, Scenic Rim, Somerset	Option 1	465.28	476.80	488.80
	Option 2	463.20	476.16	489.44
Sunshine Coast and Noosa	Option 1	447.68	476.80	488.80
	Option 2	442.24	465.76	489.44
Redland City	Option 1	443.36	476.80	488.80
	Option 2	436.32	462.88	489.44

Source: QCA calculations.

¹³² 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, including issues relevant to future price reviews, are discussed in this chapter. These issues are the review events framework; ex-post assessments of capex; incentive mechanisms; tariff reform; 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 events¹³³.

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.¹³⁴

In our view, it may be difficult to assess whether an event met the definition of an extreme event without establishing a review threshold. Seqwater has also provided insufficient justification to include a contingency allowance to account for seasonal or climatic variations in feedwater quality (see Chapter 4).

We recommend that no change be made to the definition of feedwater quality events that we recommended in the 2015 review.

Draft recommendation 3

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 include drought response events is reasonable, particularly given the unpredictable nature of droughts and the uncertain accompanying impact on costs.

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

¹³³ Defined as changes to operating mode, response to regional drought triggers and local drought in off-grid areas (Seqwater, sub. 1, p. 53).

¹³⁴ Seqwater, sub. 1, pp. 44–45, 52–53.

customer price impacts if a true-up occurred during the regulatory period.¹³⁵ Consistent with our recommendations in the 2015 review¹³⁶, 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 the need for a within-period review.

Draft recommendation 4

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 costs in the following manner:

- (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 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 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 often 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.

Draft recommendation 5

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

10.3 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.

¹³⁵ Queensland Urban Utilities, sub. 8, pp. 2–3.

¹³⁶ QCA, *SEQ bulk water price path 2015–18*, final report, March 2015, pp. 91–98.

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.¹³⁷

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 not to claw back outperformance over the regulatory period. These commitments are difficult to provide, because the QCA's reviews are at the discretion of the government and are based on government policy positions at the time of each review.

We consider 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.

10.4 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 two-part tariff that is more reflective of its cost structure (i.e. high fixed costs relative to variable costs).¹³⁸

We note that there are costs and benefits associated with tariff reform, which require careful consideration and consultation with stakeholders and customers. There may be merit in considering this matter as part of a future review.

10.5 Stakeholder consultation and consumer 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.¹³⁹

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 submission.¹⁴⁰ We encourage Seqwater to continue to consult and collaborate with customers in future, including in the development of its regulatory submission.

¹³⁷ Seqwater, sub. 1, p. 54.

¹³⁸ Seqwater, sub. 1, p. 54.

¹³⁹ QCOSS, sub. 10, pp. 2–3.

¹⁴⁰ Seqwater, sub. 1, pp. 26, 46.

The QCA's Consumer Advisory Committee was established under the *Electricity Act 1994* and its purpose is to advise 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. Our role is to provide advice at the request of the government and to provide that advice in accordance with the terms of reference established for each review. We do not consider the regulatory arrangements that apply to water pricing support the establishment of 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.

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
capex	capital expenditure
CAPM	capital asset pricing model
CPI	consumer price index
DEWS	Queensland Department of Energy and Water Supply
DNRM	Queensland Department of Natural Resources and Mines
EBA	enterprise bargaining agreement
ERA	Economic Regulatory Authority (Western Australia)
ESC	Essential Services Commission (Victoria)
ESCOSA	Essential Services Commission of South Australia
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
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
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	<i>Queensland Competition Authority Act 1997</i>
QCOSS	Queensland Council of Social Service
QTC	Queensland Treasury Corporation

QUU	Queensland Urban Utilities
RAB	regulatory asset base
RBA	Reserve Bank of Australia
RFR	risk-free rate
SEQ	south east Queensland
the referral	the referral for the review issued by the Treasurer and Minister for Trade and Investment 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
WACC	weighted average cost of capital
WAE	water access entitlement
WCRWS	Western Corridor Recycled Water Scheme
WPI	wage price index
WSP	Water Security Program
WTP	water treatment plant

APPENDIX A: REFERRAL

The referral was issued by the Queensland Government on 25 May 2017 and published in the Queensland 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) DefinitionsOperational & 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 prudence 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 prudence 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

<i>Stakeholder</i>	<i>Submission number</i>	<i>Document/date of submission</i>
Seqwater's submission		
Seqwater	1	Submission Part A, July 2017
Seqwater	2	Submission Part B, July 2017
Seqwater	3	Appendix 1, <i>Cost escalation factors</i> , final report, prepared by PwC, July 2017
Seqwater	4	Appendix 2, <i>The weighted-average cost of capital for Seqwater</i> , prepared by Frontier Economics, July 2017
Seqwater	5	Appendix 3, <i>Updated cost of debt estimates for Seqwater</i> , prepared by Queensland Treasury Corporation, July 2017
Other stakeholders' submissions		
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

APPENDIX C: OVERVIEW OF SEQWATER'S KEY OBLIGATIONS

The Water Supply Regulator (within the Department of Energy and Water Supply) 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 it must comply with a range of obligations in this Act and other legislative and regulatory instruments.¹⁴¹

Water quality obligations

Seqwater provides bulk water to water retailers that has been treated to drinking water quality standards.¹⁴² Seqwater's bulk water supply agreements with the retailers¹⁴³ detail specific quality parameters, while also requiring compliance with the Australian Drinking Water Guidelines.¹⁴⁴ Seqwater must also meet obligations with respect to fluoride and E.coli levels¹⁴⁵, comply with an approved Drinking Water Quality Management Plan¹⁴⁶ and report its performance against drinking water quality standards.¹⁴⁷

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 2002.¹⁴⁸ Broadly, they require that the bulk water supply network is able to supply enough water:¹⁴⁹

- 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

¹⁴¹ Seqwater, sub. 1, p. 16.

¹⁴² Seqwater has bulk water supply agreements to supply raw water (rather than treated water) to other customers, including Stanwell Corporation and Toowoomba Regional Council.

¹⁴³ Agreements are determined by the Minister for Energy and Water Supply under s. 360G of the *Water Act 2000*.

¹⁴⁴ 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.

¹⁴⁵ For example, under the *Public Health Act 2005*.

¹⁴⁶ Under the *Water Supply (Safety and Reliability) Act 2008*, the plan must be approved by the Water Supply Regulator.

¹⁴⁷ 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*.

¹⁴⁸ 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.

¹⁴⁹ 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.¹⁵⁰

Dam safety obligations

Seqwater is responsible for the safety of its dams under the *Water Supply (Safety and Reliability) Act 2008*.¹⁵¹ 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 Guidelines¹⁵²
- complying with the national guidelines of the Australian National Committee on Large Dams¹⁵³
- having an approved emergency action plan in place for each dam¹⁵⁴
- meeting requirements relating to acceptable flood capacity in the Guideline on Acceptable Flood Capacity for Water Dams¹⁵⁵
- undertaking flood operations in accordance with approved flood mitigation manuals for Wivenhoe, Somerset and North Pine Dams.¹⁵⁶

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.¹⁵⁷

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.¹⁵⁸

¹⁵⁰ Seqwater, sub. 2, pp. 4, 22.

¹⁵¹ Seqwater, sub. 1, p. 29.

¹⁵² DNRM, *Queensland Dam Safety Management Guidelines*, February 2002.

¹⁵³ Seqwater, sub. 1, p. 29.

¹⁵⁴ *Water Supply (Safety and Reliability) Act 2008*, s. 352E.

¹⁵⁵ DEWS, *Guidelines on Acceptable Flood Capacity for Water Dams*, July 2017.

¹⁵⁶ 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*.

¹⁵⁷ Seqwater, sub. 1, p. 16.

¹⁵⁸ Seqwater, sub. 1, pp. 16, 18.

APPENDIX D: REGULATORY DECISIONS ON THE EQUITY PREMIUM

The following table presents our analysis of the equity premium provided to other water businesses in recent regulatory decisions.

Year	Regulator and review	Capital structure (%)	Equity beta	MRP (%)	Equity premium^a (%)
2017	IPART–Sydney Desalination Plant ^b	60	0.70	7.75 ^c	5.43 ^c
2017	IPART–WaterNSW (MDB valleys) ^d	60	0.70	6.00	4.20
2017	IPART–WaterNSW (Coastal valleys) ^e	60	0.70	7.75 ^c	5.43 ^c
2017	ERA–Water Corporation, Aqwest and Busselton Water Board ^{f,g}	55	0.70	6.80	4.76
2016	IPART–WaterNSW greater Sydney area ^h	60	0.70	7.35 ^c	5.15 ^c
2016	IPART–Sydney Water Corporation ⁱ	60	0.70 ^c	7.35 ^c	5.15 ^c
2016	ESCOSA–SA water regulatory determination ^j	60	0.70	6.00	4.20
2016	ESC–Melbourne Water ^k	60	0.65	6.00	3.90
2016	ESC–Goulburn-Murray Water ^l	60	0.70	6.00	4.20
2015	QCA–Gladstone Area Water Board ^m	50	0.64	6.50	4.19
2013	IPART–Hunter Water ⁿ	60	0.70 ^c	6.80 ^c	4.76 ^c
2013	ERA–Water Corporation, Aqwest and Busselton Water Board ^o	60	0.65	6.00	3.90

a The post-tax nominal cost of equity minus the risk-free rate.

b IPART, Sydney Desalination Plant review of prices, final report, June 2017, p. 124.

c Using the midpoint.

d IPART, WaterNSW review of prices, final report, June 2017, p. 73.

e IPART, WaterNSW review of prices, final report, June 2017, p. 75.

f ERA, The efficient costs and tariffs of the Water Corporation, draft report, August 2017, p. 28.

g The final report is due to the government on 10 November 2017.

h IPART, Review of prices for WaterNSW, final report, June 2016, p. 46.

i IPART, Review of prices for Sydney Water Corporation, final report, June 2016, p. 125.

j ESCOSA, SA Water regulatory determination 2016, final determination, June 2016, p. 126.

k ESC, Melbourne water price review 2016, final decision, June 2016, p. 53.

l ESC, Goulburn-Murray water price review 2016, final decision, June 2016, p. 33.

m QCA, Gladstone Area Water Board Price Monitoring 2015–2020, final report, May 2015, p. 53.

n IPART, Hunter Water Corporation review of prices, final report, June 2013, p. 83.

o ERA, Inquiry into the efficient costs and tariffs of the Water Corporation, revised final report, March 2013, pp. 58–60.

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